Silvereye 1

T/44P Offshore Bass Basin
Well Completion Report
Basic Data

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WELL DATA CARD Silvereye 1

GENERAL DATA

Surface Location:	Latitude:	39°54'19.8250"S
(GDA 94)	Longitude:	145°03'32.6409"E
(UTM Zone 55)	Easting:	334 088.708m
	Northing:	5 580 927.328 m
Elevation:	WD:	53.9 m
	RT:	26.0 m
Date spudded:	03/12/2010	00:00 hours
Date TD reached:	16/12/2010	10:00 hours
Date Rig release:	22/12/2010	14:00 hours

Status:	Plugged & Abandoned	
Total Depth:	Driller:	2317 mMDT / 2272.04m TVDRT / 2246.0m TVDSS
Plugs:	#1A: 2170 – 2317mMDRT #1B: 2020 – 2170mMDRT #1C: 1920 – 2020mMDRT # 2: 1000 – 1150mMDRT #2B: 996 – 1130mMDRT # 3: 100 - 200mMDRT	
Casing:	Size:	Shoe:
(a) Conductor	30”	137.4 m MDRT
(b) Surface	13 3/8”	1102.8 m MDRT

LWD LOGS

Hole Size (inches)	Interval (mMDRT)	MWD services	LWD services
17.5”	141 – 1112	PCDR	none
12.25”	1112 – 1812	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT
12.25”	1812 – 2215	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT
12.25”	2215 – 2317	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT

WIRELINE LOGS

None wireline logs were acquired.

PRESSURE TESTING AND FLUID SAMPLING

No testing & sampling was undertaken.

FULL HOLE CORES

No full hole cores were acquired.

1. WELL SUMMARY SHEET

Well Name:	Silvereye 1	
Permit:	T/44P Offshore Bass Basin	
Well Path:	Deviated	
Top Hole Location:	Latitude:	39°54'19.8250" South
	Longitude:	145°03'32.6409" East
	Easting:	334 088.708 metres
	Northing:	5 580 927.328 metres
	(GDA 94; AMG Zone 55, Central Meridian 147° East)	
Seismic Location:	Inline 1401 and Crossline 1810 on the 2008 Silvereye 3D seismic	
Bottom Hole Location:	Easting:	334 396.91 metres
	Northing:	5 580 994.36 metres
Elevation:	26m (RT-sea level)	
Water Depth:	53.9m LAT	
Total Depth Driller:	2317m MDRT	
(TVD) Driller:	2272.04m TVDRT / 2246.0m TVDSS	
Rig on tow:	10:30hrs	26/11/2010
Rig on Location:	10:30hrs	26/11/2010
Spud:	00:00hrs	03/12/2010
Reached TD:	10:00hrs	16/12/2010
Rig Released:	14:00hrs	22/12/2010
Total Rig Days:	26.15 days	
Well Status:	Plugged and abandoned	
Permit Interests:	Origin Energy Resources Ltd* (*OPERATOR)	60.0%
	ARC (Bass Gas) Pty Ltd	40.0%
Rig Name:	Kan Tan IV (Semi-submersible Rig)	
Drilling Contractor:	Maersk Contractors Services A/S	
Approx. Well Cost:	US$19,877,000 (As per the Daily Drilling reports)	

2. FINAL DRILLING REPORT

By Australian Drilling Associates Pty Ltd (ADA)

2.1 Executive Summary

Silvereye 1 exploration well was drilled in Exploration Permit T/44P in the Bass Basin, Tasmania. The well was drilled to a total depth of 2,317 m MDRT.

The Maersk semi-submersible drilling rig "Kan Tan IV" came on contract to Origin Energy Resources for the Silvereye 1 well at 10:30 hrs on 26 November 2010, on completion of the tow from the previous well Tarapunga 1 in New Zealand. The well was spudded at 00:00 hrs on the 3rd December 2010 after obtaining environmental approval The well was spudded in 54 m (LAT) of water with the rotary table elevation at 26 m above sea level.

The 36in conductor hole was drilled to 141 m MDRT and the 30in conductor with a 20in shoe was run to 137.4 m MDRT and cemented to sea bed. The 17.5in surface hole was drilled to 1,112 m MDRT with returns to sea bed. The 13.375 casing and 18.75in wellhead was run to 1,102.9 m MDRT and cemented to sea bed. The BOP stack and riser were successfully run and landed onto the wellhead. The 12.25in hole was drilled to well TD at 2,317m MDRT (2,272 m TVDRT).

The well was subsequently plugged and abandoned with three (3) cement plugs according to regulatory requirements. Operations on Silvereye 1 were completed at 14:00 hrs on 22nd December 2010, with the rig on tight tow to the next well Craigow 1 (operated by TAP Oil).

The total time spent on Silvereye 1 was 26.15 days, compared with the total predicted pre-drill time for the well of 24.62 days. The well duration was 1.52 days (6.2 %) over the predicted pre-drill time.

Of the 26.15 days spent on Silvereye 1 a total of 7.73 days (29.6 %) of operations were recorded as non-productive time (NPT) for the well, 3.27 days (12.5 %) of which was due to waiting on environmental approval, 1.27 days (4.9 %) due to waiting on weather and the remaining 3.19 days (12.2 %) was due to operational reasons.

At the time of writing this end of well report the final cost for Silvereye 1 is estimated to be US$ 19.877 million.

2.2 Well Summary and Overview

Well Name	Silvereye 1
Country	Australia
Designation	Exploration
Field Name	Silvereye
License/Permit	T/44P
Rig Name/Type	Kan Tan IV (KTIV) / Semi-Submersible
Well Operator	Origin Energy Resources Ltd
Participants	ARC (Bass Gas) Pty Ltd
Rig on Location	26 November, 2010 @ 10:30hrs
Spud Date	03 December, 2010 @ 00:00hrs
TD Reached	16 December, 2010 @ 10:00 hrs
End of Well	22 December, 2010 @ 14:00hrs
Total Days on Operations	26.15 days
Total Predicted Days	21.97 days
Total Depth (LAT)	2246.0mTVDSS / 2272.0mTVDRT / 2317.0mMDRT
Well Type	Deviated
Maximum Deviation Angle	20.17° at 2283.0m MDRT
Water Depth	54m
RT above MSL	26m
Rig Heading	246.28° True
Geocentric Datum	GDA94
Surface UTM	UTM Zone 55
Surface Latitude	39º 54' 19.83" S
Surface Longitude	145º 03' 32.65" E
Surface Easting	334 088.7m E
Surface Northing	5 580 927.3m N
Bottom Hole Location: Easting	334 396.9m E
Bottom Hole Location: Northing	5 580 994.4m N

2.3 Casing and Cementing Data

2.3.1 Casing Data

Type	Size (in)	Weight / Wall Thickness (in) (ppf)	Grade	Thread	Depth (mMDRT)
Conductor (30in x 20in tapered shoe joint)	30	1.5" / 1"	X52	D90/D60	129.1
	20	0.625"	X52	Welded	137.4
Surface Casing	13.375	68	K-55	BTC	1102.9

Table 1: Casing Data

Further casing details are located in Appendix 8.

2.3.2 *Cementing Data*

String / Plug	Cement Type	Dry Cmt Vol (MT)	Cement Additives	Mix Water (gal/sk)	Slurry Vol (bbls)	Slurry Density (ppg)	Cement to / from (mMDRT)	Csg Test Pressure (psi)
30in	Class G	55	+CaCl2 +NF-6 +Seawater	5.18	270	15.8	80-137.4	n/a
13.375in Lead	Class G	25.6	+Econolite +SCR-100L +NF-6 +Seawater	13.03	228	12.5	500-950	2500
13.375in Tail	Class G	17.5	+SCR-100L +NF-6 +Drillwater	4.89	84	15.8	950-1103	
Plug #1a	Class G	16.8	+SCR-100L +Halad-413L +NF-6 +Drillwater	4.75	88	15.8	2170-2317	n/a
Plug #1b	Class G	17	+SCR-100L +Halad-413L +NF-6 +Drillwater	4.75	89	15.8	2020-2170	
Plug #1c	Class G	11.3	+SCR-100L +Halad-413L +NF-6 +Drillwater	4.75	65	15.8	1920-2020	
Plug #2	Class G	15.7	+SCR-100L +Halad-413L +NF-6 +Drillwater	4.66	90	15.8	1116-1150 (tagged)	1500
Plug #2 (re-set)	Class G	13.4	+SCR-100L +Halad-413L +NF-6 +Drillwater	4.66	67	15.8	1002-1116 (tagged)	
Plug #3	Class G	10.9	+CaCl2 +NF-6 +Seawater	5.18	55	15.8	100-200	n/a

Table 2: Cementation Data

Further cementing details are located in Appendix 8.

2.4 Operations Summary

2.4.1 *Rig Mobilisation and Rig up*

The Maersk semi-submersible drilling rig "Kan Tan IV" came on contract to Origin Energy Resources Ltd for the Silvereye 1 well at 10:30 hrs on 26 November 2010, subsequent to completing the Trans-Tasman tow from the previous well location Tarapunga 1 in New Zealand waters.

The rig was successfully anchored on location after lifting and re-laying anchors #5, #6 and #8 which had flipped during running operations. Anchor

running operations were completed at 06:00hrs on 27 November 2010 when all eight anchors had been run. The anchors were pre-tensioned and the rig was ballasted down to an operational draft of 19.8 m (65 ft) at 00:30 hrs on 28 November 2010, with the final rig position at 5.25 m from the intended location.

At this stage, 24 hrs of downtime was incurred due to severe weather conditions and operations were suspended for a further 3.27 days while waiting on EPBC environmental approval to drill the well.

The ROV was launched and a seabed survey was conducted. The Kan Tan IV rig elevation was 26m from Rotary Table to sea level. Water depth was recorded as 54 m LAT.

Conclusions and Recommendations

(i) The total time associated with mobilising the rig to Silvereye 1 and rigging up was 6.29 days vs 2.00 planned days primarily due to time lost waiting on EPBC environmental approval (3.27 days) and waiting on weather (1 day).

(ii) Three anchors flipped during running operations and required to be lifted and re-laid, anchor handing performance was good (16hrs) considering only one vessel was available at the time.

2.4.2 Drilling 36in Hole section

A 26in Smith XR-VCPS milled tooth bit and 36in hole opener BHA was RIH. Seabed was tagged at 80m and an Anderdrift survey was taken showed the inclination to be 0.5°.

The well was spudded and the 26in x 36in hole was drilled from 80 m to 130 m MDRT, initially with PHG mud at a flow rate of 600 gpm. After 10 m, the flow rate was increased to 1000 gpm and the hole was drilled ahead using sea water and Hi Vis sweeps pumped on connections and at every half stand drilled. At 130 m, whilst making a connection, the drill pipe threads were crossed and were unable to back out the connection. The pipe was worked down in order to use the rotary tongs. The pipe was backed out and the top drive made up. The string was found to be stuck at 123m and the pipe was worked free. The BHA was POOH to surface to check the bit and hole opener. The BHA was re-run to 130m and the section was drilled ahead to 141m MDRT. A final survey was taken at section TD of 0.5°. The hole was circulated and the well was displaced to 11ppg mud. The ROV positioned sonar Buoys around the well and the BHA was POOH and racked back.

Conclusions and Recommendations

(i) Overall time associated with drilling the 26in x 36in hole was 0.83 days vs 0.62 planned days. A total of 0.35 days of NPT was incurred during this phase due to to the cross threaded pipe and the resulting stuck string.

(ii) The cause of the stuck string and cross threaded pipe could not be determined conclusively. Two possibilities identified;

one was that the delay due to the cross threaded connection resulted in the string getting stuck. The other was that the string became stuck initially, which caused the pipe to jack out of the rotary resulting in cross threading of the connection.

2.4.3 Setting 30in Conductor

The 20in x 30in shoe joint was made up and the float valve operation checked before running the conductor string inside the PGB in the moonpool. The conductor string was landed and latched inside the PGB. Guidelines were attached to the guideposts on the PGB and the assembly was picked up and RIH on drill pipe to seabed. The ROV observed the conductor entering the wellbore and the conductor was then run in hole to setting depth at 137.4m washing down the last 10m. The ROV confirmed the height of the 30in housing was at approximately 2 m above the seabed.

A 100 bbl seawater spacer was pumped, the last 20 bbls containing mica to assist with identifying cement returns at the mudline. The 30in conductor was then cemented with 270bbls of 15.8ppg Class G cement slurry and displaced with 63.5bbls of seawater. The float valves were confirmed to be holding. Subsequent to waiting on cement for 4 hrs, the wellhead housing running tool was released and POOH. The bull's eye readings were 0.75° port (stbd) and 0.25° port (aft). The ROV confirmed that there was cement around the conductor and that there was no slumping of the PGB or change in the bullseye readings.

The 36in BHA and damaged pipe were laid out in preparation for the next section.

Conclusions and Recommendations

(i) Overall operations for setting the 30in conductor went very well; the time associated with this phase was 0.85 days vs 1.30 days planned. The only NPT that occurred in this section was for laying down the pipe damaged during drilling (0.08 days).

2.4.4 Drilling 17.5in Hole Section

A 17.5in Smith milled tooth bit (type XR-VEJ3PS) was made up to a directional BHA, comprising a bent housing motor and DGWD sensor. The motor was included in the assembly to build slight inclination at the end of this section to assist the kick off with the steerable assembly in the next hole section. The 17.5in BHA was RIH on drill pipe and tagged top of cement at 131m MDRT. The cement and float shoe were drilled out and the rathole was washed out to 141m. The 17.5in hole was then drilled from 141m to 537m MDRT, where a precautionary wiper trip was performed, no overpulls or drag was observed. The 17.5in hole was drilled ahead from 537m to section TD at 1112m, building inclination from 1038m MDRT onwards. The hole angle at TD was 0.44°. The entire 17.5in section was drilled with sea water and PHG pills (50 bbls of Hi Vis PHG sweeps at half stand and around the BHA on connections).

At section TD 2x100bbl of Hi-Vis PHG sweeps were circulated and the well was displaced to 9.5 ppg PHG mud. The BHA was pulled to 500m and tight spots observed between 1068-940m and 780-583m. These were wiped and the BHA run back to bottom, 8m of fill was observed. A 600 bbl hi-vis sweep was circulated and the well displaced to 9.5 ppg mud. The drill string was pulled to surface wiping through tight spots between 1080-1070 m and 930-925m. The bit was graded 1-1-NO-A-0-I-NO-TD.

Overall the 17.5in hole section was drilled from 141m to 1191m MDRT (971m section) in one run, in a total of 22hrs with an average drilling ROP for the section of 44 m/hr. The bit on bottom time was 13.5 hrs (72 m/hr).

Conclusions and Recommendations

(i) The section was completed in 1.98 days vs the planned time of 3.27 days. The NPT in this section was 0.06 days for waiting on weather.

(ii) The motor assembly achieved the desired result of building inclination at the end of the 17.5in hole section to assist the steerable assembly in the next section.

2.4.5 Setting 13.375in Casing

A two joint shoe track was made up and the float valves checked. The 13.375in casing was run to a hold up depth of 530m MDRT, the casing was washed through and run to the setting depth at 1090 m MDRT without further problems, though the prevailing weather conditions (high wind) hampered progress. The cement head assembly was picked up and wellhead landed out in 30in wellhead housing. Latching of the wellhead in the housing was confirmed with a 50klbs over pull.

The cementing unit pumped 10bbls of drill water and the surface lines were pressure tested to 3000psi. A 60 bbl sea water spacer was pumped, the last 20 bbls containing mica to assist with observing cement returns to seabed. The ball was dropped and the bottom plug sheared at 1100 psi. The 13.375in casing was cemented with 228bbls of 12.5ppg Class G cement lead slurry followed by 84 bbls of 15.8 ppg Class G cement tail slurry. A 20bbl seawater spacer was pumped and the top plug was released with 500psi. The rig pumps displaced the cement with a further 476.3bbls of seawater and the top plug was bumped at 650 psi. The casing was tested to 2500psi for 10 minutes. The test pressure was released and the floats were holding, no backflow was observed. The ROV monitored returns to seabed throughout the displacement. The 18.75in wellhead running tool was released and the running tool was pulled to surface.

Weather conditions prevented the 17.5in BHA being laid down resulting in 5 hours NPT.

Conclusions and Recommendations

(i) Overall the time associated with setting the 13.375in surface casing was 1.54 days vs 1.21 days planned. A total of 0.25

days NPT was incurred due to weather.

(ii) The casing had been numbered and laid out on the pipe deck in a reverse order. This meant each joint had to be picked up from the farthest point on the pipe deck. The high winds throughout the job made the job more difficult. It is important that casing be optimally arranged on the pipe deck for simple running with the next joint to be picked up as close as possible to the catwalk.

(iii) Halliburton provided four VHF radio headsets operating on a unique Halliburton frequency so there is no risk of interfering with other radio communication. This resulted in much improved communication as compared to previous jobs.

2.4.6 Running BOPs

The weather conditions prevented over the side work required for running the BOPs. The 12.25in BHA was made up while waiting for the weather to improve. The ROV installed the VX ring into the wellhead off the critical path. The BOPs were then run and landed out on the wellhead, 50 klbs over pull was applied to confirm latch. The BOP – wellhead connector was successfully pressure tested to 2500psi against the blind shear rams. The BOP had previously been pressure tested on the test stump.

The BOP landing joint was then laid out and the Diverter was installed.

Conclusions and Recommendations

(i) The BOP running operations were completed in 1.00 days vs 2.95 planned days. No downtime was experienced during this phase. The time spent on making up the 12.25in BHA was allocated to the next phase.

2.4.7 Drilling 12.25in Hole

The 12.25in drilling BHA was made up consisting of a Halliburton FXG65 PDC bit (6 blade x 16 mm cutters), a GeoPilot, Resistivity, Density, Porosity and Sonic LWD tools. The tools were shallow tested and the BHA was RIH picking up drill pipe and tagged cement at 1087m MDRT. The plugs and shoetrack were drilled out and the rathole was washed to 1113m while displacing the well to 10ppg KCl polymer mud.

The 12.25in hole was then drilled from 1113m to 1117m MDRT whilst continuing to displace to new mud. A formation integrity test (FIT) was performed to 15.95 ppg EMW and the test repeated to confirm

The 12.25in hole was drilled from 1117m to 1224m MDRT when the slips jammed in the rotary bushing, resulting in 0.5 hr NPT. The slips were released and drilling continued to 1251m MDRT. The top drive was unable to be broken out and 9.5hrs was lost resolving the problem (Later were found some misalignment in TDS).

Drilling continued from 1251m to 1512m MDRT when the drill pipe pressure increased by 500psi and the LWD signal failed. The pressure and the signals

returned to normal after one (1) hour and drilling was resumed. Drilling continued to 1573m MDRT when the drill pipe threads were crossed during a connection and two (2) hours were lost in changing out the damaged pipe. Drilling continued to 1812m MDRT when communication to the LWD tools was lost and the pipe tripped out of the hole to investigate the failure.

The BHA was POOH from 1812 to 1544mMDRT; over pulls up to 70klbs were encountered at 1752m, 1717m, 1704m, 1663m and 1544m which were wiped clean. The string was pumped out of hole to 1515m, pulled straight up to 1341m and pumped out further to the shoe.

The well was circulated clean at the shoe and the BHA pulled out of hole to surface. Data was downloaded from the LWD tools. Investigations revealed that debris inside the tools had caused the loss of communication. The debris was found to have come from damaged drill pipe protectors lost inside the mouse hole.

A new Halliburton PDC bit (type FMF3753Z) was made up to the replacement GeoPilot and LWD tools, and the assembly run in hole to resistance at 1500m. The string was washed and reamed to bottom at 1812m MDRT. The 12.25in hole was then drilled from 1812m to 2215m MDRT when the rate of penetration reduced to less than 1m/hr, this associated with an increased differential pressure and reduced torque differential (on-off bottom) indicated that the bit was damaged.

The drill string was pulled to surface, requiring to be pumped out from 1920m MDRT to 1399m MDRT. The bit was graded 2-8-RO-T-X-I-CT-PR.

A Smith insert bit (GFS10BOVCPS) was made up to a rotary assembly and the LWD tools. The BHA was run in hole without problems and 12.25in hole drilled ahead from 2215m to well TD at 2317m MDRT. The well was circulated clean and the bit was pulled out of hole to surface (pumping out through tight intervals 2127 – 2106m and 1730 – 1643m). The BHA was racked back and the LWD tools laid out. The bit was graded 2-5-WT-G-F-I-CT-TD.

The 12.25in hole section was drilled from 1102 m to 2317 m MDRT (1215 m section) in three bit runs, in a total of 86.5 hrs with an average drilling ROP for the section of 14 m/hr. The bit on bottom time was 60.8 hrs (20 m/hr).

Conclusions and Recommendations

(i) The time associated with drilling the 12.25in production hole was 8.02 days vs 4.81 days planned. A total of 1.40 days of NPT was recorded during this phase, of which the majority of the time was rig repair related to the trip caused by the damaged protectors left in the mouse hole and cross threaded pipe (1.33 days).

(ii) A trip was required due to loss of LWD signals caused by debris from damaged pipe protectors. These protectors were lost inside the mouse hole. No pin protectors should be run on pipes inside the mouse hole.

(iii) The section was planned to be drilled in one bit run. Unexpected hard formations were encountered which result in multiple bits used.

2.4.8 Well Abandonment

The LWD and mud logging data indicated that there was no presence of hydrocarbons over the 12.25in section; Silvereye 1 was abandoned with three (3) cement plugs set in the well. The first plug was set in the open hole over the interval 1920m to 2317m MDRT to isolate the objective sands and was set in three stages. The second plug was set across the 13.375in casing shoe from 1002m to 1150m MDRT. The third plug was set at seabed from 100m to 200m MDRT.

A 2.875in cement stinger was made up and run on 5in drill pipe to bottom at 2317m MDRT. Plug #1A was set from 2170m to 2317m MDRT using 88bbls of 15.8ppg Class G cement. The stinger was pulled out to 2170 m and the hole was circulated clean with 40 bbl of cement contaminated mud observed at the shakers. Plug #1B was set from 2020m to 2170m MDRT with 89 bbls of 15.8 ppg Class G cement. The stinger was pulled out to 2020m and the hole was circulated clean with 20 bbl of cement contaminated mud observed at the shakers. Plug #1C was set in the interval 1920m to 2020m MDRT with 65 bbls of 15.8 ppg Class G cement. The stinger was pulled out to 1870 m and the well circulated clean, with no contaminated cement observed at the shakers.

The cement stinger was pulled out to 1250m MDRT and a 55bbl hi vis pill weighted to 12.5ppg was spotted from 1150 m – 1250 m MDRT to support the next plug across the shoe. Plug #2 was set across the 13.375in casing shoe in the interval from 1150 m MDRT to 1000 m MDRT with 90 bbls of 15.8 ppg Class G cement. The stinger was pulled out to 950m and the well was circulated clean, with 82 bbl of cement contaminated mud observed at the shakers. The string was then pulled out laying down pipe while waiting on cement. The stinger was run in hole and cement tagged at 961m MDRT. However, the subsequent pressure test of the cement plug failed (pressure bled off at 960psi, while attempting the 1500psi test), and it was decided to repeat the plug job.

The cement stinger was run in hole to 960 m MDRT and washed down to hold up depth at 1116 m MDRT. Cement Plug #2 was reset from 1000 m to 1116 m MDRT with 67 bbl of 15.8 ppg Class G cement slurry. The string was pulled to 950 m and the wellbore circulated clean, with 31 bbls of cement contaminated mud observed at the shakers. The wear bushing in the wellhead was retrieved with 85klb over pull while waiting on cement. The string was run in hole and cement tagged at 1002 m MDRT and successfully pressure tested to 1500 psi against the upper annular preventer.

The cement stinger was pulled to 300m to set the surface plug. A 64 bbl 12.5ppg inhibited hi-vis pill was spotted from 300 to 200m MDRT to support the plug. Surface plug #3 was set from 200m to 100m MDRT with 55bbls of 15.8ppg Class G cement with top of cement at 20 m below seabed. Excess drill pipe was laid out and the wellhead was jetted clean. The BOPs were then pulled and set back without incident.

The Casing Cutting Assembly complete with a 18.75in well head grapple was run but unable to latch into the wellhead. The assembly was pulled and replaced with 20in casing spear and cutting assembly, and re-run. Two attempts were made to cut the 20in wellhead extension at 82m (2m below

seabed), but the casing could not be pulled free. The cutter was pulled and knives changed and re-run. The 20in x 30in conductor was then cut at 80.5m (0.5 m below the seabed). The PGB and the wellhead were successfully retrieved to surface without any problems and a seabed clearance survey was completed with the ROV prior to commencing rig move operations.

Conclusions and Recommendations

(i) Overall abandonment operations on Silvereye 1 were completed in 4.77 days vs 4.26 days planned. A total of 1.13 days of NPT was incurred during this phase; 0.88 days due to the repeated cement plug No.2 and 0.25 days due to the inability to cut the surface casing in one attempt.

(ii) Greater emphasis is required in the detailed operational procedures for setting cement plugs to ensure correct placement (refer Section 7 Recommendations)

(iii) Cutting and retrieving conductor operations can be improved and possible downtime avoided by included a HAC joint (Hydraulic Abandonment Coupling) in the conductor in areas where the seabed stability is not a concern.

2.4.9 Anchor Retrieval

The rig was de-ballasting to transit draft and anchor retrieval operations completed. Silvereye 1 was completed at 14:00 hrs on 22nd December 2010, with the rig on tight tow to Tap Oil Craigow 1 location.

Conclusions and Recommendations

(i) The Anchor Retrieval phases of the well were very efficiently handled by the offshore team.

(ii) The Anchor Retrieval phase was completed in 0.85 days vs 1.20 days planned. 1 hour of downtime was experienced during this phase when the port side ballast pump lost suction.

2.5 Bit Selection

Well: Silvereye-1

Date In	Date Out	IADC	Bit#	Size (in)	Ser #	Mfr	Type	Jets	TFA	D.In (m)	D.Out (m)	Prog (m)	Hrs IADC	ROP (m/hr)	SPP (psi)	Flow (gpm)	WOB (klb)	RPM	MW (ppg)	I	O1	D	L	B	G	O2	R
15 Dec 2010	16 Dec 2010	437X	5	12.25	PR2119	Smith Bits	GFS10BODVCPS	3 x 20 1 x 18	1.169	2215.0	2317.0	102	22	4.64	3188	949	43.00	123	9.74	2	5	WT	G	F	I	CT	TD
12 Dec 2010	14 Dec 2010	M322	4	12.25	10932505	Halliburton	FMF3753Z	7 x 15	1.208	1812.0	2215.0	403	37	10.89	2951	999	40.00	165	9.67	2	8	RO	T	X	I	CT	PR
09 Dec 2010	12 Dec 2010	M124	3	12.25	11548586	Halliburton	FXG65	6 x 16	1.178	1102.0	1812.0	710	27.5	25.82	2760	997	20.00	169	9.54	5	4	CT	A	X	I	BT	DTF
04 Dec 2010	06 Dec 2010		2	17.50	STPR4067	SMITH	XR-VEJ3PS	3 x 16 3 x 12	0.92	141.0	1112.0	971	22	44.14	2526	1122	25.00	77	8.87	1	1	NO	A	0	I	NO	TD
02 Dec 2010	03 Dec 2010		1	26.00	203A3	Smith Bits	XR-VCPS	3 x 24 1 x 18 3 x 16	2.163	80.0	141.0	61	0			874			8.60	0	0	NO	A	0	I	NO	TD

Table 3: Bit Selection

2.6 Health, Safety and Environment

Parameter		Number	Units	Comments
SAFETY				
Manhours	Kan Tan IV	2282x24= 54768	Man day x24 hrs	Offshore ADA/Origin/Maersk/TPC from 26th November 2010 up to and including 22nd December 2010
	AHTS	16584	Man day x24 hrs	Far Fosna & Far Scimitar.
	Shore Support	1256	hrs	ADA office based staff in Melbourne (x12), OPC (Mgt x 8 hrs) plus Stevedores (x hrs worked)
	Bristow Pilots	112.2	hrs	2 x pilot per trip x flight hours (Total hours calculated using LAH spreadsheet adding flights in and out x 65 minutes ex Essendon)
Personnel Flying Hours		341.25	Exposures hrs	Total flying exposure for personnel 'To' and 'From' the rig (315 personnel movements – average of 65 mins per trip)
ACTIVE cards generated		927	ea	Participation measured from 26th November 2010 up to and including 22nd December 2010. Quality of cards has been consistently high and participation demonstrates commitment to the system. Daily awards are issued for two quality cards and cards of note are discussed in pre-start meeting and the Daily Drilling morning meeting. Overall participation from the Crew, Client and TPC's is monitored and targets have exceeded the target. Participation increased significantly during the Silvereye 1 well and there was a greater % of safe observations submitted.
Safe Observation (proACTIVE)		490	ea	53% of ACTIVE Cards were deemed safe (proACTIVE).
Unsafe Observation (reACTIVE)		437	ea	47% of ACTIVE Cards were deemed unsafe (reACTIVE).
Total MODU Proactive Safety Efforts		983	ea	PSE categories include Active Cards, PTW Audits, Emergency Drills Carried Out (Fire/Abandon/MOB), Area Authority Audits/Hazard Hunt, General HSE Meetings and Departmental Meetings. The PSE target is set at 220 per week (31 points per day). The well performance was maintained at 38 points per day for Silvereye 1.
AUDIT				
Regulatory Audit		0	ea	No regulatory audits undertaken
Audits General		2	ea	• Lifting equipment completed by Maersk third-party. • Origin undertook the following assessments from 8th – 9th Dec: 1) Safety Management Plan (All recommendations have been closed); 2) Environment Plan. The status of the following actions are being monitored by Origin for EP Closeout: i) 9 areas to be followed up to close out minor issues and ii) 8 recommendations and actions to be undertaken
MODU Mini HSE Audits		8	ea	The ADA Offshore HSE Advisor on board the Kan Tan IV conducted the following audit:

Parameter	Number	Units	Comments
			• 29th Nov – Risk Assessment • 2nd Dec – Maintenance Management System; • 5th Dec – Waste Management; • 11th Dec – Radiation & Explosives; • 12th Dec – Well Control; • 14th Dec – Permit To Work; • 15th Dec – Occupational Health • 17th Dec – Control of Substances Hazardous to Health (COSHH); All identified actions from this mini audit have been reviewed and closed.
MODU Environmental Inspection	4	ea	The following environmental inspections were carried out by the ADA Offshore HSE Advisor; • 28th Nov; • 5th Dec; • 12th Dec; • 19th Dec. All actions identified during the inspections have been closed.
TRAINING			
ADA ERG Exercise	1	ea	• ADA undertook an ERG process check via the ADA ERR to the new ADA Drilling Superintendent on the 7th Dec 2010. Origin Drilling Manager was contacted accordingly. *Note: Origin hold a desktop exercise with the involvement of ADA ERG Leader representative on the 16th Nov 2010.*
Environment Plan Training	Compliant	ea	Origin Environment Plan Compliance: Specific Origin HSE Inductions with Environmental Plan expectations were delivered on the following dates: • 27th Nov – 3 sessions; • 28th Nov – 1 session; • 30th Nov – 1 session; • 2nd Dec – 5 sessions; • 6th Dec – 3 sessions; • 7th Dec – 2 sessions; • 8th Dec – 2 sessions; • 9th Dec – 2 sessions; • 12th Dec – 3 sessions; and • 14th Dec – 1 session DSEWPC Requirement Compliance: • 11th Dec – Expectations for whale watching responsibilities during the VSP activity in line with Schlumberger's Procedure for Borehole Seismic Survey

Parameter	Number	Units	Comments
			were addressed to the crew.
MODU Emergency Drill	9	ea	Fire fighting Refresher • 6th & 7th Dec - Excellent crew training conducted – Refresher fire-fighting equipment training given to deck crew. The following Emergency Drills were held: • 26th Nov – Fire exercise on Helideck; • 26th Nov – Abandon Aft Lifeboat; • 2 Dec – Emergency Ballast Drill • 3rd Dec – Fire exercise in Laundry; • 3rd Dec – Abandon Rig Drill; • 4th Dec – SOPEP Simulation in the Hydraulics Room. • 10th Dec – Fire exercise in Tool Pusher Office; • 10th Dec – Abandon Rig Drill • 21th Dec – Abandon Rig Drill Objectives have been met and there are no outstanding actions required.
REPORTABLE INCIDENT (NOPSA)			
Lost Time Injury (LTI)	0	ea	Nil Lost Time Injuries. Final day of Kan Tan IV Silvereye 1 drilling operations recorded 416 days LTI free.
Alternate Duties Injury (ADI/RWC)	0	ea	Nil Restricted Workcase injuries
Medical Treatment Injury (MTI)	0	ea	Nil Medical Treatment Injuries
NON REPORTABLE INCIDENT			
First Aid Case (FAC)	4	ea	• **27th Nov / First Aid** - A roustabout sustained a grazing soft tissue injury to his left shoulder where it had stuck a steel edge on the anchor winch housing. Rig Medic assessed and treated the IP's soft tissue injury with ice packs and prophylactic anti-inflammatory medication. The Medic reports no neuro-muscular or neuro-motor deficits found. The IP is fully mobile and will continue with ice therapy for the remainder of his shift (Flash Report # 116). **Action:** SJA and related procedure documentation were reviewed to highlight the need to eliminate manhandling of anchor winch chain. Status – Closed. • **8th Dec / First Aid** - While working on the BOP in the moon-pool, the IP was slung in the man-riding belt as he worked. The IP intentionally swung across to the hand-rail intending to land on the moon-pool catwalk. In doing so he missed the hand-rail and pendulumed back toward the BOP striking his arm just above his right elbow against a hard surface initially causing severe pain to his elbow. Rig Medic assessed the IP and instigated an ICE Treatment regime, strapped the IP's elbow, advised the IP and will reassess the IP for return to work (Flash Report # 117). **Action**: To highlight the inherent risks in man-riding within the

Parameter	Number	Units	Comments
			various crews, and to revisit the pre-job risk assessment template, JSA and procedures for all man-riding operations. Status – Closed • **1^{4th} Dec / First Aid** - Over the course of the previous night shift the IP had been needle gunning, and reports that he had been wearing correct PPE at all times and was later tasked to undertake fire watch duties for welding and grinding activities. The IP reported that his right eye had later started to become irritated and worsened over a period of time. The IP flushed the eye with eyewash, but with no relief and the irritation worsened during the shift so he repeated the eye wash with poor effect. Rig Medic identified a small piece of debris and flushed the eye with saline solution and then manually removed the debris with a saline soaked cotton tip applicator. The eye was flushed again and assessed to confirm the successful removal of the debris, advised the IP and approved his return to full duties (Flash Report # 119). **Action:** 1) The JSA and TBT documents have been reviewed. 2) Relevant JSA's will be refreshed to raise awareness and highlight caution in 'wash-up' activities where debris may contaminate eyes etc 'after' the job has been completed. 3) All crews will again be reminded that it is imperative that ALL such issues be reported and attended by the Medic immediately after the event Status – Closed. • **21st Dec / First Aid** - The IP was stacking away the life vests into the stowage locker following an Abandon Rig Drill, when he caught the small finger of his left hand on a steel sprag protruding from a shelf in the locker. The IP was wearing heavy cloth gloves (with the rubber dots) at the time. The finger of the glove was torn by the sprag allowing the sprag to contact the IP's little finger. Rig Medic identified a small superficial laceration and skin flap and flushed it with saline solution. The Medic then manually checked for debris and dressed with Betadine solution and a plaster, advised the IP and approved his return to full duties (Flash Report # 120). **Action:** The IP (mechanic) filed the sprag off the lower surface of the shelf and rounded off the edge to eliminate the hazard. Status – Closed.
Near Miss (NM)	1	ea	• 10th Dec / Near Miss - Man-riding had been planned in order to look at the RBS prior to the next RBS connection, and appropriate preparations were made. The Man-Rider wire was slacked off for the job, but the man-riding process was suspended due to increasing winds, so the wire was re-stowed and tensioned as would normally occur after the job. On picking up the Top-Drive it became evident that during the previous process the wire had become snagged in the Top-Drive at some point, as the Man-Rider wire was parted and fell to the Drill-floor. No-one was in the

Parameter	Number	Units	Comments
			immediate vicinity at the time the wire was parted and no injury was sustained by any personnel and the job was immediately stopped by the Tool Pusher (Flash Report # 118). **Action**: 1) Reiterate the need for improved risk assessment and pre-job planning and documentation. 2) Revisit the provision for checking wire clearance when the wire is stowed. 3) Encourage 'Look Up/Down' as a prevention strategy. 4) Maintain focus and vigilant for potential 'what if' hazards at all times. Status – In Progress, as of 11th Dec 2011.
Medical Evacuation	0	ea	No MEDIVAC called during Silvereye 1.
RECORDABLE INCIDENT			
Spills – occurrence	0	ea	No spill incidents during Silvereye 1.
Sewerage Disposal			
Problems with sewerage plant resulted in discharge of untreated sewage to the marine environment	0	ea	No concerns identified.
Waste			
Hazardous Waste			
Waste oil	2	2000 litres tote tank	All wastes are separated & then appropriately packed, stored and sent onshore & disposed of accordingly by Transpacific Cleanaway through OPC Pty Ltd in Port of Melbourne.
Paint tins	4	Bulk Bag	
Oily rags/filters	1	Wheelie Bin	
Non-hazardous waste			
Scrap metal	4	Skip	12 m^3
General waste	22	Skip	Solid waste / 66 m^3
	40	Bulk Bag	General waste
Recyclable waste	18	Bulk Bag	
	1	Wheelie Bin	
Environmental Initiatives: Whale observations continued on Silvereye 1, in line with DSEWPC requirement compliance.			
Marine User Interaction			
Cetacean sightings	0	ea	No sightings recorded.
Errant vessel interaction	0	ea	No unauthorised vessel issues
Impacts from Fishing Operations	0		No impacts
Water Based Muds (WBM)			
Volume water based drilling fluid dispose into the ocean (m^3)	1344.5	m^3	No recordable incident arising from the Kan Tan IV well activity that breaches the performance objectives for the Origin Energy Environment Plan.

Parameter	Number	Units	Comments
Note: This number is taken from the mud report. In a well where drilling occurs in the lost circulation zone, sweeps etc are lost down hole, not to the ocean. This column is for mud lost at the shale shakers or dumped.			
Volume of drill cuttings using WBM disposed to the seabed (m^3) Note: *This data is basically the volume of rock excavated from the well. When drilling top hole, cuttings are lost down hole and should not be included.*	296.8	m^3	
Volume of drill cuttings using WBM injected into the annulus (m^3)	0	m^3	
Oil / Chemical spills discharged to the marine environment	0		No spill incidents - No reportable incidents recorded.

Table 4: Health, Safety and Environment

2.7 Well Highlight and Lowlights

2.7.1 Highlights

The main highlights during Silvereye 1 were as follows:

- No LTIs occurred during the well
- No hydrocarbon / chemical spills were recorded during the well
- A total of 927 Stop (ACTIVE) cards (459 safe and 343 unsafe observations) were submitted during the well, of which 490 were proactive and 437 reACTIVE.
- A total of 983 proactive safety efforts were recorded during the well.
- The hole inclination was built to 3 degrees at the 17.5in section TD using a mud motor. This greatly assisted the GeoPliot assembly in the 12.25in section to kick off and continue along the desired directional trajectory.
- The well was drilled to the target within the directional tolerance.
- The well was successfully plugged and abandoned in accordance with regulatory requirements.

2.7.2 Lowlights

The main lowlights during Silvereye 1 were as follows:

- There were four (4) first aid cases recorded during the operations.
- A total of 3.27 days were lost waiting on environmental approval to spud the well.
- A total of 1.33 days were lost due to rig issues related to the trip caused by damaged protectors left in the mouse hole and cross threaded pipe during a connection.
- A total of 0.88 days were lost due to the failure of the cement plug across the casing shoe and another 0.25 days lost due to the inability to cut the conductor in the first attempt.

2.8 Time Analysis

2.8.1 Breakdown by Well Phase

Table 5 summarises the planned versus actual time breakdown by operational phase for Silverye 1. Figure 1 presents the same data in graphical format.

Operation Phase	Time (days)						
	Planned	Actual	Programmed	Unprogrammed	NPT Programmed	NPT Unprogrammed	Delta
Mobilisation	2.00	6.29	6.29	-	4.42	-	+4.29
36in Hole	0.62	0.83	0.83	-	0.35	-	+0.21
30in Casing	1.30	0.85	0.85	-	0.08	-	-0.45
17.5in Hole	3.27	1.98	1.98	-	0.06	-	-1.29
13.375in Casing	1.21	1.54	1.54	-	0.25	-	+0.33
Run BOP/Riser	2.95	1.00	1.00	-	0.00	-	-1.95
12.25in Hole	4.81	8.02	8.02	-	1.40	-	+3.21
Log 12.25in Hole	0.00	0.00	0.00	-	0.00	-	-0.00
Abandon Well	4.26	4.77	4.77	-	1.13	-	+0.51
Demobilisation	1.20	0.85	0.85	-	0.04	-	-0.35
On location WOW Days	1.00	0.00	0.00	-	0.00	-	-1.00
Mob/Demob WOW Days	2.00	0.00	0.00	-	0.00	-	-2.00
Total	**24.62**	**26.15**	**26.15**	**0.00**	**7.73**	**0.00**	+1.52

Table 5: Time analysis - Breakdown by Well Phase

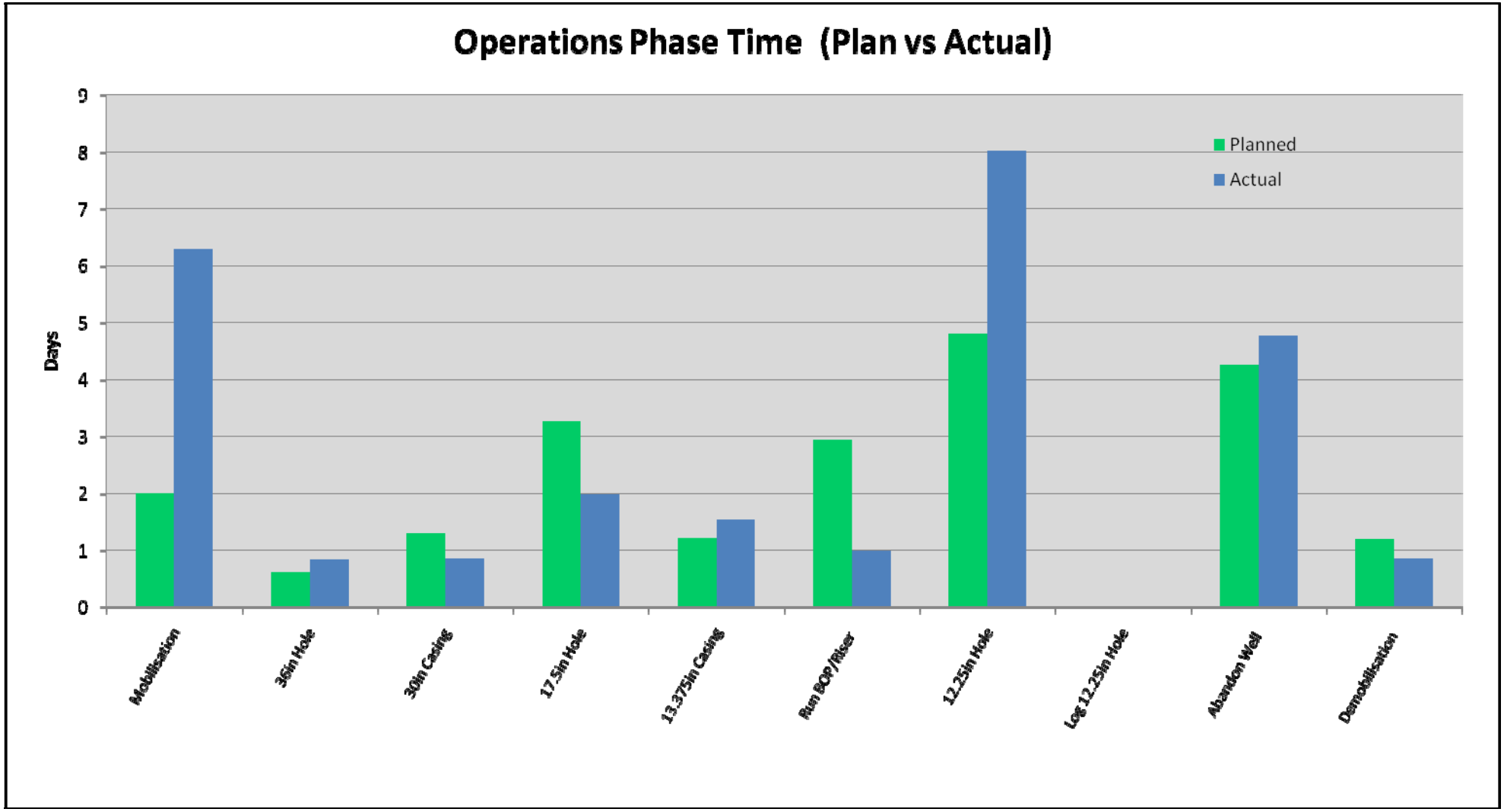

Figure 1: Actual time breakdown by operational phase

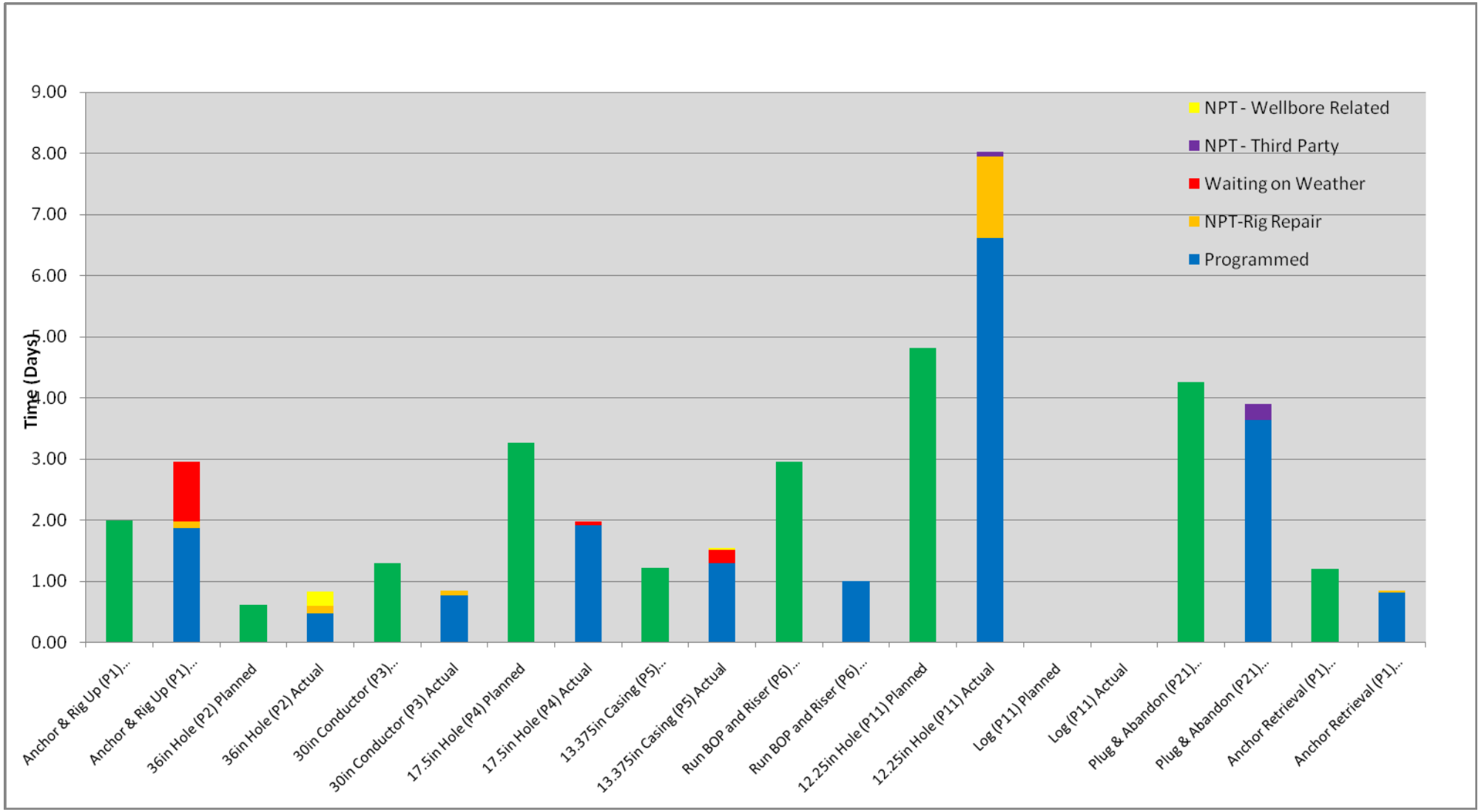

Figure 2: Well Phase vs. Time in days

2.8.2 Non-productive Time Analysis

The total time spent on Silvereye 1 was 26.15 days, compared with the total predrill predicted time for the well of 24.62 days. The well duration was 1.53 days (6.2%) over the predicted time. Of the 26.15 days spent on Silvereye 1 a total of 7.73 days (29.6%) of operations were recorded as non-productive time (NPT) for the well:

- 3.27 days (12.5 %) of NPT waiting on environmental approval to spud the well
- 1.69 days (6.45 %) incurred due to rig equipment downtime
- 1.27 days (4.86 %) as a result of waiting on weather
- 0.88 days (3.37 %) due to the failure of the cement plug across the casing shoe
- 0.31 days (1.20 %) as a result of third party equipment down time
- 0.25 days (0.96 %) due wellbore related downtime
- 0.06 days (0.24 %) due to other causes

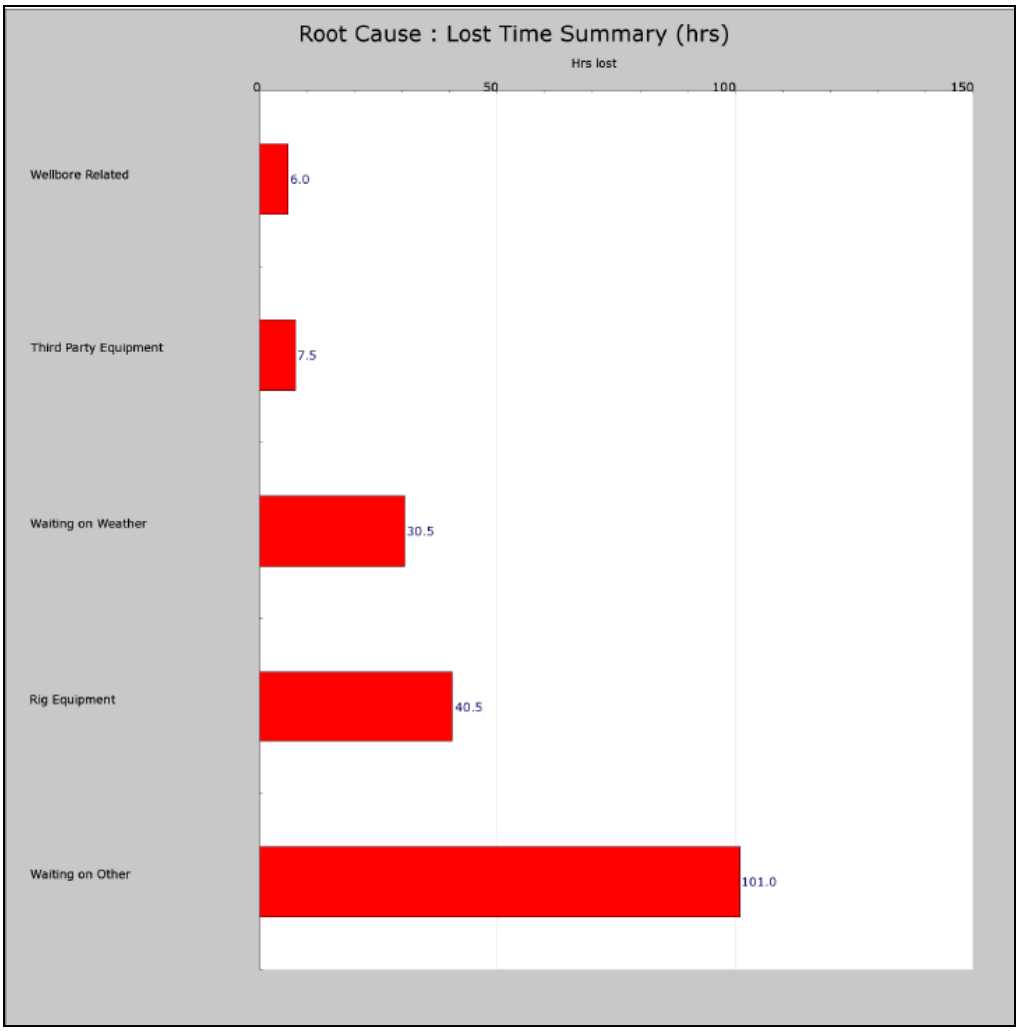

Figure 3: Lost Time Summary

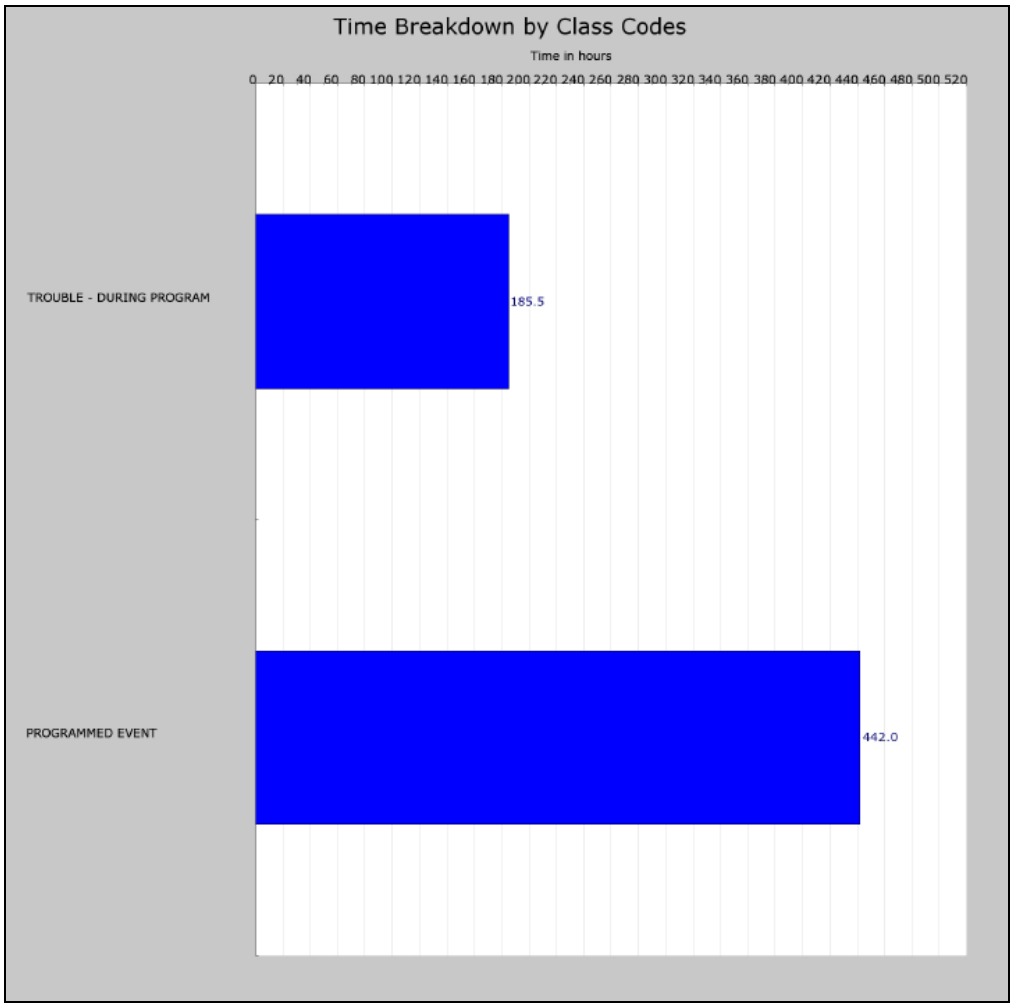

Figure 4: Time Breakdown by class codes

A complete listing of all the NPT events on Silvereye 1 is located in Appendix 6.

OPERATIONS PHASE	DEPTH	ACTUAL PHASE DURATION		TOTAL NPT		NPT BREAKDOWN									
						OTHER		RIG REPAIR		WOW		THIRD PARTY		WELLBORE RELATED	
		HRS	DAYS	HOURS	DAYS	HOURS	DAYS	HOURS	DAYS	HOURS	DAYS	HOURS	DAYS	HOURS	DAYS
Mobilisation	80	151.00	6.29	106.00	4.42	80.00	3.33	2.50	0.10	23.50	0.98	0.00	0.00	0.00	0.00
36in Hole	141	20.00	0.83	8.50	0.35	0.00	0.00	3.00	0.13	0.00	0.00	0.00	0.00	5.50	0.23
30in Casing	141	20.50	0.85	2.00	0.08	0.00	0.00	2.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
17.5in Hole	1112	47.50	1.98	1.50	0.06	0.00	0.00	0.00	0.00	1.50	0.06	0.00	0.00	0.00	0.00
13.375in Casing	1,112	37.00	1.54	6.00	0.25	0.00	0.00	0.00	0.00	5.50	0.23	0.00	0.00	0.50	0.02
Run BOP/Riser	1,112	24.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.25in Hole	2317	192.50	8.02	33.50	1.40	0.00	0.00	32.00	1.33	0.00	0.00	1.50	0.06	0.00	0.00
Log 12.25in Hole	2317	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
Abandon Well	2317	114.50	4.77	27.00	1.13	21.00	0.88	0.00	0.00	0.00	0.00	6.00	0.25	0.00	0.00
Demobilisation	2317	20.50	0.85	1.00	0.04	0.00	0.00	1.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL (DAYS / %)			26.15 (100%)		7.73 (29.56%)		4.21 (16.10%)		1.69 (6.45%)		1.27 (4.86%)		0.31 (1.20%)		0.25 (0.96%)

Table 6: Non Productive Time Breakdown

2.8.3 *Time vs Depth Curve*

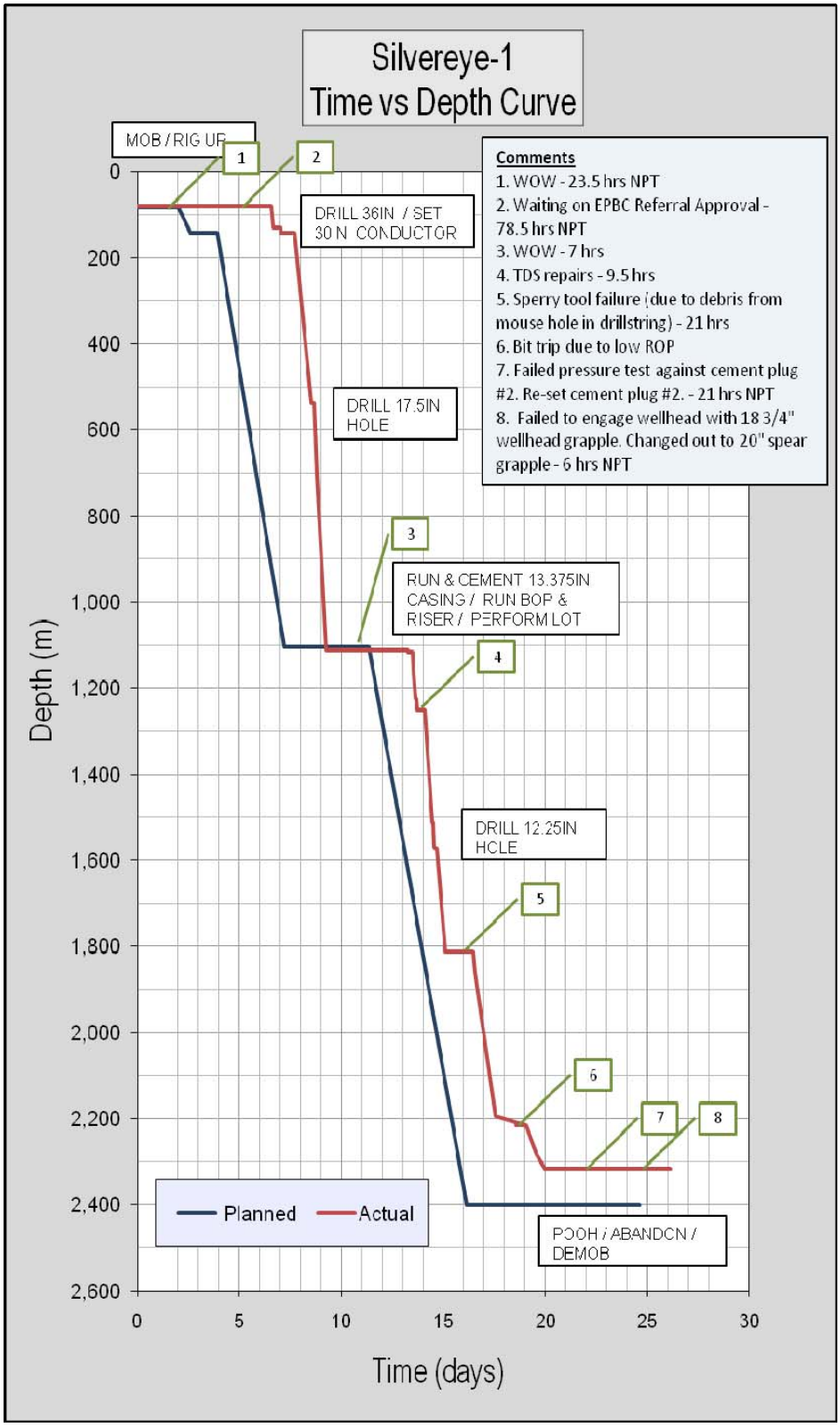

Figure 5: Time vs Depth Curve

2.9 Well Schematic

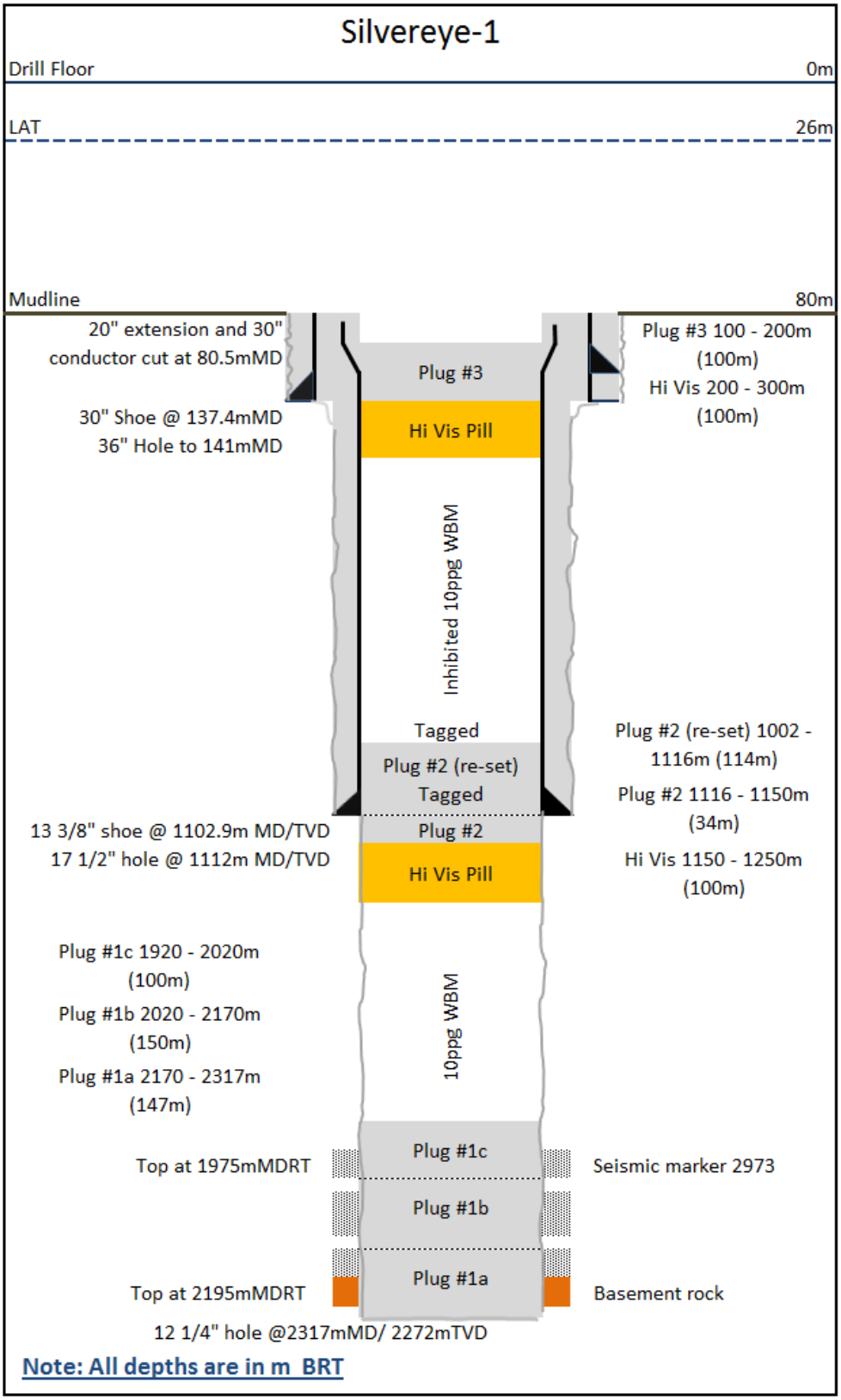

Figure 6: Well Schematic

2.10 Lessons Learnt Register

LL #	Phase	Lesson Learned / Opportunity	Action Results
1	30in Casing	The conductor joints that came out to the rig still had the pad eyes in place. These needed to be removed before running. It would be better to remove them due to the tight clearance through the PGB.	When operating out of New Zealand, the pad eyes were removed before being sent out to the rig. This worked well and if possible should be repeated in Australia. This should be raised with onshore logistics so that they can be removed in time for the next well.
2	30in Casing	The 18.3/4" wellhead was not loaded out at first opportunity. Normally, preparations for the wellhead (wearbushing etc) would be done off critical path. It will now be necessary to do this work on critical path which will impact on the start of the 13.3/8" casing job costing approximately 1.5 hours KILT.	Discussion needs to take place with onshore as to whether the rig should start producing load out lists as a rig prompt.
3	30in Casing	Communication in the moonpool is difficult at the best of times; the exhaust fan from the pit room is very loud.	Suggest turning off the fans when critical operations are taking place in the moonpool (Running conductor/BOP). Once the critical operation has been completed, the fans can be switched back on. REACH Coach to discuss with STP.
4	36in Hole	Need better communication regarding timing of the sweeps when making connections during drilling of the 36" hole section. After the string was stuck, the section was wiped twice so the sweep had gone by then.	Need to emphasise that the sweep is in the hole when making connections - comment to be added to SIDs.
6	36in Hole	Getting survey from the Anderdrift has been problematic in the past. Various pump rates were tried with the higher pump rates being discounted due to the tool cycling too fast making it difficult to read the pulses. Optimum pump rate was found to be 600 gpm (using pump 1&2).	Ensure this is noted, REACH coach to place comment in Spud check sheet.
7	30in Casing	When performing the 30" cement job, the cement delivery from the P-Tanks was only too low allowing mix rate of 4bb/min. When investigated, was told couldn't deliver greater than 4bbl/min. It was seen that there was insufficient pressure in the P-tank (30psi sometimes as low as 20psi). Apparently the bulk air compressor couldn't supply	To get adequate supply from the P-tank, it is necessary to have a pressure of 40psi. A note to be made that rig air must also be used to ensure adequate delivery of cement to the cement unit. A note has been placed in Performance prompts and issue to also be raised with Barge engineers to ensure they pass on this learning to their back to backs.

		more. Rig air was then put on and cement delivery increased to 5.5bbls/min.	
17	30in Casing	When making up the cement stand for the 30", it was necessary to put someone up in a riding belt as the side entry sub, lo-torque and single wing swing were interfering with the top drive hoses. (5 minutes KILT).	It is suggested that a 90 degree elbow be used in the side entry sub with a low torque below the elbow. For security, a failsafe could be used above and below the cement head to isolate the elbow should it be necessary.
8	17.5in Hole	When RIH with the 17-1/2" assembly, three guide ropes snapped (2, 3 &4) at the guidewires. However #1 snapped at the BHA. It was necessary for the ROV to cut the rope. Because it wasn't under tension, cutting it took longer (15 minutes KILT). The loose rope would have posed a problem for the ROV had it got caught in the prop. Need to either make time for the ROV to cut the guide ropes or alternatively introduce a weak link into the guide rope.	It is suggested that 1/2" 2 strand poly prop rope be used and that one of the strands on each of the guide ropes are cut. This will ensure that the rope snaps at the correct point (beside the guidewires).
9	13.375in Csg	Difficulties were encountered latching the 350T elevators. The locking pin was getting damaged when latching. 15 minutes KILT straightening the pin. When it got bent a second time, the decision was taken to replace it with a modified latching pin that could be removed after a casing joint had been landed & slips set. Once the elevators had been latched the pin was re-inserted. Again there was 15 minutes KILT during this time.	The pin design on the 350T elevators makes it susceptible to damage (it should be noted that the 250T elevators has a different set up so cannot be damaged). According to PCS Crew Chief, he had requested 250's but when he came out to the job saw that 350's had been provided. Need to ensure in future that optimal size elevators are available
10	13.375in Csg	The 13-3/8"casing had been numbered and laid out on the pipe deck in a reverse order. This meant each joint had to be picked up from the farthest point on the pipe deck. The high winds throughout the job made the job more difficult.	It is important that casing is optimally arranged on the pipe deck for simple running with the next joint to be picked up as close as possible to the catwalk. SDS to give reminder to deck crews as to importance of the order of casing.

11	13.375in Csg	Halliburton have brought with them four VHF radio head sets. These operate on a unique Halliburton frequency so there is no risk of interfering with other radio communication. Head sets were used for 1st time with cementer, SDS, Barge Eng & Driller having a headset.	Communications were much improved and the drill floor, barge engineer and all at cement unit were able to communicate amongst themselves without distortion or any background noise. Were able to question the floor regarding returns and keep them informed on progress. Need to use the radios next time and utilise them for other tasks too.
	12.25in Hole	Fluid Loss Material (Dextrid-Lte & Pac-L) for 12.1/4" hole onboard was based on offset information. During initial stages of 12.1/4" section it was apparent that we would run out of this product before TD.	Learning on this well is to carry circa 5% more fluid loss material than the offset indicates.
12	12.25in Hole	Loss of MWD/LWD signal due to pieces of protector getting inside the drill string (from the mouse hole). This caused 20hrs NPT.	No tubular to be run into mouse hole with pin protectors.
	12.25in Hole	Prior to final run in hole the geospan unit was rigged down. Had there been any need to fault find problems with LWD/MWD the geospan would be been very effective even though it was not being used for geopilot.	Consider for future drilled sections.
	Abandon Well	Failure to set an abandonment cement plug across the 13 3/8" shoe at the 1st attempt has cost us about 24 hours of rig time.	Following discussion points were identified; 1. Theoretical volume of cement pumped for top tag was at its extreme. For a tag depth of 961m. 2. We should pressure immediately after tagging cement, to be able to complete any remedial work if failure to test. 3. Discussion required on possible amount of Hi-Vis pumped 4. In hindsight, tag weight insufficient to confirm accurate tag. 2 7/8" cement string in compression with additional applied weight. Possibly 3 ½" drill pipe is a balance when a required accurate tag & competent cement plug. 5. Time saved on plug pressure testing highlighted as test via top drive. Although not a contributing factor in the cement plug placement, it would have reduced critical path time and leak paths. Note this was raised during the day but failed to be handed over on drill floor handover.

	Abandon Well	Abandonment plug pressure testing highlighted opportunity to test the plug via rig pumps/top drive. The Halliburton chart recorder is connected via manifold test line already. This procedure would stop the need to rig up the Side Entry Sub each time a plug is being tested (10 min KILT)	

Table 7: Lessons Learnt Register

2.11 Daily Activity Report

Please refer to Appendix 5 for the Daily Activity Report.

3. FORMATION SAMPLING & ANALYSIS

3.1 Cuttings

Cuttings were collected over the interval 1112 – 2317mMDRT. The sampling intervals were as follows:

1112 – 1530 mMDRT: 5 metre intervals
1530 – 2317 mMDRT: 3 metre intervals

A detailed collection and distribution list for all ditch cutting samples collected from Silvereye 1 is included in the Geoservices End of Well Report (Appendix 2). Cuttings lithological descriptions are presented in Appendix 1. A complete set of Daily Geological Reports (which include cuttings descriptions summary) are included in Appendix 11.

3.2 Sidewall Cores

No sidewall cores were cut.

3.3 Conventional Cores

No conventional cores were cut.

3.4 Palynology

Twenty two samples were selected for post-drill palynological studies. This was undertaken to confirm the stratigraphy intersected in the well. These studies were undertaken by Morgan Palaeo Associates and the basic palynological data is presented in Appendix 4. A summary of the basic data is presented in Table 8. The complete palynology report is presented in the interpretive volume of the Silvereye 1 Well Completion Report in Appendix 4.

Depth (mRT)	Type	Yield			Preservation	
		kerogen	spore-pollen	dinocysts	spore-pollen	dinocysts
1300-1305	cuttings	medium	very low	trace	poor	fair
1485-1490	cuttings	high	low	trace	poor	fair
1575-1578	cuttings	high	low	trace	very poor	fair
1638-1641	cuttings	high	medium	-	poor	-
1698-1701	cuttings	very high	medium	-	very poor	-
1734-1737	cuttings	high	medium	-	fair	-
1743-1746	cuttings	high	medium	very low	variable	good
1761-1764	cuttings	high	low	trace	±fair	fair
1773-1776	cuttings	very high	medium	low	±fair	fair
1797-1800	cuttings	very high	medium	low	poor	fair
1827-1830	cuttings	high	medium	very low	±fair	poor
1851-1854	cuttings	high	medium	medium	±fair	±fair
1863-1866	cuttings	very high	medium	medium	±fair	good
1899-1902	cuttings	high	high	low	good	fair
1908-1911	cuttings	high	high	low	fair	fair
1941-1944	cuttings	very high	high	trace	±fair	good
1965-1968	cuttings	very high	very high	trace	±fair	good
2031-2034	cuttings	high	low	trace	poor	good
2070-2073	cuttings	high	low	trace	poor	good
2094-2097	cuttings	high	low	trace	variable	fair
2121-2124	cuttings	high	low	trace	variable	good
2169-2172	cuttings	very high	medium	trace	±fair	good

Table 8: Silvereye 1 Basic Palynology Data

3.5 Geochemistry

Cuttings samples were selected with TOC Analysis carried out on 9 samples and Rock-Eval Pyrolysis carried out on 7 samples. The geochemical analysis was undertaken by Geotech. All geochemical analysis is presented in the interpretive volume of the Silvereye 1 Well Completion Report in Appendix 2.

Depth interval (mRT)	Sample Type	Analysis		
		TOC	Rock-Eval Pyrolysis	Vitrinite Reflectance
1200-1205	Cuttings	-	-	X
1300-1305	Cuttings	-	-	X
1485-1490	Cuttings	-	-	X
1593-1596	Cuttings	-	-	X
1767-1770	Cuttings	X	X	X
1905-1908	Cuttings	X	X	X
1941-1944	Cuttings	X	X	-
2031-2034	Cuttings	X	X	X
2052-2055	Cuttings	X	X	-
2070-2073	Cuttings	X	ND	-
2121-2124	Cuttings	X	ND	X
2166-2169	Cuttings	X	X	-
2169-2172	Cuttings	X	X	-
2199-2202	Cuttings	-	-	X
2235-2238	Cuttings	-	-	X

Table 9: Cuttings sample selected for geochemical analysis

ND = Rock-Eval Pyrolysis not done, where TOC < 1%

3.6 Petrology

An initial program of petrological analysis was undertaken on twelve samples between the depths of 1875-2298m. Analytical techniques that were used are thin-section analysis and photo microscopy. Qualitative fine-fraction X-ray diffraction analysis and scanning electron microscopy was not undertaken due to poor sample quality. These studies were undertaken by Julian Baker and the petrology report is presented in the interpretive volume of the Silvereye 1 Well Completion Report in Appendix 5.

Sample #	Depth interval (mRT)	Sample Type	Petrologic Analysis	
			Thin section	Photo Microscopy
1	1875-1878	Cuttings	X	X
2	1905-1908	Cuttings	X	X
3	1926-1929	Cuttings	X	X
4	1932-1935	Cuttings	X	X
5	1941-1944	Cuttings	X	X
6	1992-1995	Cuttings	X	X
7	2034-2037	Cuttings	X	X
8	2112-2115	Cuttings	X	X
9	2184-2187	Cuttings	X	X
10	2214-2217	Cuttings	X	X
11	2223-2226	Cuttings	X	X
12	2295-2298	Cuttings	X	X

Table 10: Cuttings sample depths for petrological analysis

4. FORMATION EVALUATION

4.1 Mudlogging

Mudlogging was provided by Geoservices Australasia Pty Ltd over the interval 80.0 – 2317mMDRT. The Mudlogger's End of Well Report can be found in Appendix 2.

4.2 Logging While Drilling

Logging while drilling (LWD) services were provided by Halliburton Sperry-Drilling. The 17 ½" hole section was drilled in one bit run using Sperry Drilling directional tool suite and mud motor. Well bore surveying was done with a Pressure Case Directional (PCDR) sonde. The 12 ¼" hole was drilled in three bit runs (MWD Run 200, 300, 400) using Sperry Drilling Quad Combo tool suite with LWD tools comprising the following: Azimuthal Lithodensity (ALD), Compensated Thermal Neutron (CTN), Bi-modal Acoustic (BAT), Dual Gamma Ray (DGR) and Electromagnetic Wave Resistivity (EWR P-4) for formation evaluation. The Drilling String Dynamics (DDSr-DGR) and Pressure while Drilling (PWD) tools were used for drilling optimization. Well bore surveying was done with a Pressure Case Directional (PCDC) sonde. The well was stared utilizing Sperry Drilling Geo-Pilot (GP) rotary steerable tool. Sperry-Sun also provided a measurement while drilling (MWD) tool throughout the drilling of the well to collect directional data. A summary of each MWD and LWD run is shown in Table 11. Sperry-Sun provided an end-of well report detailing the LWD and MWD operations, which is presented in Appendix 3.

Hole Size (inches)	Interval (mMDRT)	MWD services	LWD services
17.5"	141 – 1112	PCDR	none
12.25"	1112 – 1812	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT
12.25"	1812 – 2215	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT
12.25"	2215 – 2317	PCDR-GP-PWD-DDSr	DGR-EWR-ALD-CTN-BAT

Table 11: Summary of MWD & LWD runs in Silvereye 1.

4.3 Wireline Logging

No wireline logging was undertaken.

4.4 Hydrocarbon Indications

Details of hydrocarbons indications can be found in the Cutting Descriptsion in Appendix 1.

4.5 Velocity Survey

No velocity survey was undertaken.

5. FORMATION TESTING

No Formation Testing was undertaken.

APPENDIX 1: CUTTINGS DESCRIPTIONS

Depth (mMDRT)	% of Rock	Main Lithology	Modifier (> 20%)	Lithological Descriptions
1115.0	1	LIMESTONE		LIMESTONE: yellow grey, hard, 10% dolomitic, common shell fragments, trace loose forams
1115.0	15	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, moderately hard to hard, subfissile to subblocky, moderately calcareous, 90% calcareous silt, 10% calcareous sand, minor dark green glauconite pellets in part, rare pyrite
1115.0	84	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey, amorphous to soft, arenaceous in part, moderately calcareous, 100% clay, trace disseminated pyrite in part, trace carbonaceous flecks, trace forams, trace skeletal fragments
1120.0	5	LIMESTONE		LIMESTONE: yellow grey, hard, 10% dolomitic, common shell fragments, rare to minor loose forams (gastropods)
1120.0	25	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, firm to hard, subfissile to subblocky, moderately calcareous, 5% calcareous clay, 85% calcareous silt, 10% calcareous sand (very fine grained, well rounded to rounded, well to very well sorted, subspherical), minor dark green glauconite pellets in part, minor pyrite, rare skeletal fragments
1120.0	70	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey, amorphous to soft, arenaceous in part, moderately calcareous, 90% calcareous clay, 10% calcareous sand, 100% very fine grained, rounded, well sorted, spherical, rare disseminated pyrite in part, rare carbonaceous flecks, minor forams, minor skeletal fragments
1125.0	5	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: translucent to dark yellowish orange, moderately hard to hard, 20% calcareous clay, 20% calcareous silt, 60% calcareous sand, 90% bery fine grained, 10% fine grained, very fine lower to fine upper, rounded, well sorted, spherical, 70% dolomitic cement, 30% calcareous cement, quartz with trace medium green glauconite, no hydrocarbon fluorescence
1125.0	20	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, moderately hard to hard, subfissile to subblocky, 90% calcareous silt, 10% calcareous sand, minor glauconite, rare pyrite, rare skeletal fragments
1125.0	75	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light grey, very soft to soft, amorphous, arenaceous in part, moderately calcareous, 90% calcareous clay, 10% calcareous sand, 100% very fine grained, rounded, well sorted, spherical, minor disseminated pyrite in part, minor carbonaceous flecks, minor forams, rare skeletal fragments

1130.0	5	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, moderately hard and becoming more subblocky, argillaceous in part, 20% calcareous clay, 80% calcareous silt
1130.0	95	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light grey, very soft to soft, amorphous to subblocky, arenaceous grading into a siltstone in part, 80% calcareous clay, 20% calcareous sand, 100% very fine grained, rounded, well sorted, spherical, minor glauconite, minor forams, minor skeletal fragments
1135.0	5	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, firm, 20% calcareous clay, 80% calcareous silt
1135.0	95	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to white, very soft to firm, amorphous to subblocky, 80% calcareous clay, 20% calcareous sand, 100% very fine grained, rounded, well sorted, spherical, minor glauconite, minor forams, minor skeletal fragments
1140.0	Trace	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, firm, subblocky, 30% calcareous clay, 60% calcareous silt, 10% calcareous sand, minor glauconite, minor forams, minor skeletal fragments
1140.0	100	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to white, very soft to soft, amorphous to subblocky, 90% calcareous clay, 10% calcareous sand, minor glauconite, minor forams
1145.0	100	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to white, very soft to soft, amorphous to subblocky, 90% calcareous clay, 10% calcareous sand, 100% very fine grained size, rounded, well sorted, spherical, minor glauconite, rare forams, rare pyrite
1150.0	15	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, dominantly very soft to soft, rarely hard and calcite cemented, subblocky to rarely blocky, highly calcareous, slightly silty, rarely locally arenaceous, 45% calcareous clay, 40% siliciclastic clay, 10% siliciclastic silt, 5% siliciclastic sand, 1% calcareous cement, trace to minor dark green glauconite, grades to marl, rare skeletal fragments
1150.0	85	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium grey to slightly brownish grey, soft, subblocky, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace pyrite, trace foraminifera, trace shell fragments
1155.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, very soft to hard, subblocky to blocky, highly calcareous, slightly silty, rarely locally arenaceous, 45% calcareous clay, 40% siliciclastic clay, 10% siliciclastic silt, 5% siliciclastic sand, 1% calcareous cement, minor glauconite, grades to marl, rare skeletal fragments, trace calcarenite

1155.0	90	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft, subblocky, grading to trace argillaceous siltstone, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace pyrite, trace foraminifera
1160.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, very soft to hard, subblocky to blocky, highly calcareous, slightly silty, rarely locally arenaceous, 45% calcareous clay, 40% siliciclastic clay, 10% siliciclastic silt, 5% siliciclastic sand, 1% calcareous cement, minor glauconite, grades to marl, rare skeletal fragments, trace calcarenite
1160.0	90	CLAYSTONE		CLAYSTONE: medium grey to brownish grey becoming dominantly olive grey, soft to firm, subblocky to blocky, becoming slightly to moderately calcareous, grading to trace argillaceous siltstone, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare pyrite, rare foraminifera
1165.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, very soft to hard, subblocky to blocky, highly calcareous, slightly silty, rarely locally arenaceous, 45% calcareous clay, 40% siliciclastic clay, 10% siliciclastic silt, 5% siliciclastic sand, 1% calcareous cement, minor glauconite, grades to marl, rare skeletal fragments, trace calcarenite
1165.0	95	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, olive grey in parts, soft to firm, subblocky to rarely blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare localised pyrite, trace foraminifera, trace shell fragments
1170.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, very soft to hard, subblocky to blocky, highly calcareous, slightly silty, rarely locally arenaceous, 40% calcareous clay, 40% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, 1% calcareous cement, minor glauconite, grades to marl, rare skeletal fragments, trace calcarenite, trace hard white limestone
1170.0	95	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, grading to trace argillaceous siltstone, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera
1175.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: medium light grey to light olive grey, light grey, very soft to soft, subblocky to blocky, highly calcareous, slightly silty, rarely locally arenaceous, 40% calcareous clay, 30% siliciclastic clay, 10% siliciclastic silt, 20% siliciclastic sand, 1% calcareous cement, minor glauconite, grades to marl, rare skeletal fragments

1175.0	5	CALCARENITE	argillaceous	ARGILLACEOUS CALCARENITE: medium light grey to light olive grey, light grey, firm to hard, blocky, highly calcareous, 20% calcareous clay, 20% calcareous silt, 50% calcareous sand, very fine to fine quartz, well sorted, subangular to subrounded, minor to common dark green glauconite, grading sandy limestone
1175.0	95	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, grading to trace argillaceous siltstone
1180.0	5	CALCARENITE	argillaceous	ARGILLACEOUS CALCARENITE: very light grey to light olive grey, firm to hard, blocky, highly calcareous, 20% calcareous clay, 20% calcareous silt, 50% calcareous sand, 10% siliciclastic sand, very fine to fine quartz, well sorted, subangular to subrounded, trace glauconite, trace yellowish crystalline limestone
1180.0	95	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, grading to trace argillaceous siltstone
1185.0	Trace	CALCARENITE	argillaceous	ARGILLACEOUS CALCARENITE: very light grey to light olive grey, firm to hard, blocky, highly calcareous, 20% calcareous clay, 20% calcareous silt, 50% calcareous sand, 10% siliciclastic sand, very fine to fine quartz, well sorted, subangular to subrounded, trace glauconite, trace yellowish crystalline limestone
1185.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, soft to firm, subblocky to blocky, moderately to highly calcareous, argillaceous, 10% calcareous clay, 20% calcareous silt, 10% siliciclastic clay, 60% siliciclastic silt, trace pyrite, trace foraminfera, minor mica
1185.0	90	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, grading to trace argillaceous siltstone
1190.0	20	SILTSTONE		SILTSTONE: medium grey to light brownish grey, soft to firm, subblocky to blocky, moderately to highly calcareous, argillaceous, 10% calcareous clay, 20% calcareous silt, 10% siliciclastic clay, 60% siliciclastic silt, rare pyrite, rare foraminfera, minor mica, trace calcarenite
1190.0	80	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, trace foraminifera

1195.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately to highly calcareous, argillaceous, 10% calcareous clay, 20% calcareous silt, 10% siliciclastic clay, 60% siliciclastic silt, locally abundant pyrite, rare foraminfera, minor mica, trace calcarenite
1195.0	90	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, trace shell fragments
1200.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming more dominantly moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, locally abundant pyrite, rare foraminfera, minor mica, trace well rounded dark green glauconite
1200.0	90	CLAYSTONE		CLAYSTONE: medium grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, trace shell fragments
1205.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming more dominantly moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, rare hard pyrite nodules, rare foraminfera, minor mica, trace well rounded dark green glauconite
1205.0	90	CLAYSTONE		CLAYSTONE: medium dark grey to brownish grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-10% silt, trace very fine sand, rare pyrite, rare foraminifera, trace shell fragments
1210.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1210.0	90	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, rare foraminifera, trace shell fragments, trace siderite

1215.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1215.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, rare foraminifera, trace shell fragments, trace siderite, trace white limestone
1220.0	20	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1220.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, rare foraminifera, trace shell fragments, trace siderite, trace white limestone
1225.0	20	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1225.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, rare foraminifera, trace shell fragments, trace siderite, trace white limestone
1230.0	20	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1230.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace siderite, trace shell fragments

1235.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1235.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: dominantly light olive grey to light brownish grey, rarely very light grey, trace yellowish brown, very soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1235.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace siderite, trace shell fragments
1240.0	5	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, moderately calcareous, argillaceous, 10% calcareous clay, 10% calcareous silt, 10% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1240.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1240.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace shell fragments, trace siderite
1245.0	5	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming less calcareous, argillaceous, 10% calcareous clay, 20% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1245.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, becoming slightly sandy

1245.0	90	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace shell fragments, trace siderite, becoming less calcareous
1250.0	5	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming less calcareous, argillaceous, 10% calcareous clay, 20% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1250.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, becoming slightly sandy
1250.0	90	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace shell fragments, trace siderite, becoming less calcareous, more dominantly brownish grey
1255.0	10	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming less calcareous, argillaceous, 10% calcareous clay, 20% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1255.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, becoming slightly sandy
1255.0	10	CLAYSTONE		CLAYSTONE: light grey to white, very soft to soft, amorphous to subblocky, non-calcareous, 80% siliciclastic clay, 20% siliciclastic silt, trace medium green glauconite and trace black carbonaceous streaks
1255.0	70	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace shell fragments, trace siderite, becoming less calcareous, more dominantly brownish grey
1260.0	5	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming less

				calcareous, argillaceous, 10% calcareous clay, 20% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1260.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, becoming slightly sandy
1260.0	10	CLAYSTONE		CLAYSTONE: light grey to white, very soft to soft, amorphous to subblocky, non-calcareous, 80% siliciclastic clay, 20% siliciclastic silt, trace medium green glauconite and trace black carbonaceous streaks
1260.0	75	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to moderately calcareous, 10% calcareous clay, 70% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, trace disseminated pyrite, trace foraminifera, trace shell fragments, trace siderite, translucent calcite, hard, euhedral to subangular
1265.0	Trace	SILTSTONE		SILTSTONE: medium grey to light brownish grey, olive grey in parts, soft to firm, subblocky to blocky, becoming less calcareous, argillaceous, 10% calcareous clay, 20% siliciclastic clay, 70% siliciclastic silt, trace nodular pyrite, trace foraminfera, minor mica, trace glauconite
1265.0	10	CLAYSTONE		CLAYSTONE: light grey to white, very soft to soft, amorphous to subblocky, non-calcareous, 80% siliciclastic clay, 20% siliciclastic silt, trace medium green glauconite and trace black carbonaceous streaks
1265.0	15	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 40% calcareous clay, 10% calcareous silt, 30% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, becoming slightly sandy
1265.0	75	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, becoming slighty calcareous, 25% calcareous clay, 65% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1270.0	Trace	SILTSTONE	calcareous	CALCAREOUS SILTSTONE: olive grey, hard, fissile, moderately calcareous, argillaceous, 40% calcareous clay, 60% calcareous silt, possibly represents concretionary lense
1270.0	5	CLAYSTONE		CLAYSTONE: light grey to white, very soft to soft, amorphous to subblocky, non-calcareous, 80% siliciclastic clay, 20% siliciclastic silt, trace medium green glauconite and trace black carbonaceous

				streaks
1270.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1270.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly calcareous, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1275.0	5	CLAYSTONE		CLAYSTONE: light grey to white, very soft to soft, amorphous to subblocky, non-calcareous, 80% siliciclastic clay, 20% siliciclastic silt, trace medium green glauconite and trace black carbonaceous streaks
1275.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1275.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly calcareous, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1280.0	Trace	SILTSTONE		SILTSTONE: greyish orange, very hard, subfissile to fissile, 10% siliciclastic clay, 70% siliciclastic silt, 20% siliciclastic sand (50% very fine grained, 50% fine grained, very fine lower to very fine upper, well sorted, slightly spherical, 10% subrounded translucent to orange yellow, quartz and 10% feldspar), non-calcareous
1280.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1280.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly calcareous, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1285.0	Trace	SILTSTONE		SILTSTONE: greyish orange, hard, subfissile to fissile, 10% siliciclastic clay, 70% siliciclastic silt, 20% siliciclastic sand (50% very fine grained, 50% fine grained, subrounded, well sorted, slightly spherical, 10% subrounded translucent to orange yellow, quartz and 10% feldspar)

1285.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1285.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to non calcareous, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1290.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral, common quartz, common feldspar
1290.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1290.0	85	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, slightly to non calcareous, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, 5-20% silt, trace hard concretions cemented within forams (shell no longer present)
1295.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1295.0	15	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral
1295.0	80	CLAYSTONE		CLAYSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1300.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1300.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral

1300.0	90	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1305.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1305.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral
1305.0	90	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1310.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1310.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral
1310.0	95	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1315.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1315.0	10	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1315.0	90	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral

1320.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1320.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1320.0	20	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1320.0	80	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, grains coarsening to medium upper to coarse upper, subangular to euhedral
1325.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1325.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand, 80% very fine grained, 20% fine grained, arenaceous in part, subangular to subrounded, very well sorted, spherical, non-calcareous
1325.0	20	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1325.0	80	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, fine lower to very coarse lower, subangular to euhedral
1330.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1330.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite

1330.0	30	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1330.0	65	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, calcite coarsening downhole from coarse upper to very coarse upper, subangular to euhedral
1335.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1335.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1335.0	30	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, coarse upper to very coarse lower, trace subrounded quartz and feldspar
1335.0	65	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1340.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1340.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1340.0	10	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, coarse upper to very coarse lower, trace subrounded quartz and feldspar
1340.0	85	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica

1345.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1345.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very light grey, trace yellowish brown, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite
1345.0	40	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, coarse upper to very coarse lower, trace subrounded quartz and feldspar
1345.0	55	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1350.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1350.0	15	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite, absence of yellow brownish grey claystone
1350.0	40	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1350.0	45	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral
1355.0	Trace	SILTSTONE		SILTSTONE: dark olive brown to black, very hard, fissile, 90% siliciclastic silt, 10% siliciclastic sand (80% very fine grained, 20% fine grained, subangular to subrounded, very well sorted, spherical), arenaceous in part, non-calcareous
1355.0	15	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace glauconite, grading to marl, trace blocky, hard dolomite

1355.0	15	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral
1355.0	70	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1360.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: yellowish grey, very hard, subblocky, slightly calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, common very fine black carbonaceous flecks within
1360.0	15	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, grading to marl, trace blocky, hard dolomite
1360.0	15	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral
1360.0	70	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar
1365.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: yellowish grey, very hard, subblocky, slightly calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, common very fine black carbonaceous flecks within
1365.0	Trace	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral
1365.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, grading to marl, trace blocky, hard dolomite
1365.0	90	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1370.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral

1370.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: yellowish grey, very hard, subblocky, slightly calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, common very fine black carbonaceous flecks within
1370.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, very soft to soft, subblocky, highly calcareous, slightly silty, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, grading to marl, trace blocky, hard dolomite
1370.0	75	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 20% calcareous clay, 70% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1375.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium lower to very coarse lower, subangular to euhedral
1375.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: yellowish grey, very hard, subblocky, slightly calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, common very fine black carbonaceous flecks within
1375.0	10	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand
1375.0	75	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 20% calcareous clay, 70% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1380.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: yellowish grey, very hard, subblocky, slightly calcareous, 20% calcareous clay, 60% siliciclastic clay, 20% siliciclastic silt, common very fine black carbonaceous flecks within
1380.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1380.0	20	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1380.0	70	CLAYSTONE		CLAYSTONE: brownish black to olive black, soft to firm, subblocky to blocky, 20% calcareous clay, 70% siliciclastic clay, 10% siliciclastic silt, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica

1385.0	Trace	CALCILUTITE	calcareous	CALCAREOUS CALCILUTITE: white to light grey, very soft to soft, amorphous to subblocky in part, 70% calcareous clay, 30% calcareous silt, black carbonaceous streaks within, highly calcareous
1385.0	Trace	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1385.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1385.0	95	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic sand, subangular to subrounded, well sorted, subspherical, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1390.0	Trace	CALCILUTITE	calcareous	CALCAREOUS CALCILUTITE: white to light grey, very soft to soft, amorphous to subblocky in part, 70% calcareous clay, 30% calcareous silt, black carbonaceous streaks within, highly calcareous
1390.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1390.0	10	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1390.0	85	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic sand, subangular to subrounded, well sorted, subspherical, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica
1395.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1395.0	10	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1395.0	85	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic sand, subangular to subrounded, well sorted, subspherical, very fine upper to fine upper silt, translucent to transparent, quartz and feldspar, trace micromica

1400.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1400.0	10	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1400.0	85	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1405.0	5	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1405.0	10	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1405.0	85	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1410.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1410.0	5	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1410.0	95	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1415.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1415.0	40	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral

1415.0	60	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1420.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1420.0	Trace	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, medium upper to coarse upper, subangular to euhedral
1420.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1425.0	Trace	CLAYSTONE	calcareous	CALCAREOUS CLAYSTONE: light olive grey to light brownish grey, light yellowish grey, very soft to soft, subblocky, amorphous, moderately calcareous, 20% calcareous clay, 60% siliciclastic clay, 10% siliciclastic silt, 10% siliciclastic sand, trace benthic forams
1425.0	Trace	VOLCANICS	calcareous	VOLCANICS: transparent to translucent, calcite (altered volcanics), very hard, blocky, calcite slightly finer, medium lower to medium upper, subangular, moderately well sorted
1425.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica, trace microcrystalline pyrite
1430.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1435.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica
1440.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace micromica

1445.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, grading into a moderately hard to hard siltstone, subfissile to fissile, arenaceous in part, non to slightly calcareous, trace medium green glauconite pellets, trace mica, trace disseminated pyrite
1450.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral
1455.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part
1460.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1460.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part
1465.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1465.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part

1470.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1470.0	Trace	CLAYSTONE		CLAYSTONE: light grey, very soft to soft, amorphous, 70% calcareous clay, 20% calcareous silt, 10% siliciclastic clay, homogenous, slightly calcareous
1470.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part
1475.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1475.0	Trace	CLAYSTONE		CLAYSTONE: light grey, very soft to soft, amorphous, 70% calcareous clay, 20% calcareous silt, 10% siliciclastic clay, homogenous, slightly calcareous
1475.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part
1480.0	Trace	CLAYSTONE		CLAYSTONE: light grey, very soft to soft, amorphous, 70% calcareous clay, calcareous silt, 10% siliciclastic clay, homogenous, slightly calcareous
1480.0	5	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1480.0	95	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, becoming more arenaceous in part

1485.0	Trace	CLAYSTONE		CLAYSTONE: light grey, very soft to soft, amorphous, 70% calcareous clay, calcareous silt, 10% siliciclastic clay, homogenous, slightly calcareous
1485.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1485.0	100	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, grading to siltstone in part
1490.0	Trace	DOLOMITE		DOLOMITE: yellowish grey to very pale orange, very hard, subfissile, 30% calcareous cement, 70% dolomitic cement, abundant black and dark red to orange lithic fragments, rare pyrite, moderately to highly calcareous in part
1490.0	15	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown, friable, 20% calcareous clay, 80% calcareous sand, 80% fine grained, 20% medium grained, fine upper to medium upper, well sorted, subspherical, subangular to subrounded quartz and feldspar and lithic fragments, weak calcite cement, weak siliceous cement in part moderately calcareous, fair visible porosity, no hydrocarbon fluorescence
1490.0	85	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, grading to siltstone in part
1495.0	30	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar, trace mica, trace disseminated pyrite, trace medium green glauconite pellets, trace calcite minerals, very coarse lower, subangular to euhedral, grading to siltstone in part
1495.0	70	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown, friable, 20% calcareous clay, 80% calcareous sand, 100% fine grained, subangular to subrounded, well sorted, subspherical, minor loose, medium upper to coarse lower, abundant calcite, no hydrocarbon fluorescence

1500.0	30	CLAYSTONE		CLAYSTONE: olive black, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1500.0	70	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown, friable, 20% calcareous clay, 80% calcareous sand, 100% fine grained, subangular to subrounded, well sorted, subspherical, minor loose, medium upper to coarse lower, no hydrocarbon fluorescence
1505.0	30	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1505.0	70	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: translucent to transparent, dark yellowish brown, friable, 20% calcareous clay, 80% calcareous sand, 100% fine grained, subangular to subrounded, well sorted, subspherical, trace medium lower muscovite and biotite, common lithic fragments, trace microcrystalline pyrite, no hydrocarbon fluorescence
1510.0	5	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1510.0	95	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown, 100% calcareous sand, 20% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, subspherical, highly calcareous, minor mica, common lithic fragments, rare pyrite, no hydrocarbon fluorescence
1515.0	5	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1515.0	10	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1515.0	10	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments

1515.0	75	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown to translucent, 100% calcareous sand, 20% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, poorly sorted, subspherical, minor mica, common lithic fragments, rare pyrite, highly calcareous, no hydrocarbon fluorescence
1518.0	10	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments
1518.0	10	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1518.0	10	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1518.0	70	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown to translucent, 100% calcareous sand, 20% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, poorly sorted, subspherical, minor mica, common lithic fragments, rare pyrite, highly calcareous, no hydrocarbon fluorescence
1521.0	Trace	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1521.0	5	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments
1521.0	10	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar

1521.0	85	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown to translucent, 100% calcareous sand, 20% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, poorly sorted, subspherical, minor mica, common lithic fragments, rare pyrite, highly calcareous, no hydrocarbon fluorescence
1524.0	Trace	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1524.0	Trace	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments
1524.0	15	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1524.0	85	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown to translucent, 100% calcareous sand, 20% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, poorly sorted, subspherical, minor mica, common lithic fragments, rare pyrite, highly calcareous, no hydrocarbon fluorescence
1527.0	Trace	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1527.0	Trace	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments
1527.0	10	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar

1527.0	80	SANDSTONE	calcareous	CALCAREOUS SANDSTONE: dark yellowish brown to translucent, 100% calcareous sand, 10% very fine grained, 20% fine grained, 30% medium grained, 20% coarse grained, 10% very coarse, 10% granular, dominant loose calcite sand, fine lower to fine upper, subangular to subrounded and medium upper to coarse lower, angular to tabular, poorly sorted, subspherical, minor mica, common lithic fragments, rare pyrite, highly calcareous, 10% coarse granular < 2mm subrounded quartz, no hydrocarbon fluorescence
1530.0	Trace	CLAYSTONE		CLAYSTONE: olive black to dark brown, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1530.0	Trace	SILTSTONE		SILSTONE: greenish grey, very soft to soft, amorphous, 90% siliciclastic silt, 10% siliciclastic very fine grained sand, rounded, well sorted, spherical, arenaceous in part, abundant glauconite, minor lithic fragments
1530.0	5	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1530.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 30% medium grained, 25% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz sand, very fine to granular, dominantly medium to coarse, subangular to well rounded, poorly sorted, subspherical, trace muscovite, rare medium grey well rounded lithics, trace pyrite infilling, rarely oil-stained dark brown, no hydrocarbon fluorescence
1533.0	5	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand, translucent to transparent, quartz and feldspar
1533.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 30% medium grained, 25% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz sand, very fine to granular, dominantly medium to coarse, subangular to well rounded, poorly sorted, subspherical, trace muscovite, rare medium grey well rounded lithics, trace pyrite infilling, 10% well rounded granules to 5mm, no hydrocarbon fluorescence

1536.0	5	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand
1536.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 5% medium grained, 10% coarse grained, 20% very coarse grained, 55% granular, transparent to translucent quartz, very fine granular, dominantly granular, moderately well sorted, subangular to well rounded, dominantly rounded, subspherical, minor pyrite, trace medium grey well rounded lithics, no hydrocarbon fluorescence
1539.0	5	CLAYSTONE		CLAYSTONE: olive grey to light olive grey, soft to firm, subblocky to blocky, 10% calcareous sand, 60% siliciclastic clay, 20% siliciclastic silt, 10% siliciclastic medium to coarse grained sand
1539.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, transparent to translucent quartz, very fine granular, dominantly granular, moderately sorted, subangular to well rounded, dominantly rounded, subspherical, minor pyrite, trace medium grey well rounded lithics, rare brown oil staining as above, no hydrocarbon fluorescence
1542.0	10	SILTSTONE		SILTSTONE: olive grey to olive black, brownish grey in parts, soft to firm, subblocky to blocky, moderately hard and subfissile in parts, 20% siliciclastic clay, 80% siliciclastic silt, non to slightly calcareous, minor pyrite in parts, carbonaceous
1542.0	90	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, transparent to translucent quartz, very fine granular, dominantly granular, moderately sorted, subangular to well rounded, dominantly rounded, subspherical, minor pyrite, trace medium grey well rounded lithics, rare brown oil staining as above, no hydrocarbon fluorescence
1545.0	Trace	SILTSTONE		SILTSTONE: olive grey to olive black, brownish grey in parts, soft to firm, subblocky to blocky, moderately hard and subfissile in parts, 20% siliciclastic clay, 80% siliciclastic silt, non to slightly calcareous, minor pyrite in parts, carbonaceous

1545.0	100	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 20% medium grained, 30% coarse grained, 25% very coarse grained, 10% granular, becoming dominantly coarse to very coarse grained, minor light brownish grey siliceous cement adhered to quartz grains, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, no hydrocarbon fluorescence
1548.0	5	SILTSTONE		SILTSTONE: olive grey to olive black, brownish grey in parts, soft to firm, subblocky to blocky, moderately hard and subfissile in parts, 20% siliciclastic clay, 80% siliciclastic silt, non to slightly calcareous, minor pyrite in parts, carbonaceous
1548.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very sofy to soft, subblocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, slightly calcareous, slightly silty
1548.0	90	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 20% medium grained, 30% coarse grained, 25% very coarse grained, 10% granular, becoming dominantly coarse to very coarse grained, minor light brownish grey siliceous cement adhered to quartz grains, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, no hydrocarbon fluorescence
1551.0	100	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 20% very coarse grained, 35% granular, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay matrix, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace lithics, trace pyrite, no hydrocarbon fluorescence
1554.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, non to slightly calcareous, slightly silty
1554.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 5% medium grained, 20% coarse grained, 20% very coarse grained, 45% granular, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence

1557.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, non to slightly calcareous, slightly silty
1557.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 5% medium grained, 20% coarse grained, 20% very coarse grained, 45% granular, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1560.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 10% calcareous clay, 80% siliciclastic clay, 10% siliciclastic silt, non to slightly calcareous, slightly silty
1560.0	5	SILTSTONE		SILTSTONE: brownish grey, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, slightly argillaceous, 5-10% sand
1560.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 5% medium grained, 25% coarse grained, 40% very coarse grained, 20% granular, subangular to well rounded, poor sorted, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1563.0	10	SILTSTONE		SILTSTONE: brownish grey, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, slightly argillaceous, 5-10% sand, rare disseminated pyrite, trace carbonaceous flecks
1563.0	15	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, slightly sticky in parts
1563.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 5% medium grained, 30% coarse grained, 45% very coarse grained, 10% granular, dominantly very coarse, moderately sorted, subangular to well rounded, dominantly subrounded, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon

				fluorescence
1566.0	15	SILTSTONE		SILTSTONE: brownish grey, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, slightly argillaceous, 5-10% sand, rare disseminated pyrite, trace carbonaceous flecks, trace mica
1566.0	15	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, slightly sticky in parts
1566.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 30% coarse grained, 40% very coarse grained, 5% granular, dominantly very coarse, moderately sorted, subangular to well rounded, dominantly subrounded, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1569.0	10	SILTSTONE		SILTSTONE: brownish grey, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, slightly argillaceous, 5-10% sand, rare disseminated pyrite, trace carbonaceous flecks, trace mica
1569.0	10	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, slightly sticky in parts
1569.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 20% medium grained, 30% coarse grained, 30% very coarse grained, 5% granular, becoming more dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded, subspherical, 5% quartz cement, trace lithics, trace pyrite, trace brownish grey aggregates, hard, brownish grey siliceous cemented clay and silty matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1572.0	20	SILTSTONE		SILTSTONE: olive grey to olive black, brownish grey in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica

1572.0	40	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts
1572.0	40	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 20% medium grained, 30% coarse grained, 35% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace hard silica and pyrite cemented aggregates, trace brownish grey clay and silt matrix, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence. hard,
1575.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 30% medium grained, 35% coarse grained, 20% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, rare oil staining on loose grains, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1575.0	40	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1575.0	40	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts

1578.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 30% medium grained, 35% coarse grained, 20% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, rare oil staining on loose grains, trace good inferred visible porosity, no hydrocarbon fluorescence
1578.0	40	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1578.0	50	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey
1581.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, becoming finer grained, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1581.0	30	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1581.0	60	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey

1584.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, becoming finer grained, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1584.0	30	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1584.0	60	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey
1587.0	5	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, becoming finer grained, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1587.0	30	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1587.0	65	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey

1590.0	5	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, becoming finer grained, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1590.0	30	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1590.0	65	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey
1593.0	5	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1593.0	30	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1593.0	65	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey

1596.0	5	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1596.0	20	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1596.0	75	CLAYSTONE		CLAYSTONE: brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts, becoming more dominantly brownish grey
1599.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1599.0	20	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1599.0	70	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone

1602.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1602.0	20	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1602.0	70	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1605.0	20	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1605.0	30	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1605.0	50	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence

1608.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1608.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1608.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 40% medium grained, 30% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1611.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1611.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1611.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 20% fine grained, 40% medium grained, 20% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, minor pyrite, trace brownish grey fine grained friable aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1614.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75%

				siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1614.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1614.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 20% fine grained, 40% medium grained, 20% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, trace brownish grey fine grained friable aggregates, rare pyrite nodules, trace good inferred visible porosity, no hydrocarbon fluorescence
1617.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1617.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1617.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 20% fine grained, 40% medium grained, 20% coarse grained, 10% very coarse grained, 5% granular, transparent to translucent quartz, very fine-granular, dominantly coarse to very coarse, moderately sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, 5% quartz cement, trace medium grey well rounded lithics, rare pyrite nodules, trace muscovite to cL, trace foram moulds, trace pyrite cemented aggregates, trace friable aggregates with silty matrix, trace good inferred visible porosity, no hydrocarbon fluorescence

1620.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1620.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1620.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 15% medium grained, 30% coarse grained, 30% very coarse grained, 10% granular, transparent to translucent quartz, very fine-granular, becoming more dominantly coarse to granular (max 4mm), dominantly subrounded to rounded, moderately sorted, 10% light grey non calcareous clay - inferred rockflour, 5% quartz cement, 1% pyrite cement, trace medium grey well rounded lithics, rare pyrite nodules, trace muscovite to cL, trace foram moulds, trace pyrite cemented aggregates, trace friable aggregates with silty matrix, trace good inferred visible porosity, no hydrocarbon fluorescence
1623.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1623.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica

1623.0	85	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 20% granular, transparent to translucent quartz, very fine-granular, becoming more dominantly coarse to granular (max 4mm), dominantly subrounded to rounded, poorly sorted, coarser as above, 10% light grey non calcareous clay - inferred rockflour, 5% quartz cement, 1% pyrite cement, trace medium grey well rounded lithics, rare pyrite nodules, trace muscovite to cL, trace foram moulds, trace pyrite cemented aggregates, trace friable aggregates with silty matrix, trace good inferred visible porosity, no hydrocarbon fluorescence
1626.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1626.0	Trace	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1626.0	100	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in rare aggregates, loose, transparent to translucent quartz, 100% siliciclastic sand, 10% coarse grained, 70% very coarse grained, 20% granular, coarse lower to granular, dominantly very coarse, subangular to well rounded, dominantly subrounded to rounded, moderately well sorted, subspherical, trace medium grey well rounded lithics, trace pyrite, trace muscovite, no visible aggregates, minor dark brown oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1629.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1629.0	Trace	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica

1629.0	100	SANDSTONE		SANDSTONE: transparent to translucent, loose, transparent to translucent quartz, 100% siliciclastic sand, 10% coarse grained, 70% very coarse grained, 20% granular, coarse lower to granular, dominantly very coarse, subangular to well rounded, dominantly subrounded to rounded, moderately well sorted, subspherical, trace medium grey well rounded lithics, trace pyrite, trace muscovite, no visible aggregates, minor dark brown oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1632.0	Trace	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1632.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone
1632.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, transparent to translucent quartz, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 60% very coarse grained, 20% granular, coarse lower to granular, dominantly very coarse, subangular to well rounded, dominantly subrounded to rounded, moderately well sorted, subspherical, trace medium grey well rounded lithics, trace pyrite, trace muscovite, no visible aggregates, minor dark brown oil staining, 5% light grey clay texture, non calcareous: inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1635.0	Trace	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1635.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 80% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, rare very fine sand, minor dark brown carbonaceous specks, rarely grading to very fine sandstone

1635.0	95	SANDSTONE		SANDSTONE: transparent to translucent, loose, transparent to translucent quartz, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 60% very coarse grained, 20% granular, coarse lower to granular, dominantly very coarse, subangular to well rounded, dominantly subrounded to rounded, moderately well sorted, subspherical, trace medium grey well rounded lithics, trace pyrite, trace muscovite, no visible aggregates, minor dark brown oil staining, 10% light grey clay texture, non calcareous: inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1638.0	Trace	COAL		COAL: black, firm to moderately hard, blocky, splintery, dull
1638.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1638.0	40	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1638.0	50	SANDSTONE		SANDSTONE: transparent to translucent, loose, transparent to translucent quartz, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 60% very coarse grained, 20% granular, coarse lower to granular, dominantly very coarse, subangular to well rounded, dominantly subrounded to rounded, moderately well sorted, subspherical, trace reddish brown well rounded lithics, 10% rockflour, trace pyrite, trace muscovite, no visible aggregates, minor dark brown oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1641.0	10	SILTSTONE		SILTSTONE: dominantly brownish grey to brownish black, olive grey to olive black in parts, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica
1641.0	40	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks

1641.0	50	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1644.0	Trace	COAL		COAL: black, firm to moderately hard, blocky, splintery, dull to moderately bright
1644.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1644.0	30	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1644.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1647.0	5	COAL		COAL: black, soft to firm, blocky, splintery, dull to moderately bright
1647.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1647.0	25	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1647.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1650.0	5	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright

1650.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1650.0	25	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1650.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1653.0	5	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright
1653.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1653.0	25	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1653.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1656.0	5	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright
1656.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica

1656.0	30	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1656.0	45	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1659.0	Trace	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright
1659.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1659.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1659.0	60	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1662.0	Trace	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright, grading carbonaceous mudstone
1662.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, abundant very fine sand in parts, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1662.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence

1662.0	60	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1665.0	Trace	COAL		COAL: brownish black to black, soft to firm, blocky, splintery, dull to moderately bright, grading carbonaceous mudstone
1665.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1665.0	20	SANDSTONE		SANDSTONE: transparent to translucent, loose, 100% siliciclastic sand, 10% coarse grained, 60% very coarse grained, 30% granular, coarse to granular (4mm max), moderately well sorted, subangular to well rounded, dominantly subangular to subrounded, subspherical, rare lithic fragments, rare pyrite, rare mica, abundant nodular glauconite, trace good inferred visible porosity, no hydrocarbon fluorescence
1665.0	60	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1668.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1668.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1668.0	60	SANDSTONE		SANDSTONE: transparent to translucent, loose to moderately hard, transparent to translucent quartz, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 30% medium grained, 10% coarse grained, 10% very coarse grained, 20% granular, very fine to granular, dominantly fine to medium, possibly bimodal, poorly sorted, subspherical, subangular to well rounded, dominantly subangular to rounded, 5% pyrite cement, 2% quartz cement, trace medium to dark grey lithics, abundant pyrite, common pyrite cemented aggregates, minor silica cemented aggregates, common light grey to light brownish grey clay and silt matrix, poor visible porosity in aggregates, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence

1671.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-10% silt, rare carbonaceous specks
1671.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, non calcareous, argillaceous, minor disemminated pyrite, carbonaceous, trace mica
1671.0	85	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose to moderately hard, transparent to translucent quartz, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 30% medium grained, 10% coarse grained, 20% very coarse grained, 10% granular, very fine to granular, dominantly fine to medium, possibly bimodal, poorly sorted, subspherical, subangular to well rounded, dominantly subangular to rounded, 5% pyrite cement, 2% quartz cement, trace medium to dark grey lithics, abundant pyrite, common pyrite cemented aggregates, minor silica cemented aggregates, common light grey to light brownish grey clay and silt matrix, poor visible porosity in aggregates, rare mica, trace good inferred visible porosity, no hydrocarbon fluorescence
1674.0	100	SANDSTONE		SANDSTONE: transparent to translucent, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 30% very coarse grained, 30% granular, becoming coarser and more dominantly granular, subangular to well rounded, poorly sorted, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, trace coal, trace good inferred visible porosity, no hydrocarbon fluorescence
1677.0	100	SANDSTONE		SANDSTONE: transparent to translucent, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, subangular to well rounded, poorly sorted, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, trace good inferred visible porosity, rare oil staining, no hydrocarbon fluorescence
1680.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, argillaceous, slightly sandy, non calcareous, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, minor disseminated pyrite, trace brown carbonaceous flecks, trace muscovite

1680.0	90	SANDSTONE		SANDSTONE: transparent to translucent, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, becoming dominantly coarse grained, moderately well sorted, subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, rare oil staining, trace pyrite cemented aggregates, trace silica cemented aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1683.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, argillaceous, slightly sandy, non calcareous, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, minor disseminated pyrite, trace brown carbonaceous flecks, trace muscovite
1683.0	90	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, becoming dominantly coarse grained, moderately well sorted, subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, rare oil staining, trace pyrite cemented aggregates, trace silica cemented aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1686.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, argillaceous, slightly sandy, non calcareous, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, minor disseminated pyrite, trace brown carbonaceous flecks, trace muscovite
1686.0	90	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, becoming dominantly coarse grained, moderately well sorted, subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, common pyrite cemented aggregates, rare oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1689.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, argillaceous, slightly sandy, non calcareous, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, minor disseminated pyrite, trace brown carbonaceous flecks, trace muscovite

1689.0	80	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, moderately sorted, dominantly subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, common pyrite cemented aggregates, rare oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1692.0	30	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1692.0	30	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, argillaceous, slightly sandy, non calcareous, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, minor disseminated pyrite, trace brown carbonaceous flecks, trace muscovite
1692.0	40	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, moderately sorted, dominantly subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, common pyrite cemented aggregates, rare oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1695.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1695.0	30	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 20% granular, moderately sorted, dominantly subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, rare pyrite cemented aggregates, rare oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1695.0	70	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica

1698.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1698.0	40	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1698.0	50	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, moderately sorted, dominantly subangular to rounded, subspherical, 5% pyrite cement, 2% quartz cement, rare lithic fragments, minor pyrite, rare mica, rare pyrite cemented aggregates, rare oil staining, trace good inferred visible porosity, no hydrocarbon fluorescence
1701.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1701.0	35	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1701.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose to moderately hard, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 5% pyrite cement, 2% quartz cement, trace medium to dark grey lithics, abundant pyrite, common pyrite cemented aggregates, minor silica cemented aggregates, rare light grey to light brownish grey clay and silt matrix, rare mica, poor visible porosity in aggregates, rare dark brown to black oil staining on loose grains, trace good inferred visible porosity, no hydrocarbon fluorescence
1704.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1704.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1704.0	90	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 5% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1707.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1707.0	40	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 10% containing dominant pyrititc cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1707.0	50	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1710.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1710.0	40	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1710.0	50	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 10% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey non - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1713.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1713.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1713.0	85	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 10% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1716.0	Trace	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica

1716.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1716.0	95	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 10% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1719.0	Trace	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1719.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1719.0	95	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 30% granular, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 5% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1722.0	Trace	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1722.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1722.0	100	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 25% medium grained, 40% coarse grained, 20% very coarse grained, 5% granular, loose sand slightly fining to dominant very coarse lower to medium upper, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 5% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 5% very light grey clay - inferred rockflour, trace good inferred visible porosity, no hydrocarbon fluorescence
1725.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1725.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1725.0	80	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominantly loose, 100% siliciclastic sand, 5% very fine grained, 5% fine grained, 25% medium grained, 40% coarse grained, 20% very coarse grained, 5% granular, loose sand slightly fining to dominant very coarse lower to medium upper, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular (maximum observed 4mm), subangular to well rounded, dominantly subangular to subrounded, moderately sorted, subspherical, 5% pyrite cement, 2% quartz cement, trace pyrite cemented aggregates, trace silica cemented aggregates, trace well rounded white lithics, 20% white, soft, non-calcareous 'Rockflour', trace good inferred visible porosity, no hydrocarbon fluorescence
1728.0	10	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1728.0	15	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1728.0	75	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, pyrite cementing in quartz, trace micro mica, trace lithic fragments, no hydrocarbon fluorescence
1731.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1731.0	30	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, trace microcrystalline pyrite, carbonaceous, trace micro mica
1731.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, trace pyritic cementing in quartz, trace microcrystalline pyrite, trace micro mica, trace lithic fragments, no hydrocarbon fluorescence
1734.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1734.0	40	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, trace microcrystalline pyrite, carbonaceous, trace micro mica
1734.0	50	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, trace pyritic cementing in quartz, trace microcrystalline pyrite, trace lithic fragments, trace micro mica, no hydrocarbon fluorescence

1737.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1737.0	45	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, trace pyritic cementing in quartz, trace microcrystalline pyrite, trace lithic fragments, trace micro mica, 20% rock flour, no hydrocarbon fluorescence
1737.0	50	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1740.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1740.0	40	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, trace pyritic cementing in quartz, trace microcrystalline pyrite, trace lithic fragments, trace micro mica, 20% rock flour, no hydrocarbon fluorescence
1740.0	55	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1743.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1743.0	35	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica

1743.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, very fine lower to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, trace pyritic cementing in quartz, trace microcrystalline pyrite, trace lithic fragments, trace glauconite, trace micro mica, 20% rock flour, no hydrocarbon fluorescence
1746.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1746.0	35	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1746.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 20% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1749.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1749.0	45	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 10% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1749.0	50	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica

1752.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1752.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1752.0	80	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 50% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1755.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1755.0	20	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1755.0	80	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 50% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1758.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1758.0	40	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, subfissile in parts, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica

1758.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 50% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1761.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1761.0	40	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, carbonaceous, minor mica
1761.0	60	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 30% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1764.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1764.0	50	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica

1764.0	50	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 20% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1767.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1767.0	35	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 35% coarse grained, 10% very coarse grained, 5% granular, 10% sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence
1767.0	65	SILTSTONE		SILTSTONE: brownish grey to greyish brown, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1770.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1770.0	20	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 20% coarse grained, trace sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, trace mica, 5% rock flour, no hydrocarbon fluorescence

1770.0	65	SILTSTONE		SILTSTONE: olive grey to brownish grey, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1773.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1773.0	20	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 20% coarse grained, trace sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, 5% rock flour, trace mica, no hydrocarbon fluorescence
1773.0	80	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica, trace inferred 'rock flour'
1776.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1776.0	15	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 20% coarse grained, trace sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, 5% rock flour, trace mica, no hydrocarbon fluorescence
1776.0	85	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1779.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1779.0	5	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, dominant loose sand, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 20% coarse grained, trace sandstone aggregates, light brownish grey, friable to firm, fine lower to fine upper, subangular to angular, poorly sorted, weak siliceous cement, trace pyrite cement, trace lithic fragments, trace medium green glauconite pellets, 5% rock flour, trace mica, no hydrocarbon fluorescence
1779.0	95	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky, becoming fissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1782.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1782.0	10	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 5% very fine grained, 40% fine grained, 50% medium grained, 5% coarse grained, becoming finer very fine lower to medium lower, trace coarse lower to coarse upper, subangular to rounded, moderately sorted, subspherical, 2% quartz cement, trace mica, trace lithic fragments, no hydrocarbon fluorescence
1782.0	90	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, dominantly subblocky, subfissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1785.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1785.0	5	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 5% very fine grained, 40% fine grained, 50% medium grained, 5% coarse grained, becoming finer very fine lower to medium lower, trace coarse lower to coarse upper, subangular to rounded, moderately sorted, subspherical, 2% quartz cement, trace mica, trace lithic fragments, no hydrocarbon fluorescence

1785.0	95	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, dominantly subblocky, subfissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1788.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1788.0	5	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, loose sand, 100% siliciclastic sand, 5% very fine grained, 40% fine grained, 50% medium grained, 5% coarse grained, becoming finer very fine lower to medium lower, trace coarse lower to coarse upper, subangular to rounded, moderately sorted, subspherical, 2% quartz cement, trace mica, trace lithic fragments, no hydrocarbon fluorescence
1788.0	95	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, dominantly subblocky, subfissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1791.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1791.0	40	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 20% coarse grained, 20% very coarse grained, 10% granular, loose sand, translucent to transparent, light yellowish grey in part, very fine upper to very coarse upper, granular in part, subangular to rounded, poorly sorted, subspherical, trace loose quartz containing black inclusions, sandstone aggregates as above, trace with pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1791.0	60	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, dominantly subblocky, subfissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica
1794.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1794.0	30	SILTSTONE		SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, dominantly subblocky, subfissile in part, 20% siliciclastic clay, 75% siliciclastic silt, 5% siliciclastic sand, rare very fine sand, argillaceous, non calcareous, minor disseminated pyrite, increase very fine lower carbonaceous specks, fine lower mica, 40% inferred 'rock flour'
1794.0	70	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 40% very fine grained, 40% fine grained, 15% medium grained, 5% granular, loose sand dominantly very fine upper to medium lower, trace granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1797.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1797.0	30	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, minor mica
1797.0	70	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 5% coarse grained, 5% very coarse grained, 10% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1800.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1800.0	40	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, minor mica

1800.0	55	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 30% very fine grained, 30% fine grained, 20% medium grained, 5% coarse grained, 5% very coarse grained, 10% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1803.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1803.0	40	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 25% very fine grained, 20% fine grained, 20% medium grained, 10% coarse grained, 10% very coarse grained, 15% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1803.0	55	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, trace mica
1806.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1806.0	35	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 20% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1806.0	60	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, trace mica
1809.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt

1809.0	30	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 20% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1809.0	70	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%
1812.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1812.0	30	SANDSTONE		SANDSTONE: transparent to translucent, yellow grey to light brownish grey in aggregates, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 20% granular, loose sand dominantly very fine upper to medium lower, increasing granular, subangular to rounded, poorly sorted, subspherical, 2% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, no hydrocarbon fluorescence
1812.0	70	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%
1815.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, 10% inferred 'rock flour' NB: drilling with new bit
1815.0	40	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 10% medium grained, 10% coarse grained, 20% very coarse grained, 20% granular, 5% quartz grains with oil staining, light bluish grey aggregates, firm to friable, very fine lower to fine lower, subangular to rounded, moderately sorted, subspherical, siliceous cement, 1% pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace fair inferred visible porosity, no hydrocarbon fluorescence

1815.0	55	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%
1818.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, 10% inferred 'rock flour' NB: drilling with new bit
1818.0	35	SILTSTONE	argillaceous	ARGILLACEOUS SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%
1818.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 20% fine grained, 5% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, increased sandstone aggregate to 15%: light bluish grey to translucent aggregates, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, poor inferred porosity, no hydrocarbon fluorescence
1821.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1821.0	40	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 20% fine grained, 5% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace sandstone aggregates with flat platey texture, no hydrocarbon fluorescence
1821.0	55	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour'

1824.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1824.0	20	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 20% inferred 'rock flour'
1824.0	75	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 20% fine grained, 5% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace aggregates with abundant black carbonaceous material, no hydrocarbon fluorescence
1827.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt
1827.0	30	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 20% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace aggregates with abundant black carbonaceous material, trace foraminifera (gastropods), no hydrocarbon fluorescence
1827.0	65	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 40% inferred 'rock flour'
1830.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, hard in part, trace disseminated pyrite

1830.0	15	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 20% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace aggregates with abundant black carbonaceous material, trace foraminifera (gastropods), no hydrocarbon fluorescence
1830.0	75	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour'
1833.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within
1833.0	30	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 20% medium grained, 5% coarse grained, 20% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, 5% sandstone aggregates, trace foraminifera (gastropods), no hydrocarbon fluorescence
1833.0	60	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 50% inferred 'rock flour'
1836.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within

1836.0	15	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% fine grained, 20% medium grained, 5% coarse grained, 40% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, 5% sandstone aggregates, trace aggregates with oil staining, no hydrocarbon fluorescence
1836.0	75	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 50% inferred 'rock flour'
1839.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within
1839.0	40	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour'
1839.0	50	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% fine grained, 20% medium grained, 5% coarse grained, 40% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, 5% sandstone aggregates, trace aggregates with oil staining, no hydrocarbon fluorescence
1842.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within

1842.0	25	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% fine grained, 20% medium grained, 5% coarse grained, 40% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace sandstone aggregates, trace aggregates with oil staining, no hydrocarbon fluorescence
1842.0	55	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour'
1845.0	20	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% fine grained, 20% medium grained, 5% coarse grained, 40% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace sandstone aggregates, trace aggregates with oil staining, no hydrocarbon fluorescence
1845.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within
1845.0	60	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour, trace fissile in part'
1848.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within

1848.0	35	SANDSTONE		SANDSTONE: transparent to translucent, light bluish grey aggregates & brownish grey in part, 100% siliciclastic sand, 10% fine grained, 20% medium grained, 5% coarse grained, 40% very coarse grained, 25% granular, 5% quartz grains with oil staining, very fine lower to fine lower, angular to subrounded, moderately sorted, subspherical, very well cemented, silica cement and trace pyrite cement, minor micro mica, minor black lithic fragments, trace nodular pyrite, trace sandstone aggregates contains well cemented pyrite cement, no hydrocarbon fluorescence
1848.0	45	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour, trace fissile in part'
1851.0	25	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%, 30% inferred 'rock flour, trace fissile in part'
1851.0	35	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within
1851.0	40	SANDSTONE		SANDSTONE: transparent to translucent quartz, light bluish grey, brownish grey aggregates, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 10% coarse grained, 40% very coarse grained, 10% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, poor visible porosity in aggregates, no hydrocarbon fluorescence
1854.0	20	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%

1854.0	30	SANDSTONE		SANDSTONE: transparent to translucent quartz, light bluish grey, brownish grey aggregates, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 10% coarse grained, 40% very coarse grained, 10% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, poor visible porosity in aggregates, 1% black coal, no hydrocarbon fluorescence
1854.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, sticky in parts, non to slightly calcareous, 5-20% silt, brownish grey claystone, hard in part, trace disseminated pyrite within, highly dispersive
1857.0	20	SILTSTONE	argillaceous	SILTSTONE: olive grey to brownish grey, olive black in part, firm to moderately hard, blocky to subfissile, 50% siliciclastic clay, 45% siliciclastic silt, 5% siliciclastic sand, becoming less arenaceous and more argillaceous, trace carbonaceous flecks, increasingly micaceous <10%
1857.0	30	SANDSTONE		SANDSTONE: transparent to translucent quartz, light bluish grey, brownish grey aggregates, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 10% coarse grained, 40% very coarse grained, 10% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, poor visible porosity in aggregates, trace coal, no hydrocarbon fluorescence
1857.0	50	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout

1860.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 10% coarse grained, 40% very coarse grained, 10% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, more dominantly angular to subangular very coarse quartz grains, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, poor visible porosity in aggregates, no hydrocarbon fluorescence
1860.0	30	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout
1860.0	50	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite
1863.0	15	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 10% coarse grained, 40% very coarse grained, 10% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, more dominantly angular to subangular very coarse quartz grains, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, common mica in fine grained aggregates, poor visible porosity in aggregates, no hydrocarbon fluorescence
1863.0	25	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout
1863.0	60	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare pyrite nodules

1866.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, more dominantly angular to subangular very coarse quartz grains, dominantly subrounded to rounded, subspherical, trace medium grey lithics, trace mica, trace nodular pyrite, trace coal, abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace light grey rockflour with clay texture, common mica in fine grained aggregates, trace aggregates, trace black inclusions (coal?) in quartz overgrowths, poor visible porosity in aggregates, no hydrocarbon fluorescence
1866.0	40	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 5% calcareous clay, 75% siliciclastic clay, 20% siliciclastic silt, 5-20% silt, minor black carboaceous specks throughout, slightly calcareous in part
1866.0	40	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare pyrite nodules
1869.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 30% medium grained, 10% coarse grained, 20% very coarse grained, 10% granular, angular to subrounded, moderately sorted, subspherical, 2% quartz cement, 5% pyrite cement, trace mica, trace lithic fragments, trace pyrite, dominantly occurs as light grey non calc rockflour with clay texture, no hydrocarbon fluorescence
1869.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite
1869.0	70	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout

1872.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, transparent to translucent quartz, very fine to granular, dominantly coarse to very coarse, moderately sorted, angular (broken?) to well rounded, dominantly subangular to rounded, subspherical, 1% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, minor pyrite, trace coal, nil visible aggregates, 10% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
1872.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite
1872.0	60	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout
1875.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout
1875.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite
1875.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, becoming more poorly sorted and dominantly subrounded, trace light brownish grey hard silica cemented aggregates with abundant clay/silt matrix, aggregates grade to sandy siltstone in part, 1% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, minor pyrite, trace coal, no hydrocarbon fluorescence
1878.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part

1878.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, trace black carbonaceous laminae, rare mica, rare disseminated pyrite
1878.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 10% coarse grained, 30% very coarse grained, 10% granular, trace fine friable weakly silica cemented aggregates with moderate porosity, loose grains are very fine granular, abundant very coarse to granular, common medium - possibly bimodal, 1% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, minor pyrite, trace coal, no hydrocarbon fluorescence
1881.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1881.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite
1881.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, trace reddish brown well rounded lithics, poorly sorted, trace fine to medium hard calcite cemented aggregates, 1% quartz cement, 1% pyrite cement, rare mica, trace lithic fragments, minor pyrite, trace coal, no hydrocarbon fluorescence
1884.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1884.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to moderately hard, blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, carbonaceous in part, minor disseminated pyrite, trace nodular pyrite, rare mica, rare black carbonaceous flecks

1884.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, subangular to rounded, poorly sorted, subspherical, 1% quartz cement, 1% pyrite cement, rare mica, rare lithic fragments, trace pyrite, trace coal, 20% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
1887.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1887.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm to moderately hard, blocky, rarely subfissile, 20% siliciclastic clay, 70% siliciclastic silt, 10% siliciclastic sand, non calcareous, argillaceous, carbonaceous in part, minor disseminated pyrite, trace nodular pyrite, rare mica, rare black carbonaceous flecks
1887.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 40% medium grained, 10% coarse grained, 20% very coarse grained, 10% granular, becoming finer grained, more dominantly fine to medium, moderately sorted, subangular to subrounded, subspherical, dominantly loose with rare silica and pyrite cemented fine to medium aggregates as above, rare mica, rare coal, 10% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
1890.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1890.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 40% medium grained, 10% coarse grained, 20% very coarse grained, 10% granular, becoming finer grained, more dominantly fine to medium, moderately sorted, subangular to subrounded, subspherical, dominantly loose with rare silica and pyrite cemented fine to medium aggregates as above, rare mica, rare coal, 10% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
1890.0	70	SILTSTONE		SILTSTONE: brownish grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 70% siliciclastic silt, non calcarous, highly argillaceous, minor dark brown to black carbonaceous flecks, rare mica, rare disseminated pyrite, grading to silty claystone

1893.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1893.0	20	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 40% medium grained, 10% coarse grained, 20% very coarse grained, 10% granular, becoming finer grained, more dominantly fine to medium, moderately sorted, subangular to subrounded, subspherical, dominantly loose with rare silica and pyrite cemented fine to medium aggregates as above, rare mica, rare coal, 10% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
1893.0	70	SILTSTONE		SILTSTONE: brownish grey, rarely olive black, soft to firm, subblocky to blocky, 30% siliciclastic clay, 70% siliciclastic silt, non calcarous, highly argillaceous, minor dark brown to black carbonaceous flecks, rare mica, rare disseminated pyrite, grading to silty claystone, (possibly cavings?)
1896.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, 80% siliciclastic clay, 20% siliciclastic silt, non calcareous, 5-20% silt, minor black carboaceous specks throughout, very silty in part
1896.0	30	SILTSTONE		SILTSTONE: brownish grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 70% siliciclastic silt, non calcarous, highly argillaceous, minor dark brown to black carbonaceous flecks, rare mica, rare disseminated pyrite, (possibly cavings?)
1896.0	60	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 10% very coarse, dominantly loose, rare friable to hard aggregates, transparent to translucent quartz, very fine to granular, dominantly fine to medium, subangular to rounded, moderately well sorted, subspherical, trace medium grey lithics, trace mica, trace pyrite, aggregates are dominantly weakly silica cemented, rarely hard and pyrite cemented, poor to fair porosity in aggregates, 40% rockflour as above, no hydrocarbon fluorescence
1899.0	20	SILTSTONE		SILTSTONE: brownish grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 70% siliciclastic silt, non calcarous, highly argillaceous, minor dark brown to black carbonaceous flecks, rare mica, rare disseminated pyrite

1899.0	30	CLAYSTONE		CLAYSTONE: light brownish grey to dominantly brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-20% silt, minor black carbonaceous flecks, trace carbonaceous laminae, rare mica, trace very fine sand in parts
1899.0	50	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 10% very coarse, dominantly loose, rare friable to hard aggregates, transparent to translucent quartz, very fine to granular, dominantly fine to medium, subangular to rounded, moderately well sorted, subspherical, trace medium grey lithics, trace mica, trace pyrite, aggregates are dominantly weakly silica cemented, rarely hard and pyrite cemented, poor to fair porosity in aggregates, 40% rockflour as above, no hydrocarbon fluorescence
1902.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to dominantly brownish grey, very soft to soft, amorphous to subblocky, 80% siliciclastic clay, 20% siliciclastic silt, dispersive, commonly sticky, non calcareous, 5-20% silt, minor black carbonaceous flecks, trace carbonaceous laminae, rare mica, trace very fine sand in parts
1902.0	10	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 10% very coarse, dominantly loose, rare friable to hard aggregates, transparent to translucent quartz, very fine to granular, dominantly fine to medium, subangular to rounded, moderately well sorted, subspherical, trace medium grey lithics, trace mica, trace pyrite, aggregates are dominantly weakly silica cemented, rarely hard and pyrite cemented, poor to fair porosity in aggregates, 40% rockflour as above, no hydrocarbon fluorescence
1902.0	85	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, firm, subblocky to blocky, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1905.0	100	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules

1908.0	100	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1911.0	100	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1914.0	100	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules, grading silty claystone in parts
1917.0	100	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1920.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1920.0	15	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to friable, 100% siliciclastic sand, 10% very fine grained, 50% fine grained, 40% medium grained, dominantly as rockflour as above, trace weakly silica cemented quartz aggregates: very fine to medium, dominantly fine, well sorted, subangular to subrounded, subspherical, trace mica, trace lithic fragments, trace pyrite, fair visible porosity, no hydrocarbon fluorescence
1920.0	85	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules

1923.0	10	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1923.0	30	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to friable, 100% siliciclastic sand, 10% very fine grained, 50% fine grained, 40% medium grained, subangular to rounded, moderately to well sorted, subspherical, 1% quartz cement, rare mica, rare lithic fragments, rare pyrite, dominantly as rockflour, trace weakly silica cemented quartz aggregates, sand inferred from gamma to be under-represented in sample, no hydrocarbon fluorescence
1923.0	60	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1926.0	10	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1926.0	30	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to firable, 100% siliciclastic sand, 10% very fine grained, 50% fine grained, 40% medium grained, subangular to rounded, moderately to well sorted, subspherical, 1% quartz cement, rare mica, rare lithic fragments, rare pyrite, dominantly as rockflour, trace weakly silica cemented quartz aggregates, sand inferred from gamma to be under-represented in sample, no hydrocarbon fluorescence
1926.0	60	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1929.0	20	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica

1929.0	40	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1929.0	40	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 5% very coarse grained, 5% granular, transparent to translucent, dominantly loose quartz, very fine to medium, dominantly fine to medium, trace very coarse to granular, moderately well sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, abundant pyrite, rare mica, trace well rounded lithics, abundant hard, pyrite cemented aggregates, rare friable silica cemented aggregates, sand inferred from gamma to be under-represented in sample, poor to fair visible porosity, no hydrocarbon fluorescence
1932.0	20	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1932.0	30	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1932.0	50	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 5% very coarse grained, 5% granular, transparent to translucent, dominantly loose quartz, very fine to medium, dominantly fine to medium, trace very coarse to granular, moderately well sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, abundant pyrite, rare mica, trace well rounded lithics, abundant hard, pyrite cemented aggregates, rare friable silica cemented aggregates, sand inferred from gamma to be under-represented in sample, poor to fair visible porosity, 10% as rockflour as above, no hydrocarbon fluorescence

1935.0	10	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1935.0	30	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules
1935.0	60	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 40% medium grained, 5% very coarse grained, 5% granular, transparent to translucent, dominantly loose quartz, very fine to medium, dominantly fine to medium, trace very coarse to granular, moderately well sorted, subangular to well rounded, dominantly subrounded to rounded, subspherical, abundant pyrite, rare mica, trace well rounded lithics, abundant hard, 20% pyrite cemented aggregates, rare friable silica cemented aggregates, sand inferred from gamma to be under-represented in sample, poor to fair visible porosity, no hydrocarbon fluorescence
1938.0	10	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, dispersive, sticky in parts, 5-10% silt, minor black carbonaceous flecks, rare mica
1938.0	40	SANDSTONE		SANDSTONE: transparent to translucent, light brownish grey in aggregates, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 30% medium grained, 20% coarse grained, trace very coarse grained, trace granular, dominantly loose quartz, very fine to very coarse, dominantly fine to medium, moderately sorted, subspherical, angular to rounded, dominantly subangular to subrounded, common pyrite, trace muscovite, abundant hard pyrite cemented aggregates, rare friable silica cemented aggregates, 10% light grey clay inferred rockflour, poor to fair porosity, no hydrocarbon fluorescence
1938.0	50	SILTSTONE		SILTSTONE: brownish grey to olive grey, rarely olive black, becoming more dominantly firm to moderately hard, blocky, subfissile in parts, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous fragments, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules

1941.0	10	SANDSTONE		SANDSTONE: transparent to translucent, light brownish grey in aggregates, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 30% medium grained, 20% coarse grained, trace very coarse grained, trace granular, dominantly loose quartz, very fine to very coarse, dominantly fine to medium, moderately sorted, subspherical, angular to rounded, dominantly subangular to subrounded, common pyrite, trace muscovite, abundant hard pyrite cemented aggregates, rare friable silica cemented aggregates, 10% light grey clay inferred rockflour, poor to fair porosity, no hydrocarbon fluorescence
1941.0	90	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
1944.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, light brownish grey in aggregates, 100% siliciclastic sand, 10% very fine grained, 40% fine grained, 30% medium grained, 20% coarse grained, trace very coarse grained, trace granular, dominantly loose quartz, very fine to very coarse, dominantly fine to medium, moderately sorted, subspherical, angular to rounded, dominantly subangular to subrounded, common pyrite, trace muscovite, abundant hard pyrite cemented aggregates, rare friable silica cemented aggregates, 10% light grey clay inferred rockflour, poor to fair porosity, no hydrocarbon fluorescence
1944.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1947.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1950.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone

1953.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1956.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1959.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1962.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1965.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace black coal, trace mica, trace to locally rare pyrite, grading silty claystone
1968.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, grading silty claystone, locally common disseminated pyrite, rare dispersed very fine sand in parts
1971.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, more dominantly soft to firm, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1974.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace black coal, trace mica, trace to locally rare pyrite, grading silty claystone

1977.0	100	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, trace black coal, trace mica, trace to locally rare pyrite, grading silty claystone
1980.0	20	SANDSTONE		SANDSTONE: transparent to translucent, light grey to light brownish grey in aggregates, 10% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, 10% very coarse grained, trace granular, dominantly loose quartz, rarely friable to hard aggregates, very fine to very coarse, dominantly fine to medium, moderately sorted, subspherical, angular to rounded, dominantly angular to subangular, minor pyrite, trace mica, trace friable silica and hard pyrite cemented aggregates, poor to fair porosity, trace oil staining, no hydrocarbon fluorescence
1980.0	30	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1980.0	50	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
1983.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, locally abundant pyrite nodules, grading silty claystone
1983.0	30	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

1983.0	50	SANDSTONE		SANDSTONE: transparent to translucent, light grey to light brownish grey in aggregates, 10% very fine grained, 30% fine grained, 30% medium grained, 20% coarse grained, 10% very coarse grained, trace granular, dominantly loose quartz, rarely friable to hard aggregates, very fine to very coarse, dominantly fine to medium, moderately sorted, subspherical, angular to rounded, dominantly angular to subangular, minor pyrite, trace mica, trace friable silica and hard pyrite cemented aggregates, trace coal, sand possibly under-represented, 5-10% good inferred visual porosity, very weak show, trace bright yellow green direct fluorescence, very slow streaming dull bluish white cut, thick dull yellowish white residue ring
1986.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, locally abundant pyrite nodules, grading silty claystone
1986.0	30	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica, possibly partially rockflour
1986.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light grey to light brownish grey in aggregates, 10% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 10% granular, dominantly loose, becoming more commonly coarse to granular, dominantly very coarse, angular to subangular, moderately sorted, subspherical, rarely friable to hard aggregates, trace friable silica and hard pyrite cemented aggregates, minor pyrite, trace mica, sand possibly under-represented, 5-10% good inferred visual porosity, no hydrocarbon fluorescence
1989.0	20	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica, possibly partially rockflour

1989.0	30	SANDSTONE		SANDSTONE: transparent to translucent, light grey to light brownish grey in aggregates, 10% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 10% granular, dominantly loose, becoming more commonly coarse to granular, dominantly very coarse, angular to subangular, moderately sorted, subspherical, rarely friable to hard aggregates, trace friable silica and hard pyrite cemented aggregates, minor pyrite, trace mica, trace shell fragments, 5-10% good inferred visual porosity, no hydrocarbon fluorescence
1989.0	50	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, locally abundant pyrite nodules, grading silty claystone
1992.0	10	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica, possibly partially rockflour
1992.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1992.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 10% granular, loose, transparent to translucent quartz, very fine to granular, dominantly very coarse, moderately sorted, subspherical, angular to rounded, dominantly angular to subangular, rare mica, rare pyrite, rare coal, trace shell fragments, trace hard pyrite cemented aggregates, poor visible porosity in aggregates, trace good inferred visible porosity, no hydrocarbon fluorescence
1995.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

1995.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty claystone
1995.0	85	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 20% medium grained, 10% coarse grained, 30% very coarse grained, 10% granular, loose, very fine to granular, dominantly very coarse, commonly fine to medium, possibly bimodal, poorly sorted, angular to rounded, dominantly angular to subangular, rare mica, rare pyrite, rare coal, trace shell fragments, trace hard pyrite cemented aggregates, poor visible porosity in aggregates, trace good inferred visual porosity, very weak show, trace dull to bright yellowish green direct fluorescence, slow diffuse to streaming pale bluish white diffuse cut, thin bright yellowish white residual ring
1998.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
1998.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty sandstone in parts
1998.0	85	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, loose to hard, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, becoming dominantly very coarse to granular, angular to subangular, moderately well sorted, subspherical, 2% pyrite cement, trace mica, trace coal, trace pyrite, trace skeletal fragments, 10% rockflour, nil visible aggregates, very weak show, trace dull to bright yellowish green direct fluorescence, slow diffuse to streaming pale bluish white diffuse cut, thin bright yellowish white residual ring
2001.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2001.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty sandstone in parts
2001.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, loose, very fine to granular, dominantly medium to very coarse, angular to rounded, dominantly subangular, poorly sorted, subspherical, 10% rockflour, trace pyrite cemented aggregates, trace mica, trace coal, trace pyrite, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2004.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2004.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty sandstone in parts
2004.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 20% medium grained, 20% coarse grained, 30% very coarse grained, 10% granular, loose, angular to subangular with visible quartz overgrowths, poorly sorted, subspherical, trace pyrite cemented aggregates, trace mica, trace black (coal?) inclusions, trace pyrite, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2007.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2007.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty sandstone in parts
2007.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 10% very fine grained, 10% fine grained, 30% medium grained, 30% coarse grained, 20% very coarse grained, trace granular, loose, transparent to translucent quartz, very fine lower to granular, dominantly medium to coarse, poorly sorted, subspherical, angular to rounded, dominantly angular to subangular with visible quartz overgrowths, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace well rounded medium grey lithics, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2010.0	5	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2010.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, grading silty sandstone in parts
2010.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 30% very coarse grained, 25% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace well rounded medium grey lithics, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2013.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2013.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2013.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace medium grey lithics, track black lithics, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2016.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2016.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2016.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace medium grey lithics, track black lithics, liquorice black green when crushed, possible horneblende, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2019.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2019.0	15	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2019.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace medium grey lithics, track black lithics, liquorice black green when crushed, possible horneblende, very weak show, trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring
2022.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2022.0	15	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2022.0	75	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace black coal, trace pyrite, rare lithics, no hydrocarbon fluorescence
2025.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2025.0	20	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2025.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace black coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence
2028.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2028.0	20	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2028.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% very fine grained, 10% fine grained, 10% medium grained, 20% coarse grained, 40% very coarse grained, 15% granular, loose, becoming more dominantly very coarse to granular, angular to rounded, dominantly angular to subangular as above, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence
2031.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace grading to dark brown to black shale in part, brittle, fissile
2031.0	35	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 15% very fine grained, 30% fine grained, 20% medium grained, 15% coarse grained, 15% very coarse grained, 5% granular, dominant loose sand fining to very fine coarse lower and minor very coarse to granular, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence

2031.0	50	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2034.0	10	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2034.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace grading to dark brown to black shale in part, brittle, fissile
2034.0	75	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 15% very fine grained, 20% fine grained, 10% medium grained, 15% coarse grained, 20% very coarse grained, 20% granular, dominant loose sand fining to very fine coarse lower and minor very coarse to granular, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence
2037.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2037.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace grading to dark brown to black shale in part, brittle, fissile
2037.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence

2040.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey, very soft to rarely soft, amorphous to subblocky, 90% siliciclastic clay, 10% siliciclastic silt, non calcareous, 5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2040.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2040.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence
2043.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2043.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2043.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, minor very coarse muscovite, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, no hydrocarbon fluorescence
2046.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2046.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2046.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, no hydrocarbon fluorescence
2049.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2049.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2049.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, very weak show, trace dull bright yellow direct fluorescence, very slow streaming dull bluish white cut, patchy dull bright yellowish white residual ring
2052.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2052.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace shale, dark grey in

				part
2052.0	75	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, very weak show, trace dull bright yellow direct fluorescence, very slow streaming dull bluish white cut, patchy dull bright yellowish white residual ring
2055.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica, trace shale, dark grey in part
2055.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace shale, dark grey in part
2055.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, no hydrocarbon fluorescence
2058.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2058.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2058.0	90	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, no hydrocarbon fluorescence
2061.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2061.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2061.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 5% fine grained, 10% medium grained, 15% coarse grained, 40% very coarse grained, 30% granular, loose sand coarsening from coarse upper to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, no hydrocarbon fluorescence
2064.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2064.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2064.0	95	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, distinctly 'bi-modal' sorting within loose sand, very fine upper to medium lower and very coarse lower to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, 5% quartz overgrowths with black lithic inclusions, no hydrocarbon fluorescence
2067.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2067.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace dark brown to black shale, brittle, fissile
2067.0	80	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, distinctly 'bi-modal' sorting within loose sand, very fine upper to medium lower and very coarse lower to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, 5% mica up to very coarse upper, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, trace quartz overgrowth with black lithic inclusions, no hydrocarbon fluorescence
2070.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2070.0	25	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, 5% dark brown to black shale, brittle, fissile

2070.0	70	SANDSTONE		SANDSTONE: transparent to translucent, brownish grey in part, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, distinctly 'bi-modal' sorting within loose sand, very fine upper to medium lower and very coarse lower to granular <4mm, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, increased mica < 5%, trace coal, trace pyrite, trace aggregates containing abundant pink to red lithics, trace quartz overgrowth with black lithic inclusions, trace black-dark green vitreous minerals with perfect cleavage possibly hornblende, no hydrocarbon fluorescence
2073.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2073.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, 5% dark brown to black shale, brittle, fissile
2073.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2076.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2076.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, 5% dark brown to black shale, brittle, fissile

2076.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2079.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2079.0	Trace	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2079.0	100	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 25% very fine grained, 25% fine grained, 25% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2082.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2082.0	Trace	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2082.0	100	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2085.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2085.0	Trace	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace black shale, brittle, fissile
2085.0	100	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2088.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2088.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2088.0	90	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2091.0	15	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2091.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2091.0	65	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, trace benthic foram, nil visible porosity, no hydrocarbon fluorescence
2094.0	25	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2094.0	25	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, trace fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2094.0	50	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, minor mica, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, trace benthic foram, nil visible porosity, no hydrocarbon fluorescence
2097.0	30	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2097.0	30	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, trace fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2097.0	40	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, trace bryozoans, nil visible porosity, no hydrocarbon fluorescence
2100.0	25	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, trace fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2100.0	35	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2100.0	40	SANDSTONE		SANDSTONE: transparent to translucent, light grey, light reddish pink in part sandstone aggregates, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, 5% inferred 'rock flour', nil visible porosity, no hydrocarbon fluorescence
2103.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, trace fissile in part, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2103.0	35	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2103.0	55	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, 15% inferred 'rock flour', nil visible porosity, no hydrocarbon fluorescence
2106.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, trace black shale, hard, brittle, fissile
2106.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2106.0	70	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, 10% inferred 'rock flour', very weak show, trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut, patchy dull bright yellowish white residual ring
2109.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite,trace black shale, hard, brittle, fissile, minor metamorphosed with friction burning at the bit
2109.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2109.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, trace skeletal fragments, bryozoans and benthic forams, trace loose black minerals (possible hornblende) up to coarse upper, trace light to medium green translucent quartz, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2112.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2112.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2112.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, increase mica up to very coarse lower, rare coal, trace pyrite, common pink, brown and black lithic fragments, non calcareous, nil visible porosity, very weak show, trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut, thin dull bright yellowish white residual ring
2112.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, locally abundant disseminated pyrite
2115.0	25	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2115.0	35	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% micaceous content, rare coal, trace pyrite, common pink, brown and black lithic fragments, 5% inferred 'rockflour', non calcareous, nil visible porosity, no hydrocarbon fluorescence
2115.0	40	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, 5% black shale
2118.0	25	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2118.0	25	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, 5% inferred 'rockflour', non calcareous, nil visible porosity, no hydrocarbon fluorescence
2118.0	50	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite, 15% siltstone, very hard, fissile, up to 7mm, 5% black shale
2121.0	15	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 5% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 25% granular, 5% sandstone aggregates, hard, very fine lower to medium lower, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, trace very weak show, trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut, thin dull bright yellowish white residual ring
2121.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2121.0	70	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2124.0	15	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 5% fine grained, 20% medium grained, 20% coarse grained, 35% very coarse grained, 20% granular, 5% sandstone aggregates, hard, dominant loose sand increasingly coarser up to 3 mm, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, trace very weak show, trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut, thin dull bright yellowish white residual ring
2124.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2124.0	70	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2127.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2127.0	25	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2127.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% sandstone aggregates, hard, sand character becoming 'bi-modal' as above, angular to subangular, subrounded in part, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, nil visible porosity, no hydrocarbon fluorescence
2130.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2130.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, granular <5mm, angular 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2130.0	75	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% sandstone aggregates, hard, granular <5mm, angular, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, nil visible porosity, no hydrocarbon fluorescence
2133.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2133.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2133.0	70	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% sandstone aggregates, hard, granular <5mm, angular, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, nil visible porosity, no hydrocarbon fluorescence
2136.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2136.0	20	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, abundant black carbonaceous flecks in part, trace mica, trace to locally rare pyrite

2136.0	80	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% sandstone aggregates, hard, granular <5mm, angular, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, nil visible porosity, no hydrocarbon fluorescence
2139.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2139.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2139.0	85	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% sandstone aggregates, well cemented, plately in part, angular, poorly sorted, subspherical, well cemented silica and pyrite cement, 5% mica very coarse upper to granular in part, rare coal, trace pyrite, common pink, brown and black lithic fragments, nil visible porosity, no hydrocarbon fluorescence
2142.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2142.0	15	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2142.0	85	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% inferred 'rockflour', trace reddish pink sandstone aggregate, hard, very fine lower to fine lower, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2145.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2145.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2145.0	90	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, trace reddish pink sandstone aggregate, hard, very fine lower to fine lower, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2148.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2148.0	10	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2148.0	90	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, trace reddish pink sandstone aggregate, hard, very fine lower to fine lower, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence

2151.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2151.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2151.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% inferred 'rockflour', trace reddish pink sandstone aggregate, hard, very fine lower to fine lower, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2154.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2154.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2154.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% inferred 'rockflour', trace reddish pink sandstone aggregate, hard, very fine lower to fine lower, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2157.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica

2157.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2157.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% inferred 'rockflour', trace dark grey and reddish pink granular quartz, hard, subangular to angular, subspherical, well cemented silica cement, common mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2160.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2160.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2160.0	95	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, 5% inferred 'rockflour', trace dark grey and reddish pink granular quartz, hard, subangular to angular, subspherical, well cemented silica cement, 15% mica up to very coarse upper, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2163.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2163.0	5	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2163.0	90	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, loose sand showing a 'bi-modal' grain size distribution as above, trace dark grey and reddish pink granular quartz, hard, subangular to angular, subspherical, well cemented silica cement, 15% mica up to very coarse upper, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2166.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2166.0	25	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite
2166.0	65	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, loose sand showing a 'bi-modal' grain size distribution as above, trace dark grey and reddish pink granular quartz, hard, subangular to angular, subspherical, well cemented silica cement, 10% mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2169.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2169.0	30	SILTSTONE		SILTSTONE: brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, predominantly subfissile <5mm, 30% siliciclastic clay, 70% siliciclastic silt, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, trace mica, trace to locally rare pyrite

2169.0	60	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, loose sand showing a 'bi-modal' grain size distribution as above, granular <3mm dark grey and reddish pink quartz, subangular, subspherical, well cemented silica cement, 10% mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2172.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2172.0	25	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2172.0	55	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 20% very fine grained, 20% fine grained, 5% medium grained, 10% coarse grained, 25% very coarse grained, 20% granular, loose sand showing a 'bi-modal' grain size distribution as above, granular <3mm dark grey and reddish pink quartz, subangular, subspherical, well cemented silica cement, 10% mica, rare coal, trace pyrite, trace lithic fragments, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2175.0	20	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2175.0	25	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2175.0	55	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, common mica, rare coal, trace pyrite, trace lithic fragments, no hydrocarbon fluorescence

2178.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2178.0	20	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2178.0	70	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, rare coal, trace pyrite, trace lithic fragments, 5% sandstone aggregates, trace with pyrite cement, 5% inferred 'rock flour', 20% loose mica < very coarse lower, no hydrocarbon fluorescence
2181.0	10	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2181.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2181.0	80	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, rare coal, trace pyrite, trace lithic fragments, 5% sandstone aggregates, trace with pyrite cement, 5% inferred 'rock flour', 20% loose mica < very coarse lower, no hydrocarbon fluorescence
2184.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2184.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous

2184.0	85	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, abundant mica, rare coal, trace pyrite, trace forams, trace reddish brown lithics, no hydrocarbon fluorescence
2187.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2187.0	20	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2187.0	75	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, abundant mica, rare coal, trace pyrite, trace lithic fragments, loose sand 'bi-modal', no hydrocarbon fluorescence
2190.0	5	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2190.0	20	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2190.0	75	SANDSTONE		SANDSTONE: transparent to translucent, light grey to reddish pink in part, 100% siliciclastic sand, 10% very fine grained, 20% fine grained, 40% very coarse grained, 30% granular, hard, loose sand aggs coarsening to dominant very coarse upper to granular <4mm, minor fine sand very fine upper to fine upper, angular to rounded, poorly to moderately sorted, subspherical, 1% pyrite cement, abundant mica, rare coal, trace pyrite, trace lithic fragments, loose sand 'bi-modal', no hydrocarbon fluorescence

2193.0	Trace	CLAYSTONE		CLAYSTONE: light brownish grey to medium grey, very soft to soft, amorphous to subblocky, homogenous, non-calcareous, 90% siliciclastic clay, 10% siliciclastic silt, minor black carbonaceous flecks, trace black carbonaceous laminae, trace mica
2193.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2193.0	90	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 40% very coarse grained, 30% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2196.0	10	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?
2196.0	20	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2196.0	70	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2198.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous

2198.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2198.0	80	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?
2199.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2199.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2199.0	80	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?
2200.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous

2200.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2200.0	80	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?
2202.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2202.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2202.0	80	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?, plus 20% loose, hard greenish black volcanics

2203.0	5	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 5% very fine grained, 15% fine grained, 10% medium grained, 10% coarse grained, 40% very coarse grained, 20% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2203.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2203.0	10	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?, plus 20% loose, hard greenish black volcanics
2203.0	75	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2204.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 50% very coarse grained, 30% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2204.0	10	SILTSTONE		SILTSTONE: brownish grey, commonly brownish black, moderately hard, subfissile to fissile, 30% siliciclastic clay, 70% siliciclastic silt, trace coal, trace mica, minor pyrite, trace metamorphosed at the bit, non calcareous
2204.0	10	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?, plus 20% loose, hard greenish black volcanics

2204.0	80	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, black streak on porcelain, inferred altered carbonaceous mudstone
2205.0	10	VOLCANICS		VOLCANICS: medium light grey, firm to moderately hard, blocky, homogeneous, splintery in parts, non calcareous, possibly welded tuff?, plus 20% loose, hard greenish black volcanics
2205.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2206.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 50% very coarse grained, 30% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2206.0	100	VOLCANICS		VOLCANICS: greyish black, olive black in parts, plus trace brownish grey to olive black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, inferred altered carbonaceous mudstone
2207.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% coarse grained, 50% very coarse grained, 40% granular, dominant transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, subspherical, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare mica, trace pyrite, nil visible aggregates, sample consists of 40% light grey non calcareous clay - inferred rockflour, no hydrocarbon fluorescence
2207.0	100	VOLCANICS		VOLCANICS: greyish black, olive black in parts, plus trace brownish grey to olive black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, inferred altered carbonaceous mudstone

2208.0	40	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, medium to granular, dominantly very coarse to granular, moderately to well sorted, subspherical, dominantly angular to subangular and broken, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, poor inferred porosity, no hydrocarbon fluorescence
2208.0	60	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2209.0	20	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, medium to granular, dominantly very coarse to granular, moderately to well sorted, subspherical, dominantly angular to subangular and broken, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, poor inferred porosity, no hydrocarbon fluorescence
2209.0	80	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2210.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, medium to granular, dominantly very coarse to granular, moderately to well sorted, subspherical, dominantly angular to subangular and broken, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, poor inferred porosity, no hydrocarbon fluorescence
2210.0	90	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, locally abundant disseminated pyrite, inferred a combination of dolerite and altered carbonaceous mudstone in part

2211.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, medium to granular, dominantly very coarse to granular, moderately to well sorted, subspherical, dominantly angular to subangular and broken, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, poor inferred porosity, no hydrocarbon fluorescence
2211.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, locally abundant disseminated pyrite, inferred a combination of dolerite and altered carbonaceous mudstone in part
2212.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, locally abundant disseminated pyrite, inferred a combination of dolerite and altered carbonaceous mudstone in part
2213.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, trace crystalline fragments
2214.0	10	SILTSTONE		SILTSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, argillaceous, slightly sandy in parts
2214.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale reddish brown, greenish black, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, medium to granular, dominantly very coarse to granular, moderately to well sorted, subspherical, dominantly angular to subangular and broken, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, poor inferred porosity, no hydrocarbon fluorescence
2214.0	80	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, trace crystalline fragments

2215.0	40	SILTSTONE		SILTSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, argillaceous, slightly sandy in parts
2215.0	60	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts and white to very light grey in parts, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2217.0	10	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, moderately hard to hard, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, subangular to subrounded in part, poorly to moderately sorted, subspherical, 5% quartz cement, 1% pyrite cement, rare mica, trace pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2217.0	30	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey in parts and white to very light grey in parts, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part
2217.0	60	SILTSTONE		SILTSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, argillaceous, slightly sandy in parts, trace pyrite,
2220.0	5	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale pink, light green, brownish yellow, moderately hard to hard, 100% siliciclastic sand, 10% medium grained, 20% coarse grained, 40% very coarse grained, 30% granular, loose quartz, medium upper to coarse upper, angular to rounded in part, poorly to moderately sorted, subspherical, 5% quartz cement, 1% pyrite cement, minor pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2220.0	45	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part

2220.0	50	SILTSTONE		SILTSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, argillaceous, slightly sandy in parts, trace pyrite
2223.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, pale pink, light green, brownish yellow, moderately hard to hard, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, subangular to subrounded in part, poorly to moderately sorted, subspherical, 5% quartz cement, 2% pyrite cement, trace pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2223.0	30	SILTSTONE		SILTSTONE: brownish grey to olive grey, soft to firm, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, slightly calcareous, argillaceous, slightly sandy in parts, trace pyrite, trace 'disc shaped' foraminifera in part
2223.0	70	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, slightly coarsening granular < 5 mm
2226.0	5	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, angular to rounded, poorly to moderately sorted, subspherical, 5% quartz cement, 2% pyrite cement, trace mica, minor pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2226.0	35	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, moderately hard, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, slightly to moderately calcareous in part, minor black lithics and carbonaceous streaks, trace pyrite, trace forams

2226.0	60	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, slightly coarsening granular < 5 mm
2229.0	5	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, moderately hard to hard, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, angular to rounded, moderately to well sorted, subspherical, 5% quartz cement, trace mica, rare lithic fragments, minor pyrite, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2229.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, moderately hard, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, slightly to moderately calcareous in part, minor black lithics and carbonaceous streaks, trace pyrite, trace forams
2229.0	75	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, slightly coarsening granular < 5 mm
2232.0	5	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, moderately hard to hard, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 20% very coarse grained, 60% granular, loose quartz, medium upper to coarse upper, angular to rounded, moderately to well sorted, subspherical, 5% quartz cement, 1% pyrite cement, trace mica, minor pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, fair to poor visible porosity, no hydrocarbon fluorescence
2232.0	20	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, trace pyrite, trace forams

2232.0	75	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, trace abundant disseminated pyrite in part, inferred a combination of dolerite and altered carbonaceous mudstone in part, dominantly fissile <5 mm
2235.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, subangular to subrounded in part, poorly to moderately sorted, subspherical, 5% quartz cement, 1% pyrite cement, trace pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, 5% inferred 'rock flour', fair to poor visible porosity, no hydrocarbon fluorescence
2235.0	10	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, trace pyrite, rare forams
2235.0	90	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, pyrite visibly cubic in habit within black, hard, fissile volcanics, single cubic pyrite < fine upper, inferred a combination of dolerite and altered carbonaceous mudstone in part
2238.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, trace light grey, dark grey, loose, 100% siliciclastic sand, 10% medium grained, 10% coarse grained, 30% very coarse grained, 50% granular, loose quartz, medium upper to coarse upper, subangular to subrounded in part, poorly to moderately sorted, subspherical, 5% quartz cement, 2% pyrite cement, minor pyrite, rare lithic fragments, trace sandstone aggregates, sucrosic sandstone aggregates, with very fine upper to fine upper, subangular grains within, non calcareous, trace loose benthic forams, fair to poor visible porosity, no hydrocarbon fluorescence
2238.0	5	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic sand, non to slightly calcareous, trace pyrite, rare forams

2238.0	95	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, pyrite visibly cubic in habit within black, hard, fissile volcanics, single cubic pyrite < fine upper, inferred a combination of dolerite and altered carbonaceous mudstone in part
2241.0	Trace	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non to slightly calcareous, trace pyrite, rare forams
2241.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, pyrite visibly cubic in habit within black, hard, fissile volcanics, single cubic pyrite < fine upper, inferred a combination of dolerite and altered carbonaceous mudstone in part
2244.0	Trace	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non to slightly calcareous, trace pyrite, rare forams
2244.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, brownish grey and white to very light grey; pale pink; light green, brownish yellow, moderately hard to hard, blocky, splintery, minor disseminated pyrite, trace nodular pyrite, commonly black streak on porcelain, inferred a combination of dolerite and altered carbonaceous mudstone in part, trace granular crystalline black with translucent to light grey laminations, angular
2247.0	Trace	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non to slightly calcareous, trace pyrite, rare forams
2247.0	Trace	SANDSTONE		SANDSTONE: translucent to transparent, moderately hard to hard, 100% siliciclastic sand, 20% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, loose quartz sand, very coarse lower to granular, subangular, sandstone aggregates, medium lower to coarse upper, poorly to moderately well sorted, subspherical, well cemented pyrite and silica cement, trace black lithics in part, non calcareous, nil visible porosity, no hydrocarbon fluorescence

2247.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, minor pyrite, minor locally abundant very fine upper phenocrysts
2250.0	Trace	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non to slightly calcareous, trace pyrite, rare forams
2250.0	Trace	SANDSTONE		SANDSTONE: translucent to transparent, moderately hard to hard, 100% siliciclastic sand, 20% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, loose quartz sand, very coarse lower to granular, subangular, sandstone aggregates, medium lower to coarse upper, poorly to moderately well sorted, subspherical, well cemented pyrite and silica cement, trace black lithics in part, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2250.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, minor pyrite, minor locally abundant very fine upper phenocrysts in part
2253.0	Trace	SILTSTONE		SILTSTONE: brownish grey to olive grey, pale yellowish brown, hard in part, trace, very fine lower black lithics, trace fine lower, angular quartz in part, subblocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non to slightly calcareous, trace pyrite, rare forams
2253.0	Trace	SANDSTONE		SANDSTONE: translucent to transparent, moderately hard to hard, 100% siliciclastic sand, 20% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, loose quartz sand, very coarse lower to granular, subangular, sandstone aggregates, medium lower to coarse upper, poorly to moderately well sorted, subspherical, well cemented pyrite and silica cement, trace black lithics in part, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2253.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, trace pyrite, minor locally abundant very fine upper phenocrysts in part
2256.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, rare forams, trace very fine upper black lithics

2256.0	Trace	SANDSTONE		SANDSTONE: translucent to transparent, moderately hard to hard, 100% siliciclastic sand, 20% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, loose quartz sand, very coarse lower to granular, subangular, sandstone aggregates, medium lower to coarse upper, poorly to moderately well sorted, subspherical, well cemented pyrite and silica cement, trace black lithics in part, non calcareous, nil visible porosity, no hydrocarbon fluorescence
2256.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, trace pyrite, trace calcite veins
2259.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, rare forams, trace very fine upper black lithics
2259.0	Trace	SANDSTONE		SANDSTONE: transparent to translucent, moderately hard to hard, 100% siliciclastic sand, 20% medium grained, 10% coarse grained, 20% very coarse grained, 50% granular, angular to subangular, poorly to moderately sorted, subspherical, rare lithic fragments, nil loose quartz, trace sandstone aggregate with pyrite cement, nil visible porosity, no hydrocarbon fluorescence
2259.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, trace pyrite, trace calcite veins
2262.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, rare forams, trace very fine upper black lithics
2262.0	100	VOLCANICS		VOLCANICS: dominant greyish black, olive black, greyish black, moderately hard to hard, blocky, splintery, trace pyrite, 5% recrystallised quartz, granular, angular
2265.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, trace very fine upper black lithics
2265.0	100	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, 5% milky white to translucent recrystallised quartz, increased granular <5mm, angular, trace disseminated pyrite
2268.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, trace very fine upper black lithics

2268.0	15	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2268.0	85	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, 10% abundant localised cubic and disseminated pyrite, trace calcite veins
2271.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, non calcareous, minor pyrite, trace very fine upper black lithics
2271.0	15	METAMORPHICS		METAMORPHICS: dominant milky white to translucent, trace reddish pink recrystallised quartz, increased granular <5mm, hard, amorphous, moderately sorted, angular, trace disseminated pyrite
2271.0	85	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, 10% abundant localised cubic and disseminated pyrite, trace calcite veins
2274.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2274.0	15	METAMORPHICS		METAMORPHICS: dominant milky white to translucent, recrystallised quartz, increased granular <5mm, hard, amorphous, moderately sorted, angular, trace disseminated pyrite
2274.0	85	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite, trace calcite vein
2277.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2277.0	15	METAMORPHICS		METAMORPHICS: milky white to translucent, hard, amorphous, moderately sorted, angular, rare pyrite, trace dark green hornblende?, very coarse lower
2277.0	85	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2280.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera

2280.0	20	METAMORPHICS		METAMORPHICS: milky white to translucent, hard, amorphous, moderately sorted, angular, rare pyrite, trace dark green hornblende?, very coarse lower
2280.0	80	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2282.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2282.0	40	METAMORPHICS		METAMORPHICS: milky white to translucent, hard, amorphous, moderately sorted, angular, rare pyrite, trace dark green hornblende?, very coarse lower
2282.0	60	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2283.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2283.0	30	METAMORPHICS		METAMORPHICS: milky white to translucent, hard, amorphous, moderately sorted, angular, rare pyrite, trace hard coarsely crystalline fragments, non calcareous, pyrite is the only visible accessory, trace white, highly calcareous rockflour
2283.0	70	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2285.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2285.0	40	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2285.0	60	METAMORPHICS		METAMORPHICS: milky white to translucent, hard, amorphous, moderately sorted, angular, trace pyrite, trace hard coarsely crystalline fragments, non calcareous, pyrite is the only visible accessory, trace white, highly calcareous rockflour
2286.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2286.0	30	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite

2286.0	70	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2289.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2289.0	30	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite
2289.0	70	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2292.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2292.0	15	VOLCANICS		VOLCANICS: greyish black, olive black, grey, moderately hard to hard, blocky, splintery, minor pyrite, trace quartz veining
2292.0	85	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2295.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2295.0	40	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2295.0	60	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone
2296.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2296.0	10	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite

2296.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone
2297.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2297.0	10	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2297.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone
2298.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2298.0	10	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2298.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone
2300.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2300.0	10	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2300.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, trace dolerite as above (possibly uphole contamination)
2301.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera

2301.0	10	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2301.0	90	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, trace foraminifera, minor biotite mica
2304.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2304.0	5	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2304.0	95	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, when dry sample has two distinct lithologies, brownish grey inferred as dolerite, greyish black, inferred as thermally altered claystone
2307.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2307.0	5	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2307.0	95	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, coarsely crystalline in parts
2310.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2310.0	5	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite

2310.0	95	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, when dry sample has two distinct lithologies, brownish grey inferred as volcanics, greyish black, inferred as thermally altered claystone (ie. shale)
2313.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2313.0	Trace	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2313.0	100	VOLCANICS		VOLCANICS: greyish black, moderately hard to hard, blocky, splintery in parts, non calcareous, trace to abundant disseminated pyrite, trace quartz veining, inferred dominantly thermally altered claystone, when dry sample has two distinct lithologies, brownish grey inferred as volcanics, greyish black, inferred as thermally altered claystone (ie. shale)
2316.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2316.0	Trace	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite
2316.0	100	VOLCANICS		VOLCANICS: 100% metamorphosed claystone????, greyish black to olive black, moderately hard to hard, blocky, splintery in part, non calcareous, trace to abundant disseminated pyrite, trace cubic pyrite, trace nodular pyrite, locally abundant biotite, trace quartz veining
2317.0	Trace	SILTSTONE		SILTSTONE: brownish grey, soft, fissile, subblocky to blocky, 30% siliciclastic clay, 60% siliciclastic silt, 10% siliciclastic very fine to fine grained subangular sand, slightly to moderately calcareous, minor pyrite, argillaceous in part, trace benthic foraminifera
2317.0	Trace	METAMORPHICS		METAMORPHICS: milky white to translucent recrystallised quartz, quartz transparent in part, increased granular <5mm, hard, amorphous, angular, moderately sorted, trace disseminated pyrite

2317.0	100	VOLCANICS		VOLCANICS: 100% metamorphosed claystone????, greyish black to olive black, moderately hard to hard, blocky, splintery in part, non calcareous, trace to abundant disseminated pyrite, trace cubic pyrite, trace nodular pyrite, locally abundant biotite, trace quartz veining. TD.

APPENDIX 2: MUDLOGGERS REPORT

Silvereye - 1

FINAL WELL REPORT

Prepared by

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John Oxley Centre
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Revision	Date	Issued by	Approved by	Remarks
1	December 2010	Geoservices Unit 174	Operations Assistant	

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1.0 WELL DATA SUMMARY

Operator:	Origin Energy Resources Ltd
Well name:	Silvereye-1
Basin:	Bass
Permit:	T/44P
Surface location:	Latitude: 39° 54' 19.8250" S Longitude: 145° 03' 32.6409" E 5.40m @ 62.75°T (61.51°G) from intended location
Total Depth:	2317.0mMDRT 2272.04mTVDRT
Rotary Table Elevation.:	26 m above LAT
Sea-water depth:	53.9 m below LAT
Rig Arrived:	1030 hr 26th November, 2010
Spud Well:	0000 hr 3rd December, 2010
Bit Reached TD:	1000 hr 16th December, 2010
Well Status:	Plugged and abandoned
Rig name:	Kan Tan IV (semi-sub)
Drilling Contractor:	Maersk

Drilling Phases

Diameter (inch)	From (m)	To (m)	Mud Type
914mm (36")	80.0	141.0	Seawater / Bentonite sweeps
445mm (17½")	141.0	1112.0	Seawater / Bentonite sweeps
311mm (12¼")	1112.0	2317.0	KCl / PHPA

Cased Hole

Casing Diameter (inch)	Casing Type	Shoe Depth (m)
762mm (30")	Conductor	137.4 mMDRT
340mm (13⅜")	Surface	1102.8 mMDRT

2.0 GENERAL INFORMATION

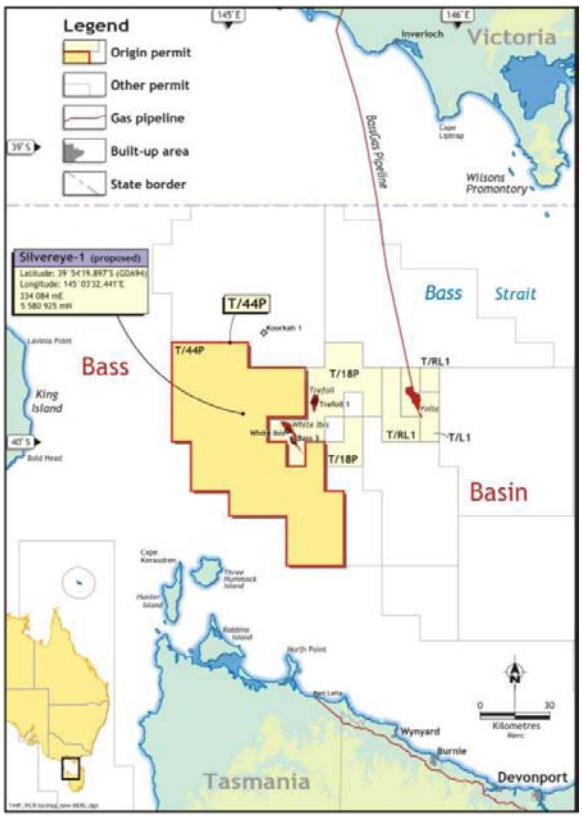
The Silvereye-1 exploration well is located in permit area T/44P in the Bass Basin.

The well will remain vertical until approximately 1000.0 mMDRT, where inclination will be increased to +/- 16° in order to intersect the primary targets.

Silvereye-1 was spudded on 3rd December 2010, and reached a total depth of 2317.0 mMDRT (2272.04 mTVDRT) on 16th December 2010.

No significant gas or fluorescence was observed while drilling this well.

There were no overpressure zones observed during the drilling of this well.



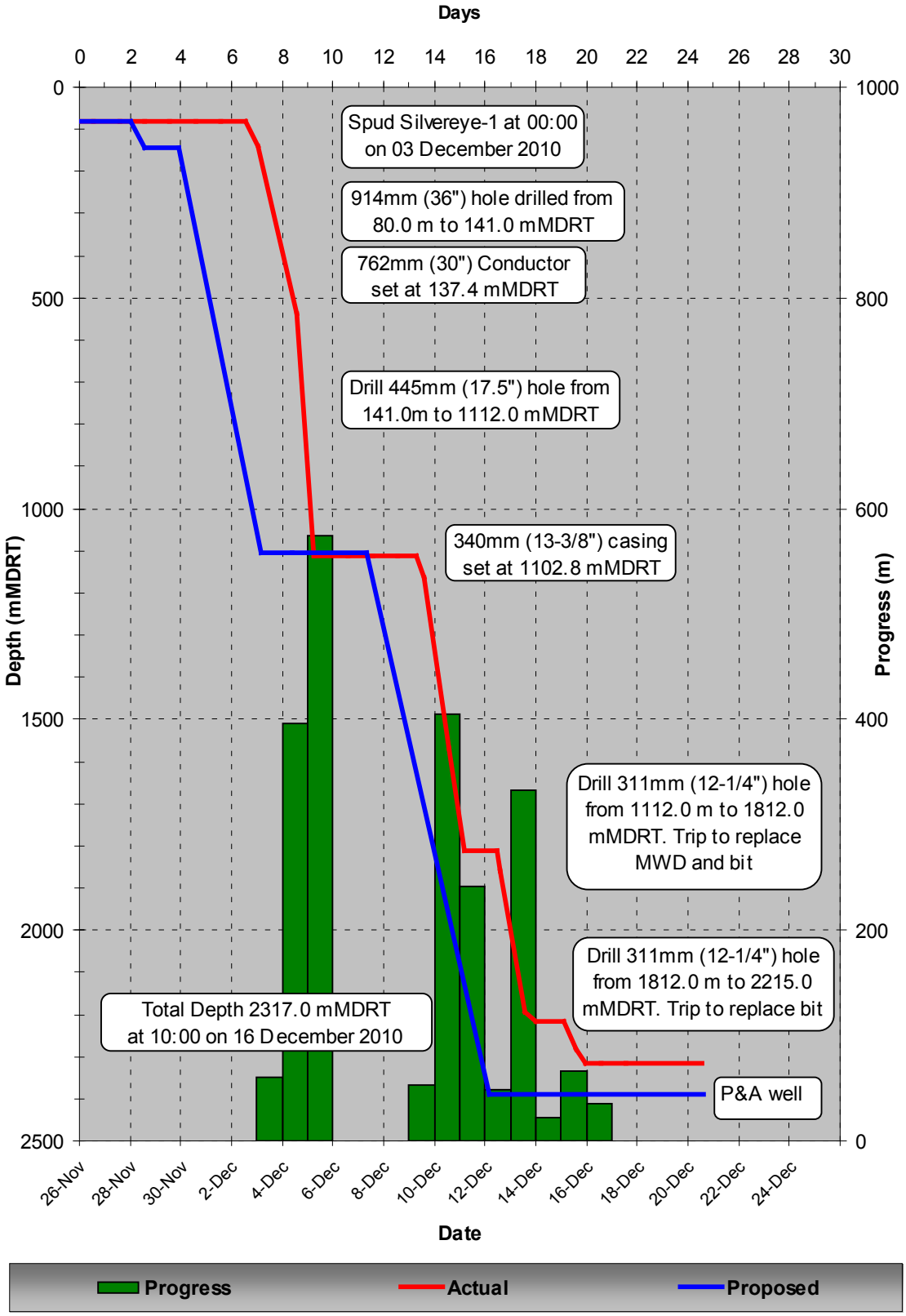
2.1 Geoservices Personnel

ALS Engineers:	Nick Abolins Gareth Munro
Mudloggers:	Kirupan Velauthapillai Adam Sullivan
Sample Catchers:	Sean Kettle Jordan Horsell

2.2 Contractor Information

Drilling:	Maersk Drilling Property
Rig name:	Kan Tan 4
Rig type:	Semi-submersible
Mud logging:	Geoservices Australasia
Mud engineering:	Baroid
MWD:	Halliburton-Sperry Sun
Wireline logging:	Schlumberger Wireline
Cementing:	Halliburton Cementing
Well head completion:	Dril-Quip
ROV:	Fugro
Casing:	Premium Casing Services
Helicopters:	Bristow

2.3 Days vs. Depth Progress Chart



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2.4 Sample Collection Summary

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Unwashed	1	500 grams	5 metres 3 metres	1112 1530	1530 2317
Washed and Dried	3	100 grams	5 metres 3 metres	1112 1530	1530 2317
Samplex Trays	2	-	5 metres 3 metres	1112 1530	1530 2317
ISOTUBES	1	-	100 meters 50 metres 15 metres Gas peaks	1112 1530 1955 none	1530 1955 2317 None
ISOJARS	1	-	Gas peaks only	none	none
Mud Samples	1	1L	-	1112 1515 2000 2317	- - -

Cuttings and Sample Distribution

Company	Washed	Unwashed	Samplex Trays	Isotubes	Isojars	Mud
Origin Energy	X	X	X	X	X	X
Mineral Resources Tasmania	X	-	-	-	-	-
Geoscience Australia	X	-	-	-	-	-

3.0 GEOLOGICAL INFORMATION

3.1 Lithological Summary

All returns to the seabed prior to 1112.0 mMDRT.

INTERVAL: 1112 - 1270 m MDRT (1111.9 to 1267.9 m TVDRT)
ROP (Range): 2.5 – 182 m/h
Av. ROP: 52 m/h

Calcareous Claystone: very light grey to light grey, medium light grey, medium dark grey, light brownish grey to brownish grey, olive grey, very soft to soft, firm, amorphous to sub-blocky, blocky, moderately calcareous to very calcareous, nodular pyrite, disseminated pyrite, shell fragments, foraminifera, quartz grains, glauconite grains, sand grains, siderite.

Siltstone: medium grey to medium light grey, medium dark grey, light brownish grey to brownish grey, firm to moderately hard, sub-blocky to blocky, subfissile, glauconite grains, micro-micaceous, nodular pyrite, quartz grains, sand grains.

INTERVAL: 1270 - 1527 m MDRT (1267.9 to -1515.1 m TVDRT)
ROP (Range): 13 – 122 m/h
Av. ROP: 58 m/h

Claystone: light grey to medium light grey, olive grey, grayish brown, pale yellowish brown to yellowish brown, dark grey, greenish grey, dispersive, very soft to soft, firm to moderately hard, amorphous to sub-blocky, subfissile, sticky, very slightly calcareous, dark brown lithics, glauconite grains, quartz grains, disseminated pyrite.

Sandstone: translucent to transparent, pale brown to dark yellowish brown, friable to moderately hard aggregates, very fine to fine loose grains, moderately well sorted, sub-angular to sub-rounded, common calcareous cement, no shows.

INTERVAL: 1527 - 1570 m MDRT (1515.1 to 1556.4 m TVDRT)
ROP (Range): 20 – 95 m/h
Av. ROP: 49 m/h

Sandstone: translucent to transparent, light brownish grey in aggregates, predominantly loose, medium to coarse grains, very coarse grains, sub-angular to sub rounded, elongated, well sorted, trace siliceous cement, clay matrix, fair inferred porosity, no shows.

Siltstone: light brownish grey to brownish grey, dark grey, firm to moderately hard, blocky to sub-blocky, non calcareous, slightly argillaceous.

INTERVAL: 1570 – 1760 m MDRT (1556.4 to 1738.8 m TVDRT)
ROP (Range): 15 – 98 m/h
Av. ROP: 47 m/h

Claystone: brownish grey, light olive grey to olive grey, pale yellowish brown to dark yellowish brown, soft to firm, sticky, amorphous to sub-blocky, micro-micaceous, calcite fragments, quartz grains, glauconite grains, carbonaceous, dark brown lithics.

Siltstone: light brownish grey to brownish grey, dark grey to olive grey, medium dark

grey, slightly argillaceous, firm, moderately hard to hard, sub-blocky to blocky, subfissile, quartz grains, micromicaceous.

Sandstone: transparent to translucent, opaque, milky white, pale yellowish grey, loose, medium grains, coarse to very coarse grains, well sorted, sub-rounded to rounded, sub-angular, hard pyrite cemented aggregates, nodular pyrite, fair inferred porosity, no shows.

Coal: black, dull to bright, firm to moderately hard, blocky, splintery, brittle.

INTERVAL: 1760 – 1980 m MDRT (1738.8 to 1950.1 m TVDRT)
ROP (Range): 8 – 98 m/h
Av. ROP: 32 m/h

Siltstone: light brownish grey to brownish grey, olive grey, medium light grey to medium grey, dark yellowish grey, greyish brown, dark grey, olive black, argillaceous grading to silty claystone, black carbonaceous specks, mica flakes, micromicaeous, very fine sand grains, disseminated pyrite, nodular pyrite, quartz grains.

Claystone: pale yellowish grey to light grey, light brownish grey, brownish grey, olive grey, silty, very soft to soft, amorphous, disseminated pyrite, micromicaceous, carbonaceous.

Sandstone: transparent to translucent, opaque, off white, pale yellowish grey, very fine to very coarse loose grains, very fine to medium grained aggregates, granular, poor to moderately sorted, angular to sub-angular, subrounded, well rounded, siliceous cement, pyritic cement, clay cement, nodular pyrite, coal, calcite grains, no shows.

INTERVAL: 1980 – 2190 m MDRT (1950.1 to 2151.9 m TVDRT)
ROP (Range): 5 – 73 m/h
Av. ROP: 25 m/h

Sandstone: translucent to transparent, opaque, milky white, reddish pink, light grey to very light grey, white, moderately hard to hard pyritic cemented aggregates, very fine to granular loose grains, poorly to moderately sorted, well sorted, angular to rounded, sub-spherical, sub-elongated, nodular pyrite, micromicaceous, glauconite grains, coal, disseminated pyrite, poor to fair inferred porosity, weak shows.

Siltstone: medium light grey to medium dark grey, dark grey, medium grey, bluish grey, moderately hard to hard, firm, friable, sub-fissile to sub-blocky, blocky, flaky, brown lithics, carbonaceous, micromicaceous, mica flakes, disseminated pyrite, glauconite grains.

Claystone: light brownish grey to light brown, silty grading to silty claystone, very soft to soft, amorphous to sub-blocky.

INTERVAL: 2190 – 2230 m MDRT (2151.9 to 2190.1 m TVDRT)
ROP (Range): 1 – 20 m/h
Av. ROP: 6 m/h

Altered Volcanics/ Degraded Metamorphics (Thermally altered Claystone): grey black, brownish grey to olive black, trace white to very light grey, medium light grey, firm, moderately hard to very hard in part, blocky to subblocky, minor

disseminated pyrite, trace nodular pyrite, splintery in part, non calcareous. (Quartzite): dominantly milky white to transparent, trace reddish pink, recrystallised quartz grains, angular, trace disseminated pyrite.

Sandstone: loose, transparent to translucent, medium grained, dominantly very coarse grained, moderately sorted, angular to round, dominantly angular to subangular & fractured quartz overgrowths, trace biotite, trace pyrite, trace light grey lithics, dark grey lithics, pale reddish brown lithics, greenish black lithics, poor inferred porosity, no show.

INTERVAL: 2230 – 2317 m MDRT (2190.1 to 2272.04 m TVDRT)
ROP (Range): 2 – 20 m/h
Av. ROP: 7 m/h

Altered Volcanics/ Degraded Metamorphics (Thermally altered Claystone): dominantly grey black, moderately hard to hard, blocky, splintery in part, non calcareous, trace to abundant disseminated pyrite, trace cubic pyrite, trace quartz veins. (Quartzite): dominantly milky white to transparent, trace reddish pink, recrystallised quartz, granular, angular, trace disseminated pyrite.

Fluorescence

1980.0 mMDRT to 1983.0 mMDRT
Trace bright yellowish green direct fluorescence, very slow streaming dull bluish white cut fluorescence, thick dull yellowish white ring residue.

1992.0 mMDRT to 2001.0 mMDRT
Trace dull to bright yellowish green direct fluorescence, slow diffuse to streaming pale bluish white cut fluorescence, thin bright yellowish white ring residue.

2001.0 mMDRT to 2017.0 mMDRT
Trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut fluorescence, nil to thin dull yellowish white ring residue.

2049.0 mMDRT to 2052.0 mMDRT
Trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut fluorescence, nil to thin dull yellowish white ring residue.

2106.0 mMDRT to 2109.0 mMDRT
Trace dull to bright yellowish green direct fluorescence, very slow streaming pale bluish white cut fluorescence, patchy dull to bright yellowish white ring residue.

2112.0 mMDRT to 2115.0 mMDRT
Trace dull to bright yellowish green direct fluorescence, slow streaming pale bluish white cut fluorescence, pale yellowish blue ring residue.

3.2 Gas Ratio Interpretation

Gas composition and total gas in mud at the shaker header box were measured using the Geoservices Reserval™. This utilises a GZG degasser to extract gas from mud. The GFF coupled with a GZ11degasser is used as an auxiliary gas detection system. Both use the FID technique of measuring ions released when hydrocarbons are burnt in a pure hydrogen flame. Independent sensors in the unit also measure H_2S and CO_2.

The composition of the gas in mud from the formation is significant in determining the geochemical origin, and value of a show. There are several methods that can be used to determine whether the hydrocarbon gas in mud comes from a potential gas or oil zone. Amongst these methods are the Triangle Diagram (also known as the gas composition diagram), Pixler Diagram (also known as the gas ratios method), and the gas Wetness/Balance/Character plots.

3.3 Explanation of Gas Composition Diagrams

The Triangle or Gas Composition Diagram is used to graphically represent the hydrocarbon distribution in the gas and to determine whether it corresponds to a gas or oil reservoir. The triangular diagram is obtained by tracing lines on three scales at 120° to each other, corresponding respectively to the ratios of ethane, propane and normal butane to the total gas. The scales are arranged in such a way that if the apex of the triangle is upward, the diagram represents the analysis of gas from a gas zone, while if the apex points downwards, the diagram represents the analysis of gas from an oil zone. A large triangle diagram represents dry gas or low GOR oil, while small triangles represent wet gases or high GOR oils. The centre of the triangle should fall inside the area delineated by the dotted line, which encircles compositions that are regarded as 'normal'. If the triangle area is outside this area the gas indicates that the reservoir is not exploitable and that the heavier hydrocarbon composition is 'abnormal' i.e. hydrocarbons that are chemically altered or gases with special compositions which are not associated with oil.

The Gas Ratio Analysis Diagram is a plot of the ratio of C1 to the other gas elements. The magnitude of the methane to ethane ratio determines if the reservoir contains gas or oil or if it is non-productive. The following conclusions are possible:

Ratio C1/C2:	< 2	non-productive zone
	2 – 15	oil present
	15 – 65	gas present
	> 65	non-productive zone

The slope of the line of the ratio plot of C1/C2, C1/C3, C1/C4 and C1/C5 indicates whether the reservoir will produce hydrocarbons or hydrocarbons and water. Positive line slopes indicate production; negative line slopes indicate water-bearing formations. When using the Gas Ratio Diagram, the following points should be borne in mind:

1. Productive dry gas zones may show only C1, but abnormally high shows of C1 are usually indicative of saltwater zones.
2. If the ratio C1/C2 is low in the oil section and the ratio C1/C4 is high in the gas section, the zone is probably non-productive.

3. If any ratio (C1/C5 except in an oil based mud) is lower than the preceding ratio then the zone is probably non-productive.
4. The ratios may not be definitive for zones of low permeability.
5. Steep gas ratio plots may be indicative of tight zones.

3.4 Explanation of Wetness/Balance/Character Curves

Another method for evaluating gas zones plots against depth three ratios: hydrocarbon Wetness (W_h), hydrocarbon Balance (B_h) and hydrocarbon Character (C_h), where:

$$W_h = \frac{(C2 + C3 + C4 + C5)}{(C1+C2+C3+C4+C5)} \times 100\ (\%)$$

$$B_h = \frac{(C1 + C2)}{(C3 + C4 + C5)}$$

$$C_h = \frac{(C4 + C5)}{C3}$$

Wetness (W_h) is the primary zone indicator and provides a measure of the relative proportion of heavier gases in the overall gas show as follows:

$W_h < 0.5$	Light non-associated gas with low productivity potential or only geo-pressured methane.
$0.5 < W_h < 17.5$	Potentially productive gas with gas density increasing with W_h.
$17.5 < W_h < 40.0$	Potentially productive oil with gravity decreasing as W_h increases.
$W_h > 40.0$	Heavy or residual oil with low productivity potential.

As reservoir hydrocarbons become denser in the transition from gas to oil, Balance (B_h) and Wetness (W_h) values move closer together and eventually intersect. The zone guidelines for B_h combine with those for W_h to improve reliability of show evaluation as follows:

$W_h < 0.5$ And $B_h > 100$	Very light, dry gas that is almost certainly non-productive.
$0.5 < W_h < 17.5$ and $W_h < B_h < 100$	Productive gas with gas increasing in wetness and density as the two curves converge.
$0.5 < W_h < 17.5$ And $B_h < W_h$	Productive gas condensate or a high gravity gas/oil ratio.
$17.5 < W_h < 40$ and $B_h < W_h$	Productive oil with oil gravity decreasing – density increasing as the curves diverge.
$17.5 < W_h < 40$ And $B_h > W_h$	Non-productive residual oil.

Character (C_h) values serve to resolve ambiguities between oil or gas indications by defining the following:

$0.5 < W_h < 17.5$ And $B_h < W_h$ and $C_h < 0.5$	Productive wet gas or condensate.
$0.5 < W_h < 17.5$ And $B_h < W_h$ and $C_h > 0.5$	Productive high gravity and/or high GOR oil.

It is important to note that in the conclusion to each of the interpretive tools, the terms 'productive' and 'non-productive' are used in a geochemical sense. Ultimate production from a zone is dependent upon reservoir thickness and extent, as well as other physical and economic factors that are not taken into account when analysing gas compositions. The methods discussed here are intended to assist the interpretive skills of the geologist or log analyst.

3.5 Gas Composition Discussion

Gas monitoring during Silvereye-1 commenced from 1112.0 mMDRT. Both the Reserval™ and GFF™ systems were in use simultaneously. This discussion refers to the Reserval data only.

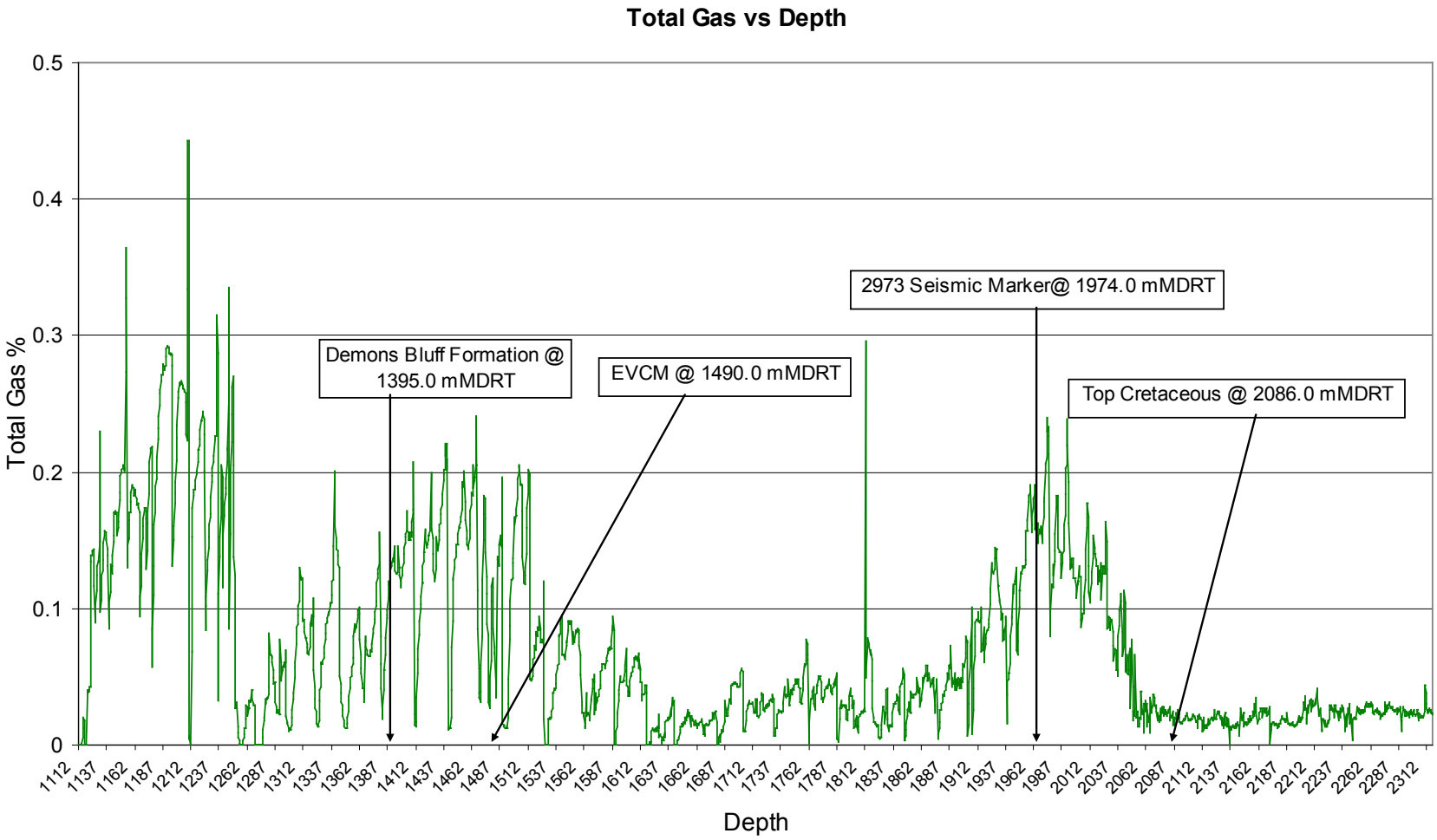
Gas levels remained low throughout the well, with the highest gas (0.4431%) recorded at 1209.5 mMDRT.

Low gas levels, such as those recorded during Silvereye-1 do not give reliable results when analysed using the Wetness/Balance/Character method, and therefore, no interpretation or conclusions can be made.

A plot of total gas versus depth follows.

3.6 Gas Peaks

There was no significant gas peaks recorded while drilling Silvereye-1



Revision	Date	Issued by	Approved by	Remarks
1	December 2010	Geoservices Unit 174	Operations Assistant	1

4.0 PRESSURE ANALYSIS

4.1 Pressure Summary

Formation pressures were monitored throughout this well by recording a range of indicators. These indicators vary from direct observations of background gas and cuttings to drilling characteristics such as torque and tight hole, as well as quantitative methods such as the D 'exponent. This is a normalized rate of penetration that takes into account mud weight, bit wear and hydraulics. It can only be reliably used in shales and clean claystones; and as an indicator in siltstones, silty shales and calcareous claystones. A normal trend line is established through normally pressured shale points, representing a normal compaction trend, and any leftward deviation of subsequent shale points from this trend, representing relative under-compaction, indicates overpressure (plotted relative to depth) or increased porosity due to changes in the lithology.

Formation pressure evaluation using D'exponent was done using the Eaton method. The Eaton method states the relationship between the formation pressure and the Dcs/Dcn ratio depending on changes in the overburden gradient.

$P = S – (S-Pn) * (Dcs/Dcn)^{1.2}$

Where: P : formation pressure gradient
S : overburden gradient
Pn: normal pressure gradient
Dcs: observed d'exponent
Dcn: normalised d'exponent

D'exponent coefficients used for this well

Poisson : a = 0.26600 b = -2.66700
source : Santa Barbara (Soft)

Overburden : a = 0.01304 b = -0.17314 c = 1.43350
source : Santa Barbara (Soft)

311mm (12 ¼") Drilling Phase

This section was drilled with 2 PDC bits, and 1 Tungsten Carbide Insert bit. Lithology consisted of Sandstones, Claystone, Siltstone, metamorphosed volcanics and metamorphosed siltstones. A Formation Integrity Test was conducted with 10.0 ppg mud at 1102. 8 m MDRT (1102.0 m TVDRT). It was conducted to a pressure of 1120psi, yielding an equivalent mud weight of 15.95 ppg.

Dexponent: No shallow gas or overpressure zones expected or observed

Temperature: No abnormal temperature zones were observed, however, regular additions to the Active mud system may mask any formation related variations.

Cavings: No overpressure related cavings were observed

Gas: Maximum gas for this section was 0.4431%, recorded at 1209.5 mMDRT. Average gas values were between 0 and 0.0713%

5.0 DRILLING INFORMATION

5.1 Bit Record

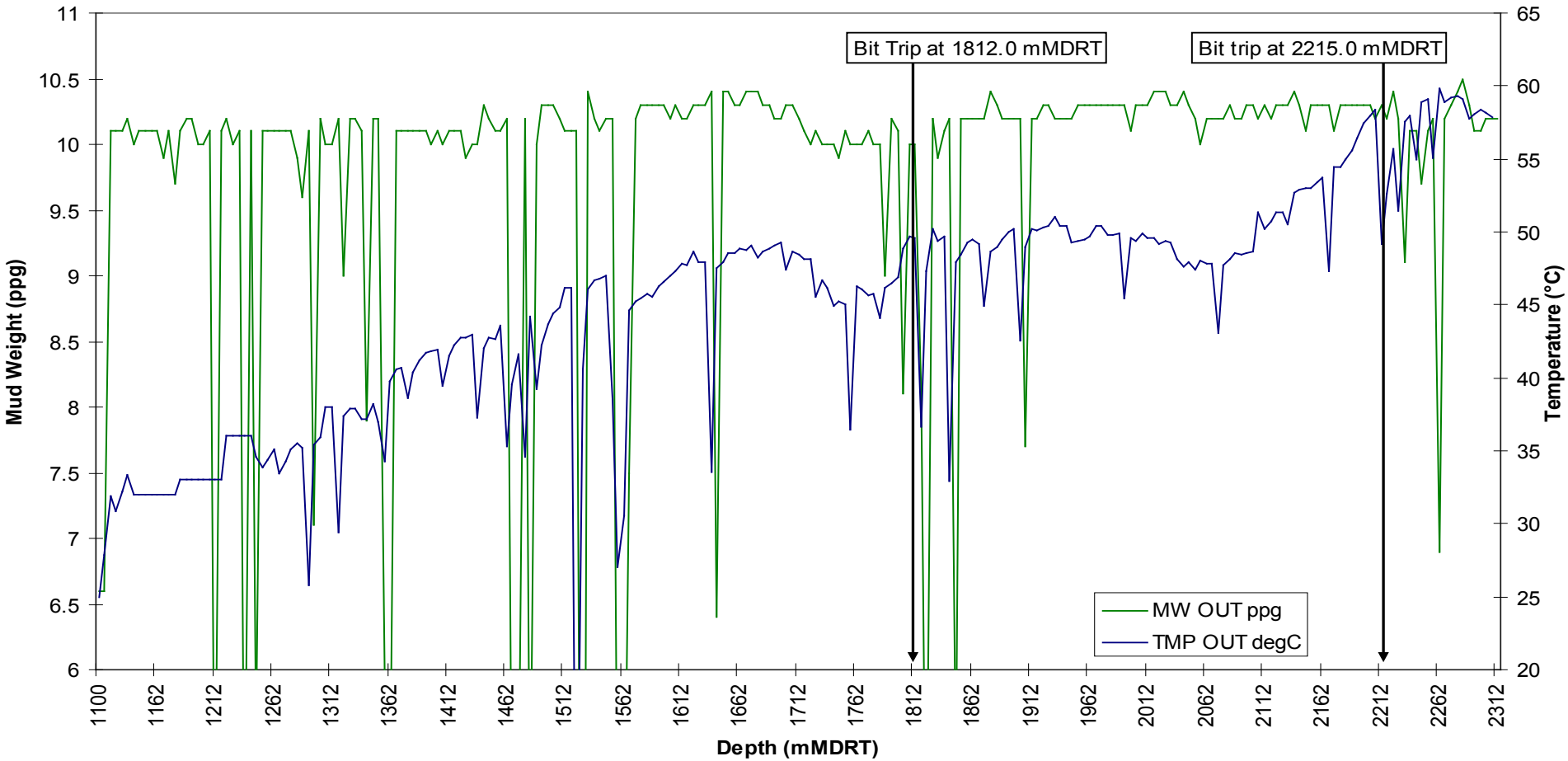
Bit	Size (")	Type	Jets	In (m)	Out (m)	Hours	Condition
1	26 / 36	Smith XR-VCPS	1 x 16 1 x 18 1 x 24	80.0	141.0	2.5	0-0-NO-A-0-I-NO-TD
2	17½	Smith XR-VEJ3PS	3 x 16 3 x 12	141.0	1112.0	13.5	1-1-NO-A-0-I-NO-TD
3	12 ¼	Security FXG65	6 x 16	1112.0	1812.0	15.7	5-4-A-CT-X-I-BT-DTF
4	12 ¼	Security FMF3753Z	7 x 15	1812.0	2215.0	26.7	2-8-RO-T-X-I-CT-PR
5	12 ¼	Smith GFS10BODVC	1x18 3x20	2215.0	2317	18.2	2-5-WT-G-F-I-CT-TD

5.2 Mud Record

The 914mm (36") section (80.0 – 141.0 mMDRT), and the 445mm (17½") section were drilled with seawater and bentonite sweeps. All returns were to the seabed.

The 311mm (12¼") section was drilled with KCl/PHPA mud from 1112.0 to 2317.0 mMDRT with mud weight 10 - 10.1 ppg. A mud weight and temperature versus depth plot follows.

Mud weight and Temperature vs Depth



Revision	Date	Issued by	Approved by	Remarks
1	December 2010	Geoservices Unit 174	Operations Assistant	1

5.3 Drilling Phase Summary

5.4 *914* mm *(36")* Hole Section

Date	: 3rd December 2010
Measured depth	: 80.0 – 141.0 mMDRT
Vertical depth	: 80.0 – 141.0 mTVDRT
Number of bits used	: 1
Mud type	: Seawater with bentonite sweeps

Silvereye-1 was spudded at 00:00hrs, on the 3rd of December, 2010, with a 26" Smith XR-VCPS bit, in conjunction with a 36" hole opener. The seabed was tagged at 80.0 mMDRT, and drilling continued to 130.0 mMDRT, where the string became stuck while breaking out 2 joints of cross threaded drill pipe. Full circulation was established and maintained, but no vertical string movement, or rotation was possible. The pipe was worked free after 2.5 hours. The string was then back-reamed to 80.0 mMDRT in order to inspect the bit and hole opener via ROV. The topdrive was also examined for damage. The string was then run back in, where drilling continued from 130.0 mMDRT to a total phase depth of 141.0 mMDRT. 50.0 bbl high viscosity sweeps were circulated every 15m to aid hole cleaning. The bit drilled 61.0m in 2.5 hours, with an average ROP of 24.4 m/hr. A dull grading of O-O-NO-A-O-I-NO-TD was recorded.

The open hole was displaced with 11.0ppg mud, and the string pulled out of hole to surface. The 30" conductor was run and cemented with 280.0bbl of 15.8ppg cement. The conductor shoe was set at 137.4 mMDRT.

5.5 *445* mm *(17½")* Hole Section

Date	: 4h December – 9th December 2010
Measured depth	: 141.0 - 1112.0 mMDRT
Vertical depth	: 141.0 –1111.9 mTVDRT
Number of bits used	: 1
Mud type	: Seawater with bentonite sweeps

On 4th December, a 17½" Smith XRVEJ+3PS bit was made up, along with an MWD survey tool, and mud motor. The conductor shoe was drilled out, and drilling commenced from 141.0 mMDRT. At 537.0 mMDRT, a wiper trip was conducted to 136.0 mMDRT after displacing the open hole to gel mud, but no significant string drag was observed. The conductor was circulated clean, and the string was then run back in hole with no significant string drag observed. Drilling continued from 537.0 mMDRT to 1038.0 mMDRT, pumping 50.0 bbl high viscosity sweeps every 15.0m. MWD surveys were also conducted at every connection. Sliding was conducted from 1038.0 mMDRT to 1053.0 mMDRT, 1061.0 mMDRT to 1070.0 mMDRT, and from 1089.0 mMDRT to 1094.0 mMDRT. The 17½" phase reached a total depth of 1112.0 mMDRT. The bit drilled 971.0 m in 13.5 hours, with an average ROP of 71.9 m/hr. The bit received a dull grading of 1-1-NO-A-0-I-NO-TD

The well was displaced to 9.5ppg mud and a wiper trip was performed to 500.0 mMDRT. Once back on bottom, high viscosity sweeps were circulated with seawater, and again displaced to 9.5 ppg mud. The string was pulled out of hole and 13⅜" casing was run, and casing shoe set at 1102.8 mMDRT. The BOP stack and 21" riser were installed, and successfully pressure tested.

5.6 *311* mm *(12¼")* Hole Section

Date	: 9th December – 16h December 2010
Measured depth	: 1112.0 – 2317.0 mMDRT
Vertical depth	: 1111.9 – 2272.04 mTVDRT
Number of bits used	: 3
Mud type	: KCl / PHPA

On 9 December, a Security FXG65 bit with Sperry MWD and Rotary Steerable assembly was run in hole, and cement tagged at 1087.0 mMDRT. Cement was drilled from 1087.0 mMDRT to 1102.8 mMDRT, and the well displaced to 10.0 ppg mud prior to drilling rat hole from 1102.8 mMDRT to 1112.0 m MDRT. New formation was drilled from 1112.0 m MDRT to 1117.0 m MDRT. An obstruction was encountered at the casing shoe, and the string pulled free. The shoe was repeatedly reamed to clear the obstruction, and the mud conditioned, prior to conducting a Formation Integrity Test. It was conducted to a pressure of 1120psi, yielding an equivalent mud weight of 15.95 ppg. As the pressure was higher than the expected 375psi, then all surface lines were checked for problems. None were found. Drilling recommenced, and 12¼" hole was drilled to 1251.0 mMDRT. The saver sub was unable to be broken out, and the string was pulled back inside the 13⅜" casing shoe to 1091.0 mMDRT while the problem was rectified. The string was run in hole, and encountered 4.0m of fill from 1247.0 mMDRT to 1251.0 mMDRT. Drilling then continued from 1251.0 mMDRT to 1812.0 mMDRT, where intermittent MWD signal loss occurred, and the decision was made to pull out of hole and replace the MWD suite. The hole was circulated clean, and the string pulled out f hole. Tight spots were encountered at 1752.0 mMDRT, 1717.0 mMDRT, 1704.0 mMDRT, 1663.0 mMDRT and 1544.0 mMDRT. The string was pumped out of hole from 1544.0 m MDRT1515.0 m MDRT. The string was pulled out of hole on elevators from 1515.0 mMDRT to 1341.0 mMDRT, and pumped out of hole from 1341.0 mMDRT to 1081.0 mMDRT. The well was circulated clean and the string pulled out of hole to surface. The bit received a dull grading of 5-4-A-CT-X-I-BT-DTF, and drilled 700.0 m in 15.7 hours. The MWD tools were found to contain fragments of thread protectors, which is thought to be the cause of the downhole tool failure. The MWD suite was replaced, and a new bit (bit 4) was picked up. The string was run in hole to 1500.0 mMDRT, where 40Klbs of string drag was observed. The string was then washed and reamed to bottom. Drilling continued from 1812.0 m MDRT to 2215.0 m MDRT, where the decision was made to change the bit, due to low ROP. The string was pulled out of hole from 2215.0 mMDRT to 1920.0 mMDRT, where up to 50 Klbs of string drag was observed. The string was pumped out of the hole from 1920.0 mMDRT to 1399.0 mMDRT, and pulled out of hole on elevators from 1399.0 mMDRT to surface. The bit drilled 403.0m in 26.7 hours, and was given a dull grading of 2-8-RO-T-X-I-CT-PR.

On 15 December 2010, a Smith GFS10BODVC TCI bit was made up, along with an MWD/LWD suite, and run in hole to 2145.0 mMDRT. The string was washed to bottom, re-logging from 2193.0 mMDRT to 2215.0 mMDRT. Drilling continued from 2215.0 mMDRT to a total depth of 2317.0 mMDRT at 1000hrs on 16 December 2010. The string was pulled out of hole from 2317.0 mMDRT to 2127.0 mMDRT. The string was pumped out of hole from 2127.0 mMDRT to 2106.0 mMDRT. The string was then pulled out of hole on elevators from 2106.0 mMDRT to 1730.0 mMDRT, where tight hole caused the string to be pumped out of hole from 1730.0 mMDRT to 1643.0 mMDRT. The string was then pulled out of hole to surface. The bit drilled 102.0m in 18.2 hours and received a dull grading of 2-5-WT-G-F-I-CT-TD.

On 16 December 2010, a 2⅞" cement stinger was made up and run in hole to 2184.0 mMDRT, where the string was washed in hole as a precautionary measure to 2317.0 mMDRT. The hole was circulated clean, and Plug 1A (81.0 bbl of 15.8ppg cement) was pumped and spotted between 2170.0 mMDRT and 2317.0 mMDRT. The string was then pulled back to 21701.0 mMDRT, where

one annular volume was circulated, and Plug 1B (82.5bbl of 15.8ppg cement) was pumped and spotted between 2020.0 mMDRT and 2170.0 mMDRT. The string was pulled back to 2020.0 mMDRT, where one annular volume was circulated and Plug 1C (55.0bbl of 15.8ppg cement) was spotted between 1920.0 mMDRT and 2020.0 mMDRT. The string was then pulled back to 1870.0 mMDRT, where one annular volume was circulated. The string was then pulled back to 1250.0 mMDRT, where 55.0 bbl of inhibited high viscosity mud was spotted between 1150.0 mMDRT and 1250.0 MDRT. The string was then pulled back to 1150.0 mMDRT, where Plug 2 (82.5 bbl of 15.8ppg cement) was spotted between 1000.0 mMDRT to 1150.0 mMDRT. The string was then pulled back to 950.0 mMDRT and one annular volume was circulated.

After waiting on cement, the top of Plug 2 was tagged with 5Klbs at 961.0 mMDRT and the string pulled out of hole to 300.0 mMDRT before attempting to pressure testing the casing to 1500 psi. The test failed at 950psi. Drillpipe was picked up and the top of cement tagged at 1116.0 mMDRT where the hole was circulated clean and 65 bbl of 15.8ppg cement was pumped and the string pulled out of hole to 950.0m. After waiting on cement, the top of cement was tagged with 10 Klbs at 1002.0 mMDRT and a successful pressure test to 1500psi was conducted.

The riser and BOP stack was displaced to seawater, unlatched, and recovered. The 30” conductor was cut at 80.5 mMDRT, and the rig prepared for towing to the next location

6.0 ENCLOSURES

A.	Formation Evaluation Log (Measured Depth)	1:500
B.	Drilling Data Log (Measured Depth)	1:1000
C.	Pressure Evaluation Log (Measured Depth)	1:1000
D.	Gas Evaluation Log (Measured Depth)	1:500

FORMATION EVALUATION LOG

WELL : SILVEREYE-1

FROM (m): 120 TO (m): 2340 SCALE: 1/ 500

Country :	: AUSTRALIA
Region	: BASS BASIN
Field	: SILVEREYE
Permit	: T/44P
Well Type	: EXPLORATION
Rig Name	: KAN TAN IV

POSITION

Latitude (GDA 94)	: 39° 54' 19.8250" S
Longitude	: 145° 03' 32.6409" E
Easting (UTM 55)	: 334088.708 m
Northing	: 5580927.328 m
RT-Sealevel (m LAT)	: 26.0 m
RT-Seabed (m LAT)	: 80.0 m

CASING SHOE SIZE / DEPTH (m MDRT)

30" Conductor at	: 137.4 m
13 3/8" (340mm) at	: 1102.8 m

Data Engineers	Mud Loggers	Sample Catchers
Gareth Munro	Adam Sullivan	Jordan Horsell
Nick Abolins	Kirupan Velauthapillai	Sean Kettle

Spud Date	: 03 DEC 2010
Total Depth Date	: 16 DEC 2010
Total Depth (m MDRT)	: 2317.0 m
Total Depth (m TVDLAT)	: -2246.04 m
Status	: Plug & Abandon

ABBREVIATIONS

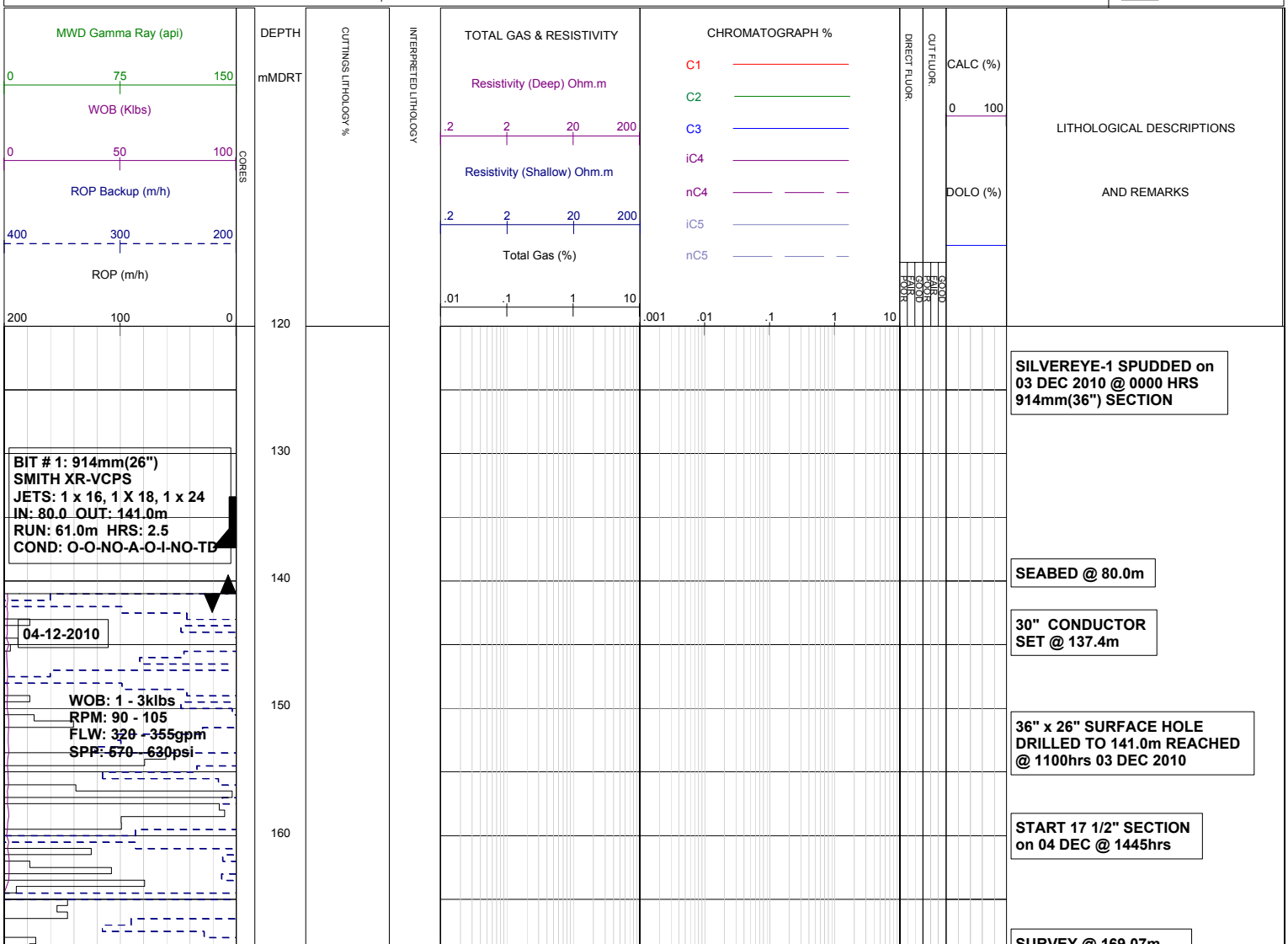
MW MUD WEIGHT	NB NEW BIT
FV FUNNEL VISCOSITY	RR RERUN BIT
PV PLASTIC VISCOSITY	CB CORE BIT
YP YIELD POINT	WOB WEIGHT ON BIT
FC FILTER CAKE	RPM REVS PER MINUTE
SOL SOLIDS	FLC FLOW CHECK
CR CIRCULATE RETURNS	WL FILTRATE
SD SAND - %	PR POOR RETURNS
S SALINITY - PPM	NR NO RETURNS
RM MUD RESISTIVITY	BG BACKGROUND GAS
RMF MUD FILTRATE	TG TRIP GAS
C CARBIDE TEST	STG SHORT TRIP GAS
LAT LOGGED AFTER TRIP	CG CONNECTION GAS
DS DEVIATION SURVEY	SG SWAB GAS
	SVG SURVEY GAS

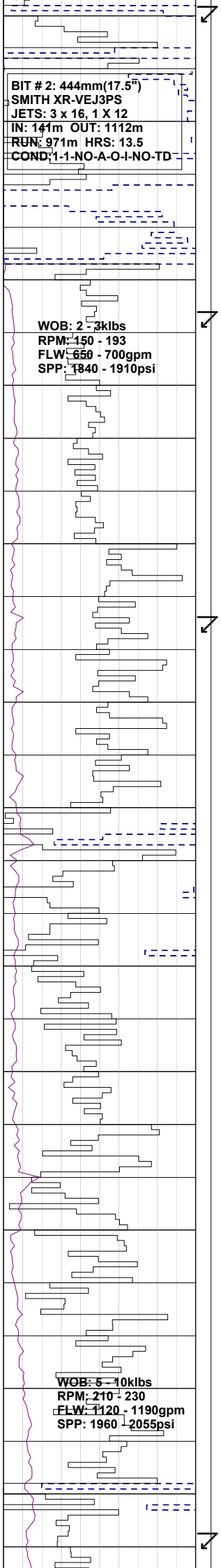
LITHOLOGY LEGEND

Dolomite	Claystone	Argil Siltstone	Calcareous
Calcirudite	Silstone	Sandy Siltstone	Dolomitic
Calcarenite	Sandstone	Calcareous Siltstone	Fossils
Calcisiltite	Coal	Argil Sandstone	Foraminiferae
Calcilutite	Metamorphic	Calcareous Sandstone	Carbonaceous
Sandy Claystone	Volcanics	Cement	Chert
Silty Claystone	ALTERED VOLCANICS / DEGRADED METAMOPHICS		Pyrite
Calcareous Claystone	Quartzite	Therm Alt Claystone	Glauconite
Argil Calcilutite			Mica

ENGINEERING

Test
FIT or LOT
Mud loss
Mud gain
Deviation survey
Core
Shoe
Calcimetry





SURVEY @ 169.07m
INC: 0.34° AZI: 207.46°
TVD: 169.07m

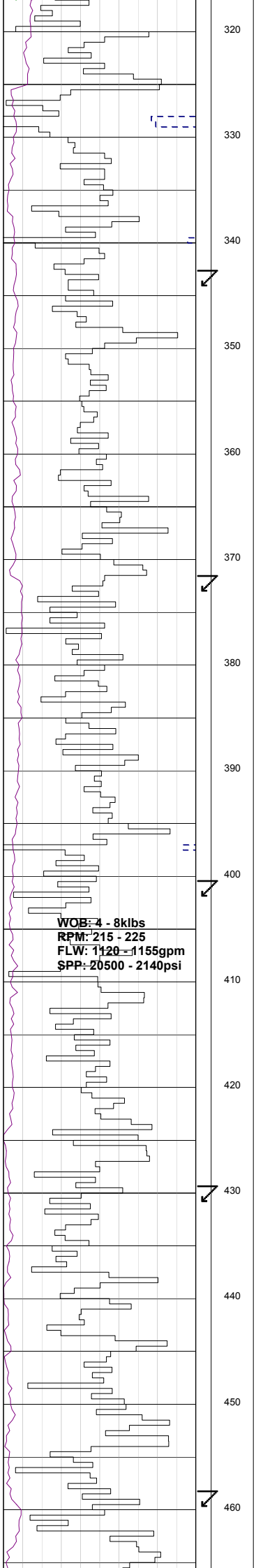
SURVEY @ 198.00m
INC: 0.69° AZI: 248.98°
TVD: 198.00m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 226.95m
INC: 0.53° AZI: 294.13°
TVD: 226.95m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 313.71m
INC: 0.53° AZI: 265.36°
TVD: 313.70m



SURVEY @ 342.60m
INC: 0.28° AZI: 302.85°
TVD: 342.59m

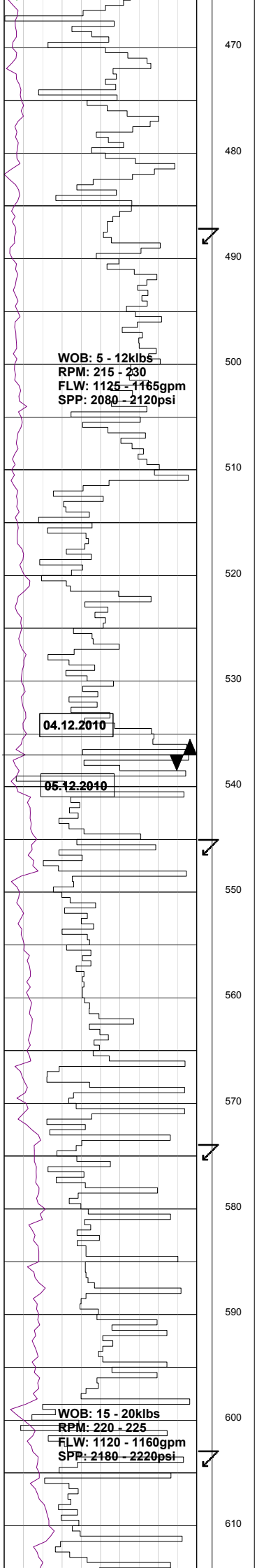
SURVEY @ 371.49m
INC: 0.39° AZI: 275.52°
TVD: 371.48m

SURVEY @ 400.39m
INC: 0.25° AZI: 319.71°
TVD: 400.38m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 429.33m
INC: 0.25° AZI: 316.06°
TVD: 429.32m

SURVEY @ 458.20m
INC: 0.43° AZI: 297.24°
TVD: 458.19m



SURVEY @ 487.12m
INC: 0.18° AZI: 317.57°
TVD: 487.11m

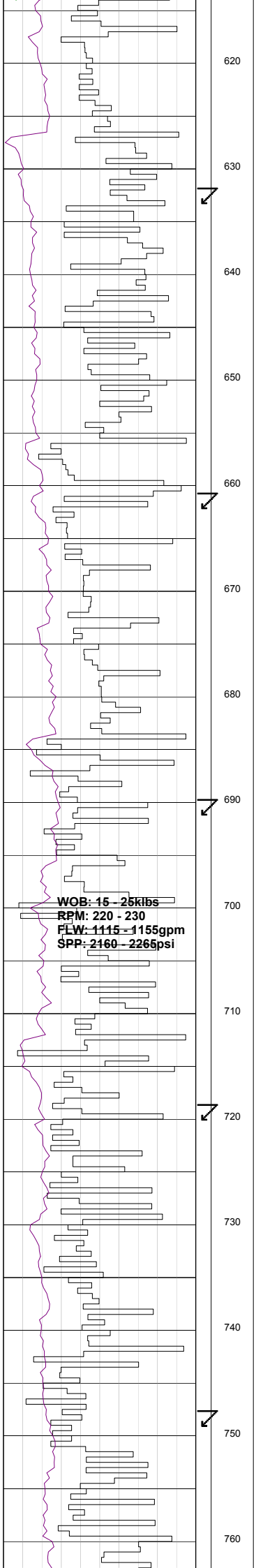
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

WIPER TRIP @ 537.0 m
TO 30" CONDUCTOR.

SURVEY @ 545.02m
INC: 0.37° AZI: 308.44°
TVD: 545.00m

SURVEY @ 573.93m
INC: 0.49° AZI: 302.31°
TVD: 573.92m

SURVEY @ 602.86m
INC: 0.46° AZI: 313.77°
TVD: 602.85m



SURVEY @ 631.798m
INC: 0.40° AZI: 313.58°
TVD: 631.78m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

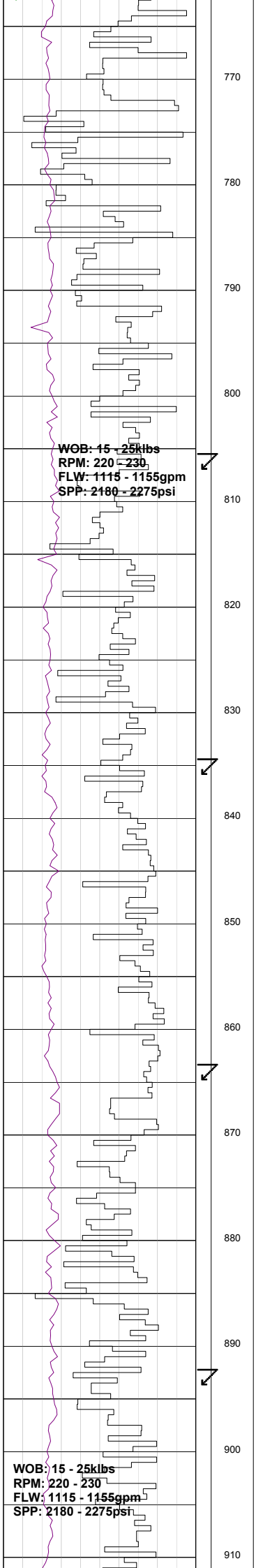
SURVEY @ 660.77m
INC: 0.37° AZI: 319.21°
TVD: 660.76m

SURVEY @ 689.68m
INC: 0.37° AZI: 312.14°
TVD: 689.67m

SURVEY @ 718.63m
INC: 0.37° AZI: 319.88°
TVD: 718.61m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 747.59m
INC: 0.45° AZI: 313.35°
TVD: 747.57m



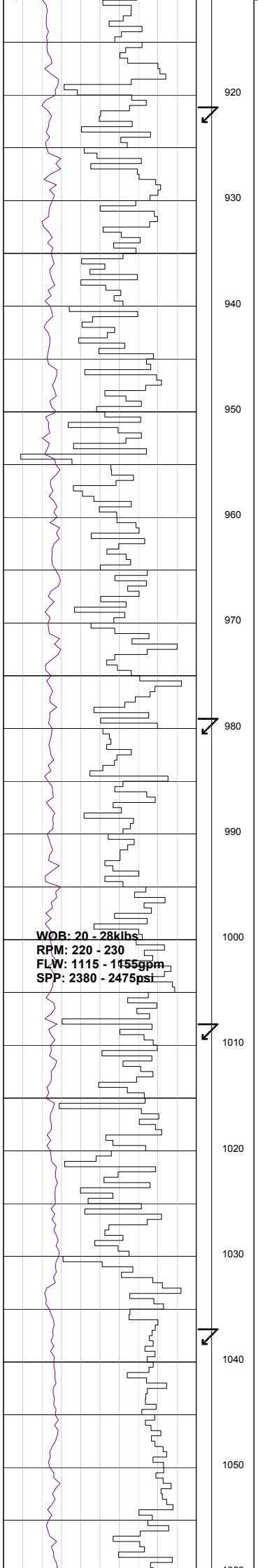
SURVEY @ 805.44m
INC: 0.34° AZI: 320.74°
TVD: 805.42m

SURVEY @ 834.36m
INC: 0.28° AZI: 307.88°
TVD: 834.34m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 863.29m
INC: 0.32° AZI: 334.24°
TVD: 863.27m

SURVEY @ 892.19m
INC: 0.39° AZI: 303.40°
TVD: 892.17m



SURVEY @ 921.11m
INC: 0.33° AZI: 321.61°
TVD: 921.09m

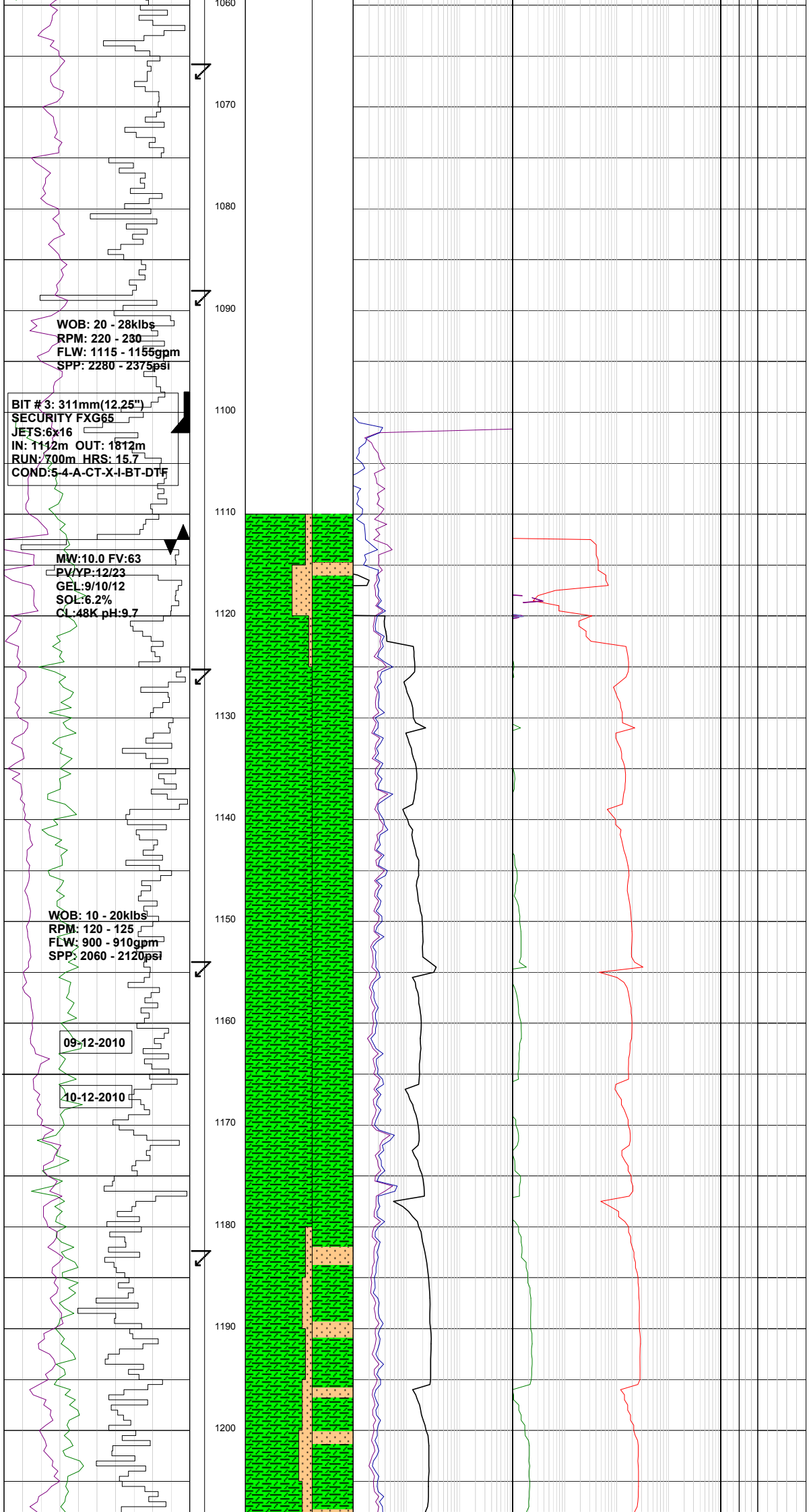
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

SURVEY @ 979.03m
INC: 0.37° AZI: 339.05°
TVD: 979.01m

SURVEY @ 1007.96m
INC: 0.40° AZI: 314.26°
TVD: 1007.94m

SURVEY @ 1036.86m
INC: 0.29° AZI: 23.92°
TVD: 1036.84m

DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED



SURVEY @ 1065.77m
INC: 0.77° AZI: 56.98°
TVD: 1065.74m

SURVEY @ 1088.00m
INC: 2.80° AZI: 63.79°
TVD: 1087.96m

17 1/2" PHASE
DRILLED TO 1112.0m
@ 1615hrs 05 DEC 2010

13 3/8" CASING
SET @ 1102.8m

START 12 1/4" SECTION
on 09 DEC @ 1730hrs

FIT @ 1102.0 mMDRT
1120psi with 10.0ppg
E.M.W = 15.95ppg

SILTSTONE: med gry-med dk gry, frm-mod hd,sbblky-blky,sli calc, rr vf glauc grs.

SURVEY @ 1125.20m
INC: 3.86° AZI: 63.79°
TVD: 1125.09m

CALCAREOUS CLAYSTONE: lt gry-med lt gry,sft-frm,amor-sbblky,mod calc,tr nod pyr,tr shell frags,mnr vf qtz grs,tr foram,tr vf glauc grs.

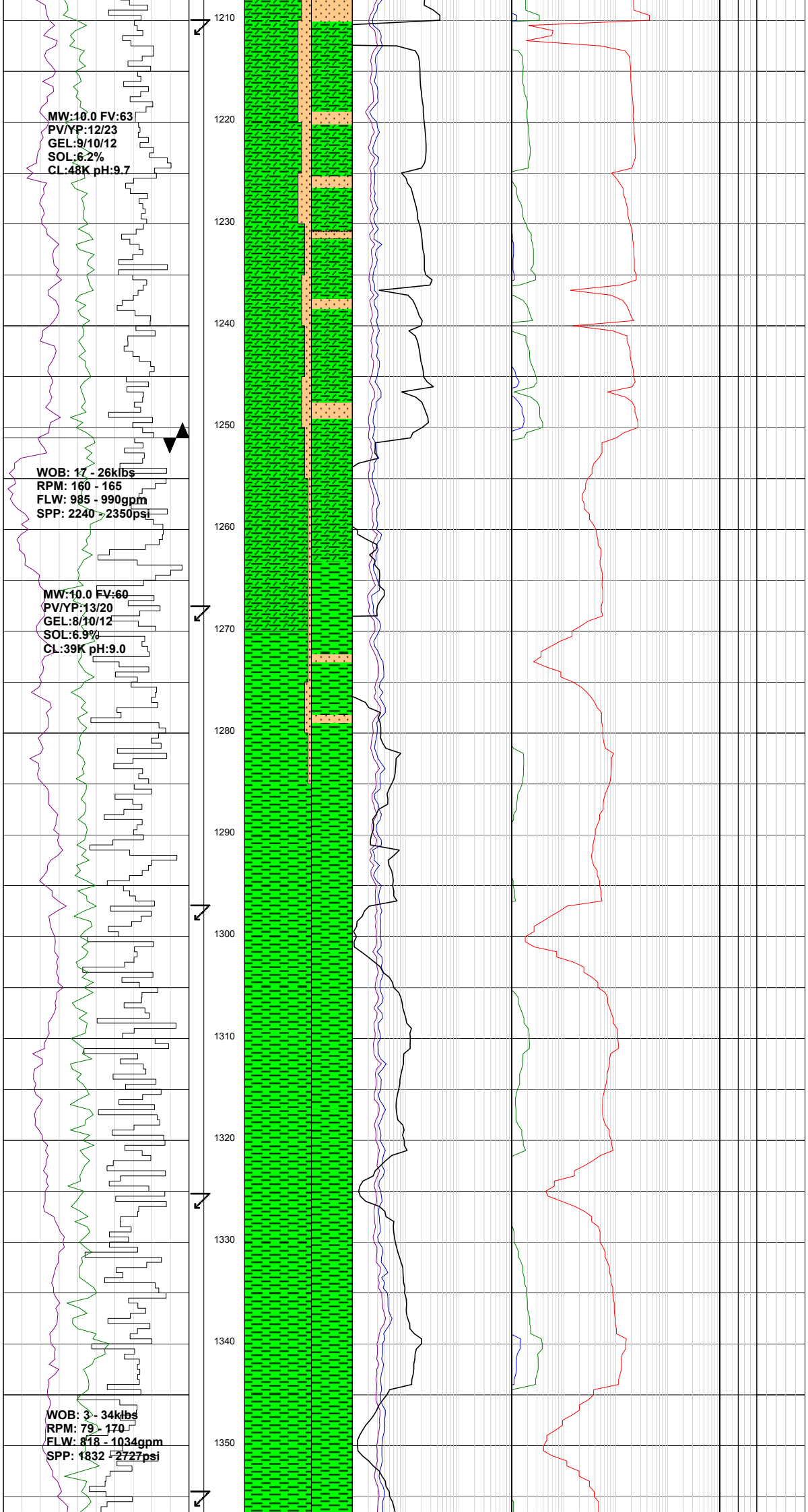
SURVEY @ 1153.95m
INC: 6.16° AZI: 72.77°
TVD: 1153.73m

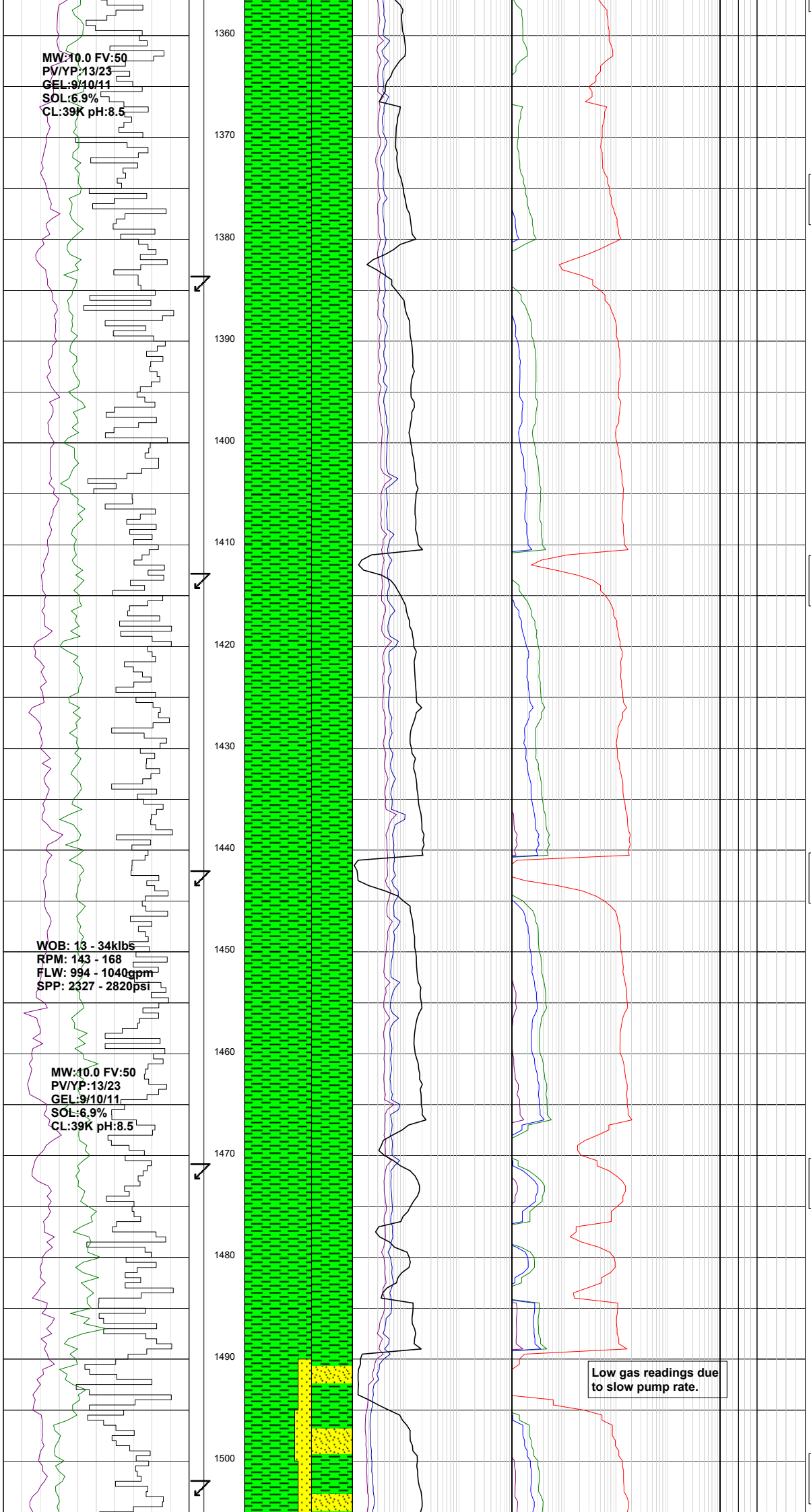
CALCAREOUS CLAYSTONE: med lt gry,med dk gry,v lt gry-lt gry,brnsh gry i/p,v sft-sft,frm i/p,amor,sbblky-blky,mod calc, v calc i/p,com glauc grs,tr sd grs i/p,tr foram.

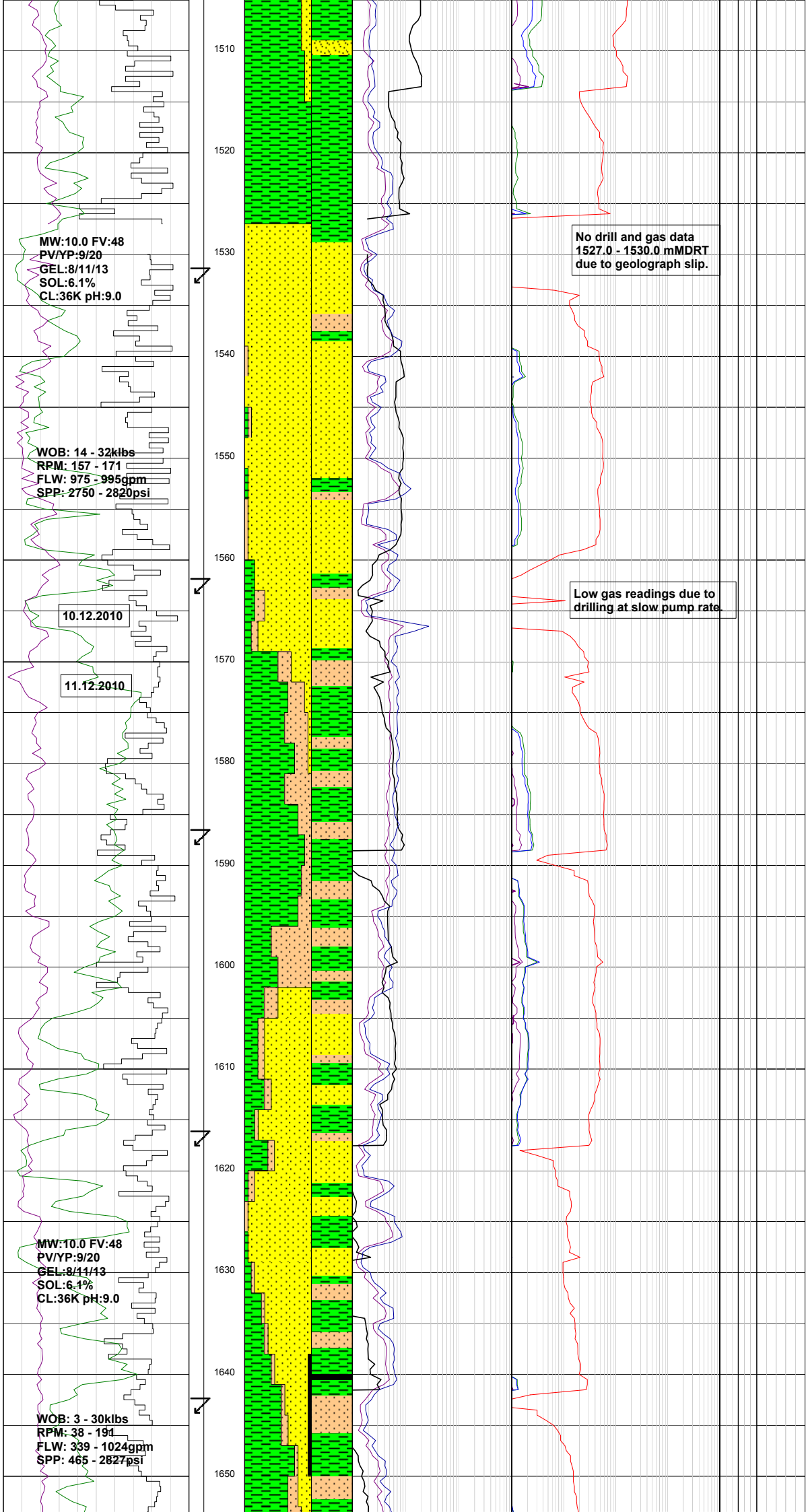
SURVEY @ 1182.32m
INC: 8.34° AZI: 78.88°
TVD: 1181.87m

SILTSTONE:med lt gry-lt brnsh gry,frm,blky,sli-mod calc,com glauc,tr mic,tr nod pyr,rr qtz grs i/p.

SURVEY @ 1209.91m
INC: 10.13° AZI: 80.17°
TVD: 1209.11m


1210
1220
1230
1240
1250
1260
1270
1280
1290
1300
1310
1320
1330
1340
1350
MW:10.0 FV:63
PV/YP:12/23
GEL:9/10/12
SOL:6.2%
CL:48K pH:9.7
WOB: 17 - 26klbs
RPM: 160 - 165
FLW: 985 - 990gpm
SPP: 2240 - 2350psi
MW:10.0 FV:60
PV/YP:13/20
GEL:8/10/12
SOL:6.9%
CL:39K pH:9.0
WOB: 3 - 34klbs
RPM: 79 - 170
FLW: 818 - 1034gpm
SPP: 1832 - 2727psi
Reduced gas due to slow pump rate.
CALCAREOUS CLAYSTONE: lt gry-lt brnsh gry,olv gry,sft -frm,sbblky-blky,mod-hi calc, com glauc grs,tr v f sd grs i/p, trslty,tr nod pyr,tr foram,tr mic,rr sid i/p,grd to MARL.
SILTSTONE:med lt gry-lt brnsh gry,frm,blky,sli-mod calc,com glauc grs,tr mic,tr nod pyr,rr qtz grs i/p.
Pull back to casing shoe to work on top drive and replace damaged saver sub
CALCAREOUS CLAYSTONE: med lt gry-olv gry,sft-frm,amor-sbblky,mod calc, rr v f glauc grs,rr f-med qtz grs,tr dissem pyr.
SILTSTONE:med dk gry-brnsh gry,frm-mod hd,sbblky-sbfiss, v sli calc,com f sd grs.
SURVEY @ 1267.50m
INC: 13.09° AZI: 77.50°
TVD: 1265.4m
CLAYSTONE: med lt gry-olv gry,sft-frm,amor-sbblky,mod calc, rr v f glauc grs,rr f-med qtz grs,tr dissem pyr.
SILTSTONE:med dk gry-brnsh gry,frm-mod hd, sbblky-sbfiss,sli calc, com f sd grs.
SURVEY @ 1296.88m
INC: 15.13° AZI: 76.43°
TVD: 1293.9m
CLAYSTONE: lt gry-grysh brn,pl yelsh brn, yelsh gry,disp-sft,amor,v sli calc,rr f qtz grs.
SURVEY @ 1325.19m
INC: 16.02° AZI: 75.50°
TVD: m
CLAYSTONE: lt gry-grysh brn,pl yelsh brn, yelsh gry,disp-sft,amor,v sli calc,slty grd to SLTST i/p,rr f qtz grs.
SURVEY @ 1354.45m
INC: 16.35° AZI: 74.55°


TVD: 1349.3m
MW:10.0 FV:50
PV/YP:13/23
GEL:9/10/11
SOL:6.9%
CL:39K pH:8.5
1360
1370
1380
1390
1400
1410
1420
1430
1440
1450
1460
1470
1480
1490
1500
SURVEY @ 1383.62m
INC: 15.73° AZI: 73.69°
TVD: 1377.34m
CLAYSTONE:
med lt gry-med olv gry,brnsh gry,dk yelsh brn,sft-frm,mnr disp,amor,v sli calc,slty grd to SLTST i/p.
SURVEY @ 1412.81m
INC: 16.05° AZI: 74.58°
TVD: 1405.41m
CLAYSTONE:
brnsh gry-olv gry,sft-frm,rr mod hd,com slty,amor-sbblky, stky,sli-non calc,tr v f qtz grs, com dk brn lith,rr v f glauc grs.
SURVEY @ 1442.05m
INC: 16.23° AZI: 74.71°
TVD: 1433.50m
WOB: 13 - 34klbs
RPM: 143 - 168
FLW: 994 - 1040gpm
SPP: 2327 - 2820psi
CLAYSTONE:
brnsh gry-olv gry,dk gry,sft-frm, mod hd i/p,com slty,amor-sbblky, stky,non calc,tr v f qtz grs,com dk brn lith,tr dol,rr v f glauc grs, grd to SLTST i/p.
MW:10.0 FV:50
PV/YP:13/23
GEL:9/10/11
SOL:6.9%
CL:39K pH:8.5
SURVEY @ 1470.78m
INC: 16.47° AZI: 76.71°
TVD: 1461.07m
SANDSTONE:trnsl-trnsp, pl brn-dk yelsh brn,fri- mod hd,v f-f grs,mod wl srt, sbang-sbrnd,com calc cmt, pr vis por. NO SHOW.
Low gas readings due to slow pump rate.
SURVEY @ 1501.94m
INC: 16.25° AZI: 78.21°
TVD: 1490.97m



CLAYSTONE:brnsh gry-olv gry,grnsh gry,v sft-sft,frm,com slt,amor-sbfiss,stky,non calc, tr v f qtz grs,com dk brn lith,rr v f glauc grs,grd to SLTST i/p.

SURVEY @ 1531.26m
INC: 16.25° AZI: 78.78°
TVD: 1519.12m

SANDSTONE:trnsl, trnsp i/p,pred lse,uncons,med-v crs grs,pred v crs grs,sbang-sbrnd,elng,pred sbrnd,wl srt,tr sil cmt i/p,tr cly mtrx,fr inf por. NO SHOW.

SANDSTONE:trnsp-trnsl, lt brnsh gry in agg,pred lse, med-crs grs,pred med grs,sbang-sbrnd,elng,pred sbrnd,wl srt, tr sil cmt i/p,cly mtrx,fr-mod inf por. NO SHOW.

SILTSTONE:lt brnsh gry-brnsh gry,dk gry,frm-mod hd, blky-sbblky,non calc,sli arg.

SURVEY @ 1561.83m
INC: 16.36° AZI: 77.89°
TVD: 1548.46m

CLAYSTONE:brnsh gry-olv gry,sft-frm,stky,non calc, tr v f qtz grs,com dk brn lith, carb,rr v f glauc grs,grd to SLTST i/p.

SILTSTONE:dk gry-olv gry, frm-mod hd,carb,blky-sbblky, non calc,sli arg,tr micmic.

SURVEY @ 1586.46m
INC: 16.24° AZI: 77.71°
TVD: 1572.10m

SURVEY @ 1616.08m
INC: 16.06° AZI: 78.20°
TVD: 1600.55m

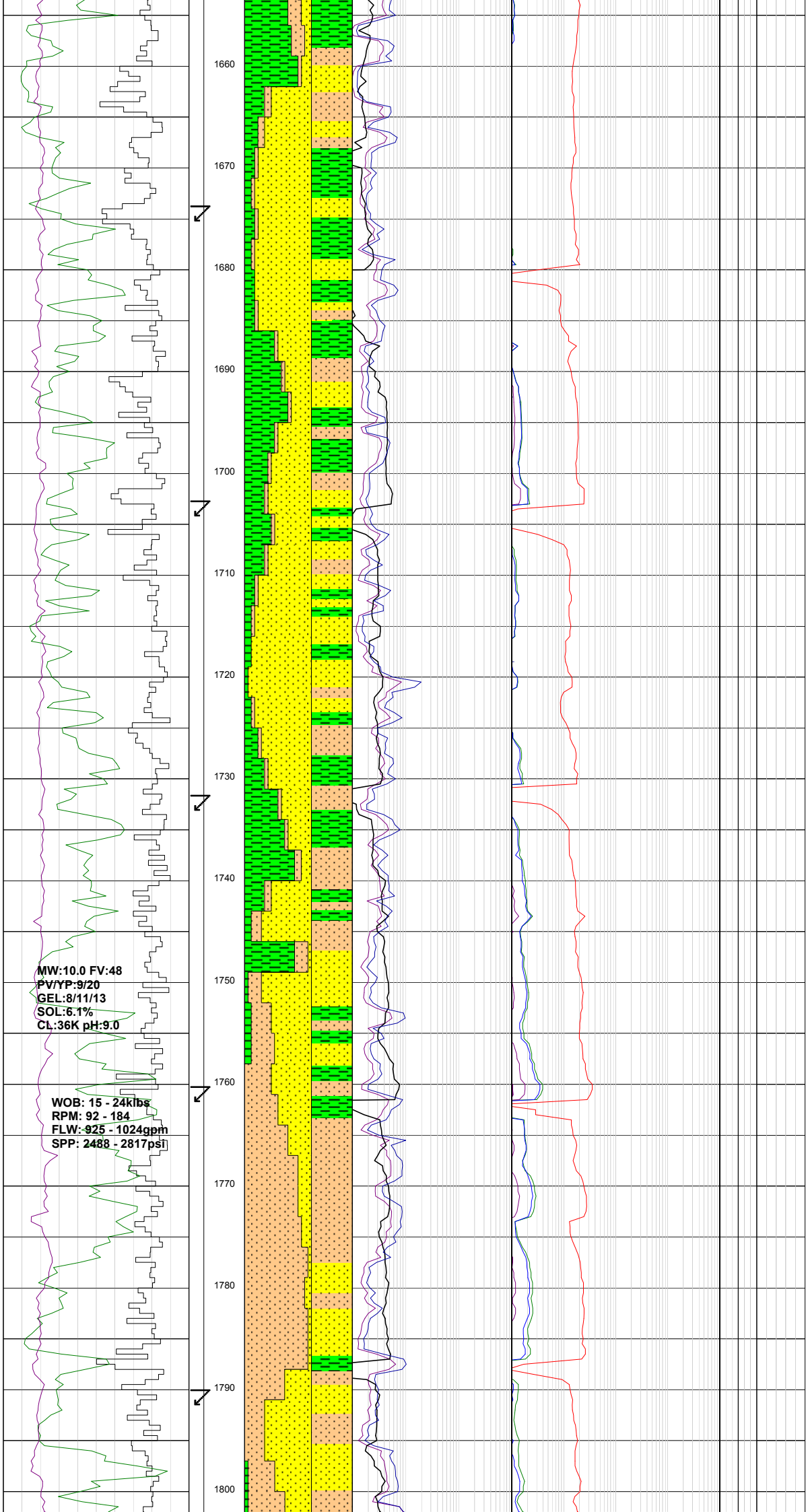
SANDSTONE:trnsp-trnsl,opq, mlky wh,rr pl yelsh gry, lse,crs-v crs grs,rr med grs,wl srt,sbrnd-rnd,mnr sbang,com nod pyr,tr hd pyr cmt aggs,fr inf por. NO SHOW.

COAL(Trace):blk,dll,frm-mod hd,blky,splin.

SURVEY @ 1642.31m
INC: 16.17° AZI: 78.50°
TVD: 1625.75m

COAL:blk,dll,mod brit,blky, splin.

CLAYSTONE:pl yelsh brn-



dk yelsh brn,lt olv gry, sft,rr frm,rr calc frags, tr f qtz grs,amor-mnr sbblky.

SILTSTONE:med dk gry-brnsh gry,mod hd-hd, sbblky-sbfiss,tr stained crs qtz grs.

SURVEY @ 1673.72m
INC: 17.17° AZI: 76.35°
TVD: 1655.84m

SANDSTONE:trnsp-trnsl, opq,mlky wh,rr pl yelsh gry, lse,crs-v crs grs,rr med grs,wl srt,sbrnd-rnd,mnr sbang,com nod pyr,tr hd pyr cmt aggs,fr inf por. NO SHOW.

SURVEY @ 1702.70m
INC: 15.87° AZI: 77.15°
TVD: 1683.63m

SANDSTONE:trnsp-trnsl, opq,mlky wh,rr pl yelsh gry, lse,crs-v crs grs,rr med grs,wl srt,sbrnd-rnd,mnr sbang,com nod pyr,fr inf por. NO SHOW.

CLAYSTONE:pl yelsh brn-dk yelsh brn,lt olv gry, sft,rr frm,rr calc frags, tr f qtz grs,tr micmic, amor-mnr sbblky.

SURVEY @ 1731.61m
INC: 16.05° AZI: 79.02°
TVD: 1711.42m

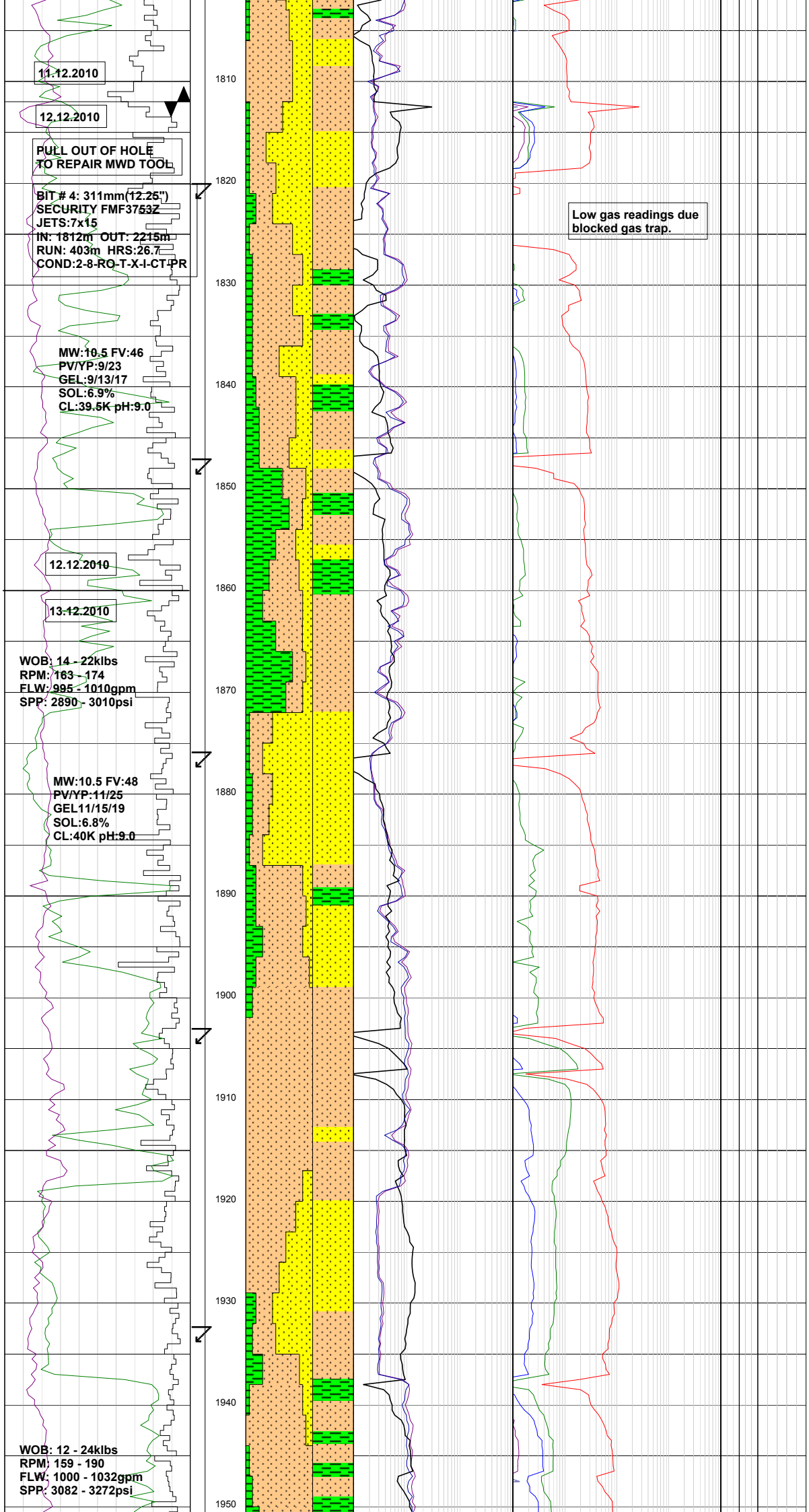
SILTSTONE:med dk gry-brnsh gry,mod hd-hd, sbblky-sbfiss.

SURVEY @ 1760.22m
INC: 15.85° AZI: 80.22°
TVD: 1738.93m

SILTSTONE:brnsh gry-olv gry, med gry,dk yelsh brn,grysh brn, arg grd to CLYST i/p,com carb spks,tr mic flks,sft-frm,occ mod hd,sbblky,rk flr from PDC bit action.

SANDSTONE:pred opq,off wh-pl yelsh gry,pred lse,crs-v crs grs, com hd-v hd aggs,mod srt,ang-sbang,strng sil cmt,rr calc frags, com nod pyr,no vis por,fr inf por. NO SHOW.

SURVEY @ 1789.99m
INC: 15.85° AZI: 81.83°
TVD: 1767.57m



SILTSTONE:med dk gry, olv gry-brnsh gry,dk gry, arg grd to CLYST i/p,tr micmic sft-frm,sbblky-blky,occ sbfiss.

SURVEY @ 1820.02m
INC: 16.00° AZI: 79.90°
TVD: 1796.45m

SANDSTONE:pred lse,trnsp-trnsl,v f-v crs,dom crs-v crs, mod srt,ang-wl rnd,dom sbang-sbrnd,tr pyr,tr COAL,pr inf por, non calc cly cmt.NO SHOW.

SURVEY @ 1847.06m
INC: 16.60° AZI: 76.98°
TVD: 1822.41m

CLAYSTONE:lt brnsh gry-brnsh gry,olv gry,v sft-sft, amor,non calc,com slt,tr carb, tr micmic,tr dissem pyr.

SILTSTONE:brnsh gry-olv gry,tr olv blk,frm,sbblky-blky, non calc,arg,mnr disp,tr v f sd,carb i/p,rr blk carb spks, rr mic,rr dissem pyr.

SURVEY @ 1875.84m
INC: 16.65° AZI: 74.79°
TVD: 1850.01m

SANDSTONE:lse,trnsp-trnsl, v f-v crs,dom crs-v crs,gran, pr srt,ang-wl rnd,dom sbang-sbrnd,com sil cmt,tr non calc cly cmt,tr pyr,pr inf por. NO SHOW.

CARBIDE LAG CHECK @ 1891m
THEO STKS: 8337
ACT STKS: 9054
HOLE DIA: 13.3"

SILTSTONE:lt brnsh gry-olv gry,tr olv blk,sft,sbfiss-sbblky, non calc,v arg,disp,tr v f sd, tr blk carb spks,com mic,tr pyr,grd to SLTY CLYST.

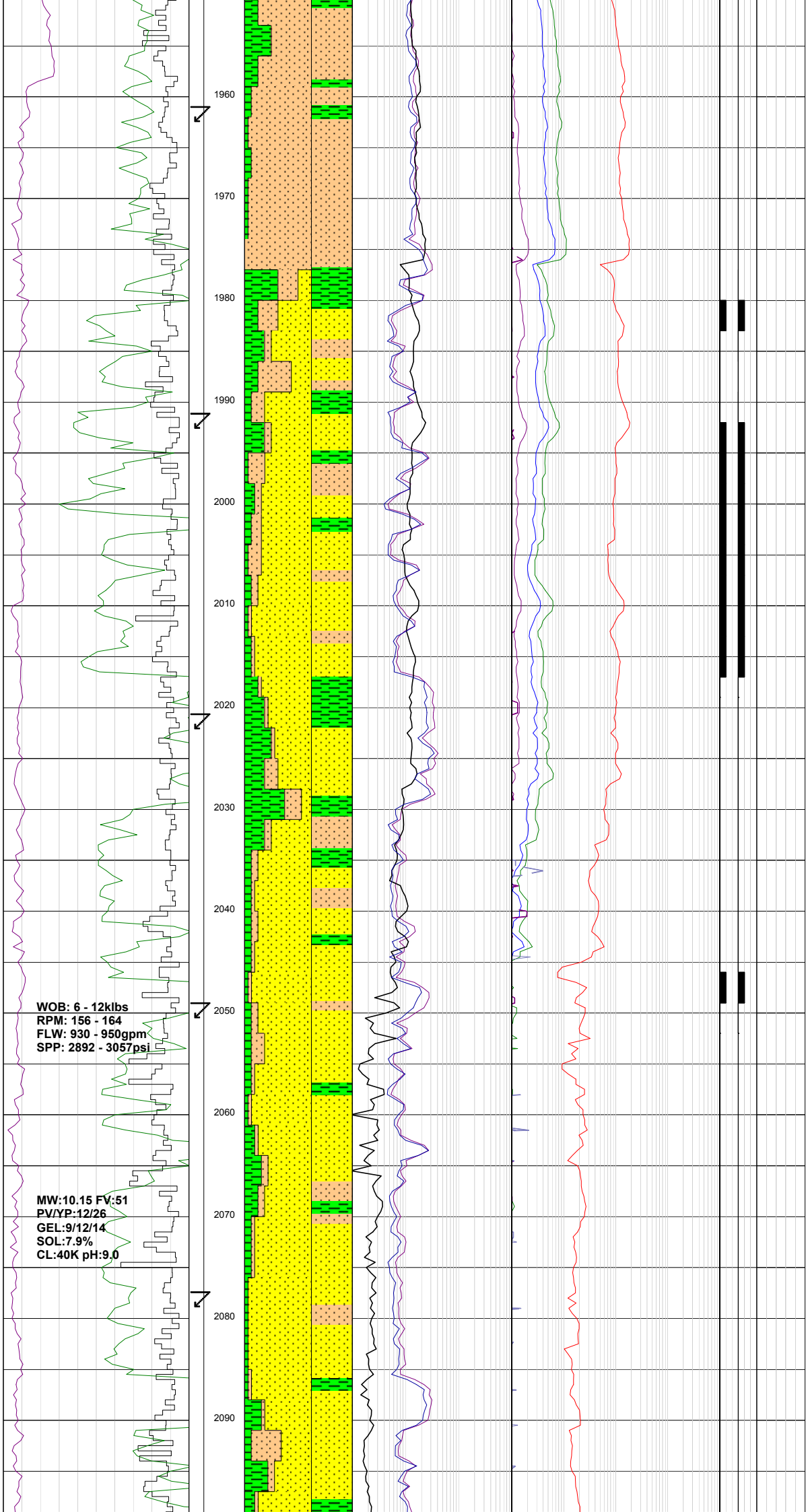
SURVEY @ 1903.76m
INC: 16.01° AZI: 73.72°
TVD: 1876.82m

SILTSTONE:lt brnsh gry-olv gry,med lt gry,frm-mod hd,hd i/p,sbblky-blky,non calc,com v f sd,tr blk carb spks,com micmic,tr pyr,grd to SST i/p.

SANDSTONE:trnsp-trnsl, v f-crs,dom f-med agg,lse med-crs grs,mod srt,ang-wl rnd,dom sbang-sbrnd,com sil & abd pyr cmt,tr pyr,pr vis & inf por. NO SHOW.

SURVEY @ 1932.30m
INC: 16.14° AZI: 74.60°
TVD: 1904.25m

CLAYSTONE:lt brnsh gry-brnsh gry,olv gry,v sft-sft, amor,non calc,com slt,tr carb, tr micmic,tr dissem pyr.



SURVEY @ 1960.96m
INC: 15.78° AZI: 74.71°
TVD: 1931.81m

CLAYSTONE:pl yelsh gry-lt gry,slty,v sft-sft,amor.

SILTSTONE:lt olv gry-olv gry, med dk gry,arg grd to SLTY CLYST i/p,tr nod pyr,rr v f-f qtz grs,sft-frm,occ mod hd, sbblky-blky.

SANDSTONE:opq-trnsl,mlky wh, v f-v crs grs,lse,pr-mod srt, sbrnd-rnd,occ sbang,rr nod pyr, tr micmic,tr v f glauc grs,pr-fr inf por.WEAK SHOW.

SHOW in SST:1980-1983m tr brt yelsh grn fluor,v slw strmg dll blu wh cut,thk dll yelsh wh r/r.

SURVEY @ 1991.07m
INC: 16.57° AZI: 74.52°
TVD: 1960.72m

SANDSTONE:trnsl-trnsp, rr opq,med-v crs grs,lse, mod-wl srt,ang-sbang,sbrnd, tr nod pyr,tr COAL,tr micmic, pr-fr inf por.WEAK SHOW.

SHOW in SST:1992-2001m tr dll-brt yelsh grn dir fluor, slw diff-strmg pl blu wh cut, thn brt yelsh wh r/r.

SHOW in SST:2001-2017m tr-2% brt yelsh grn dir fluor, nil-v slw strmg pl blu wh cut, nil-thn dll yelsh wh r/r.

SANDSTONE:opq-trnsl,occ trnsp,crs-v crs grs,lse,pr-mod srt, rr pyr cmt aggs,ang-sbang,sbrnd, tr nod pyr,tr COAL frags,com micmic,pr inf por. WEAK SHOW.

SURVEY @ 2020.60m
INC: 16.44° AZI: 73.87°
TVD: 1989.04m

CLAYSTONE:lt brn-lt brnsh gry,slty grd to SLTY CLYST, v sft-sft,amor-sbblky.

SURVEY @ 2048.98m
INC: 15.67° AZI: 72.94°
TVD: 2016.31m

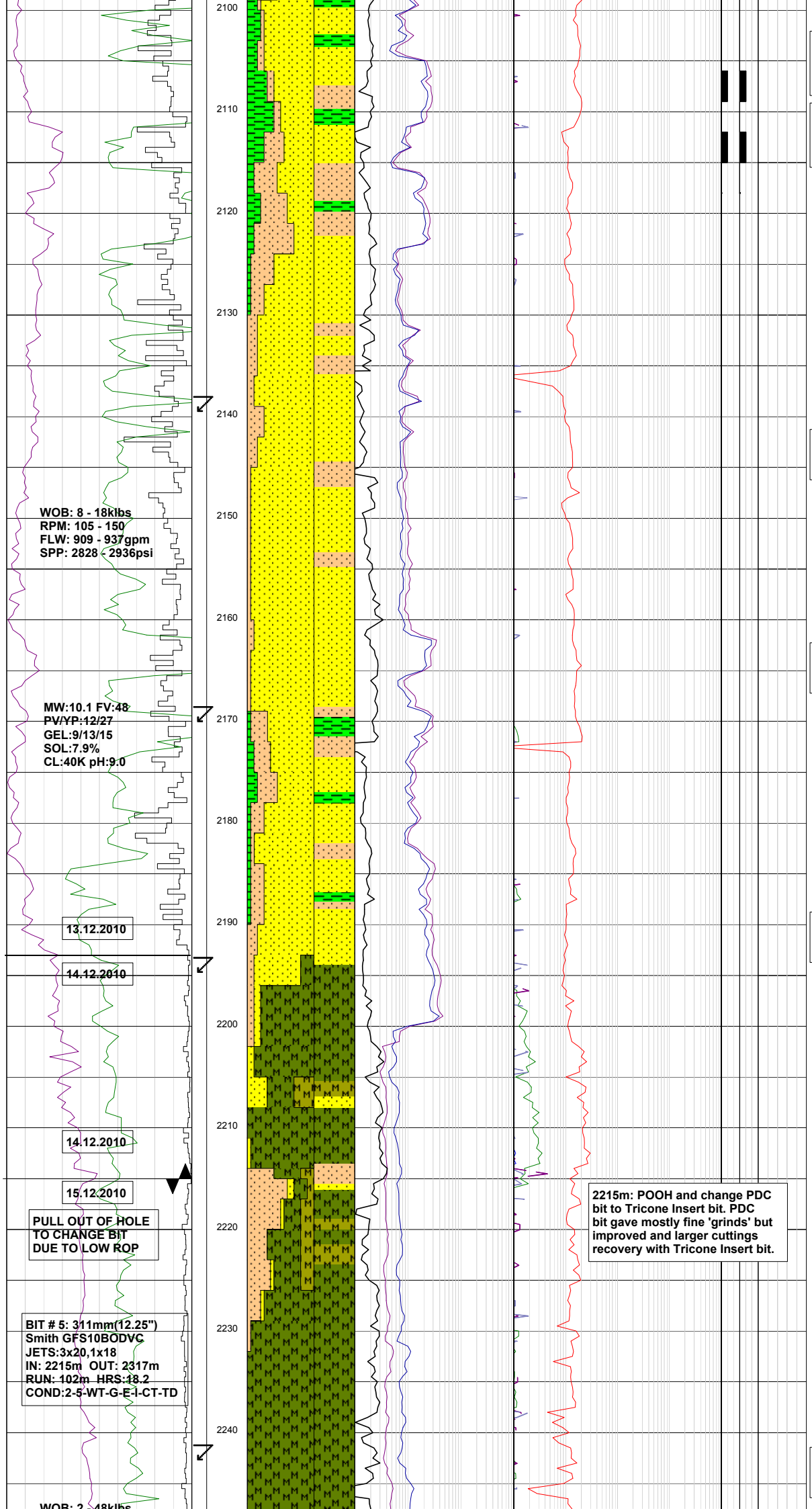
SHOW in SST:2049-2052m tr-2% brt yelsh grn dir fluor, nil-v slw strmg pl blu wh cut, nil-thn dll yelsh wh r/r.

SANDSTONE:trnsl-trnsp,occ opq,pred v crs grs,mnr med-crs grs,lse,com nod pyr,rr micmic,pred ang-sbang,occ sbrnd-rnd,mod-wl srt,fr inf por.NO SHOW.

SILTSTONE:med dk gry-dk gry, occ blu gry,tr brn liths,mod hd-hd,sbblky-blky,occ flky.

SURVEY @ 2077.36m
INC: 16.14° AZI: 73.20°
TVD: 2043.6m

SANDSTONE:trnsp-trnsl, lt gry-rdsh pnk i/p,lse, hd,v f-gran,pred v crs grs, ang-rnd,pr-mod srt,sbsph,tr COAL,tr nod pyr,pr inf por.



WEAK SHOW.

SHOW in SST:2106-2109m
tr dll brt yel grn dir fluor,
v slw strmg pl blu wh cut,
ptchy dll,brt yelsh wh r/r.

SHOW in SST:2112-2115m
tr dll brt yel grn dir fluor,
slw strmg pl blu wh cut,thn
pl yel blu r/r.

SANDSTONE:trnsp-trnsl,
v lt gry,wh i/p,mod hd-hd
agg,med-v crs lse grs,pred
v crs grs,ang-sbrnd,elng i/p,
pr-mod srt,com sil & pyr cmt,
com mic incl i/p,tr nod pyr,
pr vis & fr inf por.
NO SHOW.

SURVEY @ 2138.28m
INC: 16.09° AZI: 74.79°
TVD: 2102.13m

SILTSTONE:med lt gry-med
gry,dk gry i/p,arg,non calc,
com frm,fri i/p,sbfiss-sbblky,
carb,com micmic,abd mic flks,
tr dissem pyr,tr brn liths.

SURVEY @ 2168.53m
INC: 15.61° AZI: 74.35°
TVD: 2131.23m

SANDSTONE:trnsp-trnsl,
dom lse,v lt gry,wh i/p,mod
hd-hd agg,f-v crs lse grs,pred
v crs grs,ang-sbrnd,sbelng i/p,
pr-mod srt,com sil & pyr cmt,
com mic incl i/p,tr nod pyr,tr
pl rd volc mnrl,pr vis & fr inf
por.NO SHOW.

SILTSTONE:med lt gry-med
dk gry,dk gry i/p,non calc,frm,
fri i/p,sbfiss-sbblky,carb,com
micmic,abd mic flks,tr dissem
pyr,rr glauc,tr brn liths.

SURVEY @ 2193.23m
INC: 16.26° AZI: 78.01°
TVD: 2154.98m

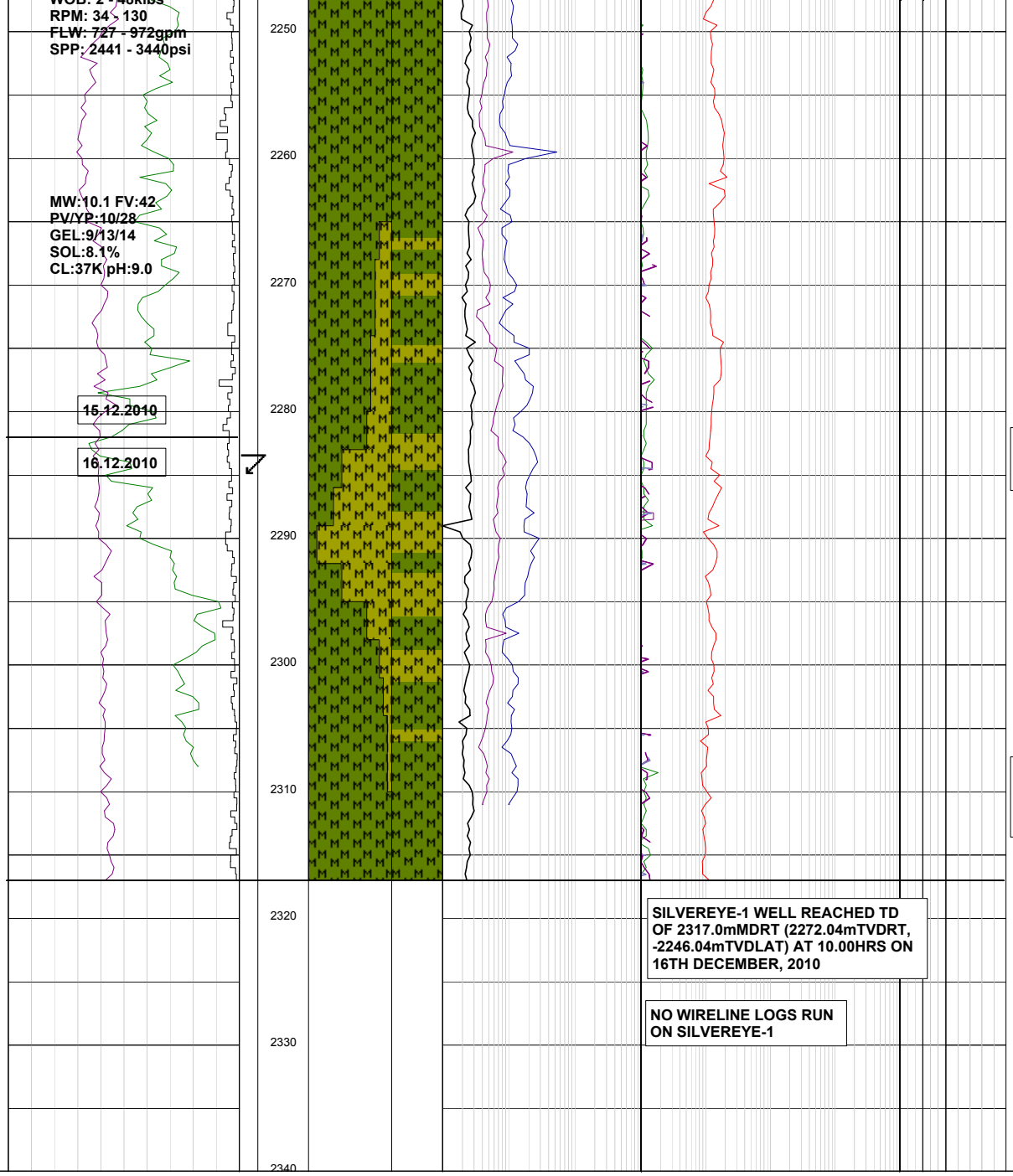
ALTERED VOLCANICS/
DEGRADED METAMORPHICS:
(Thermally Altered Claystone)
gry blk,brnsh gy-olv blk,
tr wh-v lt gy,med lt gy,frm,
mod hd-v hd i/p,blky-sbblky,
mnr dissem pyr,tr nod pyr,
splin i/p,non calc.

SANDSTONE:lse,trnsp-trnsl,
med-gran,dom v crs-gran,mod srt,
ang-rnd,dom ang-sbang & frac qtz
ovrgrths,tr biotite,tr pyr,tr lt
gry liths,dk gy liths,pl rdsh brn
liths,grnsh blk liths,pr inf por.
NO SHOW.

SILTSTONE:brnsh gry-olv
gry,sft-frm,sbblky-blky,non-
sli calc,arg,sli aren i/p.
(likely derived from trip
back in the hole)

ALTERED VOLCANICS/
DEGRADED METAMORHPICS:
(Thermally Altered Claystone)
gry blk,olv blk,gry,com qtz rexln,
mod hd-v hd i/p,gran,blky-sbblky,
ang,mnr dissem pyr,tr nod pyr,
non calc.
(Quartzite)
dom mlky wh-trnsp,tr rdsh pnk,
rexlsd qtz,gran,ang,tr dissem pyr.

SURVEY @ 2241.21m
INC: 18.18° AZI: 93.36°
TVD: 2200.83m



ALTERED VOLCANICS/
DEGRADED METAMORPHICS:
(Thermally Altered Claystone)
dom blk-olv blk,mnr gry blk,
brnsh yel,mod hd-hd,blky,mnr
dissem pyr,tr nod pyr,loc abd
nod pyr,alt carb CLYST,fiss
frag,com loc abd phenocrysts,
tr Calcite veins.
(Quartzite)
dom mlky wh-trnsp,tr rdsh pnk,
rexlsd qtz,gran,ang,tr dissem pyr.

SURVEY @ 2283.36m
INC: 20.17° AZI: 100.27°
TVD: 2240.65m

ALTERED VOLCANICS/
DEGRADED METAMORPHICS:
(Thermally Altered Claystone)
dom gry blk,mod hd-hd,
blky,splin i/p,non calc,
tr-abd dissem pyr,tr cubic
pyr,tr qtz veins.

CARBIDE LAG CHECK @ 2309m
THEO STKS: 9883
ACT STKS: 12063
HOLE DIA: 14.95"

SILVEREYE-1 WELL REACHED TD
OF 2317.0mMDRT (2272.04mTVDRT,
-2246.04mTVDLAT) AT 10.00HRS ON
16TH DECEMBER, 2010

NO WIRELINE LOGS RUN
ON SILVEREYE-1

DRILLING DATA LOG

WELL : SILVEREYE-1

FROM (m): 120 | TO (m): 2340 | SCALE: 1/ 1000

		POSITION		CASING SHOE SIZE / DEPTH			
Country	: AUSTRALIA	Latitude (NZGD49)	: 39° 54' 19.8250" S	30" Conductor at (m MDRT)	: 137.4 m	Spud Date	: 03 DEC 2010
Region	: BASS BASIN	Longitude	: 145° 03' 32.6409" E	9 5/8" (245mm) at (m MDRT)	: 1102.8 m	Total Depth Date	: 16 DEC 2010
Field	: SILVEREYE	Easting (NZMG)	: 334088.708 m			Total Depth (m MDRT)	: 2317.0 m
Permit	: T/44P	Northing	: 5580927.328 m			Total Depth (m TVSS)	: -2246.04 m
Well Type	: EXPLORATION	RT-Sealevel (m LAT)	: 26.0 m			Status	: Plug & Abandon
Rig Name	: KAN TAN IV	RT-Seabed (m LAT)	: 80.0 m				

ABBREVIATIONS

MW MUD WEIGHT	NB NEW BIT
FV FUNNEL VISCOSITY	RR RERUN BIT
PV PLASTIC VISCOSITY	CB CORE BIT
YP YIELD POINT	WOB WEIGHT ON BIT
FC FILTER CAKE	RPM REVS PER MINUTE
SOL SOLIDS	FLC FLOW CHECK
CR CIRCULATE RETURNS	WL FILTRATE
SD SAND - %	PR POOR RETURNS
S SALINITY - PPM	NR NO RETURNS
RM MUD RESISTIVITY	BG BACKGROUND GAS
RMF MUD FILTRATE	TG TRIP GAS
C CARBIDE TEST	STG SHORT TRIP GAS
LAT LOGGED AFTER TRIP	CG CONNECTION GAS
DS DEVIATION SURVEY	SG SWAB GAS
	SVG SURVEY GAS

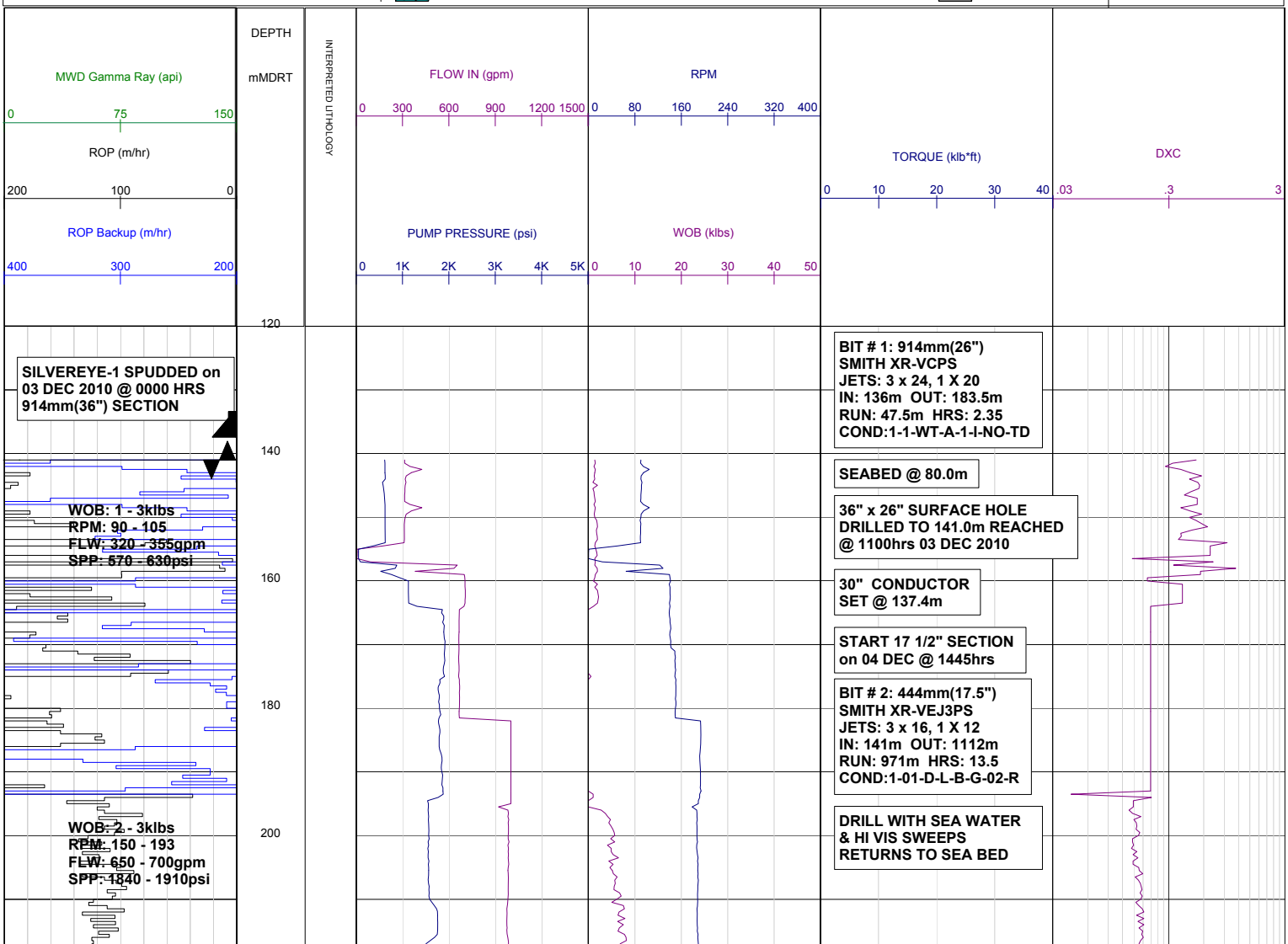
LITHOLOGY LEGEND

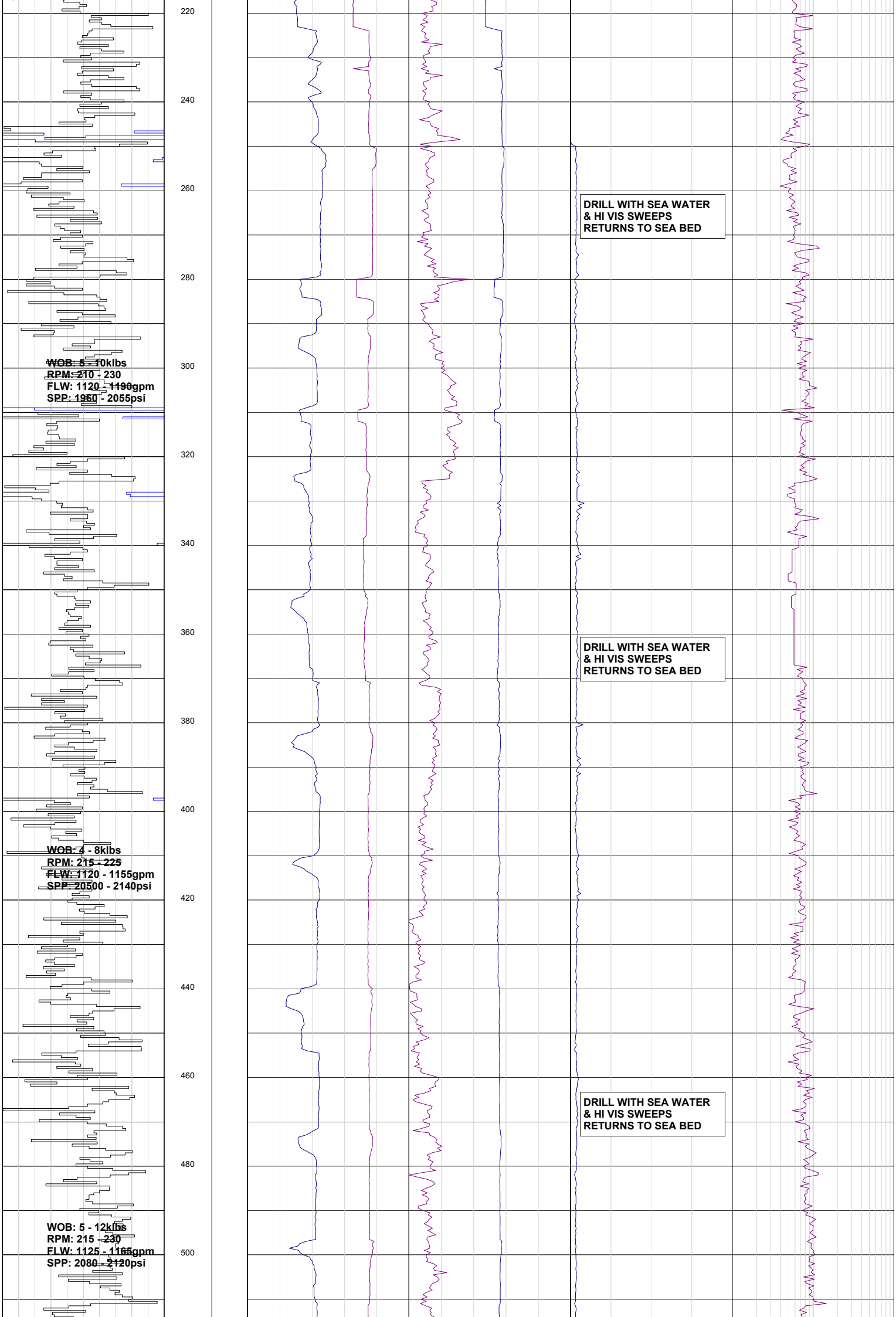
Dolomite, Claystone, Argil Siltstone, Calcareous, Calcirudite, Silstone, Sandy Siltstone, Dolomitic, Calcarenite, Sandstone, Calcareous Siltstone, Fossils, Calcisiltite, Coal, Argil Sandstone, Foraminiferae, Calcilutite, Metamorphic, Calcareous Sandstone, Carbonaceous, Sandy Claystone, Volcanics, Cement, Chert, Silty Claystone, Pyrite, Calcareous Claystone, Quartzite, Therm Alt Claystone, Glauconite, Argil Calcilutite, Mica

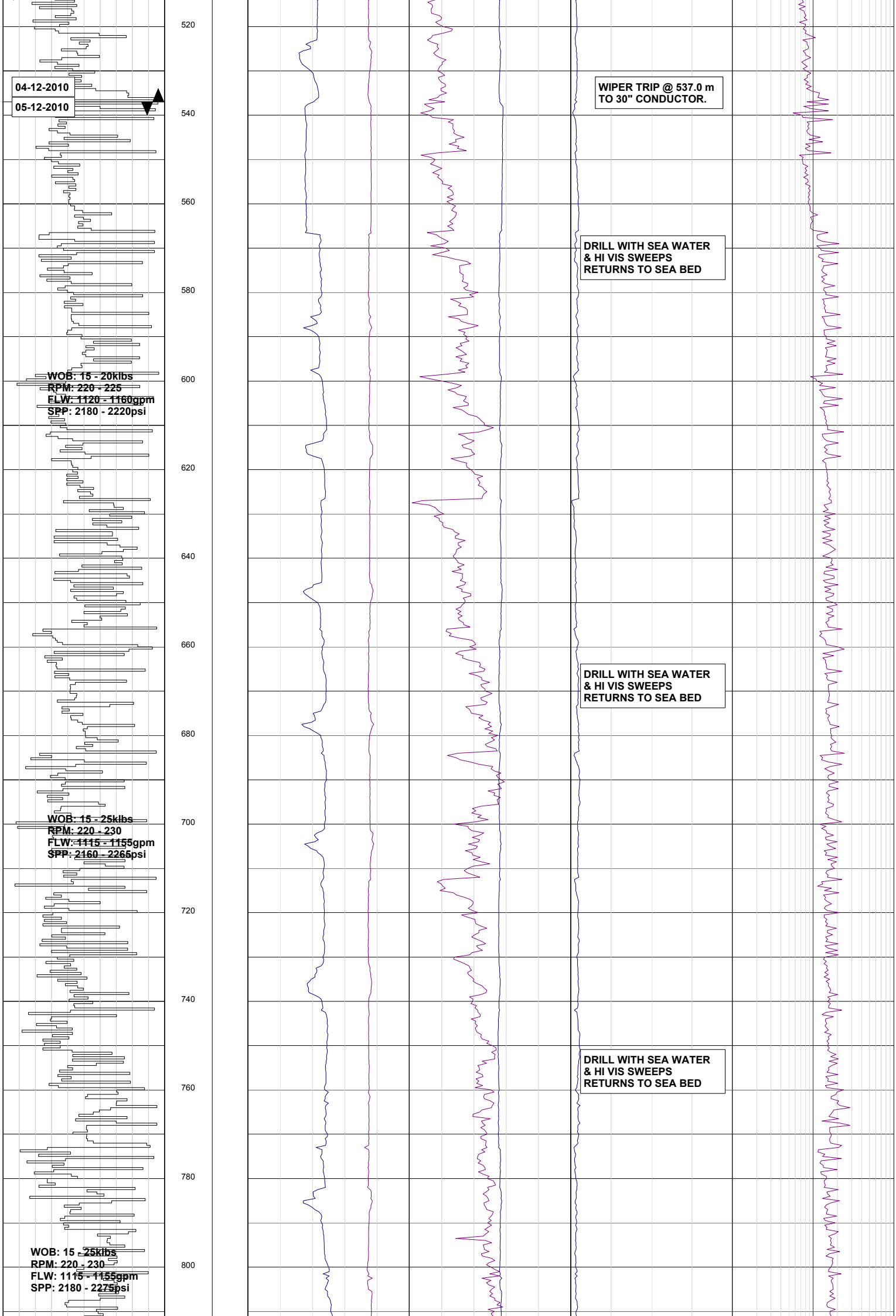
ALTERED VOLCANICS / DEGRADED METAMORPHICS

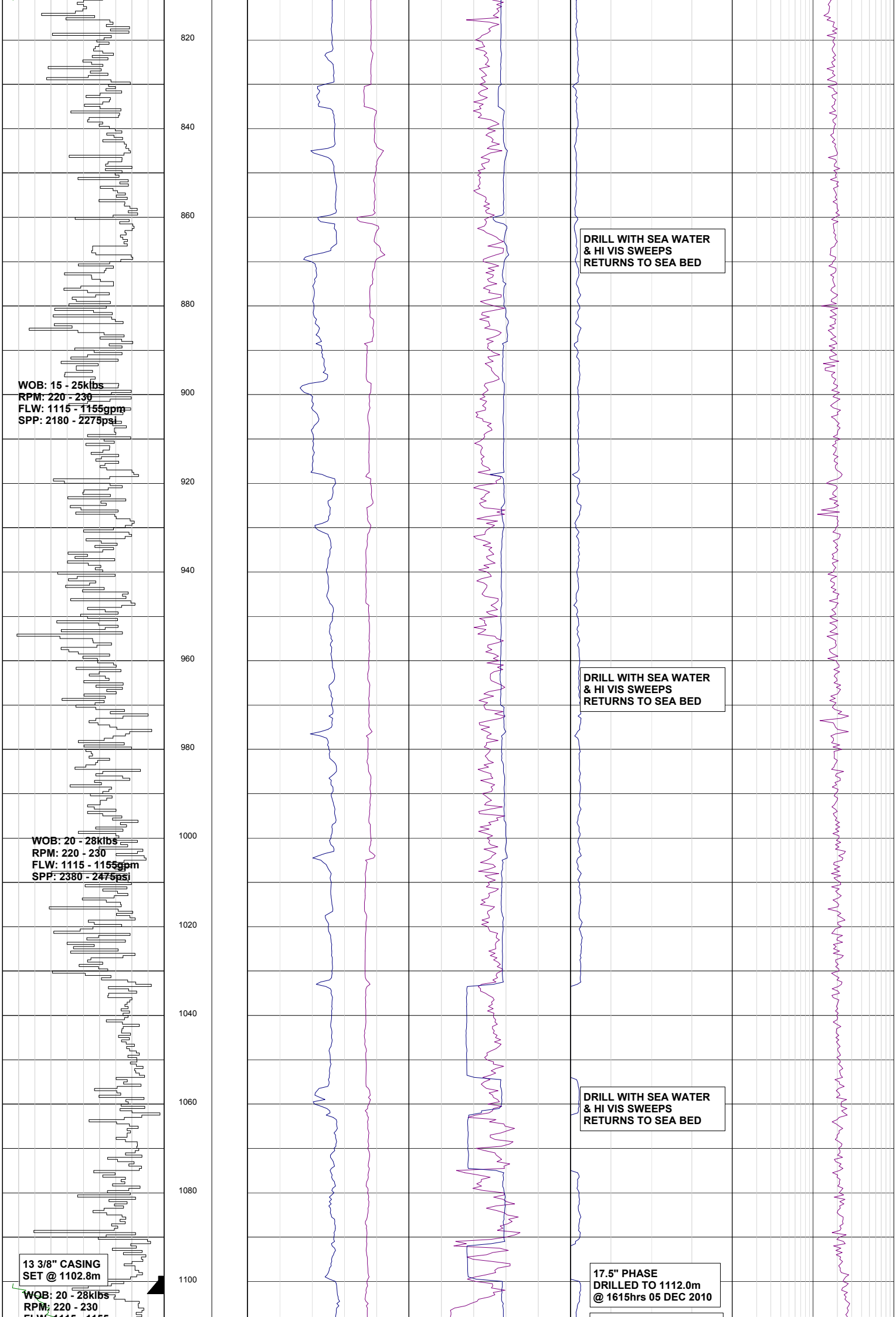
ENGINEERING

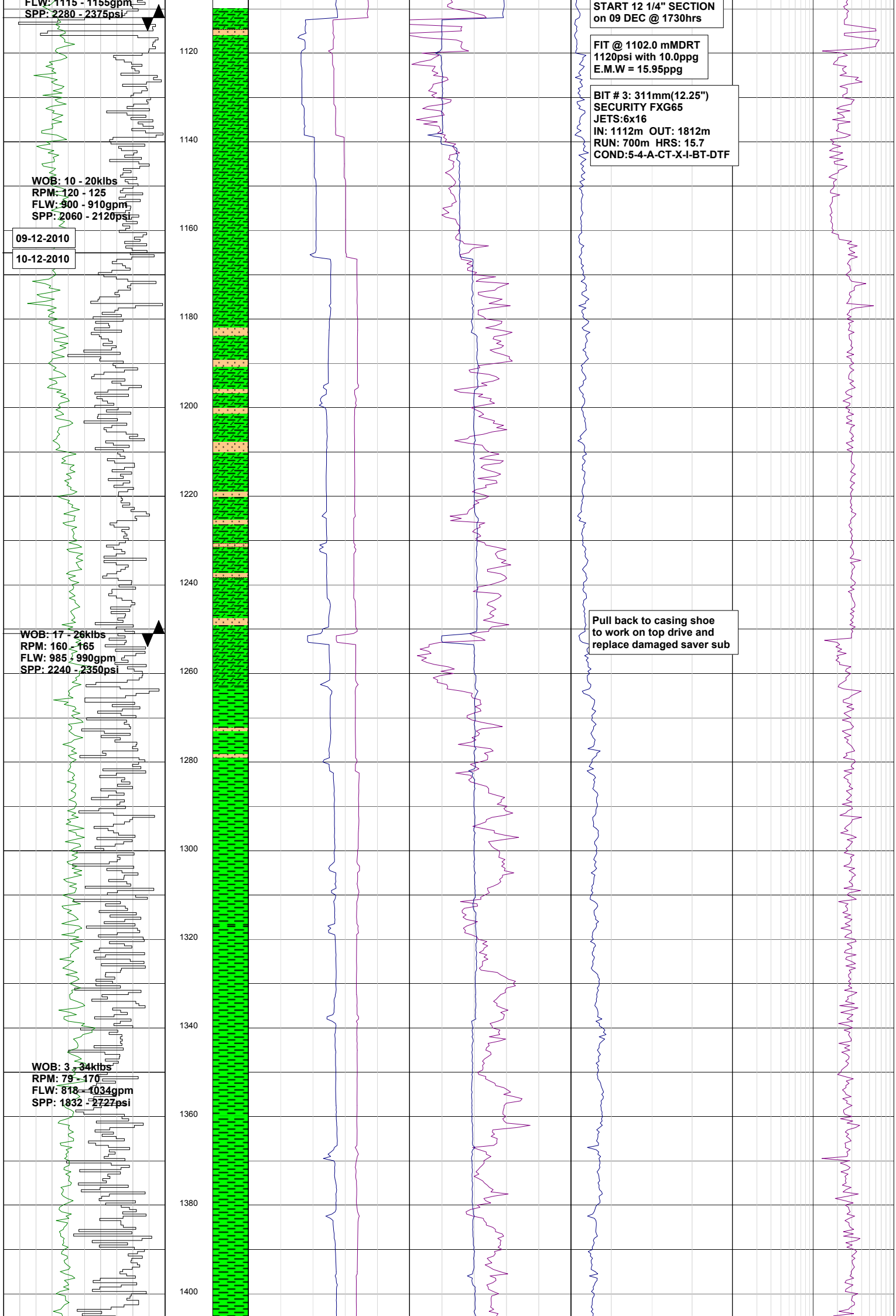
Test, FIT or LOT, Mud loss, Mud gain, Deviation survey, Core, Shoe, Calcimetry

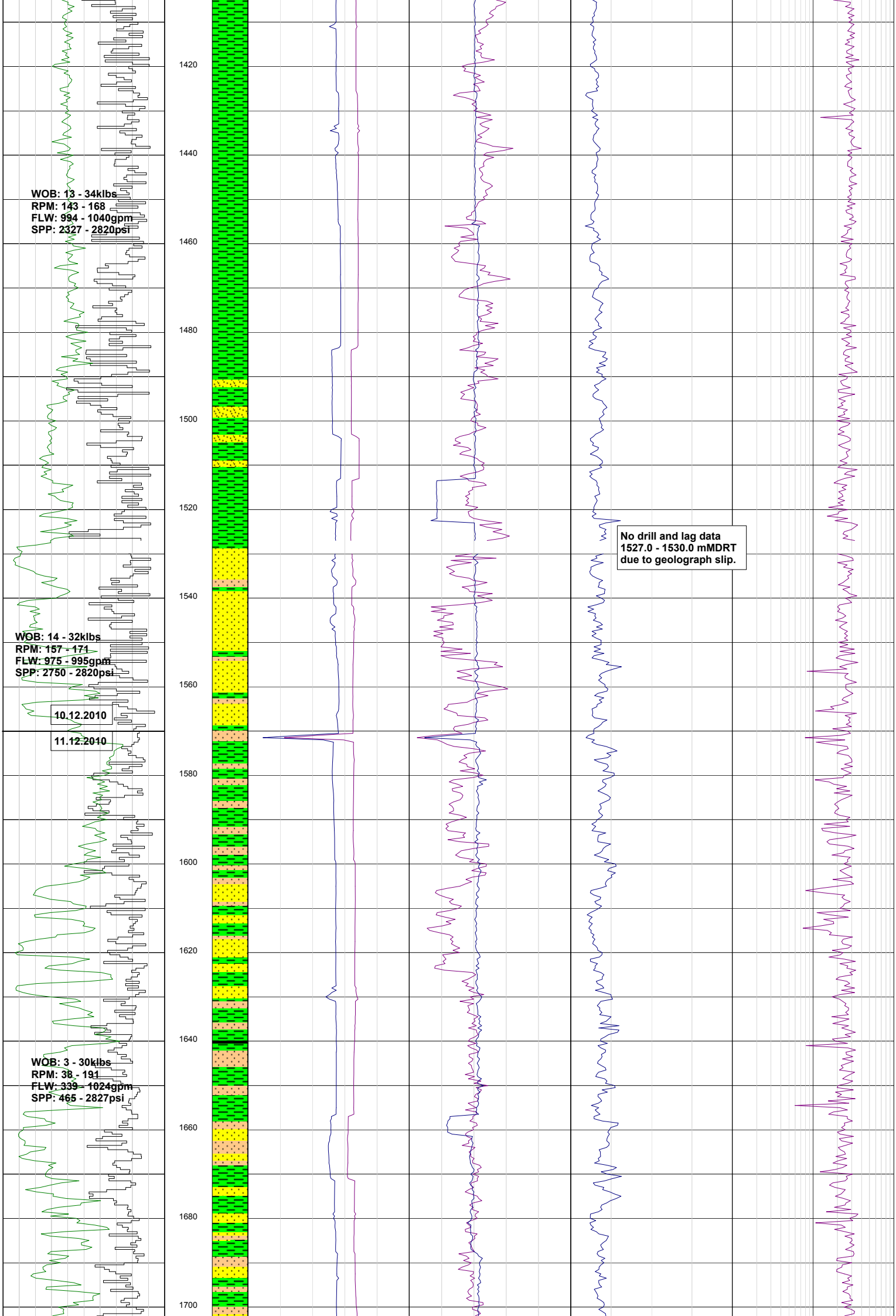


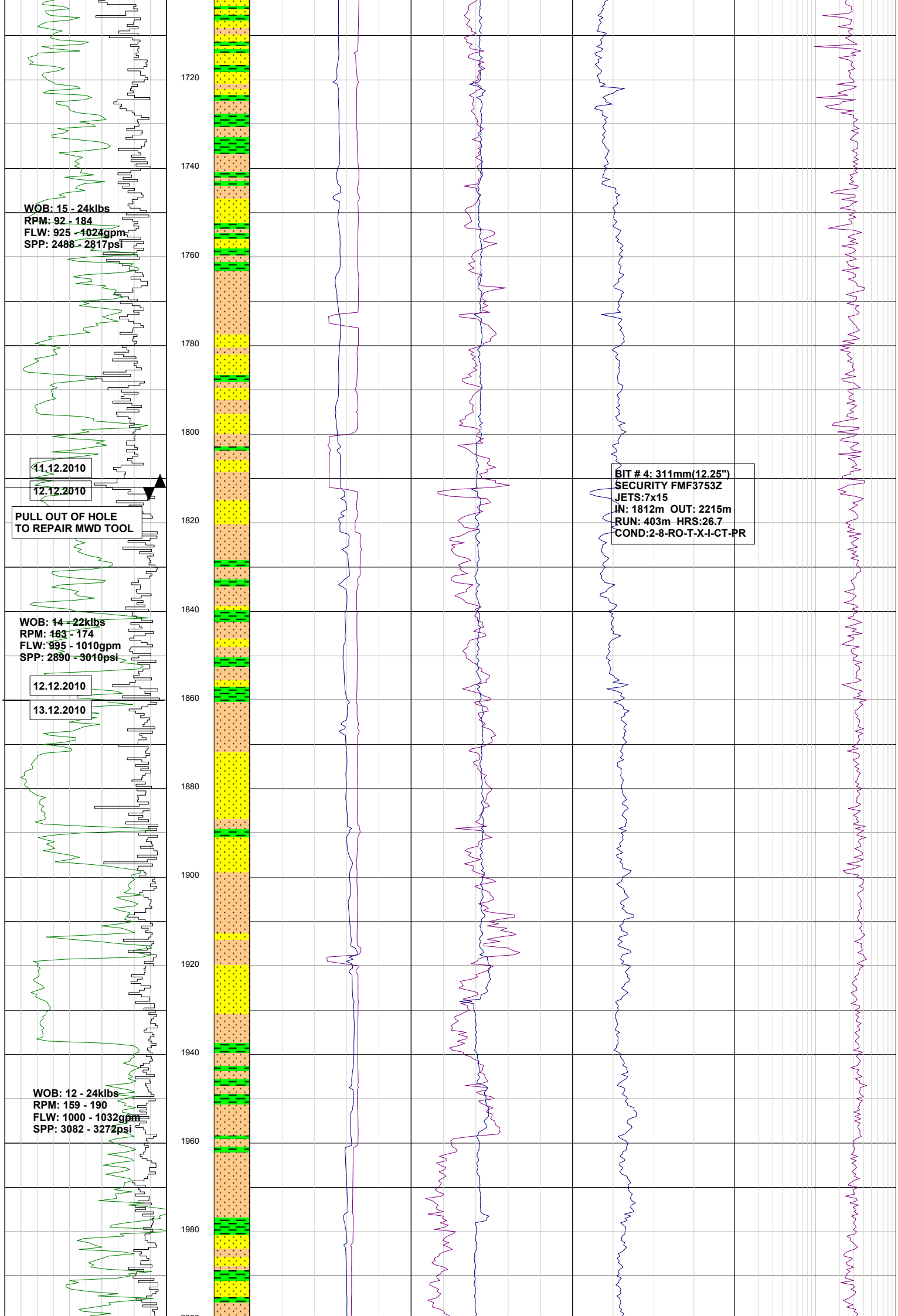

220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
WOB: 5 - 10klbs
RPM: 210 - 230
FLW: 1120 - 1190gpm
SPP: 1960 - 2055psi
WOB: 4 - 8klbs
RPM: 215 - 225
FLW: 1120 - 1155gpm
SPP: 2050 - 2140psi
WOB: 5 - 12klbs
RPM: 215 - 230
FLW: 1125 - 1165gpm
SPP: 2080 - 2120psi
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

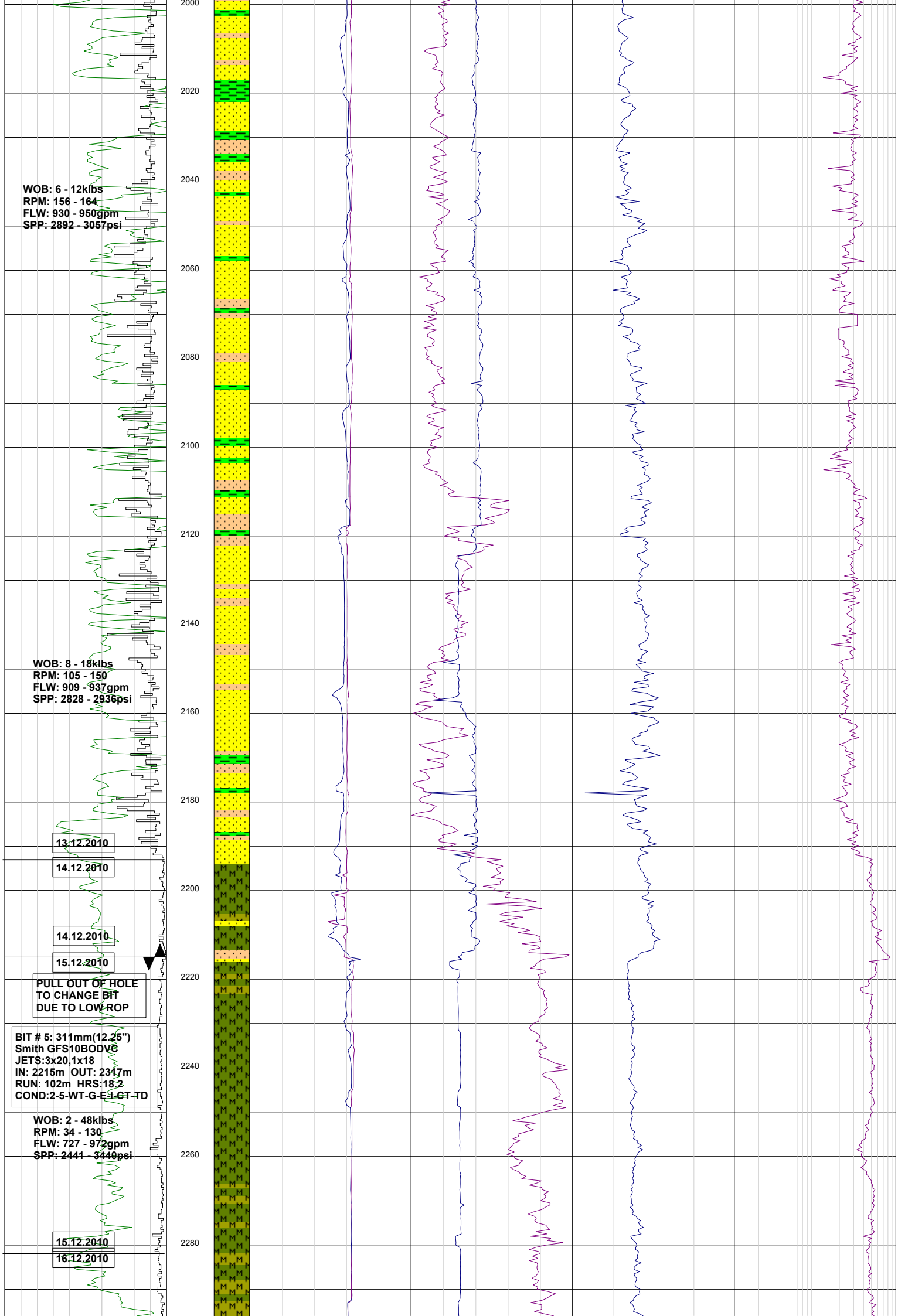

520
04-12-2010
05-12-2010
540
560
580
600
620
640
660
680
700
720
740
760
780
800
WOB: 15 - 20klbs
RPM: 220 - 225
FLW: 1120 - 1160gpm
SPP: 2180 - 2220psi
WOB: 15 - 25klbs
RPM: 220 - 230
FLW: 1115 - 1155gpm
SPP: 2160 - 2265psi
WOB: 15 - 25klbs
RPM: 220 - 230
FLW: 1115 - 1155gpm
SPP: 2180 - 2275psi
WIPER TRIP @ 537.0 m
TO 30" CONDUCTOR.
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED

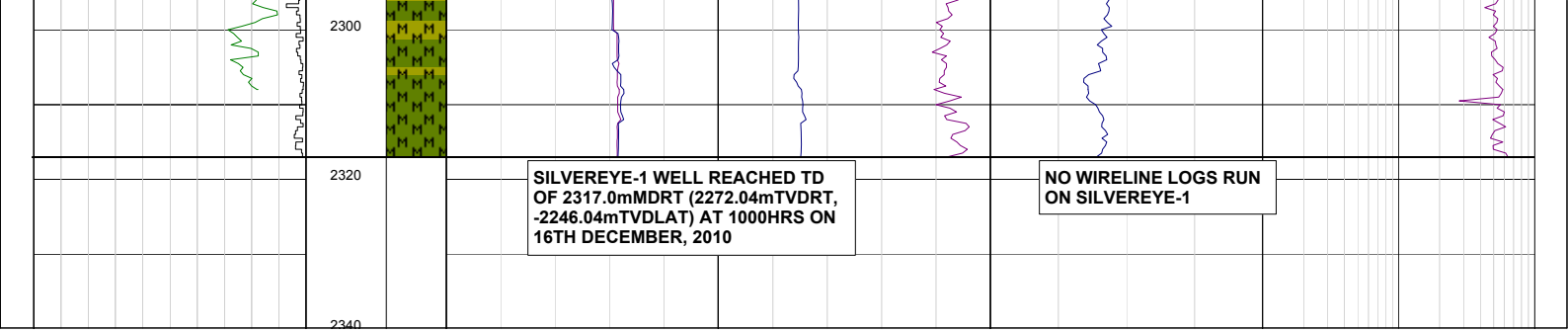

820
840
860
880
900
920
940
960
980
1000
1020
1040
1060
1080
1100
WOB: 15 - 25klbs
RPM: 220 - 230
FLW: 1115 - 1155gpm
SPP: 2180 - 2275psi
WOB: 20 - 28klbs
RPM: 220 - 230
FLW: 1115 - 1155gpm
SPP: 2380 - 2475psi
13 3/8" CASING
SET @ 1102.8m
WOB: 20 - 28klbs
RPM: 220 - 230
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
DRILL WITH SEA WATER
& HI VIS SWEEPS
RETURNS TO SEA BED
17.5" PHASE
DRILLED TO 1112.0m
@ 1615hrs 05 DEC 2010


FLW: 1115 - 1155gpm
SPP: 2280 - 2375psi
START 12 1/4" SECTION
on 09 DEC @ 1730hrs
FIT @ 1102.0 mMDRT
1120psi with 10.0ppg
E.M.W = 15.95ppg
BIT # 3: 311mm(12.25")
SECURITY FXG65
JETS:6x16
IN: 1112m OUT: 1812m
RUN: 700m HRS: 15.7
COND:5-4-A-CT-X-I-BT-DTF
WOB: 10 - 20klbs
RPM: 120 - 125
FLW: 900 - 910gpm
SPP: 2060 - 2120psi
09-12-2010
10-12-2010
1120
1140
1160
1180
1200
1220
1240
Pull back to casing shoe
to work on top drive and
replace damaged saver sub
WOB: 17 - 26klbs
RPM: 160 - 165
FLW: 985 - 990gpm
SPP: 2240 - 2350psi
1260
1280
1300
1320
1340
WOB: 3 - 34klbs
RPM: 79 - 170
FLW: 818 - 1034gpm
SPP: 1832 - 2727psi
1360
1380
1400


1420
1440
1460
1480
1500
1520
1540
1560
1580
1600
1620
1640
1660
1680
1700
WOB: 13 - 34klbs
RPM: 143 - 168
FLW: 994 - 1040gpm
SPP: 2327 - 2820psi
WOB: 14 - 32klbs
RPM: 157 - 171
FLW: 975 - 995gpm
SPP: 2750 - 2820psi
10.12.2010
11.12.2010
WOB: 3 - 30klbs
RPM: 38 - 191
FLW: 339 - 1024gpm
SPP: 465 - 2827psi
No drill and lag data
1527.0 - 1530.0 mMDRT
due to geolograph slip.


1720
1740
1760
1780
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
WOB: 15 - 24klbs
RPM: 92 - 184
FLW: 925 - 1024gpm
SPP: 2488 - 2817psi
11.12.2010
12.12.2010
PULL OUT OF HOLE
TO REPAIR MWD TOOL
WOB: 14 - 22klbs
RPM: 163 - 174
FLW: 995 - 1010gpm
SPP: 2890 - 3010psi
12.12.2010
13.12.2010
WOB: 12 - 24klbs
RPM: 159 - 190
FLW: 1000 - 1032gpm
SPP: 3082 - 3272psi
BIT # 4: 311mm(12.25")
SECURITY FMF3753Z
JETS:7x15
IN: 1812m OUT: 2215m
RUN: 403m HRS:26.7
COND:2-8-RO-T-X-I-CT-PR


2000
2020
2040
2060
2080
2100
2120
2140
2160
2180
2200
2220
2240
2260
2280
WOB: 6 - 12klbs
RPM: 156 - 164
FLW: 930 - 950gpm
SPP: 2892 - 3057psi
WOB: 8 - 18klbs
RPM: 105 - 150
FLW: 909 - 937gpm
SPP: 2828 - 2936psi
13.12.2010
14.12.2010
14.12.2010
15.12.2010
PULL OUT OF HOLE
TO CHANGE BIT
DUE TO LOW ROP
BIT # 5: 311mm(12.25")
Smith GFS10BODVC
JETS:3x20,1x18
IN: 2215m OUT: 2317m
RUN: 102m HRS:18.2
COND:2-5-WT-G-E-I-CT-TD
WOB: 2 - 48klbs
RPM: 34 - 130
FLW: 727 - 972gpm
SPP: 2441 - 3440psi
15.12.2010
16.12.2010


2300
2320
2340
SILVEREYE-1 WELL REACHED TD OF 2317.0mMDRT (2272.04mTVDRT, -2246.04mTVDLAT) AT 1000HRS ON 16TH DECEMBER, 2010
NO WIRELINE LOGS RUN ON SILVEREYE-1

PRESSURE EVALUATION LOG

WELL : SILVEREYE-1

FROM (m): 1090 TO (m): 2340 SCALE: 1/ 1000

Country	: AUSTRALIA	**POSITION**		**CASING SHOE SIZE / DEPTH**			
Region	: BASS BASIN	Latitude (GDA 94)	: 39° 54' 19.8250" S	30" Conductor at (m MDRT)	: 137.4 m	Spud Date	: 03 DEC 2010
Field	: SILVEREYE	Longitude	: 145° 03' 32.6409" E	13 3/8" (340mm) at (m MDRT)	: 1102.8 m	Total Depth Date	: 16 DEC 2010
Permit	: T/44P	Easting (UTM 55)	: 334088.708 m			Total Depth (m MDRT)	: 2317.0 m
Well Type	: EXPLORATION	Northing	: 5580927.328 m			Total Depth (m TVDLAT)	: -2246.04 m
Rig Name	: KAN TAN IV	RT-Sealevel (m LAT)	: 26.0 m			Status :	: Plug & Abandon
		RT-Seabed (m LAT)	: 80.0 m				

ABBREVIATIONS

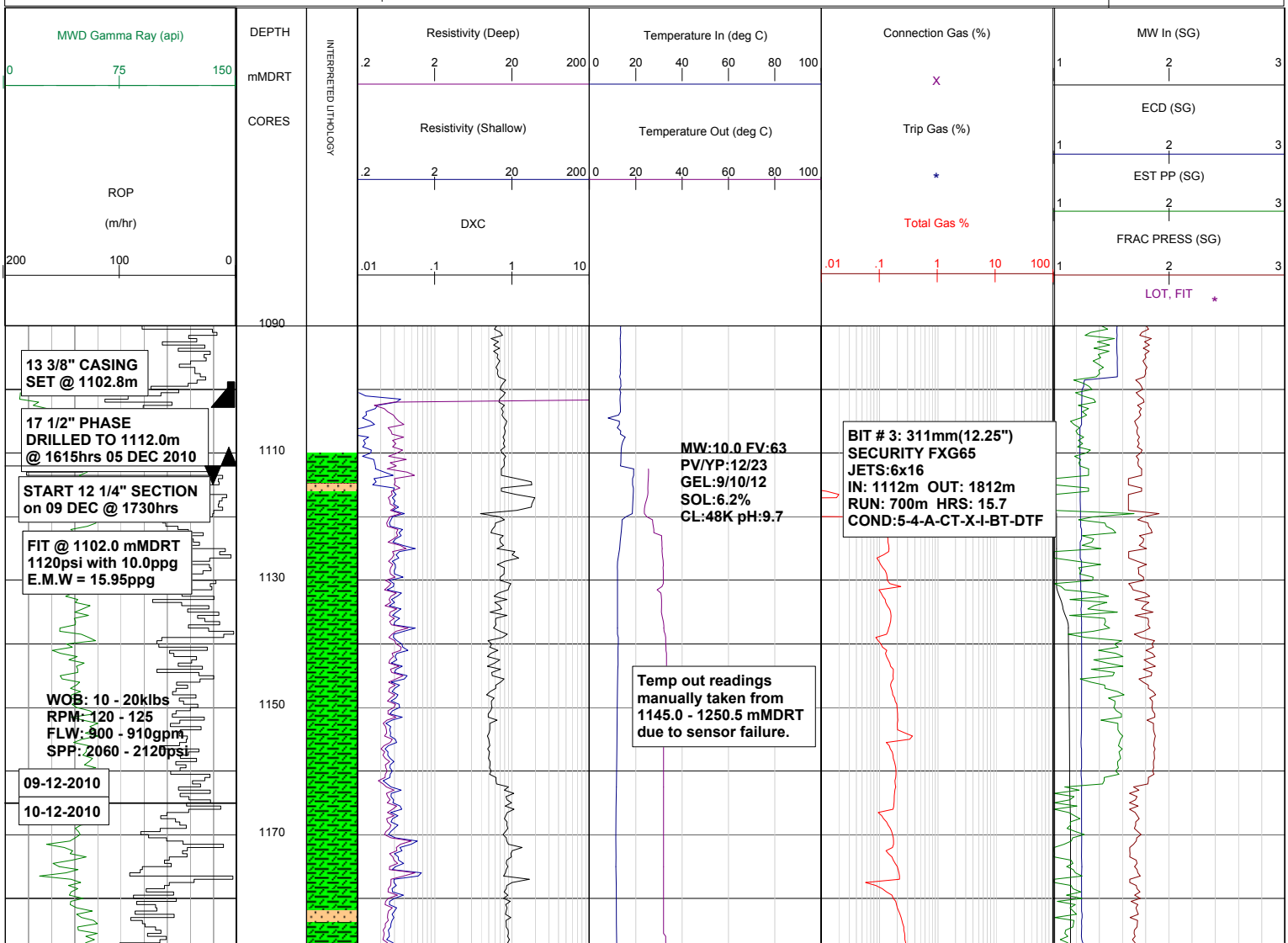
MW MUD WEIGHT	NB NEW BIT
FV FUNNEL VISCOSITY	RR RERUN BIT
PV PLASTIC VISCOSITY	CB CORE BIT
YP YIELD POINT	WOB WEIGHT ON BIT
FC FILTER CAKE	RPM REVS PER MINUTE
SOL SOLIDS	FLC FLOW CHECK
CR CIRCULATE RETURNS	WL FILTRATE
SD SAND - %	PR POOR RETURNS
S SALINITY - PPM	NR NO RETURNS
RM MUD RESISTIVITY	BG BACKGROUND GAS
RMF MUD FILTRATE	TG TRIP GAS
C CARBIDE TEST	STG SHORT TRIP GAS
LAT LOGGED AFTER TRIP	CG CONNECTION GAS
DS DEVIATION SURVEY	SG SWAB GAS
	SVG SURVEY GAS

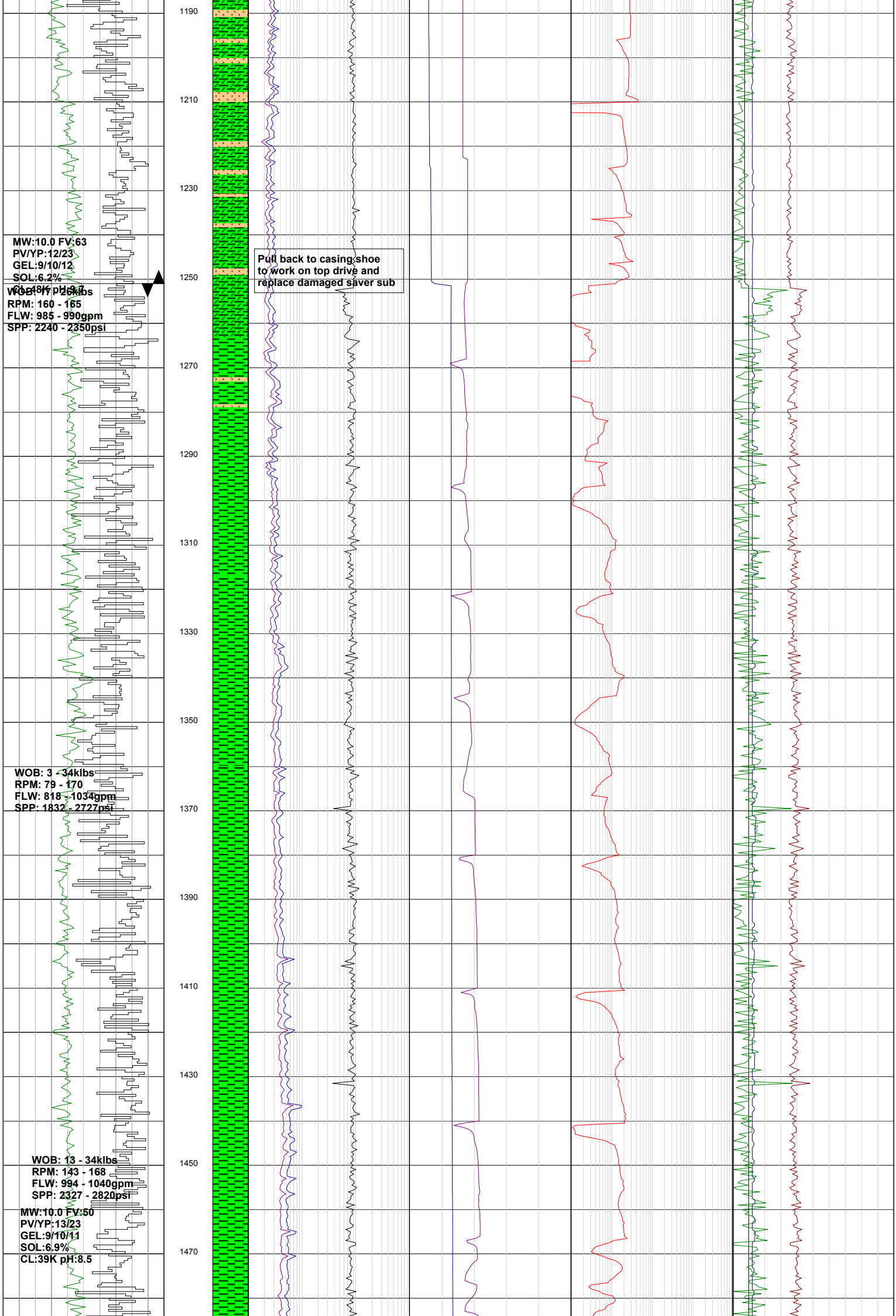
LITHOLOGY LEGEND

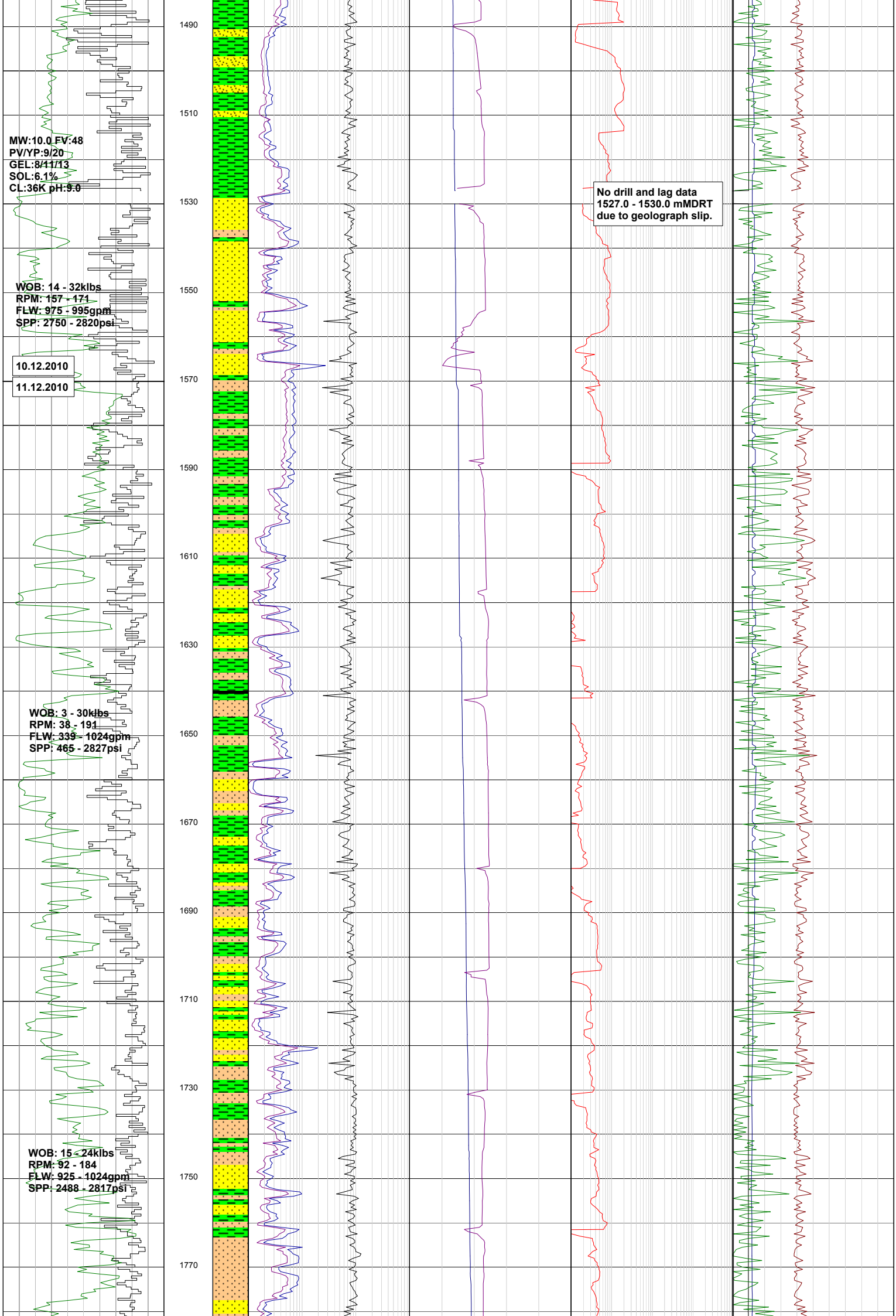
Dolomite	Claystone	Argil Siltstone	Calcareous
Calcirudite	Silstone	Sandy Siltstone	Dolomitic
Calcarenite	Sandstone	Calcareous Siltstone	Fossils
Calcisiltite	Coal	Argil Sandstone	Foraminiferae
Calcilutite	Metamorphic	Calcareous Sandstone	Carbonaceous
Sandy Claystone	Volcanics	Cement	Chert
Silty Claystone	ALTERED VOLCANICS / DEGRADED METAMORHICS		Pyrite
Calcareous Claystone	Quartzite	Therm Alt Claystone	Glauconite
Argil Calcilutite			Mica

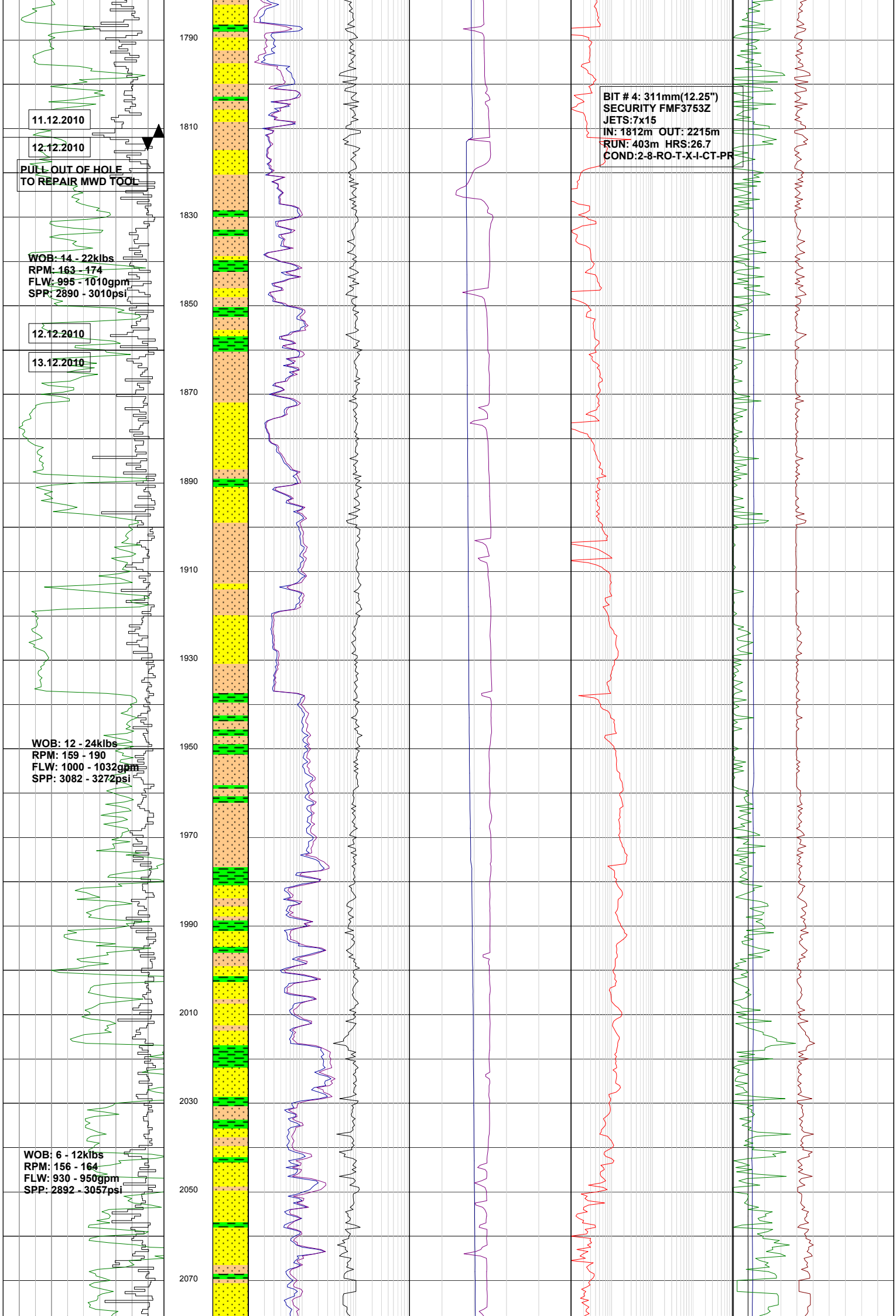
ENGINEERING

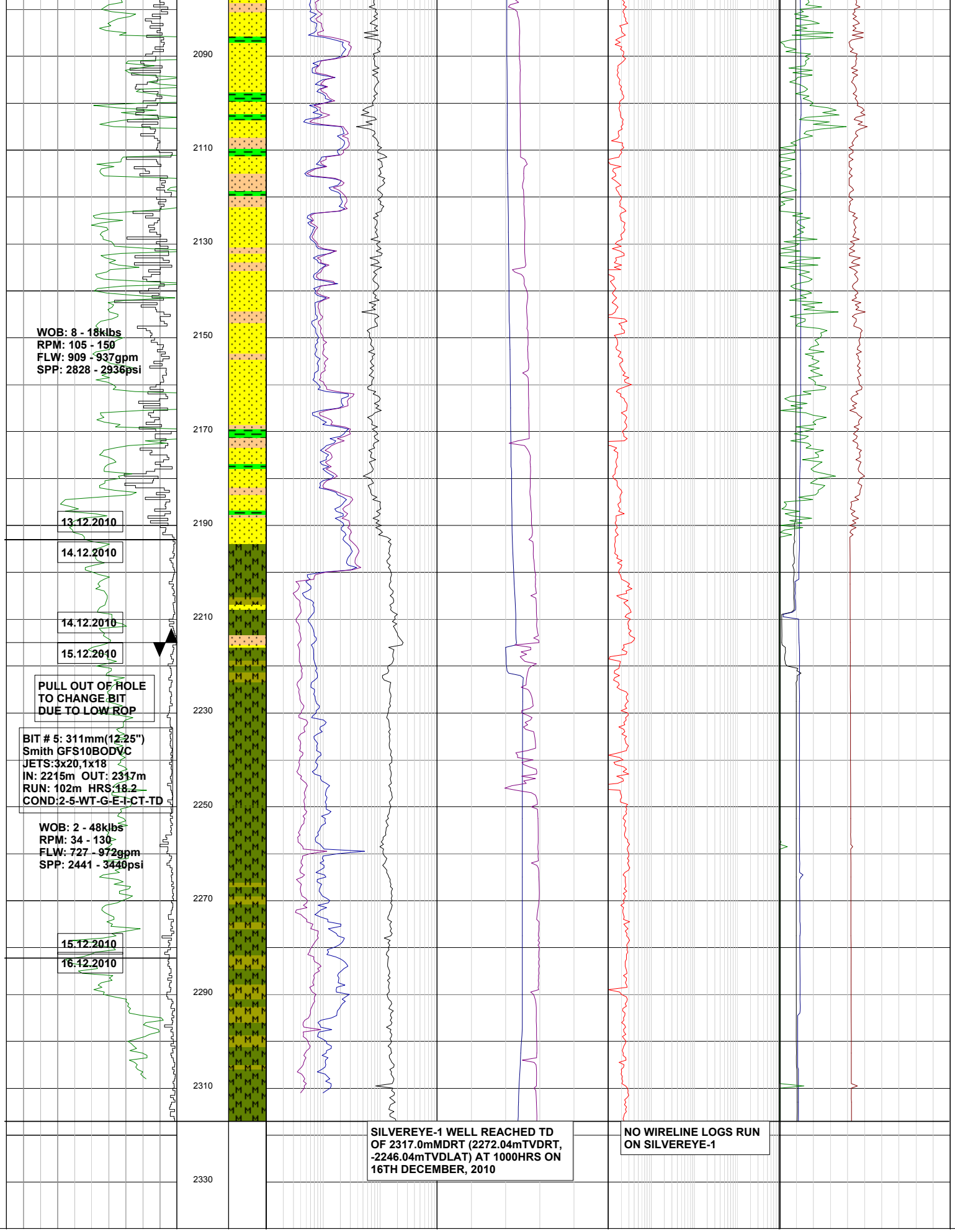
Test
FIT or LOT
Mud loss
Mud gain
Deviation survey
Core
Shoe
Calcimetry




1190
1210
1230
1250
1270
1290
1310
1330
1350
1370
1390
1410
1430
1450
1470
MW:10.0 FV:63
PV/YP:12/23
GEL:9/10/12
SOL:6.2%
CL:48K pH:8.5
WOB: 17 - 26klbs
RPM: 160 - 165
FLW: 985 - 990gpm
SPP: 2240 - 2350psi
Pull back to casing shoe
to work on top drive and
replace damaged saver sub
WOB: 3 - 34klbs
RPM: 79 - 170
FLW: 818 - 1034gpm
SPP: 1832 - 2727psi
WOB: 13 - 34klbs
RPM: 143 - 168
FLW: 994 - 1040gpm
SPP: 2327 - 2820psi
MW:10.0 FV:50
PV/YP:13/23
GEL:9/10/11
SOL:6.9%
CL:39K pH:8.5


1490
1510
1530
1550
1570
1590
1610
1630
1650
1670
1690
1710
1730
1750
1770
MW:10.0 FV:48
PV/YP:9/20
GEL:8/11/13
SOL:6.1%
CL:36K pH:9.0
WOB: 14 - 32klbs
RPM: 157 - 171
FLW: 975 - 995gpm
SPP: 2750 - 2820psi
10.12.2010
11.12.2010
WOB: 3 - 30klbs
RPM: 38 - 191
FLW: 339 - 1024gpm
SPP: 465 - 2827psi
WOB: 15 - 24klbs
RPM: 92 - 184
FLW: 925 - 1024gpm
SPP: 2488 - 2817psi
No drill and lag data
1527.0 - 1530.0 mMDRT
due to geolograph slip.


1790
1810
1830
1850
1870
1890
1910
1930
1950
1970
1990
2010
2030
2050
2070
11.12.2010
12.12.2010
PULL OUT OF HOLE
TO REPAIR MWD TOOL
WOB: 14 - 22klbs
RPM: 163 - 174
FLW: 995 - 1010gpm
SPP: 2890 - 3010psi
12.12.2010
13.12.2010
WOB: 12 - 24klbs
RPM: 159 - 190
FLW: 1000 - 1032gpm
SPP: 3082 - 3272psi
WOB: 6 - 12klbs
RPM: 156 - 164
FLW: 930 - 950gpm
SPP: 2892 - 3057psi
BIT # 4: 311mm(12.25")
SECURITY FMF3753Z
JETS:7x15
IN: 1812m OUT: 2215m
RUN: 403m HRS:26.7
COND:2-8-RO-T-X-I-CT-PR


2090
2110
2130
2150
2170
2190
2210
2230
2250
2270
2290
2310
2330
WOB: 8 - 18klbs
RPM: 105 - 150
FLW: 909 - 937gpm
SPP: 2828 - 2936psi
13.12.2010
14.12.2010
14.12.2010
15.12.2010
PULL OUT OF HOLE
TO CHANGE BIT
DUE TO LOW ROP
BIT # 5: 311mm(12.25")
Smith GFS10BODVC
JETS:3x20,1x18
IN: 2215m OUT: 2317m
RUN: 102m HRS:18.2
COND:2-5-WT-G-E-I-CT-TD
WOB: 2 - 48klbs
RPM: 34 - 130
FLW: 727 - 972gpm
SPP: 2441 - 3440psi
15.12.2010
16.12.2010
SILVEREYE-1 WELL REACHED TD
OF 2317.0mMDRT (2272.04mTVDRT,
-2246.04mTVDLAT) AT 1000HRS ON
16TH DECEMBER, 2010
NO WIRELINE LOGS RUN
ON SILVEREYE-1

RESERVAL GAS RATIO LOG

WELL : SILVEREYE-1

FROM (m): 1090 TO (m): 2340 SCALE: 1/ 500

Country	: AUSTRALIA
Region	: BASS BASIN
Field	: SILVEREYE
Permit	: T/44P
Well Type	: EXPLORATION
Rig Name	: KAN TAN IV

POSITION

Latitude (GDA 94)	: 39° 54' 19.8250" S
Longitude	: 145° 03' 32.6409" E
Easting (UTM 55)	: 334088.708 m
Northing	: 5580927.328 m
RT-Sealevel (m LAT)	: 26.0 m
RT-Seabed (m LAT)	: 80.0 m

CASING SHOE SIZE / DEPTH (m MDRT)

30" Conductor at	: 137.4 m
13 3/8" (340mm) at	: 1102.8 m

Spud Date	: 03 DEC 2010
Total Depth Date	: 16 DEC 2010
Total Depth (m MDRT)	: 2317.0 m
Total Depth (m TVDLAT)	: -2246.04 m
Status	: Plug & Abandon

GAS RATIOS FORMULAE

GAS WETNESS RATIO (Wh)

GWR = (C2+C3+C4+C5) / (C1+C2+C3+C4+C5)*100

LIGHT TO HEAVY RATIO (Bh)

LHR = (C1+C2) / (C3+C4+C5)

OIL CHARACTER QUALIFIER (Ch)

OCQ = (C4+C5) / (C3)

Dolomite, Calcirudite, Calcarenite, Calcisiltite, Calcilutite, Sandy Claystone, Silty Claystone, Calcareous Claystone, Argil Calcilutite, Claystone, Silstone, Sandstone, Coal, Metamorphic, Volcanics, ALTERED VOLCANICS / DEGRADED METAMORPHICS, Quartzite, Argil Siltstone, Sandy Siltstone, Calcareous Siltstone, Argil Sandstone, Calcareous Sandstone, Cement, Therm Alt Claystone, Calcareous, Dolomitic, Fossils, Foraminiferae, Carbonaceous, Chert, Pyrite, Glauconite, Mica

GEOSERVICES CREW

DATA ENGINEERS

Nick Abolins

Gareth Munro

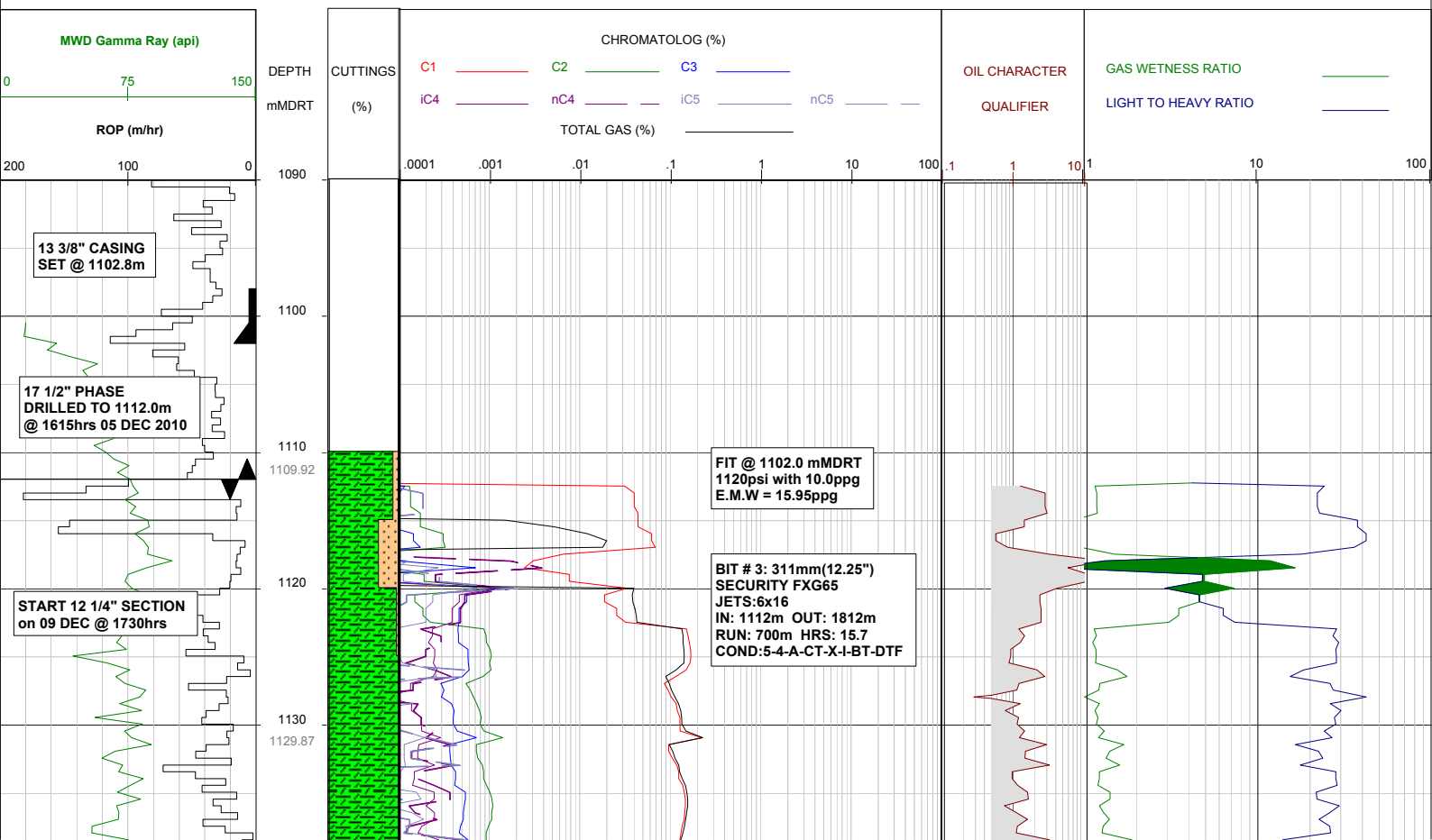
MUDLOGGERS

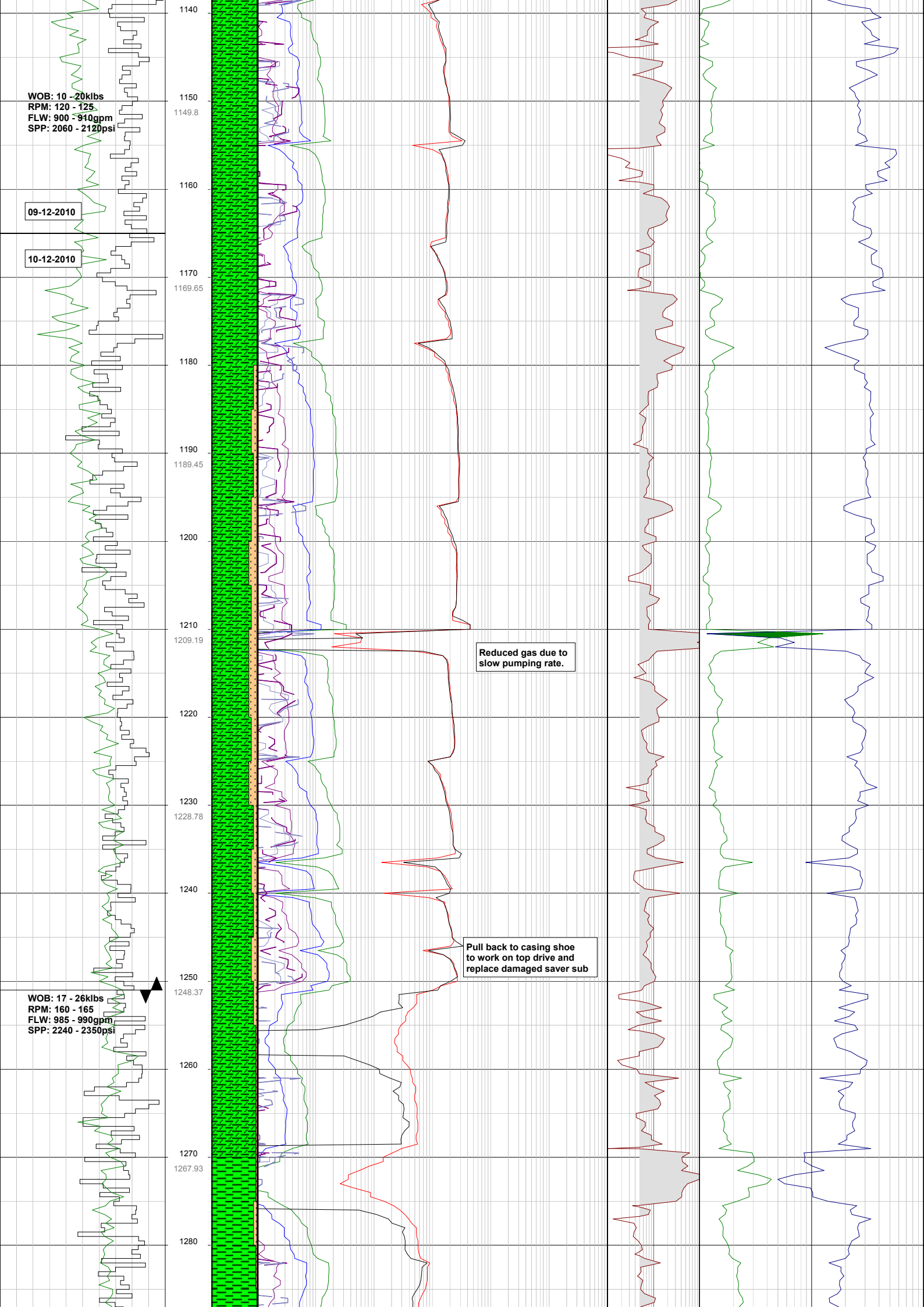
Adam Sullivan

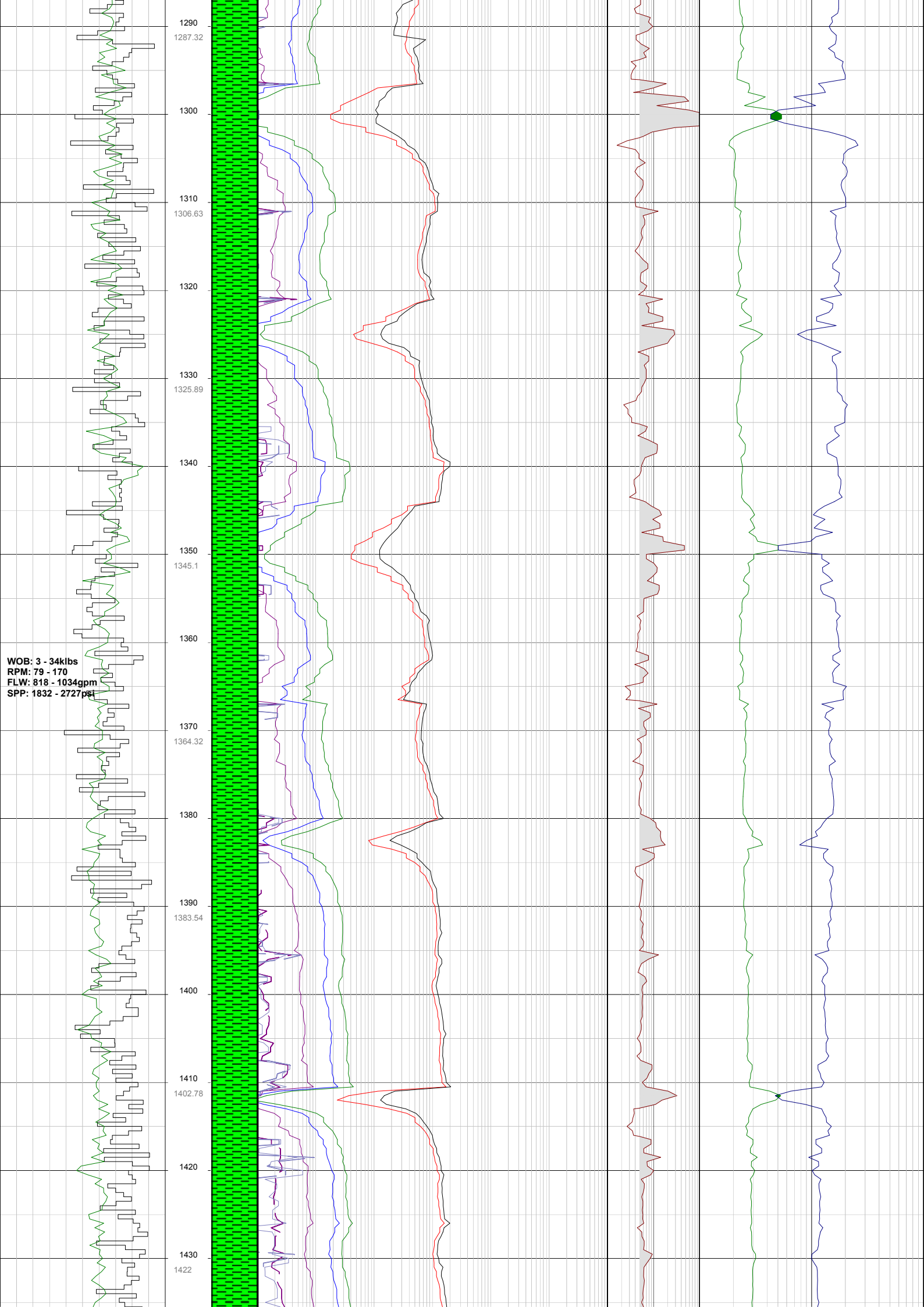
Kirupan Velauthapillai

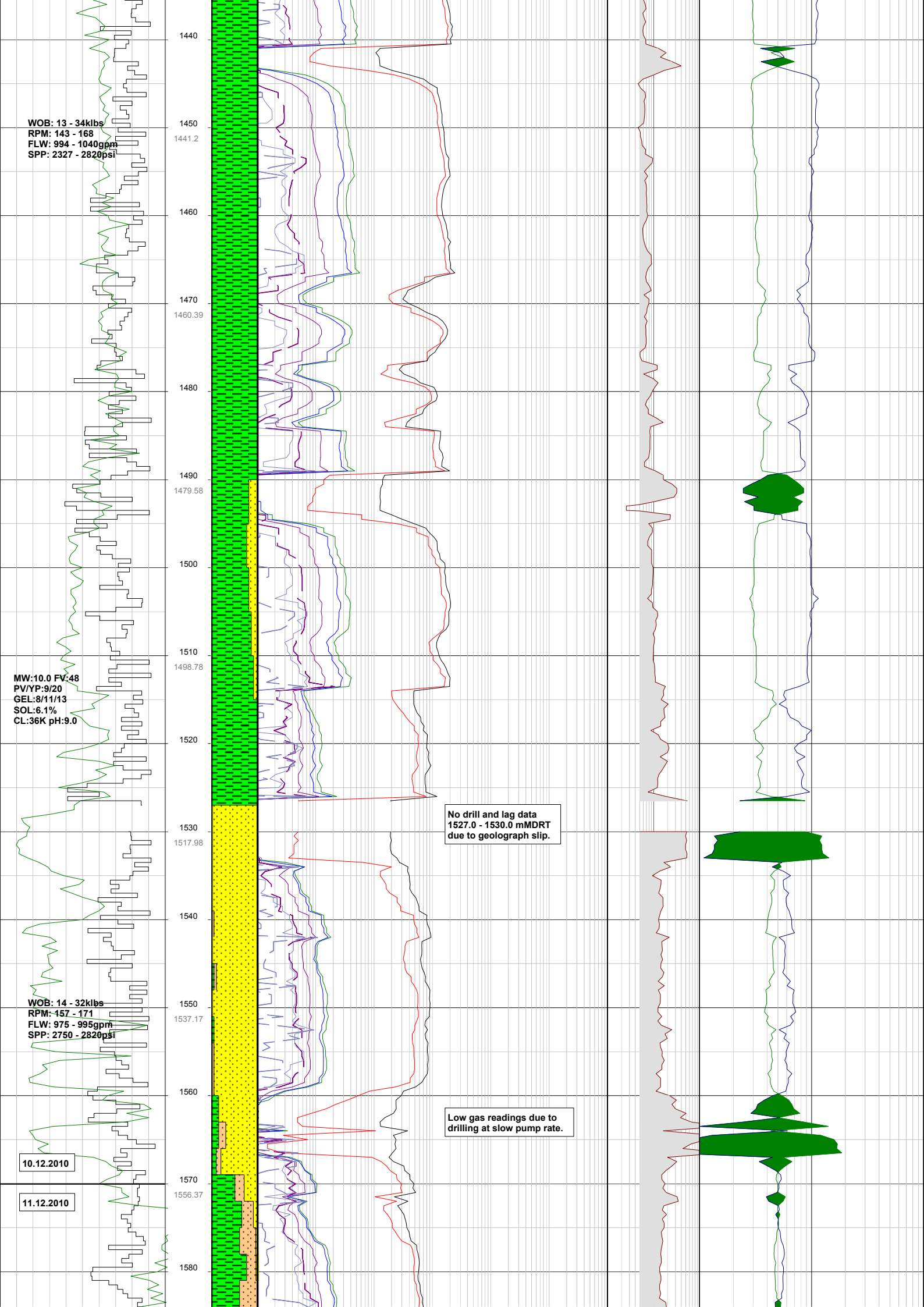
SAMPLE CATCHERS

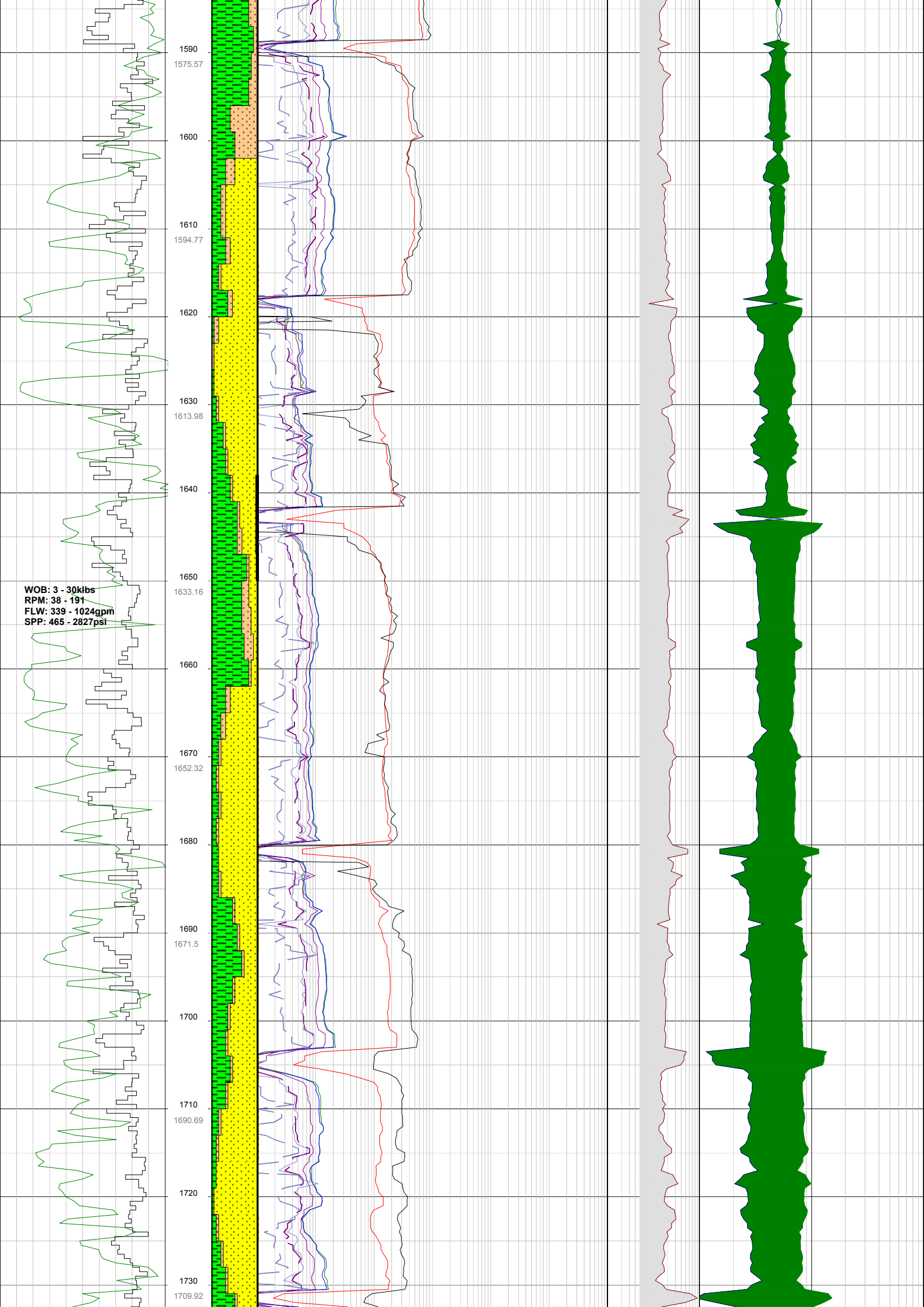
K.Velauthapillai

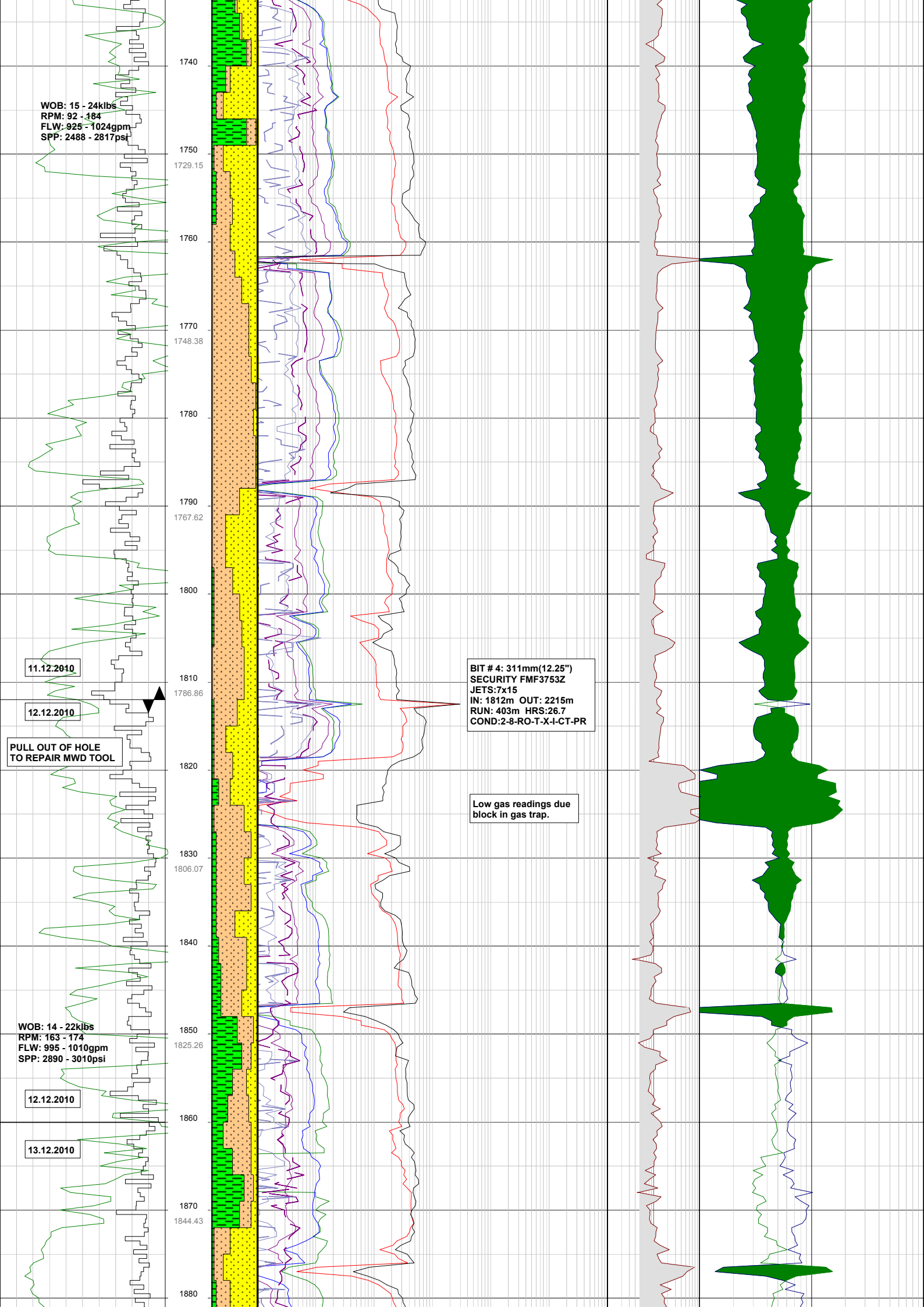


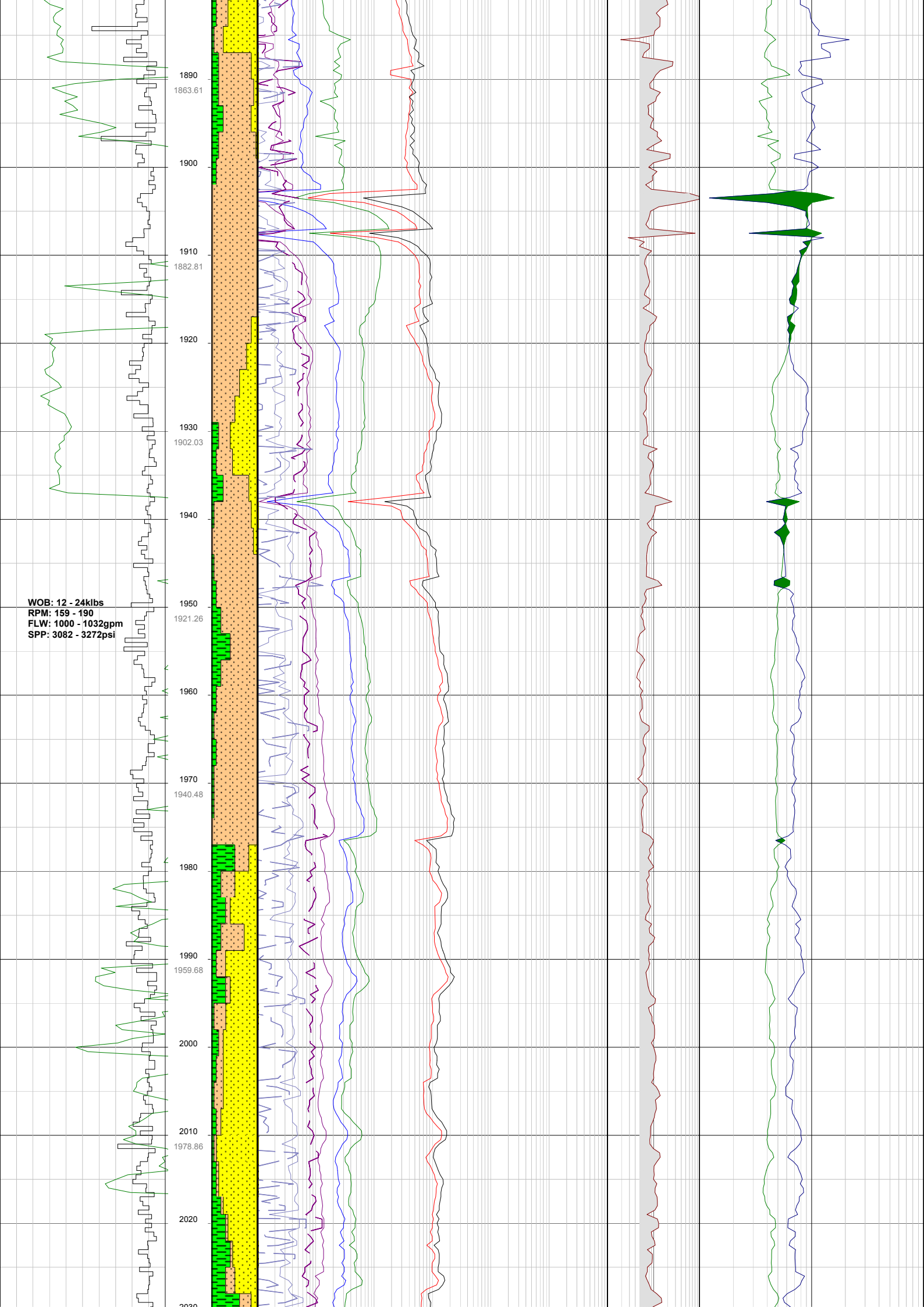

1140
1150
1149.8
1160
1170
1169.65
1180
1190
1189.45
1200
1210
1209.19
1220
1230
1228.78
1240
1250
1248.37
1260
1270
1267.93
1280
WOB: 10 - 20klbs
RPM: 120 - 125
FLW: 900 - 910gpm
SPP: 2060 - 2120psi
09-12-2010
10-12-2010
WOB: 17 - 26klbs
RPM: 160 - 165
FLW: 985 - 990gpm
SPP: 2240 - 2350psi
Reduced gas due to slow pumping rate.
Pull back to casing shoe to work on top drive and replace damaged saver sub

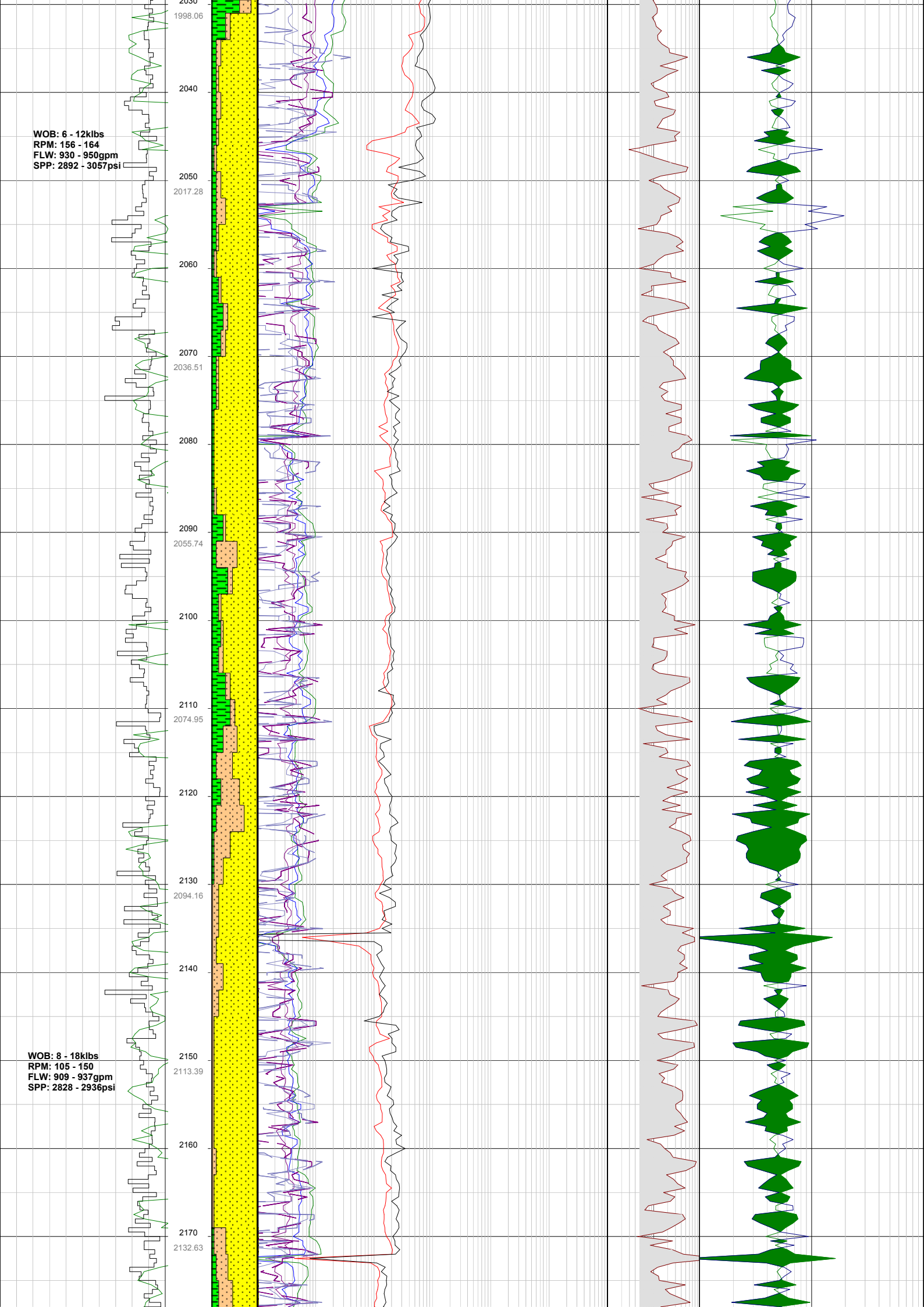

1290
1287.32
1300
1310
1306.63
1320
1330
1325.89
1340
1350
1345.1
1360
1370
1364.32
1380
1390
1383.54
1400
1410
1402.78
1420
1430
1422
WOB: 3 - 34klbs
RPM: 79 - 170
FLW: 818 - 1034gpm
SPP: 1832 - 2727psi

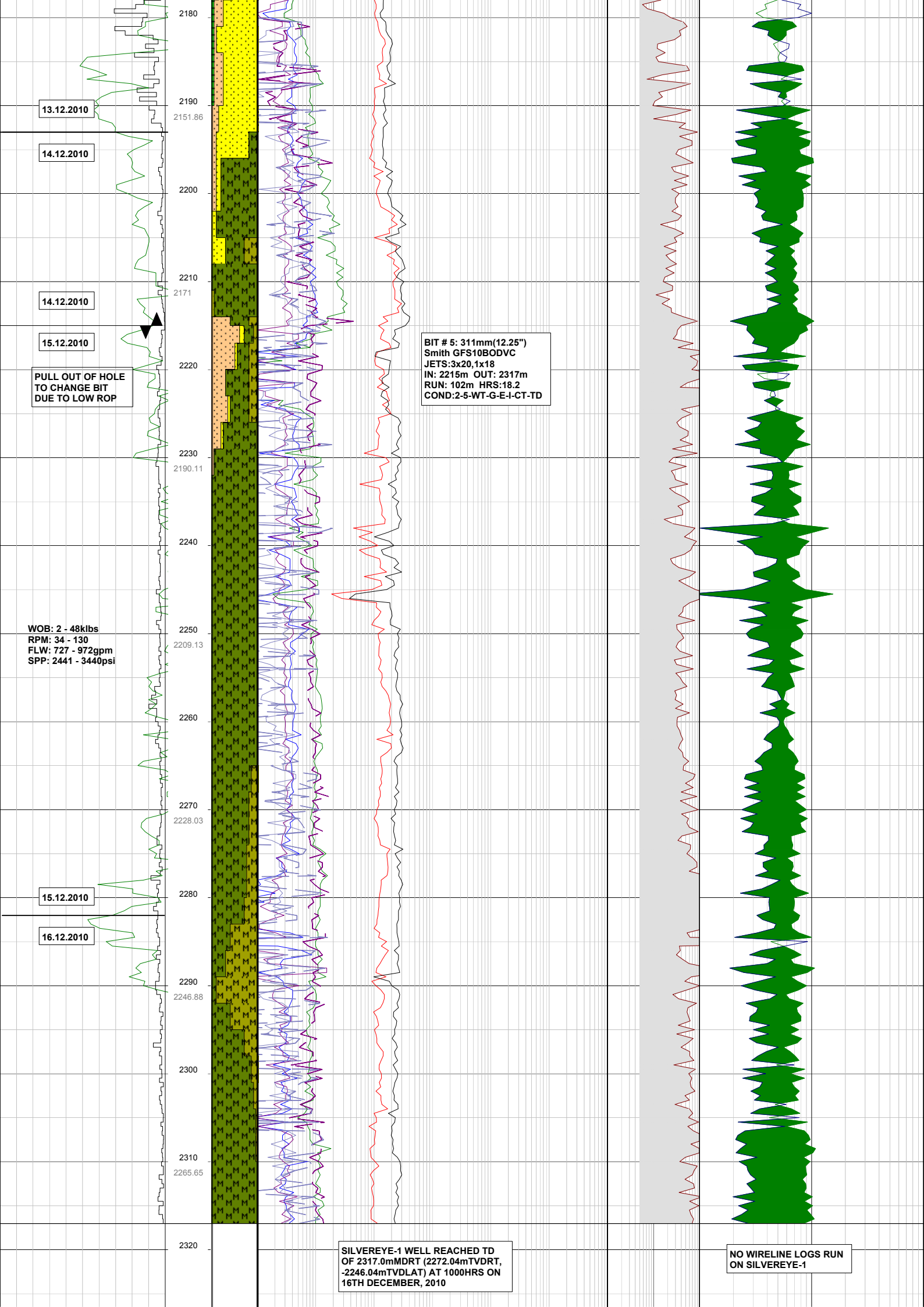

1440
1450
1441.2
1460
1470
1460.39
1480
1490
1479.58
1500
1510
1498.78
1520
1530
1517.98
1540
1550
1537.17
1560
1570
1556.37
1580
WOB: 13 - 34klbs
RPM: 143 - 168
FLW: 994 - 1040gpm
SPP: 2327 - 2820psi
MW:10.0 FV:48
PV/YP:9/20
GEL:8/11/13
SOL:6.1%
CL:36K pH:9.0
WOB: 14 - 32klbs
RPM: 157 - 171
FLW: 975 - 995gpm
SPP: 2750 - 2820psi
10.12.2010
11.12.2010
No drill and lag data
1527.0 - 1530.0 mMDRT
due to geolograph slip.
Low gas readings due to
drilling at slow pump rate.


1590
1575.57
1600
1610
1594.77
1620
1630
1613.98
1640
1650
1633.16
1660
1670
1652.32
1680
1690
1671.5
1700
1710
1690.69
1720
1730
1709.92
WOB: 3 - 30klbs
RPM: 38 - 191
FLW: 339 - 1024gpm
SPP: 465 - 2827psi


1740
1750
1729.15
1760
1770
1748.38
1780
1790
1767.62
1800
1810
1786.86
1820
1830
1806.07
1840
1850
1825.26
1860
1870
1844.43
1880
WOB: 15 - 24klbs
RPM: 92 - 184
FLW: 925 - 1024gpm
SPP: 2488 - 2817psi
11.12.2010
12.12.2010
PULL OUT OF HOLE
TO REPAIR MWD TOOL
WOB: 14 - 22klbs
RPM: 163 - 174
FLW: 995 - 1010gpm
SPP: 2890 - 3010psi
12.12.2010
13.12.2010
BIT # 4: 311mm(12.25")
SECURITY FMF3753Z
JETS:7x15
IN: 1812m OUT: 2215m
RUN: 403m HRS:26.7
COND:2-8-RO-T-X-I-CT-PR
Low gas readings due
block in gas trap.


1890
1863.61
1900
1910
1882.81
1920
1930
1902.03
1940
1950
1921.26
1960
1970
1940.48
1980
1990
1959.68
2000
2010
1978.86
2020
WOB: 12 - 24klbs
RPM: 159 - 190
FLW: 1000 - 1032gpm
SPP: 3082 - 3272psi


2030
1998.06
2040
WOB: 6 - 12klbs
RPM: 156 - 164
FLW: 930 - 950gpm
SPP: 2892 - 3057psi
2050
2017.28
2060
2070
2036.51
2080
2090
2055.74
2100
2110
2074.95
2120
2130
2094.16
2140
WOB: 8 - 18klbs
RPM: 105 - 150
FLW: 909 - 937gpm
SPP: 2828 - 2936psi
2150
2113.39
2160
2170
2132.63


2180
2190
2151.86
13.12.2010
14.12.2010
2200
2210
2171
14.12.2010
15.12.2010
PULL OUT OF HOLE
TO CHANGE BIT
DUE TO LOW ROP
2220
2230
2190.11
2240
WOB: 2 - 48klbs
RPM: 34 - 130
FLW: 727 - 972gpm
SPP: 2441 - 3440psi
2250
2209.13
2260
2270
2228.03
15.12.2010
2280
16.12.2010
2290
2246.88
2300
2310
2265.65
2320
BIT # 5: 311mm(12.25")
Smith GFS10BODVC
JETS:3x20,1x18
IN: 2215m OUT: 2317m
RUN: 102m HRS:18.2
COND:2-5-WT-G-E-I-CT-TD
SILVEREYE-1 WELL REACHED TD
OF 2317.0mMDRT (2272.04mTVDRT,
-2246.04mTVDLAT) AT 1000HRS ON
16TH DECEMBER, 2010
NO WIRELINE LOGS RUN
ON SILVEREYE-1

2330

2340

APPENDIX 3: MWD-LWD REPORT

HALLIBURTON | Sperry Drilling

End of Well Report
for
Origin Energy Resources Ltd

Rig	:	Kan Tan IV
Well	:	Silvereye-1
Field	:	Silvereye
Country	:	Australia
Job Number	:	AU-FE-0007617647
Date	:	04-Dec-10
API Number	:	

Table of Contents

1. General Information
2. Operational Overview
3. Summary of MWD Runs
4. Bitrun Summary
5. Directional Survey Data
6. Service Interrupt Report

General Information

Company:	Origin Energy Resources Ltd
Rig:	Kan Tan IV
Well:	Silvereye-1
Field:	Silvereye
Lease Name:	
State:	Victoria
County:	
Country:	Australia
API Number:	
Sperry Job Number:	AU-FE-0007617647
Job start date:	04-Dec-10
Job end date:	16-Dec-10
North reference:	Grid
Declination:	12.363 deg
Dip angle:	-70.523 deg
Total magnetic field:	61047 nT
Date of magnetic data:	04 December, 2010
Wellhead coordinates N:	39 deg. 54 min 19.83 sec South
Wellhead coordinates E:	145 deg. 3 min 32.64 sec East
Vertical section direction:	74.49 deg
Unit Number:	
MWD Engineers:	A. Ingram, T. Farnworth, S. Allan
Company Representatives:	P. Jenkins,
Company Geologist:	N. Jackson,

Operational Overview

Sperry Drilling was contracted by Origin Energy Resources Ltd to provide Logging While Drilling (LWD) services for the drilling of Silvereye-1. The well was drilled by Maersk operators using the Kan Tan IV rig.

17.5" Hole Section:
This section was drilled in one bit run using Sperry Drillings directional tool suite and mud motor. Well bore surveying was done with a Pressure Case Directional (PCDR) sonde.
17.5” hole was drilled from 141.0mMDRT to 1112.0mMDRT.

12 ¼” Hole Section:
This section was drilled in three bit runs (MWD Run 200, 300, 400) using Sperry Drillings Quad Combo tool suite with LWD tools comprising the following:
Azimuthal Lithodensity (ALD), Compensated Thermal Neutron (CTN), Bi-modal Acoustic (BAT), Dual Gamma Ray (DGR) and Electromagnetic Wave Resistivity (EWR P-4) for formation evaluation. The Drilling String Dynamics (DDSr-DGR) and Pressure while Drilling (PWD) tools were used for drilling optimization. Well bore surveying was done with a Pressure Case Directional (PCDC) sonde. The well was stared utilizing Sperry Drillings Geo-Pilot (GP) rotary steerable tool.
12 ¼” hole was drilled from 1112.0mMDRT to well TD of 2317.0mMDRT

Summary of MWD runs

Run No.	Bit No.	Hole Size (in)	MWD Service	Start Depth (m)	End Depth (m)	Drill/Wipe Distance (m)	Run Start Date Time	Run End Date Time	BRT Hrs.	Oper. Hrs.	Circ. Hrs.	Max Temp. (degC)	Serv. Int.	Trip for MWD	Failure Type
100	2	17.500	DWD	141.000	1112.000	971.000	04-Dec-10 12:15	06-Dec-10 06:30	42.25	23.900	23.900	25.80	No	No	
200	3	12.250	PFE	1112.000	1812.000	700.000	09-Dec-10 00:27	12-Dec-10 00:03	71.60	71.600	44.710	62.74	Yes	Yes	Run MWD-1
300	4	12.250	PFE	1812.000	2215.000	403.000	12-Dec-10 11:44	14-Dec-10 21:12	57.47	57.470	40.040	74.51	No	No	
400	5	12.250	PFE	2215.000	2317.000	102.000	15-Dec-10 03:22	16-Dec-10 20:04	40.70	40.700	24.920	88.24	No	No	

Bitrun Summary

RUN TIME DATA

MWD Run	: 100	**Run Start**	: 04-Dec-10 12:15	**BRT Hrs**	: 42.25 hr	**Circ. Hrs**	: 23.90 hr
Rig Bit No	: 2	**Run End**	: 06-Dec-10 06:30	**Hole Size**	: 17.500 in	**Oper. Hrs**	: 23.90 hr

DRILLING DATA

Start Depth	: 141.00 m	**Footage**	: 971.00 m	**Avg WOB**	: 15.3 klb	**Avg ROP**	: 71.00 m/hr
End Depth	: 1112.00 m	**Avg Flow Rate**	: 1100.00 gpm	**Avg TOB**	: 1.4000 f-kp	**Avg SPP**	: 2190 psig
Drilling Hours	: 12.830 hr	**Avg RPM**	: 75 rpm	**Avg Bend**	: 0.00 f-p		

MUD DATA

Mud Type	: Sea Water						
Weight	: 9.50 ppg	**Viscosity**	: 180.00 spqt	**PV**	: 16 cP	**YP**	: 36.00 lhf2
Chlorides	: 17390.00 ppm	**Max Temp.**	: 25.80 degC	**% Solids**	: 5.00 %	**% Sand**	: 0.10 %
pH	: 9.00 pH	**Fluid Loss**	: 0 mptm	**% Oil**	: 0.00 %	**O:W**	: 0:0.94

MWD PERFORMANCE

Tool OD	: 9.50 in	**Type**	: DWD	**Min. Inc.**	: 0.18 deg	**Min. Inc. Depth**	: 487.120 m
Final Az.	: 63.79 deg	**Max Op. Press.**	: 4002 psig	**Max Inc.**	: 2.80 deg	**Max Inc. Depth**	: 1088.000 m
	MWD Real-time %	: 100 %		**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		193.57
5" X 3" HWDP #49.3 - NC50(IF) 5.00 in OD / 3.00 in ID	84.51	
		109.06
X-Over Sub 8.00 in OD / 2.81 in ID	1.17	
		107.89
8" X 2.8125" - 149.8# Drill Collar 8.00 in OD / 2.81 in ID	9.40	
		98.49
Jar 8.00 in OD / 2.75 in ID	9.15	
		89.34
8" X 2.8125" - 149.8# Drill Collar 8.00 in OD / 2.81 in ID	65.72	
		23.62
X-Over Sub 9.50 in OD / 3.00 in ID	1.12	
		22.50
MWD	9.89	
		12.61
Integral Blade 9.50 in OD / 3.00 in ID	2.17	
		10.44
Float Sub 9.50 in OD / 3.00 in ID	0.76	
		9.68
9 5/8" SperryDrill Lobe 6/7 - 5.0 stg 9.63 in OD / 6.14 in ID	9.24	
		0.44
Mill 9.50 in OD / 3.00 in ID	0.44	

	Length (m)	Dist From Bit (m)
HOC 9.50 in OD / 3.00 in ID SN : 11230617 * Positive Pulser - SN : 10482110 * PCD Sonde - SN : 10809465	9.89	19.49

COMMENTS

Drill from 141.0m to Section TD of 1112.0mMDRT, utilising MWD tool for surveys and to provide toolfaces for sliding to build angle over the last 3 stands.

Bitrun Summary

RUN TIME DATA

MWD Run	: 200	**Run Start**	: 09-Dec-10 00:27	**BRT Hrs**	: 71.60 hr	**Circ. Hrs**	: 44.71 hr
Rig Bit No	: 3	**Run End**	: 12-Dec-10 00:03	**Hole Size**	: 12.250 in	**Oper. Hrs**	: 71.60 hr

DRILLING DATA

Start Depth	: 1112.00 m	**Footage**	: 700.00 m	**Avg WOB**	: 44.6 klb	**Avg ROP**	: 44.60 m/hr
End Depth	: 1812.00 m	**Avg Flow Rate**	: 1000.00 gpm	**Avg TOB**	: 6.4000 f-kp	**Avg SPP**	: 2601 psig
Drilling Hours	: 23.630 hr	**Avg RPM**	: 157 rpm	**Avg Bend**	: 0.00 f-p		

MUD DATA

Mud Type	: KCL Polymer						
Weight	: 10.10 ppg	**Viscosity**	: 60.00 spqt	**PV**	: 13 cP	**YP**	: 20.00 lhf2
Chlorides	: 39000.00 ppm	**Max Temp.**	: 62.74 degC	**% Solids**	: 6.90 %	**% Sand**	: 0.00 %
pH	: 9.00 pH	**Fluid Loss**	: 5 mptm	**% Oil**	: 0.00 %	**O:W**	: 0:0.91

MWD PERFORMANCE

Tool OD	: 8.00 in	**Type**	: PFE	**Min. Inc.**	: 3.84 deg	**Min. Inc. Depth**	: 1125.200 m
Final Az.	: 81.83 deg	**Max Op. Press.**	: 5078 psig	**Max Inc.**	: 17.17 deg	**Max Inc. Depth**	: 1673.720 m
	MWD Real-time %	: 97 %		**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		242.57
12 x 5" X 3" HWDP #49.3 - NC50(IF) 5.00 in OD / 3.00 in ID	113.00	
		129.57
X-Over Sub 8.00 in OD / 2.75 in ID	1.17	
		128.40
8 " X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	9.40	
		119.00
8" Sledgehammer Jar 8.12 in OD / 2.75 in ID	9.15	
		109.85
7 x 8" X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	65.72	
		44.13
Integral Blade 8.00 in OD / 2.75 in ID	2.46	
		41.67
Float Sub 8.00 in OD / 2.81 in ID	0.71	
		40.96
MWD	31.08	
Geo-Pilot 9600 Flex Collar 6.75 in OD / 3.50 in ID * PCDC Sonde	2.80	8.35
		7.08
Geo-Pilot 9600 9.63 in OD / 2.38 in ID * Geo-Pilot 9600 Sleeve Stabilizer	6.59	
PDC - Long Gauge 12.25 in OD / 3.00 in ID * Bit Sleeve	0.49	0.49

	Length (m)	Dist From Bit (m)
HOC 8.00 in OD / 4.02 in ID * PCM Sonde - SN : 11227428 * Positive Pulser - SN : 111503671	3.10	0.00
8" BAT Collar 8.00 in OD / 1.91 in ID * BAT Insert - SN : 175489	6.74	34.40
8" CTN Collar 8.00 in OD / 2.37 in ID * CTN Insert - SN : 10718015	6.52	29.15
8" ALD Collar 8.00 in OD / 2.38 in ID * ALD Insert - SN : 10905621	4.99	23.90
		19.61
8" STAB HCIM 8.00 in OD / 1.92 in ID * HCIM Insert - SN : 10911832	2.70	
8" PWD 8.00 in OD / 1.92 in ID * PWD Insert - SN : 10942831	1.34	15.89
8" DGR Collar 8.00 in OD / 1.92 in ID * DDS Insert * DGR Insert - SN : 11069961	1.39	15.01
8" EWR-P4 Collar 8.00 in OD / 1.98 in ID * EWR-P4 Insert - SN : 110455755	4.30	11.98

COMMENTS

Drilled cement, float equipment and shoe, 3 m of new formation then LOT. Drilled ahead to 1812.0mMDRT. LWD lost realtime transmission. POOH to investigate. On surface, parts of a thread protector were found jammed in the top of the MWD tool.

Bitrun Summary

RUN TIME DATA

MWD Run	: 300	**Run Start**	: 12-Dec-10 11:44	**BRT Hrs**	: 57.47 hr	**Circ. Hrs**	: 40.04 hr
Rig Bit No	: 4	**Run End**	: 14-Dec-10 21:12	**Hole Size**	: 12.250 in	**Oper. Hrs**	: 57.47 hr

DRILLING DATA

Start Depth	: 1812.00 m	**Footage**	: 403.00 m	**Avg WOB**	: 15.0 klb	**Avg ROP**	: 15.10 m/hr
End Depth	: 2215.00 m	**Avg Flow Rate**	: 900.00 gpm	**Avg TOB**	: 13.8000 f-kp	**Avg SPP**	: 1900 psig
Drilling Hours	: 27.310 hr	**Avg RPM**	: 161 rpm	**Avg Bend**	: 0.00 f-p		

MUD DATA

Mud Type	: KCL Polymer						
Weight	: 10.10 ppg	**Viscosity**	: 58.00 spqt	**PV**	: 14 cP	**YP**	: 30.00 lhf2
Chlorides	: 40000.00 ppm	**Max Temp.**	: 74.51 degC	**% Solids**	: 6.80 %	**% Sand**	: 0.00 %
pH	: 9.00 pH	**Fluid Loss**	: 6 mptm	**% Oil**	: 0.00 %	**O:W**	: 0:0.90

MWD PERFORMANCE

Tool OD	: 8.00 in	**Type**	: PFE	**Min. Inc.**	: 15.67 deg	**Min. Inc. Depth**	: 2048.980 m
Final Az.	: 78.01 deg	**Max Op. Press.**	: 5146 psig	**Max Inc.**	: 16.55 deg	**Max Inc. Depth**	: 1847.060 m
	MWD Real-time %	: 95 %		**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		242.57
12 x 5" X 3" HWDP #49.3 - NC50(IF) 5.00 in OD / 3.00 in ID	113.00	
		129.57
X-Over Sub 8.00 in OD / 2.75 in ID	1.17	
		128.40
8 " X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	9.40	
		119.00
8" Sledgehammer Jar 8.12 in OD / 2.75 in ID	9.15	
		109.85
7 x 8" X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	65.72	
		44.13
Integral Blade 8.00 in OD / 2.75 in ID	2.46	
		41.67
Float Sub 8.00 in OD / 2.81 in ID	0.71	
		40.96
MWD	31.08	
Geo-Pilot 9600 Flex Collar 6.75 in OD / 3.50 in ID * PCDC Sonde	2.80	8.50
		7.08
Geo-Pilot 9600 9.63 in OD / 2.38 in ID * Geo-Pilot 9600 Sleeve Stabilizer	6.59	
PDC - Long Gauge 12.25 in OD / 3.00 in ID * Bit Sleeve	0.49	0.49

	Length (m)	Dist From Bit (m)
HOC 8.00 in OD / 4.02 in ID * PCM Sonde - SN : 11055350 * Positive Pulser - SN : 11228089	3.10	0.00
8" BAT Collar 8.00 in OD / 1.91 in ID * BAT Insert - SN : 1175489	6.74	34.47
8" CTN Collar 8.00 in OD / 2.37 in ID * CTN Insert - SN : 10600540	6.52	29.23
8" ALD Collar 8.00 in OD / 2.38 in ID * ALD Insert - SN :11318862	4.99	23.97
		19.61
8" STAB HCIM 8.00 in OD / 1.92 in ID * HCIM Insert - SN : 10783407	2.70	
8" DGR Collar 8.00 in OD / 1.92 in ID * DDS Insert * DGR Insert - SN : 10906838	1.39	16.42
8" PWD 8.00 in OD / 1.92 in ID * PWD Insert - SN : 10486806	1.34	14.55
8" EWR-P4 Collar 8.00 in OD / 1.98 in ID * EWR-P4 Insert - SN : 10906732	4.30	12.03

COMMENTS

RIH Dtrilled ahead to 1830.0mMDRT then controlled ROP at 25m/hr Drilled ahead to 2213.30mMDRT. POOH due to ROP. Bit fount to be ringed out on surface.

Bitrun Summary

RUN TIME DATA

MWD Run	: 400	**Run Start**	: 15-Dec-10 03:22	**BRT Hrs**	: 40.70 hr	**Circ. Hrs**	: 24.92 hr
Rig Bit No	: 5	**Run End**	: 16-Dec-10 20:04	**Hole Size**	: 12.250 in	**Oper. Hrs**	: 40.70 hr

DRILLING DATA

Start Depth	: 2215.00 m	**Footage**	: 102.00 m	**Avg WOB**	: 40.0 klb	**Avg ROP**	: 5.50 m/hr
End Depth	: 2317.00 m	**Avg Flow Rate**	: 980.00 gpm	**Avg TOB**	: 15.3000 f-kp	**Avg SPP**	: 2800 psig
Drilling Hours	: 20.040 hr	**Avg RPM**	: 120 rpm	**Avg Bend**	: 0.00 f-p		

MUD DATA

Mud Type	: KCL Polymer						
Weight	: 10.00 ppg	**Viscosity**	: 42.00 spqt	**PV**	: 10 cP	**YP**	: 28.00 lhf2
Chlorides	: 37000.00 ppm	**Max Temp.**	: 88.24 degC	**% Solids**	: 8.10 %	**% Sand**	: 0.50 %
pH	: 9.00 pH	**Fluid Loss**	: 5 mptm	**% Oil**	: 0.00 %	**O:W**	: 0:0.89

MWD PERFORMANCE

Tool OD	: 8.00 in	**Type**	: PFE	**Min. Inc.**	: 18.18 deg	**Min. Inc. Depth**	: 2241.210 m
Final Az.	: 104.23 deg	**Max Op. Press.**	: 4624 psig	**Max Inc.**	: 21.71 deg	**Max Inc. Depth**	: 2309.950 m
	MWD Real-time %	: 90 %		**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		237.57
12 x 5" X 3" HWDP #49.3 - NC50(IF) 5.00 in OD / 3.00 in ID	113.00	
		124.57
X-Over Sub 8.00 in OD / 2.75 in ID	1.17	
		123.40
8 " X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	9.40	
		114.00
8" Sledgehammer Jar 8.12 in OD / 2.75 in ID	9.15	
		104.85
7 x 8" X 2.8125" - 160.6# Drill Collar 8.00 in OD / 2.81 in ID	65.72	
		39.13
Integral Blade 8.00 in OD / 2.75 in ID	2.46	
		36.67
Float Sub 8.00 in OD / 2.81 in ID	0.71	
		35.96
MWD	31.08	
Geo-Pilot 9600 Flex Collar 6.75 in OD / 3.50 in ID * PCDC Sonde	2.80	3.36
		2.08
Near-Bit Stabilizer 8.00 in OD / 2.81 in ID	1.75	
		0.33
Tricone 8.00 in OD / 3.00 in ID	0.33	

	Length (m)	Dist From Bit (m)
HOC 8.00 in OD / 4.02 in ID * PCM Sonde - SN : 111227428 * Positive Pulser - SN : 110482614	3.10	34.36
8" BAT Collar 8.00 in OD / 1.91 in ID * BAT Insert - SN : 175489	6.74	29.27
8" CTN Collar 8.00 in OD / 2.37 in ID * CTN Insert - SN : 10600540	6.52	24.03
8" ALD Collar 8.00 in OD / 2.38 in ID * ALD Insert - SN : 11318862	4.99	18.77
		14.61
8" STAB HCIM 8.00 in OD / 1.92 in ID * HCIM Insert - SN : 10911832	2.70	
8" PWD 8.00 in OD / 1.92 in ID * PWD Insert - SN : 10942831	1.34	11.60
8" DGR Collar 8.00 in OD / 1.92 in ID * DDS Insert * DGR Insert - SN : 11069961	1.39	10.01
8" EWR-P4 Collar 8.00 in OD / 1.98 in ID * EWR-P4 Insert - SN : 10455755	4.30	6.89

COMMENTS

RIH with rotary assembly and rock bit. Drilled ahead to well TD 2317.0mMDRT. POOH to P&A

Directional Survey Data

ALL DEPTHS ARE REFERENCED TO THE DRILLERS PIPE TALLY
ALL DEPTHS ARE REFERENCED TO THE ROTARY TABLE

Tie-in

0.000	0.00	0.00	0.000	0.000 N	0.000 E		***

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
169.070	0.34	207.46	169.069	0.451 S	0.235 W	-0.347	0.06
198.000	0.69	248.98	197.998	0.591 S	0.437 W	-0.579	0.51
226.950	0.53	294.13	226.946	0.599 S	0.721 W	-0.855	0.51
313.710	0.53	265.36	313.703	0.469 S	1.484 W	-1.555	0.09
342.600	0.28	302.85	342.592	0.441 S	1.677 W	-1.734	0.36
371.490	0.39	275.52	371.482	0.393 S	1.835 W	-1.873	0.20
400.390	0.25	319.71	400.381	0.336 S	1.972 W	-1.990	0.28
429.330	0.25	316.06	429.321	0.243 S	2.056 W	-2.046	0.02
458.200	0.43	297.24	458.190	0.148 S	2.197 W	-2.156	0.22
487.120	0.18	317.57	487.110	0.063 S	2.326 W	-2.258	0.28
545.020	0.37	308.44	545.009	0.122 N	2.535 W	-2.410	0.10
573.930	0.49	302.31	573.918	0.247 N	2.714 W	-2.549	0.14
602.860	0.46	313.77	602.847	0.394 N	2.903 W	-2.692	0.10
631.790	0.40	313.58	631.777	0.545 N	3.061 W	-2.804	0.06
660.770	0.37	319.21	660.756	0.685 N	3.196 W	-2.896	0.05
689.680	0.37	312.14	689.665	0.819 N	3.326 W	-2.986	0.05
718.630	0.37	319.88	718.615	0.953 N	3.456 W	-3.075	0.05
747.590	0.45	313.35	747.574	1.103 N	3.598 W	-3.173	0.09
805.440	0.34	320.74	805.423	1.390 N	3.871 W	-3.358	0.06
834.360	0.28	307.88	834.342	1.499 N	3.980 W	-3.434	0.10
863.290	0.32	334.24	863.272	1.614 N	4.070 W	-3.490	0.15
892.190	0.39	303.40	892.171	1.740 N	4.186 W	-3.568	0.21
921.110	0.33	321.61	921.091	1.859 N	4.319 W	-3.665	0.13
979.030	0.37	339.05	979.010	2.165 N	4.490 W	-3.748	0.06
1007.960	0.40	314.26	1007.939	2.323 N	4.596 W	-3.807	0.17
1036.860	0.29	23.92	1036.839	2.460 N	4.638 W	-3.812	0.42
1065.770	1.77	56.98	1065.743	2.770 N	4.233 W	-3.338	1.60
1088.000	2.80	63.79	1087.955	3.198 N	3.457 W	-2.476	1.43
1125.200	3.84	63.79	1125.092	4.150 N	1.523 W	-0.358	0.84
1153.950	6.12	72.77	1153.732	5.029 N	0.805 E	2.120	2.51
1182.320	8.29	78.88	1181.877	5.872 N	4.256 E	5.671	2.43
1209.910	10.13	80.17	1209.110	6.670 N	8.599 E	10.069	2.01
1241.510	12.76	79.14	1240.079	7.802 N	14.765 E	16.314	2.50
1267.500	13.03	77.50	1265.414	8.977 N	20.445 E	22.101	0.52
1296.880	15.07	76.43	1293.913	10.590 N	27.392 E	29.226	2.10
1325.190	15.96	75.50	1321.192	12.428 N	34.738 E	36.796	0.98
1354.450	16.30	74.55	1349.300	14.529 N	42.590 E	44.924	0.44
1383.620	15.73	73.69	1377.338	16.730 N	50.331 E	52.971	0.63
1412.810	16.05	74.58	1405.412	18.914 N	58.018 E	60.963	0.41
1442.050	16.23	74.71	1433.500	21.066 N	65.856 E	69.091	0.19
1470.780	16.47	76.71	1461.068	23.061 N	73.693 E	77.176	0.64
1501.940	16.25	78.21	1490.967	24.968 N	82.259 E	85.940	0.46
1531.260	16.25	78.78	1519.115	26.604 N	90.299 E	94.125	0.16
1561.830	16.31	77.89	1548.459	28.337 N	98.691 E	102.675	0.25
1586.460	16.24	77.71	1572.103	29.796 N	105.438 E	109.566	0.11
1616.480	16.06	78.20	1600.938	31.538 N	113.604 E	117.901	0.23
1642.310	16.17	78.50	1625.753	32.986 N	120.626 E	125.054	0.16

Directional Survey Data

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
1673.720	17.17	76.35	1655.843	34.952 N	129.418 E	134.051	1.12
1702.700	15.87	77.15	1683.626	36.843 N	137.438 E	142.285	1.37
1731.610	16.05	79.02	1711.422	38.483 N	145.215 E	150.217	0.57
1760.220	15.85	80.22	1738.930	39.900 N	152.948 E	158.048	0.40
1789.990	15.85	81.83	1767.569	41.168 N	160.978 E	166.125	0.44
1820.020	15.95	79.90	1796.450	42.475 N	169.100 E	174.300	0.54
1847.060	16.55	76.98	1822.410	43.994 N	176.510 E	181.846	1.12
1875.840	16.40	74.79	1850.009	45.983 N	184.424 E	190.004	0.67
1903.760	15.96	73.72	1876.823	48.094 N	191.912 E	197.784	0.57
1932.300	16.14	74.60	1904.250	50.247 N	199.503 E	205.674	0.32
1960.960	15.78	74.71	1931.806	52.332 N	207.103 E	213.555	0.38
1991.070	16.57	74.52	1960.723	54.558 N	215.190 E	221.943	0.79
2020.600	16.44	73.87	1989.037	56.843 N	223.262 E	230.332	0.23
2048.980	15.67	72.94	2016.310	59.083 N	230.784 E	238.179	0.86
2077.360	16.14	73.20	2043.603	61.348 N	238.224 E	245.954	0.50
2138.280	16.09	74.79	2102.130	66.010 N	254.477 E	262.861	0.22
2168.530	15.61	74.35	2131.229	68.207 N	262.441 E	271.123	0.49
2193.230	16.26	78.01	2154.981	69.822 N	269.023 E	277.898	1.45
2241.210	18.18	93.36	2200.832	70.780 N	283.075 E	291.693	3.07
2283.360	20.17	100.27	2240.646	69.098 N	296.792 E	304.462	2.15
2309.950	21.71	104.23	2265.481	67.072 N	306.071 E	312.861	2.36

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 74.49 DEGREES(GRID)
A TOTAL CORRECTION OF 11.12 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2309.95 METRES
IS 313.33 METRES ALONG 77.64 DEGREES (GRID)

Service Interrupt Report

MWD Run Number	: 200	**Time/Date of Failure**	: 11-Dec-10 13:10
Rig Bit Number	: 3	**Depth at time of Failure**	: 1812.00 m
MWD Run start time/date	: 09-Dec-10 00:27	**Lost Rig Hours**	: 0 hr
MWD Run end time/date	: 12-Dec-10 00:03		

RIG ACTIVITY

Drilling ahead in tangent section.

DESCRIPTION OF FAILURE

Tool stopped pulsing.

ACTION TAKEN

Downlink enable PPM pulsing, cylced pumps and then manually cycled pumps to mode switch tool. POOH.

OPERATION IMPACT

POOH to change tool.

REASON FOR FAILURE

Plastic thread protectors that were sitting on top of the pulser. Discovered there were plastic thread protectors in the mouse hole and parts of the protectors were wedged into the drill pipe when the stands were being made up and racked back. When the stand of drill pipe with the thread protectors was picked up and used the plastic washed down to the pulser where it sat causing the pulser to overloadand fail.

APPENDIX 4: PALYNOLOGICAL BASIC DATA REPORT

MORGAN PALAEO ASSOCIATES

PALYNOLOGICAL/PETROLEUM GEOLOGICAL CONSULTANTS

POSTAL ADDRESS: Box 161, Maitland, South Australia 5573
DELIVERIES: 1 Shannon Tce, Maitland, South Australia 5573
Phone (08) 8832 2795 Fax (08) 8832 2798

Palynostratigraphic age determinations,

SILVEREYE-1 BASIC

T/44P, Bass Basin, Tasmania

Mike Macphail

Palaeontological report prepared 4 May 2011 for *Origin Energy Resources* Ltd.
John Oxley Centre, 339 Coronation Drive, Milton, Qld. 4064

Consultant Palynological Services/Morgan Palaeo Associates,
PO Box 166, Maitland, SA 5573
mike.macphail@anu.edu.au / rmorgan@netyp.com.au

REF: BAS.SILVEREYE-1 BASIC DATA REPORT

1 Basic data

Basic data are presented in Table 1. Yields and preservation were variable depending on the degree of downhole contamination.

Table 1 Basic data

Depth (mRT)	Yield			Preservation	
	kerogen	**spore-pollen**	**dinocysts**	**spore-pollen**	**dinocysts**
1300-1305	medium	very low	trace	poor	fair
1485-1490	high	low	trace	poor	fair
1575-1587	high	low	trace	very poor	fair
1638-1641	high	medium	-	poor	-
1698-1701	very high	medium	-	very poor	-
1734-1737	high	medium	-	fair	-
1743-1746	high	medium	very low	variable	good
1761-1764	high	low	trace	±fair	fair
1773-1776	very high	medium	low	±fair	fair
1797-1800	very high	medium	low	poor	fair
1827-1830	high	medium	very low	±fair	poor
1851-1854	high	medium	medium	±fair	±fair
1863-1866	very high	medium	medium	±fair	good
1899-1900	high	high	low	good	fair
1908-1911	high	high	low	fair	fair
1941-1946	very high	high	trace	±fair	good
1965-1968	very high	very high	trace	±fair	good
2031-2034	high	low	trace	poor	good
2070-2073	high	low	trace	poor	good
2094-2097	high	low	trace	variable	fair
2121-2124	high	low	trace	variable	good
2169-2172	very high	medium	trace	±fair	good

Well Name : SILVEREYE-1

Operator :

Interval : 1285m - 2192m — **Palynological Data Chart : BASIC DATA**

Scale : 1:3000 — **% Abundance histogram : Highest occurrence**

Chart date: 23 May 2011 — **Mike Macphail**

SILVEREYE-1

Morgan Palaeo Associates
Maitland, South Australia

Enclosure 1

Sampling
- Cutting
- Core
- Sidewall core

Text Keys
*1 % within discipline (40mm=100%)
*2 In-Situ,'?' occurrences

Depth | Samples | Dinoflagellate Cysts (% within discipline (40mm=100%); In-Situ,'?' occurrences) | Algae (*1 *1 *2 *2; ALBO *1 *2) | Spores And Pollen (% within discipline (40mm=100%); In-Situ,'?' occurrences) | Samples | Total Count | % Category

Samples in Descriptnsl(s) : Poly

Dinoflagellate Cysts: Dinocyst indet; Operculodinium spp.; Lingulodinium machaerophorum; Spiniferites spp.; Systematophora placacantha; Homotryblium tasmaniense; Palaeocystodinium gardnerense; Trichodinium spp.; Vozzhennikovia sp.; Apectodinium longipinosum; Apectodinium homomorphum; Hystrichokolpoma rigaudiae; Hystrichosphaeridium tubiferum; Hystrichosphaeridium spp.; Apectodinium hyperacanthum; Deflandrea spp.; Eisenackiella partridgei; Eisenackiella spp.; Morkallacysta pyramidalis; Thalassiphora pelagica; Nematosphaeropsis spp.; Membranilarnacia spp.; Apectodinium reburrus; Deflandrea flounderensis; Thalassiphora spp.; Isabelidinium spp.

Algae: Microfossils; Mesozoic-Palaeozoic spores; Reworking Mesozoic-Palaeozoic; Algae indet.; Botryococcus; Pediastrum

Spores And Pollen: angiosperms unassigned; Araucariacites australis; Baculatisporites spp.; Cyathidites spp.; Dictetradites diversus; Dictyophyllidites arcuatus; Dilwynites granulatus; Ericipites scabratus; Gleichenidites spp.; gymnosperms% unassigned%; Haloragacidites harrisii; Kuylisporites waterboliki; Laevigatosporites ovatus; Laevigatosporites visalus; Lygistepollenites florinii; Matonisporites ornamentalis; Matonisporites spp.; Myrtaceidites parvumesoreisus; Nothofagidites asperus; Nothofagidites emarcidus; Nothofagidites emarcidus-heterus; Nothofagidites falcatus; Nothofagidites flemingii; Nothofagidites sp.; Nothofagidites tenuicristatus; Periporopollenites demaracatus; Phyllocladidites mawsonii; Podocarpidites spp.; Podosporites microsaccatus; Polypodiisporites australiensis; Propylipollis annularis; Proteacidites pachypolus; Proteacidites reticulomarginis; Proteacidites spp.; Proteacidites symphonemoides; Retitriletes austraclavidites complex; Retitriletes spp.; Rhoipites spp.; Rugulatisporites mallatus; Stereisporites cariozoicus; Spores indet.; Stereisporites antiquasporites; Tricolpites lilurus; Tricolpites spp.; Verrucosisporites kopukuensis; Aglaoreidia qualumis; Cicatricosisporites dorogensis; Cyathidites splendens; Herkosporites elliottii; Impatiradites spp.; Latrobosporites margins; Malvacipollis subtilis; Microcachryidites antarcticus; Proteacidites adenopodus; Proteacidites incurvatus; Proteacidites stipplatus; Proteacidites spp.; Trilites tuberculiformis; Triorites magnificus; Triorites spp.; Cingulatisporites conjunens; Clavifera triplex; Cyathidites subtilis; Dictyophyllidites australiensis; Foveotriletes balteus; Ischyosporites gremius; Leptolepidites verrucatus; Proteacidites asperopolus; Proteacidites grandis; Proteacidites incrassatus; Proteacidites leightonii; Proteacidites nasus; Proteacidites pachypolus; Proteacidites tuberculiformis; Tricolpites adelaidensis; Tricolpites sphaerobatodormis; Corollina meyeriana; Dilwynites tuberculatus; Forcipites confragosus; Nothofagidites spp.; Rufordaspora australiensis; Tricolporopollenites spp.; Triporopollenites spp.; Verrucosisporites verrucosus; Camarozonosporites bullatus; Gambierina rudata; Phyllocladidites verrucosus; Ischyosporites marwickii; Camarozonosporites spp.; Evansisporites senonica; Gambierina edwardsii; Latrobosporites ohmanii; Lygistepollenites balmei; Nothofagidites endurus/kaitangiataenaeis; Phyllocladidites mawsonii; Phyllocladidites reticulosacatus; Polycolpites langstonii; Proteacidites crassus; Latrobosporites crassus; Murospora florida; Neoraistrickia equalis; Proteacidites latosaccus; Protohaploxypinus amplus; Rouseisporites stellatus; Retitriletes australiensis; Retitriletes circumlunus; Tricolpites reticulatus; Tricolpites sphaerica; Tricolpites spp.; Proteacidites angulatus; Pecromonolites spp.; Proteacidites obscuriglatus; Peninsulapollis truswellii; Proteacidites amolosexinus; Proteacidites longispinosus; Batinipollis sectilis; Nothofagidites sarcinus; Proteacidites dilwynensis; Proteacidites cliver ms; Proteacidites reticulocoronatus ms; Proteacidites tetracolporatus ms; Stereisporites regium; Balmeiopsis limbata; Foveotriletes spp.; Forcipites stipulatus; Gambierina pugilla ms; Proteacidites cumulus; Proteacidites latomulus; Tetracolpites tillei?

Samples in Descriptnsl(s) : Poly — In-Situ,'?' occurrences — Total count: Total Count — In-Situ,'?' occurrences — Category %: % Category

Depth: 1300m, 1350m, 1400m, 1450m, 1500m, 1550m, 1600m, 1650m, 1700m, 1750m, 1800m, 1850m, 1900m, 1950m, 2000m, 2050m, 2100m, 2150m

Samples: 1300.00-1305.00m CU; 1485.00-1490.00m CU; 1575.00-1578.00m CU; 1638.00-1641.00m CU; 1698.00-1701.00m CU; 1734.00-1737.00m CU; 1743.00-1746.00m CU; 1761.00-1764.00m CU; 1773.00-1776.00m CU; 1797.00-1800.00m CU; 1827.00-1830.00m CU; 1851.00-1854.00m CU; 1863.00-1866.00m CU; 1899.00-1902.00m CU; 1908.00-1911.00m CU; 1941.00-1944.00m CU; 1965.00-1968.00m CU; 2031.00-2034.00m CU; 2070.00-2073.00m CU; 2094.00-2097.00m CU; 2121.00-2124.00m CU; 2169.00-2172.00m CU

Total count: 100; 100; 115; 100; 100; 100; 100; 95; 120; 100; 120; 100; 100; 110; 120; 100; 110; 120; 100; 110; 120; 110

Category %: FT, AL, ALBO, DC, SP

APPENDIX 5: DAILY ACTIVITY REPORT

DFE above MSL : 26.0m	Lat : 39 Deg 54 Min 19.8504 Sec	Spud Date : 03 Dec 2010	Release Date :
Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Activity Report For Silvereye-1

Date : 26 Nov 2010 **Daily Cost : AU$ 1946252** **Report Number : 1**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	P	M4		1.5	1030 Anchor on bottom. ***End of tow and START of Silvereye-1 @ 10:30 hrs on 26 November 2010*** 1033 #6 holding. Far Fosna commenced stripping back on #6 1056 #6 disconnected from fosna 1103 #6 PCP passed back to rig 1134 #2 PCP passed to Fosna 1152 All stop # 2 @ 492 ft connecting anchor up to chain
0.0	P1	P	M4		6	1256 #2 anchor connected up - prepare to run anchor to stern roller 1323 #2 anchor winch stopped. Suspected knot / kink in chain 1329 #2 Anchor on bottom 1356 #2 PCP passed back to rig 1406 #7 PCP passed to Fosna 1448 #7 anchor on bottom 1523 #7 PCP passed back to rig 1545 #3 PCP passed to Fosna 1630 #3 anchor on bottom 1637 Scimitar heaving in on tow wire 1700 #3 PCP passed back to rig - all primary anchors deployed 1723 #8 PCP passed to Fosna 1734 Tow bridle disconnected from scimitar 1740 Tow bridle secured back on rig 1800 #8 anchor on bottom
0.0	P1	P	M4		6	1850 Scimitar alongside stbd, offload 2x anchors & backload MT food containers. 1908 # 8 anchor on the bottom 1934 # 8 PCP passed back to rig 1942 # 1 PCP passed to Fosna 2040 # 1 anchor on the bottom 2119 #1 PCP back to rig 2135 # 4 PCP to Fosna 2242 # 4 anchor on the bottom 2311 # 4 PCP back to rig 2317 # 5 PCP to Fosna

Date : 27 Nov 2010 **Daily Cost : AU$ 636689** **Report Number : 2**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	P	M4		1.5	0044 Anchor # 5 on the bottom 0125 # 5 PCP back to rig 0135 Commenced cross tensioning of anchors 0137 All stop on cross tensioning - power lost to anchor winch 3 and 4
0.0	P1	TP	M4	RE	2.5	Repaired Anchor winch 3 & 4 while also untangling knot on #2 Anchor winch chain, in the chain locker.
0.0	P1	P	M4		2	Continued cross tensioning anchors. Cross tensioning completed at 06:00 hrs.
0.0	P1	P	M4		1.5	Removed sea fastenings & prepared rig floor to pick up tubulars.
0.0	P1	TP	M4	WO	1.5	Waited on cranes, cranes working stbd aft pontoon for UT inspections.
0.0	P1	P	G2		9	Picked up 5" DP & DC from the deck & racked in the derrick. Offline: backloaded 2 x anchors to the Fosna.
0.0	P1	P	M3		6	Commenced ballasting rig down to drilling draft. Offline: pressure tested C&K manifold.

Date : 28 Nov 2010 **Daily Cost : AU$ 660831** **Report Number : 3**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	P	M3		0.5	Continued ballasting rig down to drilling draft.

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Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Date : 28 Nov 2010 **Daily Cost : AU$ 660831** **Report Number : 3**

0.0	P1	TP	M3	WOW	5.5	Waiting On Weather 01:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 02:00 Wind speed- 38knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 04:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 06:00 Wind speed- 38knts/ Wave Ht- 1.4m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m.
0.0	P1	TP	M3	WOW	6	Waiting On Weather 08:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m. 10:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 12:00 Wind speed- 45knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.8/ Heave 2m.
0.0	P1	TP	M3	WOW	6	Waiting On Weather 14:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m. 16:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 2.8/ Heave 2m. 18:00 Wind speed- 41knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m.
0.0	P1	TP	M3	WOW	6	Waiting On Weather 20:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.7/ Heave 2m. 22:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 24:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m.

Date : 29 Nov 2010 **Daily Cost : AU$ 666456** **Report Number : 4**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	P	M3		6	Weather decreased enough to use the cranes & call in Fosna. Offloaded bulk Barite, Gel & Drill water from Far Fosna. Organised decks to receive spud loadout from Far Scimitar on arrival from Melbourne. Removed Diverter from rotary table & laid out to the deck.
0.0	P1	TP	M3	WO	6	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
0.0	P1	TP	M3	WO	4.5	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
0.0	P1	P	M3		1.5	Held PJSM, picked up and made up 26" bit & 36" hole opener BHA and racked back in the derrick.
0.0	P1	TP	M3	WO	6	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing. Welder removed padeyes from 30" conductor.

Date : 30 Nov 2010 **Daily Cost : AU$ 634655** **Report Number : 5**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	TP	M3	WO	6	Waiting on EPBC Referral Approval. Offloaded bulks from Far Scimitar. Continued with rig maintenance & servicing.
0.0	P1	TP	M3	WO	1	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
0.0	P1	P	M3		3.5	M/Up 30" casing running tool & racked in the derrick. M/Up 18 3/4 R/tool & laid out to the deck.
0.0	P1	TP	M3	WO	13.5	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

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Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Activity Report For Silvereye-1

Date : 01 Dec 2010 **Daily Cost : AU$ 630582** **Report Number : 6**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	TP	M3	WO	24	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

Date : 02 Dec 2010 **Daily Cost : AU$ 0** **Report Number : 7**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0.0	P1	TP	M3	WO	17.5	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
0.0	P2	P	F2		1.5	Commenced mixing spud mud & kill mud.
80.0	P2	P	G6		3.5	Held PJSM. RIH with 36" BHA & tagged seabed @ 80m tide corrected with ROV assistance. Water depth = 54m. Offline: continued mixing spud mud & kill mud.
80.0	P2	P	G6		1.5	Function tested Anderdrift Tool. Good test - 0° recorded. Continued to mix spud mud & kill mud. Held PJSM and discussed spud & shallow gas procedures.

Date : 03 Dec 2010 **Daily Cost : AU$ 718482** **Report Number : 8**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
130.0	P2	P	D2		2	Took survey ½ deg. Spudded well @ 00:00 hrs. Drilled 36" hole from 80m to 130m with 1000gpm, 50rpm and 5 -10 WOB. Pumped 50 bbl Hi Vis sweeps every 15m.
130.0	P2	TP	D2	RE	2	Cross threaded stand of DP while making connection. Unable to back out tool joint, finally worked tool joint down low enough to get tongs on & break free.
130.0	P2	TP	G21	WB	2.5	Broke out tool joint and racked stand back in the derrick. Made up Top Drive - unable to move pipe up or down or rotate. Full circulation achieved. Working stuck pipe @ 123m.
130.0	P2	TP	G8	WB	2	Pipe Free. POOH from 123m, pumped & backreamed to above seabed racking back over torqued stands of HWDP. Confirmed with ROV bit & hole opener OK.
130.0	P2	TP	G21	RE	1	Mechanics & electricians inspected Top Drive for possible damage, no problems found.
130.0	P2	TP	G8	WB	1	RIH, washed down from seabed to 130m.
141.0	P2	P	D2		0.5	Drilled 36" hole from 130m to 141m tide corrected. Took survey at TD - 1/2 deg.
141.0	P2	P	F3		0.5	Pumped 100bbl sweep & displaced well to 11ppg weighted mud @ 1100gpm/ 950psi.
141.0	P2	P	G8		2	POOH from 141m to surface, racked back BHA in the derrick. ROV positioned marker bouys around the well.
141.0	P3	P	G1		0.5	Held PJSM. Rigged up 30" Conductor running equipment.
141.0	P3	P	G9		2.5	Held PJSM. Picked up shoe joint, checked float & RIH 30" conductor
141.0	P3	P	G9		1.5	Installed C plate, ran 1 stand Of 5" DP stinger & made up 30" Running Tool to 30" housing. Lowered 30" conductor & made up 30" to PGB in the moon pool under Dril Quip supervision.
141.0	P3	P	G9		1.5	Filled casing with SW & RIH hole to set PGB 2m above seabed. Made up cement stand & washed down last 10m. ROV confirmed PGB heading & checked bullseyes. Stbd bullseye 3/4 deg to Port. Aft bullseye 1/4 deg to Port.
141.0	P3	P	F3		2.5	Held PJSM. Commenced pumping cement as per programme. Pumped 20bbl of SW & performed line test 300/3000psi 5/10min. Pumped 60bbl of SW followed by 20bbl of SW with Mica. Mixed & pumped 270bbls of 15.8ppg cement slurry @ 5bbl/pm. Displaced with 63.5bbls of SW. Opened bleed off to confirm floats holding.

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Date : 03 Dec 2010 **Daily Cost : AU$ 718482** **Report Number : 8**

141.0	P3	P	G9		2	Waited on cement.

Date : 04 Dec 2010 **Daily Cost : AU$ 672588** **Report Number : 9**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
141.0	P3	P	G9		2	Continued to wait on cement. ROV observing PGB for movement.
141.0	P3	P	G8		1.5	Held PJSM. Slacked off landing string weight & observed PGB for slumping or movement. ROV confirmed hard cement all around conductor. Unlatched 30" R/tool & POOH. Strapped out string 77.6m RKB to 30" W/head. Laid out R/tool to the deck. Bullseye readings - no change. Stbd bullseye 3/4 deg to Port Aft bullseye 1/4 deg to Port
141.0	P3	P	G2		2	Laid out 36" BHA from the derrick to the deck for backloading.
141.0	P3	TP	G2	RE	2	Held PJSM. Laid out damaged 5" DP & HWDP to the deck for backloading.
141.0	P3	P	G2		2.5	Held PJSM, cleared & cleaned Rig floor. Picked up 30 joints of 5" DP from the deck & racked in the derrick.
141.0	P7	P	G6		3.5	Held PJSM. Picked up & made up 17 1/2" BHA. Connected guide ropes in the moonpool. Continued to RIH picking up BHA to top of 30" housing, stabbed into housing with ROV assistance & continued to pick up BHA & RIH to 100m.
141.0	P7	P	G15		0.5	Shallow tested MWD W/ 1000gpm/ 200spm/ 1520psi.
141.0	P7	P	G8		0.5	Continued to RIH to 131m top of cement.
141.0	P7	P	G2		1	Drilled out cement & shoe track from 131m to 141m. Shoe @ 138m. Reamed through shoe 3 times.
537.0	P7	P	D2		7.5	Drill ahead 17 1/2" hole from 141m to 537m. 1200gpm/2200psi/ 100rpm/ 5-10 WOB.
537.0	P7	P	D2		0.5	Pumped 30bbl sweep & displaced with 300bbls of SW. Pumped & displaced open hole volume to Gel mud.
537.0	P7	P	G8		0.5	POOH (wiper trip) on elevators from 537m to 396m. No tight spots or overpull observed.

Date : 05 Dec 2010 **Daily Cost : AU$ 724804** **Report Number : 10**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
537.0	P7	P	G8		1	Continued to POOH (wiper trip) on elevators from 396m to 136m. No tight spots or overpull observed. ROV Cleaning cuttings build up from around the well head.
537.0	P7	P	G8		1	Broke circulation at the shoe & pumped out 30" casing Volume. RIH from 136m to 537m. Hole in good condition, no drag & no fill on Bottom.
705.0	P7	P	D2		4	Continued to drill ahead new 17 1/2" hole from 537m to 705m. 1150gpm/2350psi/ 10-20 WOB/ 3-4 Torque. ROP 42-50m p/hr. Pumped 50bbl of pre hyd gel sweeps every 15m. Took surveys on every stand.
1112.0	P7	P	D2		10.5	Continued to drill ahead new 17 1/2" hole from 705m to 1038m. Slide to 1053m. Drilled to 1061m. Slide to 1070m. Drilled to 1089m. Slide to 1094m. Drilled to 1112m section TD tide corrected. 1150gpm/2450psi/ 10-30 WOB/ 3-8 Torque. ROP 37 - 40m p/hr. Pumped 50bbl of pre hyd gel sweeps every 15m. Took surveys on every stand.
1112.0	P7	P	F4		1	Pumped 2 x 100bbl Hi Vis sweeps & circulated hole clean @ 200spm/ 1000gpm/ 2450psi.
1112.0	P7	P	F3		1.5	Took survey & displaced well to 1200bbls of 9.5ppg mud @ 190spm/ 1000gpm/ 1950psi.
1112.0	P7	P	G8		3	POOH on elevators from 1112m to 500m. Numerous tight spots between 1068m - 940m & 780 - 583m, up to 60k over pull. Pulled through & wiped all tight spots. Cranes shut down due to high winds 35+ knots.
1112.0	P7	P	G8		1.5	RIH from 500m to 1112m section TD. Wiper Trip. No restrictions observed. Washed last stand to bottom, 8m of fill. Offline mixing new mud & sweeps to clean well.
1112.0	P7	P	F4		0.5	Pumped 60bbl Hi Vis Sweep, circulated with seawater @ max rate of 1200gpm/ 1150psi.

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Date : 06 Dec 2010 **Daily Cost : AU$ 712788** **Report Number : 11**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1112.0	P7	P	F4		1	Continued to circulate out Hi Vis Sweep. Displaced well to 9.5ppg mud.
1112.0	P7	P	F4		4	POOH on elevators from 1112m to 193m. Tight spots between 1080m - 1070m & 930m - 925m, up to 50k over pull. Pulled through & wiped all tight spots.
1112.0	P7	P	G6		0.5	POOH BHA from 193m to 75m.
1112.0	P7	P	F4		0.5	Make up Top Drive & flushed around well head & PGB. Stopped pumping due to mud motor causing excessive vibration of the top drive.
1112.0	P7	P	G6		1	Continued to POOH BHA from 75m to surface & racked back in the derrick.
1112.0	P7	P	F4		1	RIH with 5" DP & jetted well head & PGB. POOH with same.
1112.0	P7	TP	F4	WOW	1.5	Waited on weather. Winds in excess of 40 knots.
1112.0	P9	P	F4		1	Held PJSM. Discussed adverse weather conditions. Picked up 18 3/4" well head & running tool. Installed plug set as per Dril Quip instructions & laid out same to the deck.
1112.0	P9	P	F4		1	Held PJSM. Picked up & made up Weatherford cement head & laid out same to the deck.
1112.0	P9	P	G1		0.5	Rigged up 13 3/8" casing running equipment.
1112.0	P9	P	F4		0.5	Held PJSM. Picked up & ran shoe track. Checked floats were functioning as they should.
1112.0	P9	P	G8		1	Commenced running 13 3/8" casing as per programme. Installed guide ropes in the moon pool. Continued to RIH & stabbed shoe joint into the well head @ 77.6m with ROV assistance.
1112.0	P9	P	G8		0.5	Continued to RIH 13 3/8" casing from 30" well head to the 20" casing shoe at 138m.
1112.0	P9	P	G8		8	Continued to RIH 13 3/8" casing in open hole from 138m to 530m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.
1112.0	P9	TP	F4	WB	0.5	Casing held up at 530m. Attempted to work through with no luck. Made up circulating swedge to a stand of 5" DP & washed through section with 500gpm. Casing slipped through with very little resistance. Removed circulating swedge & racked back stand of DP.
1112.0	P9	P	G8		1.5	Continued to RIH 13 3/8" casing in open hole from 530m to 630m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.

Date : 07 Dec 2010 **Daily Cost : AU$ 694519** **Report Number : 12**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1112.0	P9	TP	G23	WOW	0.5	Weather conditions affecting the safe running of current casing operations. Stopped job, reassessed operation & changed the current plan to better suit the conditions.
1112.0	P9	P	G8		4.5	Continued to RIH 13 3/8" casing in open hole from 630m to 1014m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.
1112.0	P9	P	G8		0.5	Picked up, made up & ran 18 3/4" well head housing joint as per Dril Quip instruction.
1112.0	P9	P	G8		1.5	RIH 13 3/8" casing on landing string. Washed through tight spot from 1060m to 1088m. Picked up & made up cement head. Washed in the hole from 1088m to 1102m & landed out 18 3/4" Hanger into the 30" well head. Confirmed well head latched with 50klb over pull.
1112.0	P9	P	F4		1	Circulated 1.5 x casing volume @ 700gpm/ 320psi with seawater.
1112.0	P9	P	F3		4	Held PJSM. Commenced cement job as per programme. Performed Line Test 300/3000psi. Pumped 60bbl seawater spacer. Dropped ball & pressured up to 1100psi to release bottom plug. Mixed & pumped 228bbls of class G 12.5 ppg lead slurry, followed by 84bbls of class G 15.8ppg tail slurry. Released dart & cement unit displaced with 20bbls of drillwater. Dart sheared at 5.3bbls/500psi. Switched to rig pumps & displaced cement with a further 476.3bbls of seawater at 11-12 bbl/min. Bumped plug with 650psi. Pressured up with cement unit to 2500psi/10mins. Bled off pressure, floats held.
1112.0	P9	P	G1		1	Released 18 3/4' well head running tool. Laid down cement head.
1112.0	P9	P	G8		0.5	POOH. Laid out 18 3/4' running tool to the deck. Strapped length, 76.7m RKB to top of 18 3/4' well head.
1112.0	P9	P	P1		1	Pressure tested new piping on standpipe manifold - 5000psi.
1112.0	P9	TP	G8	WOW	5	Waited on weather. 16:00 Winds 30-35 knts/ Seas 4m/ Swell 4.2m/ Pitch 2.9/ Roll 2.1/ Heave 1.2m. 18:00 Winds 28-32 knts/ Seas 4m/ Swell 4.3m/ Pitch 1.7/ Roll 2.1/ Heave 1.4m.

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Date : 07 Dec 2010 **Daily Cost : AU$ 694519** **Report Number : 12**

1112.0	P9	P	G6	3	Held PJSM. Laid out excess 17 1/2" BHA from the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool.
1112.0	P11	P	G6	1.5	Picked up and made up 12 1/4" BHA. Tested MWD tools & rack back in the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool. Offline: ROV installed VX ring into 18 3/4 well head.

Date : 08 Dec 2010 **Daily Cost : AU$ 793886** **Report Number : 13**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1112.0	P11	P	G6		3.5	Continued to pick up and make up 12 1/4" BHA. Tested MWD tools & racked back in the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool.
1112.0	P6	P	G13		2	Rigged up riser running equipment. Offline: function tested BOPs through newly repaired Blue pod.
1112.0	P6	P	G13		1.5	Made up riser double plus 10ft riser pup.
1112.0	P6	P	G13		1.5	Moved BOP to well centre on transporter and made up riser assembly to same.
1112.0	P6	P	G13		2.5	Dressed BOPs for running. Installed guide lines and installed transponder.
1112.0	P6	P	G13		0.5	Picked up BOPs, removed transporter and ran BOPs through splash zone.
1112.0	P6	P	G13		2	Made up Slip Joint and Landing Joint to riser.
1112.0	P6	P	G13		1	Installed Choke and Kill hoses to Slip Joint
1112.0	P6	P	G13		1	Flushed Kill and Choke lines. Pressure tested Kill and Choke lines to 500psi/5mins - 5000psi/10mins.
1112.0	P6	P	G13		2	Installed MRTS lines to load ring. Installed storm saddles for umbilical hoses. Skidded rig over well centre.
1112.0	P6	P	G13		0.5	Landed BOPs on 18 3/4" wellhead with 50klbs down weight. Latched BOP connector, confirmed indicator movement with ROV. Confirmed latch with 50klbs overpull on connector. Reduced weight to 170klbs MD. Pre land off weight 320klbs MD
1112.0	P6	P	G13		0.5	Installed RBQ plates to umbilical reels.
1112.0	P6	P	G13		1	Pressure tested BOP connector against BSR 350psi/5mins - 2500psi/10mins. Good test
1112.0	P6	P	G13		1	Stroked open slip joint and laid out landing joint.
1112.0	P6	P	G13		1	Installed diverter assembly and function tested same.
1112.0	P6	P	G13		1	Rigged down riser handling equipment from drill floor.
1112.0	P11	P	G7		1.5	Picked up Sperry drilling stand from derrick and made up bit and commenced downloading data to Sperry tools.

Date : 09 Dec 2010 **Daily Cost : AU$ 776987** **Report Number : 14**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1112.0	P11	P	G7		1	Continued to download data to Sperry tools. Installed radioactive sources in BHA.
1112.0	P11	P	G6		2.5	Continued to make up 12¼" BHA to 241m. (Shallow tested Sperry MWD/LWD/Geopilot at 151m).
1112.0	P11	P	G2		0.5	RIH from 241m to 388m picking up 5" DP from deck. (15 joints of DP made up).
1112.0	P11	P	P3		1	Function tested BOPs on blue Pod from drillers panel and on yellow pod from the koomey unit.
1112.0	P11	P	G2		1.5	RIH from 388m to 677m picking up 5" DP from deck. (45 joints of DP made up).
1112.0	P11	P	G2		0.5	Racked back 10 stands of 5" DP in derrick to 388m.
1112.0	P11	P	G2		4	RIH from 388m to 959m picking up 5" DP from deck. (Total 135 joints DP picked with another 10 stands racked back in derrick).
1112.0	P11	P	G8		0.5	RIH from 959m to 1040m.
1112.0	P11	P	F1		0.5	Washed in hole from 1040m to tag cement plugs at 1087m.
1113.0	P11	P	D1		5	Drilled out cement plugs, float and shoe track from 1087m to shoe at 1103m with seawater and Guar Gum Hi vis pills. Cleaned out rat hole to 1113m. Commenced displacing well to 10ppg KCL PHPA

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						WBM mud system.
1117.0	P11	P	D4		0.5	Drilled 12¼" hole from 1113m to 1117m while displacing well to 10ppg KCL PHPA WBM mud system.
1117.0	P11	P	F1		1	Racked back stand and attempted to pull into shoe. Recorded overpull pulling into shoe. Worked shoe area to clear obstruction.
1117.0	P11	P	F4		0.5	Shoe cleared. Circulated bottoms up at 1081m.
1117.0	P11	P	P1		0.5	Rigged up to perform LOT. Held PJSM.
1117.0	P11	P	P1		0.5	Pumped 7bbl of mud with cement unit to flush and confirm lines. Pressure tested surface lines to 1000psi. Performed FIT to 1120psi with 10.0ppg mud against upper annular. No break over. Test stopped. 3bbls pumped. 2.25bbls returned EMW 15.95ppg.
1117.0	P11	P	P1		0.5	Opened upper annular and pumped down string and kill line indivdually with returns to trip tank to double check line up for FIT was correct.
1117.0	P11	P	F1		0.5	Rigged down lines for FIT. BHA held up on shoe when RIH. Reamed shoe to clear obstruction.
1117.0	P11	P	P1		0.5	With bit at 1104m, closed upper annular and pressured up formation to 500psi with the rig pumps to eliminate possibilty of FIT testing against a plugged shoe. No leak off occurred.
1117.0	P11	P	P3		0.5	Recorded SCRs and choke line friction losses.
1165.0	P11	P	D4		2	Drilled 12¼" hole from 1117m to 1165m. 10klbs wob, 120rpm, 4kftlbs torq, 900gpm, 2100psi. Av ROP 24m/hr.

Date : 10 Dec 2010 **Daily Cost : AU$ 897338** **Report Number : 15**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1224.0	P11	P	D4		2	Drilled 12¼" hole from 1165m to 1224m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
1224.0	P11	TP	D4	RE	0.5	Slips jammed in bushing on connection. Released slips from pipe.
1251.0	P11	P	D4		1	Drilled 12¼" hole from 1224m to 1251m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
1251.0	P11	TP	D4	RE	0.5	Unable to break TDS saver sub on connection. Attempted to break Top drive connection without success.
1251.0	P11	TP	D4	RE	0.5	Manriding winch wire broke after hanging up on TDS. (No person on wire). Circulated while stop for safety held and derrick checked for any remaining hazards.
1250.0	P11	TP	D4	RE	3	Laid out second single from TDS and reconnected TDS to string to enable Top Drive to be brought to rig floor. Removed pipe handler and drilling bails from Top Drive. Broke out saver sub from Top Drive with rig tongs, laid out single with saver sub. (Moved string and circulated at regular intervals to ensure pipe free).
1251.0	P11	TP	D4	RE	1	POOH from 1251m to inside shoe at 1091m.
1251.0	P11	TP	D4	RE	3.5	Re-installed pipe handler and new saver sub to Top Drive. Repaired damaged air/oil line on Top Drive.
1251.0	P11	TP	D4	RE	0.5	RIH from 1091m to 1225m.
1251.0	P11	TP	D4	RE	0.5	Washed in hole from 1225m to 1251m. (4m of filled at bottom of hole).
1425.0	P11	P	D4		5	Drilled 12¼" hole from 1251m to 1425m. 22klbs wob, 160rpm, 6kftlbs torq, 1000gpm, 2650psi.
1512.0	P11	P	D4		3.5	Drilled 12¼" hole from 1425m to 1512m. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps.
1512.0	P11	P	D4		1	Unable to read data from Sperry tools after connection. Troubleshot pulsar failure. Pump pressure 500psi higher after connection coinciding with failure to read signals. Pressure eventually returned to normal with communications returning to sperry tools. Failure and pressure anomaly unexplained.
1570.0	P11	P	D4		1.5	Drilled 12¼" hole from 1512m to 1570m. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps.

Date : 11 Dec 2010 **Daily Cost : AU$ 822708** **Report Number : 16**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity

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1573.0	P11	P	D4		0.5	Drilled 12¼" hole from 1570m to 1573m. Made connection. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps
1573.0	P11	TP	D4	RE	2	Threads crossed on RBS connection. Unable to back out crossed threads. Picked up drill string and worked tool joint down to workable height near DF with 40/60 rpm, 350gpm, 500psi. (Installed spare elevators around pipe at rotary for safety). Broke crossed connection with rig tongs and racked back 2 stands with damaged tool joints. Washed back to bottom.
1657.0	P11	P	D4		3.5	Drilled 12¼" hole from 1573m to 1657m. 15/25klbs wob, 160rpm, 8kftlbs torq, 1000gpm, 2760ps.
1780.0	P11	P	D4		6	Drilled 12¼" hole from 1657m to 1780m. 15/30klbs wob, 160rpm, 8kftlbs torq, 1000gpm, 2780ps.
1812.0	P11	P	D4		1	Drilled 12¼" hole from 1780m to 1812m. 20/25klbs wob, 160rpm, 10kftlbs torq, 1000gpm, 2800ps.
1812.0	P11	P	D4		0.5	Sperry communication link to downhole tools failed. Troublehot problem.
1812.0	P11	P	F4		0.5	Circulated well clean.
1812.0	P11	P	P3		0.5	Flow checked well on trip tank. Well stable.
1812.0	P11	P	G8		1.5	POOH on elevators from 1812m to 1544m. Encountered tight spots at 1752m, 1717m, 1704m, 1663m, 1544m. Max overpull 70klbs.
1812.0	P11	P	D7		0.5	Pumped out of hole (no rotation) from 1544m to 1515m. 800gpm, 1600psi.
1812.0	P11	P	G8		0.5	POOH on elevaters from 1515m to 1341m.
1812.0	P11	P	D7		1.5	Pumped out of hole (no rotation) from 1341m to inside shoe at 1081m. 800gpm, 1500psi. Held trip drill. 15secs to stab and close IBOP.
1812.0	P11	P	F4		1	Circulated well clean. Flow checked well on trip tank. Well static.
1812.0	P11	TP	G8	RE	1.5	POOH from 1081m to 1050m. Pumped slug and continued to POOH from 1050m to 242m.
1812.0	P11	TP	G6	RE	2.5	Racked back BHA. Laid out stab and float sub.
1812.0	P11	TP	G7	RE	0.5	Sperry removed radioactive sources from tools and commenced down loading data from HCIM/Geopilot/resistivity tools.

Date : 12 Dec 2010 **Daily Cost : AU$ 802922** **Report Number : 17**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1812.0	P11	TP	G7	RE	0.5	Continued downloading sperry tools. Unable to read data from tools above HCIM.
1812.0	P11	TP	G7	RE	1	Downloaded data fron BAT Sonic tool.
1812.0	P11	TP	G7	RE	2	(Cranes down due to high winds) 00:00 Wind 45knts, gusting 48knts 01:00 Wind 45knts, gusting 50knts 02:00 Wind 40knts, gusting 45knts Sperry continued to trouble shoot and isolate failures in tools while WOW. Unable to read ALD-CTN from bottom of tool. Connected into top of ALD-CTN tool and down loaded data.
1812.0	P11	TP	G7	RE	1.5	Racked back sperry stand in derrick. Broke out bit and set Geopilot in slips. 03:00 Wind 37knts, gusting 44knts 04:00 Wind35knts, gusting 38knts
1812.0	P11	TP	G7	RE	2.5	Waited on Weather. 05:00 Wind 35knts 06:00 Wind 28knts gusting 33knts 07:00 Wind 28knts gusting 32knts
1812.0	P11	TP	G7	RE	2	Checked mouse hole for broken protectors. Laid out HOC, Q BAT Sonic, ALD+CTN, RLL, and Geopilot.
1812.0	P11	TP	G7	RE	1.5	Picked up and made up replacement Geopilot, RLL, ALD+CTN, Q BAT, HOC tools.
1812.0	P11	TP	G7	RE	1	Downloaded data to Sperry tools.
1812.0	P11	TP	G7	RE	0.5	Installed radioactive sources in LWD tools.
1812.0	P11	TP	G6	RE	1	Continued to make up 12¼" BHA to 242m.

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1812.0	P11	TP	G7	RE	0.5	Shallow tested LWD/MWD tools. 860gpm, 1460psi.
1812.0	P11	TP	G8	RE	1.5	RIH from 242m to 1081m.
1812.0	P11	P	G11		0.5	Serviced rig. Adjusted RBS, greased crown.
1812.0	P11	P	G8		1	RIH from 1081m to 1500m. Took 40klbs weight at 1500m.
1812.0	P11	P	F1		4.5	Washed/reamed from 1500m to 1812m. Attempted to RIH at various stages without success. 140rpm, 3/15kftlbs torq, 0/10klbs wob, 1000gpm, 3000psi.
1860.0	P11	P	D4		2.5	Drilled 12¼" hole from 1812m to 1860m. 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi.

Date : 13 Dec 2010 **Daily Cost : AU$ 836844** **Report Number : 18**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1966.0	P11	P	D4		6	Drilled 12¼" hole from 1860m to 1966m. Control drilled at 25m/hr max rop from 1900m for log quality. 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi
2046.0	P11	P	D4		6	Drilled 12¼" hole from 1966m to 2046m. Control drilled at 25m/hr max rop for log quality. 10/20klbs wob, 160rpm, 10/16kftlbs torq, 1000gpm, 3100psi
2120.0	P11	P	D4		6	Drilled 12¼" hole from 2046m to 2120m. Control drilled at 25m/hr max rop for log quality. 5/30klbs wob, 160rpm, 10/19.5kftlbs torq, 940gpm, 3011psi
2193.0	P11	P	D4		6	Drilled 12¼" hole from 2120m to 2193m. Control drilled at 25m/hr max rop for log quality. 10/30klbs wob, 135rpm, 11/21.5kftlbs torq, 907gpm, 2860psi

Date : 14 Dec 2010 **Daily Cost : AU$ 813477** **Report Number : 19**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2211.0	P11	P	D4		6	Drilled 12¼" hole from 2193m to 2211m. ROP began dropping off at 2192m. Drilled ahead at 3-4m/hr. 30/40klbs wob, 120/160rpm, 16/18kftlbs torq, 900gpm, 2760psi .
2215.0	P11	P	D4		4.5	Drilled 12¼" hole from 2211m to 2215m. Drilled ahead at less than 3m/hr deceasing to less than 1m/hr. Pressure differential between on and off bottom increased to 400psi and torque differential dropped to 2kftlbs; indicating possible bit failure. 40/50klbs wob, 120/160rpm, 16/20kftlbs torq, 884gpm, 2905psi.
2215.0	P11	P	P3		0.5	Decision made to POOH due to low ROP. Removed geolograph cables from Top Drive. Flow checked well. Well static.
2215.0	P11	P	G8		1	POOH from 2215m to 1920m. Overpulls up to 50klbs and well starting to swab.
2215.0	P11	P	F1		3	Pumped out of the hole from 1920m to 1399m.
2215.0	P11	P	G8		0.5	POOH from 1399m to inside show at 1081m.
2215.0	P11	P	F4		0.5	Circulated bottoms up. Flow checked well.
2215.0	P11	P	G11		1.5	Slipped and cut 120ft of drilling line.
2215.0	P11	P	G8		1.5	POOH from 1081m to 242m.
2215.0	P11	P	G6		1.5	Racked back BHA from 242m to 40m.
2215.0	P11	P	G7		2	Laid out HOC tool. Sperry removed radioactive sources and down loaded data from LWD/MWD tools.
2215.0	P11	P	G6		1	Racked back LWD/MWD stand. Laid out bit and Geopilot.
2215.0	P11	P	G6		0.5	Picked up LWD/MWD stand from derrick.

Date : 15 Dec 2010 **Daily Cost : AU$ 719501** **Report Number : 20**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity

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Date : 15 Dec 2010 **Daily Cost : AU$ 719501** **Report Number : 20**

2215.0	P11	TP	G7	TP	1.5	Connector failed at bottom of RLL tool. Racked back LWD stand with single of DP on top and replaced RLL tool.
2215.0	P11	P	G6		1	Made up flex joint and NB stab to RLL tool. Made up to LWD stand, picked up new HOC tool. Made up 12¼" bit.
2215.0	P11	P	G7		1.5	Sperry down loaded data to LWD/MWD tools and installed radioactive sources to ALD+CTN tools.
2215.0	P11	P	G6		2	Continued to make up BHA to 255m. Made up 2 additional 8¼" DCs in BHA. Shallow tested LWD/MWD on first stand of HWDP. 800gpm, 1350psi.
2215.0	P11	P	G8		1.5	RIH with 12¼" rotary assembly from 255m to 1094m.
2215.0	P11	P	G11		0.5	Serviced Top Drive and travelling blocks.
2215.0	P11	P	G8		2	RIH in open hole from 1094m to 2145m.
2215.0	P11	P	F1		1	Washed in hole from 2145m to 2193m. 800gpm, 2350psi.
2215.0	P11	P	F1		1	Re logged hole section from 2193m to 2215m.
2248.0	P11	P	D2		6	Broke in new bit and drilled 12¼" hole from 2215m to 2248m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
2282.0	P11	P	D2		6	Drilled 12¼" hole from 2248m to 2282m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.

Date : 16 Dec 2010 **Daily Cost : AU$ 734026** **Report Number : 21**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2308.0	P11	P	D2		6	Drilled 12¼" hole from 2282m to 2308m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
2317.0	P11	P	D2		4	Drilled 12¼" hole from 2308m to well TD at 2317m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
2317.0	P11	P	F4		1	Circulated bottoms up.
2317.0	P11	P	P3		0.5	Attempted TD survey. No success. Removed geolograph lines from Top Drive and flow checked well. Well static.
2317.0	P11	P	G8		0.5	Pulled out of hole from 2317m to 2127m.
2317.0	P11	P	D7		0.5	Pumped out of tight hole section from 2127m to 2106m. 750gpm, 2000psi.
2317.0	P11	P	G8		1.5	POOH from 2106m to 1730m.
2317.0	P11	P	D7		1	Pumped out of tight hole section from 1730m to 1643m. 850gpm, 2400psi.
2317.0	P11	P	G8		1	POOH from 1643m to inside shoe at 1094m. Held trip drill. 31secs to stab and close IBOP.
2317.0	P11	P	P3		0.5	Flow checked well. Well static. Installed auto slips and pipe wiper.
2317.0	P11	P	G8		1	POOH from 1094m to 255m.
2317.0	P11	P	G6		2	Racked back BHA. Laid out 8" jars and 2 x DCs to deck.
2317.0	P11	P	G7		2	Removed radioactive sources from Sperry ALD+CTN tools. Down loaded data from LWD/MWD tools.
2317.0	P11	P	G2		1.5	Laid out Sperry HOC, Q BAT Sonic, ALD+CTN, RLL and flex joint, stabs and bit.
2317.0	P21	P	G2		1	Rigged up DF and picked up first 5 joints + elephant shoe of 2 2/7" cement stinger.

Date : 17 Dec 2010 **Daily Cost : AU$ 710540** **Report Number : 22**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2317.0	P21	P	G2		1.5	Continued to pick up and make up 2 7/8" cement stinger. Total of 20 joints picked up. Made up Top Drive and pumped through stinger to confirm clear.
2317.0	P21	P	G8		3	RIH with cement stinger from 188m to 2184m.
2317.0	P21	P	D7		1.5	Precautionary wash in hole from 2184m to 2317m.
2317.0	P21	P	F4		0.5	Circulated bottoms up. 1000gpm, 2680psi.
2317.0	P21	P	F3		1.5	Cement plug #1A: Rigged up surface lines and spaced out to 2317m.

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					Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill waterthen mixed pumped and displaced 88bbl 15.8ppg G cement plug #1A. Cement plug interval 2317m to 2170m.
2317.0	P21	P	G8	1	Rigged down cement head assembly and POOH slowly out of cement plug from 2317m to 2170m.
2317.0	P21	P	F4	1	Circulated well clean. Diverted 40bbl of cmt contaminated mud at shakers. 800gpm, 1750psi.
2317.0	P21	P	F3	1	Cement plug #1B: Rigged up surface lines and spaced out to 2170m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill water then mixed pumped and displaced 89bbl 15.8ppg G cement plug #1B. Cement plug interval 2170m to 2020m.
2317.0	P21	P	G8	1	Rigged down cement head assembly and POOH slowly out of cement plug from 2170m to 2020m.
2317.0	P21	P	F4	1	Circulated well clean. Diverted 20bbl of cement contaminated mud at shakers. 800gpm, 1700psi.
2317.0	P21	P	F3	1	Cement plug #1C: Rigged up surface lines and spaced out to 2020m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls DW then mixed pumped and displaced 65bbl 15.8ppg G cement plug #1C. Cement plug interval 2020m to 1920m.
2317.0	P21	P	G8	0.5	Rigged down cement head assembly and POOH slowly out of cement plug from 2020m to 1870m.
2317.0	P21	P	F4	1	Installed wiper ball in pipe and circulated well clean. 800gpm, 1575psi.
2317.0	P21	P	G8	1	Pumped slug and POOH from 1870m to 1250m.
2317.0	P21	P	F3	0.5	Spotted 55bbl 12.5ppg hi vis pill at 1250m with rig pumps.
2317.0	P21	P	G8	0.5	POOH from 1250m to 1150m.
2317.0	P21	P	F3	1	Cement plug #2: Rigged up surface lines and spaced out to 1150m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill water then mixed pumped and displaced 90bbl 15.8ppg G cement plug #2 across shoe. Cement plug interval 1150m to 1000m.
2317.0	P21	P	G8	0.5	Rigged down cement head assembly and POOH slowly out of cement plug from 1150m to 950m.
2317.0	P21	P	F4	1	Circulated well clean. Diverted 82bbl of cement contaminated mud at shakers. 1000gpm, 2600psi. Installed wiper ball in string and pumped 100bbls to clean pipe ID.
2317.0	P21	P	G2	4	Pumped slug and POOH laying out DP to deck while WOC. (Laid out 78 joints of 5" DP and 10 joints of 2 7/8" tubing)

Date : 18 Dec 2010 **Daily Cost : AU$ 698240** **Report Number : 23**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2317.0	P21	P	G2		2.5	RIH 14 stands 5" DP from derrick and laid out same to pipe deck.
2317.0	P21	P	G8		1.5	RIH from 97m to 936m.
2317.0	P21	P	G2		0.5	Washed down from 936m and tagged top of cement plug #2 at 961m with 5klbs.
2317.0	P21	P	G2		4	Pumped slug and POOH from 961m to 300m laying out excess DP to pipe deck.
2317.0	P21	P	G8		0.5	RIH from 97m to 300m.
2317.0	P21	TP	P1	WO	4	Rigged up surface lines and attempted to pressure test against cement plug to 1500psi. Test failed at 950psi. Tested surface equipment to confirm leak was downhole. Retested against cement plug #2. Test failed.
2317.0	P21	TP	G1	WO	0.5	Rigged down surface lines.
2317.0	P21	TP	G2	WO	2	RIH from 300m to 960m picking up extra required DP from pipe deck.
2317.0	P21	TP	F1	WO	2.5	Washed in hole from 960m to tag TOC at 1116m. 483gpm, 200psi.
2317.0	P21	TP	F4	WO	0.5	Circulated to clean open hole from 1116m to 1102m
2317.0	P21	TP	F4	WO	2	Circulated well clean. Prepared for pumping new shoe cement plug #2. Made up cement single and spaced out to 1116m

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Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Date : 18 Dec 2010 **Daily Cost : AU$ 698240** **Report Number : 23**

2317.0	P21	TP	F3	WO	1	Re-set cement plug #2: Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbl drill water spacer then mixed and pumped 67bbl 15.8ppg G cement plug. Displaced cement with 4bbl drill water and 49bbl 10.0ppg mud. Checked for back flow.
2317.0	P21	TP	G8	WO	0.5	Rigged down cement single to 1107m and POOH slowly from 1107m to 950m.
2317.0	P21	TP	F4	WO	0.5	Circulated annulus clean at 1000gpm, 1100psi. 31bbl of cement contaminated mud diverted at shakers.
2317.0	P21	TP	G8	WO	0.5	POOH from 950m to 760m.
2317.0	P21	P	G8		0.5	Made up DrilQuip WBRT to string and RIH to 60m.
2317.0	P21	P	G15		0.5	Jetted BOPs 1000gpm, 250psi for 15mins. Set WBRT into wear bushing with 20klbs down. Sheared wear bushing from 18 3/4" well head with 85klbs overpull.

Date : 19 Dec 2010 **Daily Cost : AU$ 702030** **Report Number : 24**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2317.0	P21	P	G15		0.5	POOH with WBRT and wear bushing. Laid out wear bushing and WBRT.
2317.0	P21	P	G2		2	Made up 2 stands of 8¼" DCs from derrick and laid out same to deck.
2317.0	P21	TP	G8	WO	0.5	RIH from 760m to 950m.
2317.0	P21	TP	G11	WO	0.5	Serviced Top Drive.
2317.0	P21	TP	G8	WO	1	Waited on cement samples to set.
2317.0	P21	TP	F1	WO	1	Washed in hole from 950m with 250gpm, 220psi and tagged TOC plug #2 at 1002m with 10klbs weight.
2317.0	P21	TP	P1	WO	0.5	Pulled back to 965m and rigged up surface lines and pressure tested same to 2000psi.
2317.0	P21	TP	P1	WO	0.5	Pressure tested cmt plug against upper annular to 1500psi 10mins. Good test. Rigged down cement single.
2317.0	P21	TP	G2	WO	3	POOH laying out DP from 964m to 300m.
2317.0	P21	P	F3		0.5	Spotted a 64bbl 12.5ppg hi vis pill at 300m.
2317.0	P21	P	G8		0.5	POOH from 300m to 200m and installed cement single.
2317.0	P21	P	F3		0.5	Surface cement plug #3: Cement unit pumped 5bbl drill water and pressure test surface lines to 3000psi. Cement unit pumped 25bbl drill water spacer followed by 55bbl 15.8ppg G cement plug. Cement plug was displaced with 1bbl DW and 3bbl 10.0ppg mud.
2317.0	P21	P	G8		0.5	Rigged down cement single and POOH slowly from 200m to 100m.
2317.0	P21	P	F4		0.5	Displaced top of well and riser to seawater while jetting BOPs. Flushed kill and choke lines with seawater.
2317.0	P21	P	G2		1.5	POOH laying out 2 7/8" cement stinger.
2317.0	P6	P	G1		1.5	Rigged up riser handling equipment on drill floor.
2317.0	P6	P	G13		1	Laid out diverter to pipe deck.
2317.0	P6	P	G13		1	Made up landing joint, collapsed slip joint and prepared to unlatch BOP.
2317.0	P6	P	M2		0.5	Unlatched BOP and skidded rig clear of well.
2317.0	P6	P	G13		2	Removed kill and choke hoses from slip joint. Removed MRT lines from slip joint and removed storm saddles from umbilical lines.
2317.0	P6	P	G13		1.5	Laid out landing joint, slip joint and riser pup joint.
2317.0	P6	P	G13		1	Pulled BOPs into moonpool on riser double and landed out on BOP transporter.
2317.0	P6	P	G13		2	Removed guide lines, pod line clamps and disconnected riser double from BOPs. Moved BOPs to aft moonpool on transporter.

Date : 20 Dec 2010 **Daily Cost : AU$ 695531** **Report Number : 25**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2317.0	P6	P	G13		1	Laid out riser double.

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Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Date : 20 Dec 2010 **Daily Cost : AU$ 695531** **Report Number : 25**

2317.0	P6	P	G1		1	Rigged down riser handling equipment on drill floor.
2317.0	P21	P	G6		1.5	Picked up 18 3/4" WH grapple and casing cutting assembly. Made up to stand of 8¼" DCs and secured to guide lines with rope. RIH to 63m.
2317.0	P21	TP	G12	TP	1	Entered wellhead with ROV assistance and attempted several times to engage wellhead with the latch grapple. Applied left hand rotation, set down maxium 25klbs on tool. Unable to obtain an overpull.
2317.0	P21	TP	G8	TP	0.5	POOH with latch grapple assembly to drill floor.
2317.0	P21	TP	G7	TP	1	Inspected tool for indications to explain failure. No obvious reason found for failure. Decision made to configure tool with 20" casing grapple.
2317.0	P21	TP	G7	TP	2	Changed out 18 3/4" latch grapple for 20" spear grapple and adjusted space out to cutters.
2317.0	P21	TP	G7	TP	1.5	Installed guide ropes to BHA and RIH. Entered well head with ROV assistance and engaged well head profile. Confirmed latch with 50klbs overpull.
2317.0	P21	P	G17		6.5	Cut 20" and 30" casing at 82m. 110rpm, 280gpm, 600psi. 5/15kftlbs torq.
2317.0	P21	P	G8		0.5	POOH to replace cutting knives.
2317.0	P21	P	G7		1	Replaced 44" knives for new on casing cutter. Removed broken brass wear bushing on casing cutter.
2317.0	P21	P	G8		0.5	Installed guide ropes to BHA and RIH. Entered well head with ROV assistance and engaged well head profile with grapple. Confirmed latch with 50klbs overpull.
2317.0	P21	P	G17		6	Cut 20" and 30" casing at 82m. 80rpm, 320gpm, 925psi. 5/15kftlbs torq with 20klbs overpull on spear. Cutting with 5/8klbs torque initially building to 7/15kftlbs from 22:00hrs.

Date : 21 Dec 2010 **Daily Cost : AU$ 779389** **Report Number : 26**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2317.0	P21	P	G17		0.5	Picked up to 350klbs overpull on wellhead. Casing not free.
2317.0	P21	P	G15		0.5	Disengaged spear and picked up to inspect cutters with ROV. Wear observed along 80% of knive length and positive deployment of knives observed when pumping.
2317.0	P21	P	G8		0.5	POOH to drill floor.
2317.0	P21	P	G7		3	Inspected knives. Wear on the knives indicated that the 30" had been successfully cut. Pumped through cutter at surface. Knives extended fully under pressure and retracted with pumps off. Changed out knives for new 44" knives. Re-spaced out knives to make cut at 80.5m (0.5m below seabed). Inspected piston seal.
2317.0	P21	P	G8		1	Attached ropes to BHA and guide lines. RIH and entered well with ROV assistance. Engaged spear grapple in well head.
2317.0	P21	P	G17		0.5	Overpulled 220klbs on wellhead. No movement observed. Reduced overpull to 15klbs. Established pump and rotating parameters.
2317.0	P21	P	G17		3	Cut 20" and 30" casing. 90rpm, 5/10kftlbs, 265gpm, 570psi with 15-25klbs overpull on wellhead.
2317.0	P21	P	G8		2	Picked up and pulled 18 3/4" wellhead and PGB clear of seabed. Continued to POOH and set PGB and wellhead on moonpool cart. Released 20" spear and racked back in derrick.
2317.0	P21	P	G2		1.5	Laid out 4 stands of DP and 4 stands of HWDP from derrick
2317.0	P21	P	G15		2	Made up WHRT on drill floor. Ran in same and engaged 18 3/4" wellhead. Released wellhead from PGB and laid out wellhead/casing stub assembly. Laid out WHRT.
2317.0	P21	P	G2		1	Laid out Smith casing cutting and wellhead retrieval assembly.
2317.0	P21	P	G2		2	Laid out remaining tubulars from derrick
2317.0	P1	P	M6		1.5	Completed seafastening of rig.
2317.0	P1	P	M3		3	De-ballasted rig from 65ft drilling draft.
2317.0	P1	TP	M3	RE	1	Portside #2 ballast pump lost suction and was out of service. Unable to ballast on port side.
2317.0	P1	P	M3		1	Continued to de-ballast rig to 46ft draft.

Date : 22 Dec 2010 **Daily Cost : AU$ 394425** **Report Number : 27**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity

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Date : 22 Dec 2010 **Daily Cost : AU$ 394425** **Report Number : 27**

2317.0	P1	P	M3	4.5	Continued de-ballasting rig from 46ft draft to transit draft at 30.5ft.
2317.0	P1	P	M4	9.5	Recovered Anchors.

04:30:- #4 PCP passed to Far Fosna
04:49:- #8 PCP passed to Far Scimitar
05:04:- #4 Anchor off bottom
05:15:- #8 Anchor off bottom
06:03:- #8 Anchor bolstered
06:14:- #4 Anchor bolstered
06:25:- #8 PCP passed back to rig
06:28:- #4 PCP passed back to rig

06:35:- #1 PCP passed to Far Scimitar
06:36:- #5 PCP passed to Far Fosna
07:05:- #5 Anchor off bottom
07:06:- #1 Anchor off bottom
07:50:- #5 Anchor bolstered
08:02:- #5 PCP passed back to rig
08:08:- #1 Anchor bolstered
08:13:- #3 PCP passed to Far Fosna
08:26:- #1 PCP passed back to rig
08:51:- #3 Anchor off bottom

09:37:- Far Scimitar connected to tow bridle and payed out to 300m

09:48:- #3 Anchor bolstered
10:01:- #3 PCP passed back to rig

10:18:- #7 PCP passed to Far Fosna
10:43:- #7 Anchor off bottom
11:29:- #7 Anchor bolstered
11:40:- #7 PCP passed back to rig

11:54:- #2 PCP passed to Far Fosna
12:12:- #2 Anchor off bottom
12:51:- #2 Anchor bolstered
13:25:- #2 PCP passed back to rig

12:20:- #6 PCP passed to Far Fosna. Commenced heaving in on #6 chain to bring rig over anchor
13:42:- #6 Anchor off bottom
13:58:- #6 Anchor left hanging at 60ft. Unable to bolster
14:00:- #6 PCP passed back to rig

*** END of Silvereye-1 @ 14:00 hrs, 22nd December 2010, with rig under tight tow***
Rig off contract to Origin Energy.

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APPENDIX 6: NON PRODUCTIVE TIME ANALYSIS

DFE above MSL : 26.0m Lat : 39 Deg 54 Min 19.8504 Sec Spud Date : 03 Dec 2010 Release Date :

Water Depth : 54.0m Long : 145 Deg 3 Min 32.5701 Sec Spud Time : 00:00 Release Time :

Trouble During Programmed Time for Silvereye-1

Date	PHS	Operation	NPT	Depth	Description of Programmed Trouble Time
27 Nov 2010	P1	Anchoring	2.5	0.0	Repaired Anchor winch 3 & 4 while also untangling knot on #2 Anchor winch chain, in the chain locker.
27 Nov 2010	P1	Anchoring	1.5	0.0	Waited on cranes, cranes working stbd aft pontoon for UT inspections.
28 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	5.5	0.0	Waiting On Weather 01:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 02:00 Wind speed- 38knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 04:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 06:00 Wind speed- 38knts/ Wave Ht- 1.4m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m.
28 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting On Weather 08:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m. 10:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 12:00 Wind speed- 45knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.8/ Heave 2m.
28 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting On Weather 14:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m. 16:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 2.8/ Heave 2m. 18:00 Wind speed- 41knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m.
28 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting On Weather 20:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.7/ Heave 2m. 22:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 24:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m.
29 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
29 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	4.5	0.0	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
29 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing. Welder removed padeyes from 30" conductor.
30 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	6	0.0	Waiting on EPBC Referral Approval. Offloaded bulks from Far Scimitar. Continued with rig maintenance & servicing.
30 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	1	0.0	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
30 Nov 2010	P1	Ballast/De-Ballast or Jack Up/Down	13.5	0.0	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
01 Dec 2010	P1	Ballast/De-Ballast or Jack Up/Down	24	0.0	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
02 Dec 2010	P1	Ballast/De-Ballast or Jack Up/Down	17.5	0.0	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
03 Dec 2010	P2	Rotary Drill	2	130.0	Cross threaded stand of DP while making connection. Unable to back out tool joint, finally worked tool joint down low enough to get tongs on & break free.
03 Dec 2010	P2	Work Stuck Tools and Equip	2.5	130.0	Broke out tool joint and racked stand back in the derrick. Made up Top Drive - unable to move pipe up or down or rotate. Full circulation achieved. Working stuck pipe @ 123m.
03 Dec 2010	P2	Trip In / Out	2	130.0	Pipe Free. POOH from 123m, pumped & backreamed to above seabed racking back over torqued stands of HWDP. Confirmed with ROV bit & hole opener OK.
03 Dec 2010	P2	Work Stuck Tools and Equip	1	130.0	Mechanics & electricians inspected Top Drive for possible damage, no problems found.

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Trouble During Programmed Time for Silvereye-1

Date	PHS	Operation	NPT	Depth	Description of Programmed Trouble Time
03 Dec 2010	P2	Trip In / Out	1	130.0	RIH, washed down from seabed to 130m.
04 Dec 2010	P3	Pick Up / Lay Down	2	141.0	Held PJSM. Laid out damaged 5" DP & HWDP to the deck for backloading.
06 Dec 2010	P7	Circulate / Condition Fluids	1.5	1112.0	Waited on weather. Winds in excess of 40 knots.
06 Dec 2010	P9	Circulate / Condition Fluids	0.5	1112.0	Casing held up at 530m. Attempted to work through with no luck. Made up circulating swedge to a stand of 5" DP & washed through section with 500gpm. Casing slipped through with very little resistance. Removed circulating swedge & racked back stand of DP.
07 Dec 2010	P9	Safety - JSAs, Drills, Incidents etc	0.5	1112.0	Weather conditions affecting the safe running of current casing operations. Stopped job, reassessed operation & changed the current plan to better suit the conditions.
07 Dec 2010	P9	Trip In / Out	5	1112.0	Waited on weather. 16:00 Winds 30-35 knts/ Seas 4m/ Swell 4.2m/ Pitch 2.9/ Roll 2.1/ Heave 1.2m. 18:00 Winds 28-32 knts/ Seas 4m/ Swell 4.3m/ Pitch 1.7/ Roll 2.1/ Heave 1.4m.
10 Dec 2010	P11	Rotary Steerable Drilling	0.5	1224.0	Slips jammed in bushing on connection. Released slips from pipe.
10 Dec 2010	P11	Rotary Steerable Drilling	0.5	1251.0	Unable to break TDS saver sub on connection. Attempted to break Top drive connection without success.
10 Dec 2010	P11	Rotary Steerable Drilling	0.5	1251.0	Manriding winch wire broke after hanging up on TDS. (No person on wire). Circulated while stop for safety held and derrick checked for any remaining hazards.
10 Dec 2010	P11	Rotary Steerable Drilling	3	1250.0	Laid out second single from TDS and reconnected TDS to string to enable Top Drive to be brought to rig floor. Removed pipe handler and drilling bails from Top Drive. Broke out saver sub from Top Drive with rig tongs, laid out single with saver sub. (Moved string and circulated at regular intervals to ensure pipe free).
10 Dec 2010	P11	Rotary Steerable Drilling	1	1251.0	POOH from 1251m to inside shoe at 1091m.
10 Dec 2010	P11	Rotary Steerable Drilling	3.5	1251.0	Re-installed pipe handler and new saver sub to Top Drive. Repaired damaged air/oil line on Top Drive.
10 Dec 2010	P11	Rotary Steerable Drilling	0.5	1251.0	RIH from 1091m to 1225m.
10 Dec 2010	P11	Rotary Steerable Drilling	0.5	1251.0	Washed in hole from 1225m to 1251m. (4m of filled at bottom of hole).
11 Dec 2010	P11	Rotary Steerable Drilling	2	1573.0	Threads crossed on RBS connection. Unable to back out crossed threads. Picked up drill string and worked tool joint down to workable height near DF with 40/60 rpm, 350gpm, 500psi. (Installed spare elevators around pipe at rotary for safety). Broke crossed connection with rig tongs and racked back 2 stands with damaged tool joints. Washed back to bottom.
11 Dec 2010	P11	Trip In / Out	1.5	1812.0	POOH from 1081m to 1050m. Pumped slug and continued to POOH from 1050m to 242m.
11 Dec 2010	P11	BHA Activities	2.5	1812.0	Racked back BHA. Laid out stab and float sub.
11 Dec 2010	P11	3rd party BHA Activites	0.5	1812.0	Sperry removed radioactive sources from tools and commenced down loading data from HCIM/Geopilot/resistivity tools.
12 Dec 2010	P11	3rd party BHA Activites	0.5	1812.0	Continued downloading sperry tools. Unable to read data from tools above HCIM.
12 Dec 2010	P11	3rd party BHA Activites	1	1812.0	Downloaded data fron BAT Sonic tool.
12 Dec 2010	P11	3rd party BHA Activites	2	1812.0	(Cranes down due to high winds) 00:00 Wind 45knts, gusting 48knts 01:00 Wind 45knts, gusting 50knts 02:00 Wind 40knts, gusting 45knts Sperry continued to trouble shoot and isolate failures in tools while WOW. Unable to read ALD-CTN from bottom of tool. Connected into top of ALD-CTN tool and down loaded data.

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Trouble During Programmed Time for Silvereye-1

Date	PHS	Operation	NPT	Depth	Description of Programmed Trouble Time
12 Dec 2010	P11	3rd party BHA Activites	1.5	1812.0	Racked back sperry stand in derrick. Broke out bit and set Geopilot in slips. 03:00 Wind 37knts, gusting 44knts 04:00 Wind35knts, gusting 38knts
12 Dec 2010	P11	3rd party BHA Activites	2.5	1812.0	Waited on Weather. 05:00 Wind 35knts 06:00 Wind 28knts gusting 33knts 07:00 Wind 28knts gusting 32knts
12 Dec 2010	P11	3rd party BHA Activites	2	1812.0	Checked mouse hole for broken protectors. Laid out HOC, Q BAT Sonic, ALD+CTN, RLL, and Geopilot.
12 Dec 2010	P11	3rd party BHA Activites	1.5	1812.0	Picked up and made up replacement Geopilot, RLL, ALD+CTN, Q BAT, HOC tools.
12 Dec 2010	P11	3rd party BHA Activites	1	1812.0	Downloaded data to Sperry tools.
12 Dec 2010	P11	3rd party BHA Activites	0.5	1812.0	Installed radioactive sources in LWD tools.
12 Dec 2010	P11	BHA Activities	1	1812.0	Continued to make up 12¼" BHA to 242m.
12 Dec 2010	P11	3rd party BHA Activites	0.5	1812.0	Shallow tested LWD/MWD tools. 860gpm, 1460psi.
12 Dec 2010	P11	Trip In / Out	1.5	1812.0	RIH from 242m to 1081m.
15 Dec 2010	P11	3rd party BHA Activites	1.5	2215.0	Connector failed at bottom of RLL tool. Racked back LWD stand with single of DP on top and replaced RLL tool.
18 Dec 2010	P21	Pressure / Inflow Test	4	2317.0	Rigged up surface lines and attempted to pressure test against cement plug to 1500psi. Test failed at 950psi. Tested surface equipment to confirm leak was downhole. Retested against cement plug #2. Test failed.
18 Dec 2010	P21	Rig Up / Down	0.5	2317.0	Rigged down surface lines.
18 Dec 2010	P21	Pick Up / Lay Down	2	2317.0	RIH from 300m to 960m picking up extra required DP from pipe deck.
18 Dec 2010	P21	Washing and Reaming	2.5	2317.0	Washed in hole from 960m to tag TOC at 1116m. 483gpm, 200psi.
18 Dec 2010	P21	Circulate / Condition Fluids	0.5	2317.0	Circulated to clean open hole from 1116m to 1102m
18 Dec 2010	P21	Circulate / Condition Fluids	2	2317.0	Circulated well clean. Prepared for pumping new shoe cement plug #2. Made up cement single and spaced out to 1116m
18 Dec 2010	P21	Pump / Displace / Spot Fluids	1	2317.0	Re-set cement plug #2: Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbl drill water spacer then mixed and pumped 67bbl 15.8ppg G cement plug. Displaced cement with 4bbl drill water and 49bbl 10.0ppg mud. Checked for back flow.
18 Dec 2010	P21	Trip In / Out	0.5	2317.0	Rigged down cement single to 1107m and POOH slowly from 1107m to 950m.
18 Dec 2010	P21	Circulate / Condition Fluids	0.5	2317.0	Circulated annulus clean at 1000gpm, 1100psi. 31bbl of cement contaminated mud diverted at shakers.
18 Dec 2010	P21	Trip In / Out	0.5	2317.0	POOH from 950m to 760m.
19 Dec 2010	P21	Trip In / Out	0.5	2317.0	RIH from 760m to 950m.
19 Dec 2010	P21	Service / Maintain Tools and Eqpt	0.5	2317.0	Serviced Top Drive.
19 Dec 2010	P21	Trip In / Out	1	2317.0	Waited on cement samples to set.
19 Dec 2010	P21	Washing and Reaming	1	2317.0	Washed in hole from 950m with 250gpm, 220psi and tagged TOC plug #2 at 1002m with 10klbs weight.
19 Dec 2010	P21	Pressure / Inflow Test	0.5	2317.0	Pulled back to 965m and rigged up surface lines and pressure tested same to 2000psi.
19 Dec 2010	P21	Pressure / Inflow Test	0.5	2317.0	Pressure tested cmt plug against upper annular to 1500psi 10mins. Good test. Rigged down cement single.
19 Dec 2010	P21	Pick Up / Lay Down	3	2317.0	POOH laying out DP from 964m to 300m.
20 Dec 2010	P21	Wellhead Activities	1	2317.0	Entered wellhead with ROV assistance and attempted several times to engage wellhead with the latch grapple. Applied left hand rotation, set down maxium 25klbs on tool. Unable to obtain an overpull.
20 Dec 2010	P21	Trip In / Out	0.5	2317.0	POOH with latch grapple assembly to drill floor.
20 Dec 2010	P21	3rd party BHA Activites	1	2317.0	Inspected tool for indications to explain failure. No obvious reason found for failure. Decision made to configure tool with 20" casing grapple.
20 Dec 2010	P21	3rd party BHA Activites	2	2317.0	Changed out 18 3/4" latch grapple for 20" spear grapple and adjusted space out to cutters.

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ORIGINENERGY_FWR.xsl (parent/child V1.3)

DFE above MSL : 26.0m	Lat : 39 Deg 54 Min 19.8504 Sec	Spud Date : 03 Dec 2010	Release Date :
Water Depth : 54.0m	Long : 145 Deg 3 Min 32.5701 Sec	Spud Time : 00:00	Release Time :

Trouble During Programmed Time for Silvereye-1

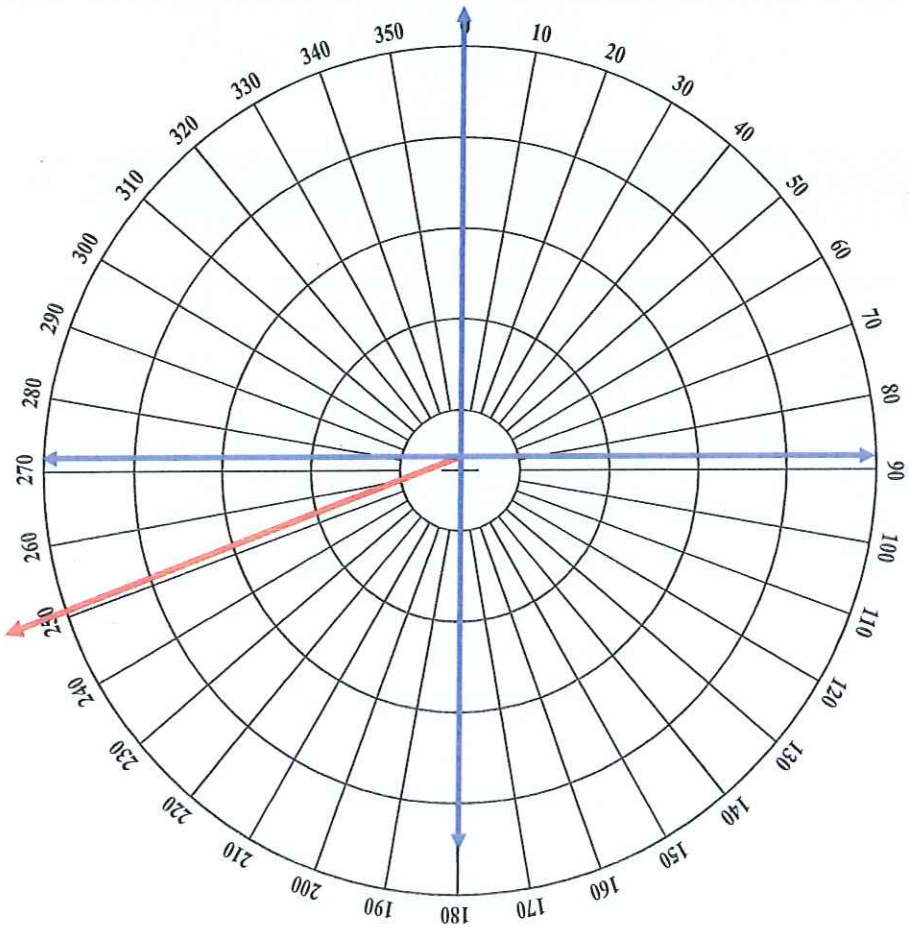
Date	PHS	Operation	NPT	Depth	Description of Programmed Trouble Time
20 Dec 2010	P21	3rd party BHA Activites	1.5	2317.0	Installed guide ropes to BHA and RIH. Entered well head with ROV assistance and engaged well head profile. Confirmed latch with 50klbs overpull.
21 Dec 2010	P1	Ballast/De-Ballast or Jack Up/Down	1	2317.0	Portside #2 ballast pump lost suction and was out of service. Unable to ballast on port side.

'Copyright IDS 2004', 20040415 (KS&JG),
ORIGINENERGY_FWR.xsl (parent/child V1.3)

APPENDIX 7: RIG MOVE & POSITIONING REPORT

FUGRO SUBSEA SERVICES (AUSTRALIA) PTY LTD
Seabed Clearance Certificate

VESSEL/RIG:	**KAN TAN IV**	**PROJECT:**	**SILVEREYE - 1 (PRE-DRILL)**
LOCATION:	**BASS STRAIT**	**DATE:**	**21 DECEMBER 2010**
Co-ordinates: 334 084.00mE 5 580 925mE			
Method of Survey: Sonar and video			
Type of Equipment Used: Imaginex 881A sonar		Contractor: ORGIN ENERGY	
Range of Coverage: Sonar range 20, 50, 80, 100m 360° visual around the well centre and out 25m on 4 cardinal directions		No. of scans: 20 overlapping scans on cardinal headings shown by blue arrows on diagram *No significant hard targets sighted.*	
Rig Heading (Indicate on Diagram): 250°			
Positions of Rig Relative to Well During Scans: Directly over on same heading			
Height Above Seabed: 0m		Height of Scanning Unit During Scan: ≤ 2m	
Nature of Seabed: Fine sediment with coarse grit		Type of Wellhead: Removed	
Type of Records Made: DVD 2, video log, duplicated as required			



Rig Heading 250°

FUGRO SUBSEA SERVICES (AUSTRALIA) PTY LTD
Seabed Clearance Certificate

LIST OF TARGETS					
	Position (Range & Bearing)	Approx. Dimensions (M)	Description	Means of Identification	Recovered
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Means of Identification	Reasons for not removing remaining debris:
A - Sonar Scan	
B - Diving Inspection	
C - R.O.V.	
D - Rig Records	

Signatories:

Name	Paul Jenkins.	Name	B Hutchinson	
Position	Client Representative ADA / Origin energy	Position	ROV Supervisor	
Signature		Signature		21/12/2010

Guidance Notes

1 Survey should extend to at least 70 metres from the well head.
2 The first signatory should be the person responsible for the rig, either the OIM or Client representative.

REPORT FOR THE KAN TAN IV RIG MOVE TO SILVEREYE-1

FUGRO BTW JOB NO. 09011

Client : AUSTRALIAN DRILLING ASSOCIATES LTD

Date of Survey : 24 November – 06 December 2010

0	Final	S. Armstrong	07 Dec 2010
Rev	Description	Checked and Approved	Date

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14-22 Connett Road West, Bell Block, PO Box 39, New Plymouth

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ABSTRACT

Between 24 November and 06 December 2010, Fugro BTW provided equipment and personnel for the semi-submersible Mobile Offshore Drilling Unit Kan Tan IV rig move to the Silvereye-1 location in T/44P in the Bass Basin, Australia.

Surface positioning was provided by Fugro's Starfix Total Position System (Starfix TOPS) and Starfix.Seis Navigation Software.

The final position for the drill stem derived from HP GPS observations at Silvereye-1 is:

Location Name:	**Silvereye-1**
MGA94 (UTM Zone 55 south)	
Easting (m):	334088.708
Northing (m):	5580927.328
GDA94	
Latitude:	39° 54' 19.8250" S
Longitude:	145° 03' 32.6409" E
WGS84	
Latitude:	39° 54' 19.7955" S
Longitude:	145° 03' 32.6545" E
Rig Heading:	246.28° (True)

This position is 5.25m at a bearing of 64.94° (True) from the proposed Silvereye-1 location.

All coordinates in this report are referenced to the Geocentric Datum of Australia 1994 (GDA94) and projected onto the Map Grid of Australia 1994 (MGA94) Zone 55 (CM 147°E), unless otherwise stated.

All times in this report are quoted in Australian Eastern Daylight Time (AEDT) unless otherwise stated.

1.0 INTRODUCTION

Fugro-BTW Ltd (Fugro) was contracted by ADA Ltd to provide navigation and positioning survey services onboard the semi-submersible Mobile Offshore Drilling Unit (MODU) *Kan Tan IV*, during the rig move from to Silvereye-1 in T/44P in the Bass Basin, Australia.

A general location diagram is shown in Figure 1-1.

This report details the equipment used, survey parameters adopted, procedures employed and the results achieved. A section on safety is included in Section 3.0 of this report.

1.1 Scope of Work

Personnel and equipment were provided on a 24 hour per day basis for:

- Calibration and function testing of the survey equipment onboard the rig and the two Anchor Handling Vessels (AHVs).
- Surface navigation for the *Kan Tan IV* using Fugro's Starfix HP (High Performance) DGPS services.
- Surface navigation for AHVs during anchoring operations, using Starfix HP DGPS.
- Final rig surface positioning using DGPS observations.
- Final reporting of the positioning results.

1.2 Sequence of Events

On 24 November 2010 S Armstrong and B Healy departed New Plymouth airport for Melbourne. On 25 November 2010 Fugro personnel departed Essendon airport for Kan Tan IV whilst the rig was under tow to Silvereye-1.

The Kan Tan IV was positioned on location at Silvereye-1 with all cross tensioning complete at 0600 on 27 November 2010.

At 0750 on 04 December 2010 the Final Fix for the *Kan Tan IV* position at Silvereye-1 was completed.

B. Healy departed the *Kan Tan IV* at 1300 on 28 November 2010.
S. Armstrong departed the *Kan Tan IV* at 1200 on 05 December 2010.

B. Healy arrived back in NZ on 29 November 2010.
S. Armstrong arrived back in NZ on 06 December 2010.

Further details of Fugro's involvement in the rig move are presented in the Daily Operations Reports included in Appendix A.

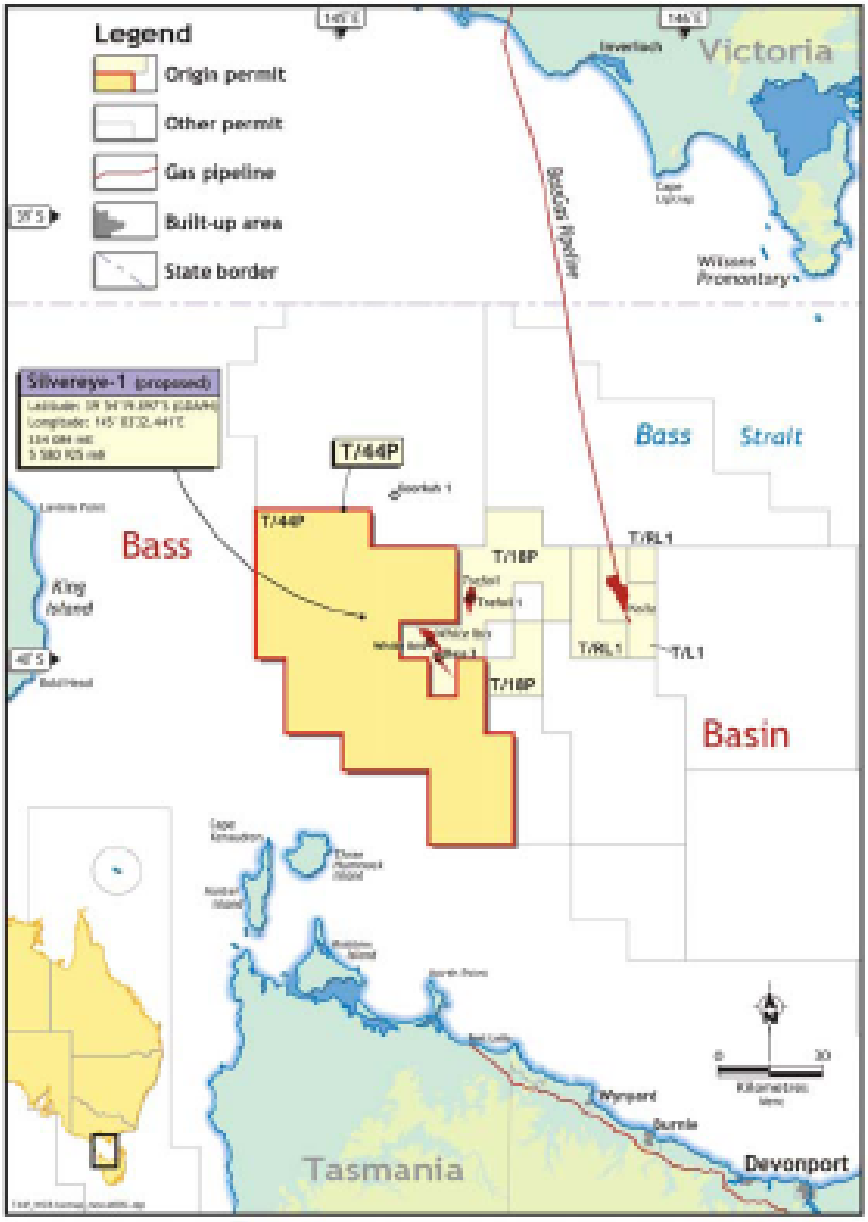


FIGURE 1-1 : GENERAL LOCATION DIAGRAM

2.0 RESULT S

2.1 Final Position

The final position of the *Kan Tan IV* drill stem was established upon the installation of the conductor at Silvereye-1 location. A mean position was calculated from two hours of HP data logged between 0550 and 0750 on 04 December 2010. During this period, calculated drill stem coordinates from the primary and secondary positioning systems were logged at five second intervals in Starfix.Seis. Data from the primary positioning system were used for the final position calculation.

GDA94 geographical positions for Silvereye-1 are shown in Table 2-1.

GDA94			
Position	**Method**	**Latitude**	**Longitude**
Drill Stem at Surface	Starfix HP	39° 54' 19.8250" S	145° 03' 32.6409" E
Proposed Location	-	39° 54' 19.8971" S	145° 03' 32.4406" E

TABLE 2-1 : GEOGRAPHICAL POSITIONS FOR SILVEREYE-1

MGA94 grid coordinates for Silvereye-1 are shown in Table 2-2.

GDA94, MGA, UTM Zone 55, CM 147°E			
Position	**Method**	**Easting (m)**	**Northing (m)**
Drill Stem at Surface	Starfix HP	334088.708	5580927.328
Proposed Location	-	334084.000	5580925.000

TABLE 2-2 : GRID COORDINATES FOR SILVEREYE-1

This position is 5.25m at a bearing of 64.94° True (63.70° Grid) from the design location.

A copy of the original rig position field report is contained in Appendix B.

2.2 Rig Heading

The heading of the *Kan Tan IV* was established by calculating the average heading during two hours of gyro data logged between 0550 and 0750 on 04 December 2010. During this period, gyro readings were logged at five second intervals in Starfix.Seis.

The *Kan Tan IV*'s heading is shown in Table 2-3.

Description	Method	True	Grid
Rig Heading	Starfix.TOPS	246.28°	245.03°
Proposed Heading	-	245.00°	243.75°

TABLE 2-3 : RIG HEADING FOR SILVEREYE-1

2.3 Anchor Positions

The approximate locations of the *Kan Tan IV*'s anchors are shown in Table 2-4.

GDA94, MGA, UTM Zone 55, CM 147°E			
Anchor	**Easting (m)**	**Northing (m)**	**Deployed By**
1	334113.2	5579965.8	*Far Fosna*
2	333502.3	5580258.1	*Far Fosna*
3	333109.8	5580878.6	*Far Fosna*
4	333347.7	5581548.8	*Far Fosna*
5	334033.1	5581861.2	*Far Fosna*
6	334892.7	5581917.9	*Far Fosna*
7	335033.9	5580959.1	*Far Fosna*
8	334744.9	5580357.5	*Far Fosna*

TABLE 2-4 : ANCHOR POSITIONS FOR SILVEREYE-1

The approximate coordinates of the *Kan Tan IV's* anchors were calculated from:

- The azimuth from the fairlead position to the AHVs stern position at the time of anchor deployment
- The range from the fairlead position to the anchor, as obtained from a correction applied to the AHVs stern position at the time of anchor deployment based on workwire paid out and water depth.

3.0 SAFETY

All work undertaken by Fugro personnel during the project was performed within the guidelines of Fugro's Health Safety & Environmental Management System Manual (HSEMS).

Fugro personnel worked within all project safety guidelines and plans adopted by ADA Ltd and Maersk.

No safety incidents involving Fugro personnel were reported during the project.

Fugro personnel attended all relevant safety meetings onboard the rig as required.

4.0 SURV EY OPERATIONS

4.1 Mobilisation

The survey equipment onboard the *Kan Tan IV, Far Scimitar and Far Fosna* was mobilised between 24 July and 12 August 2009. Rig offsets were checked and a total station traverse was conducted to determine C-O values for the Gyro compass and Starfix.TOPS.
The equipment was confirmed as operational on the Kan Tan IV and AHVs after arrival at 0640 on 26 November 2010.

4.2 General Survey Procedures

The *Kan Tan IV* was taken under tow from Tarapunga-1 without Fugro personnel present, Fugro personnel arrived with the rig under tow to Silvereye-1.

Anchor deployment operations commenced at 0841 on 26 November 2010. During the deployment of the anchors, the AHVs were provided with anchor lines via the Wombat telemetry system. The AHVs ran out the anchors along this line to the desired drop point.

The *Kan Tan IV* was positioned at Silvereye-1 with all anchoring, cross-tensioning and ballasting complete at 0600 on 27 November 2010. A Pre Spud Fix report was logged between 0610 and 0625 on 27 November 2010 which was issued to the ADA Ltd Company Representative. On the completion of the conductor installation, final position data was logged between 0550 and 0750 on 04 December 2010 (see Appendix B).

4.3 Demobilisation

The survey equipment onboard the *Kan Tan IV* was left onboard in preparation for the rig moves in the rest of the Drilling Program.

B. Healy departed the *Kan Tan IV* at 1300 on 28 November 2010.
S. Armstrong departed the *Kan Tan IV* at 1200 on 05 December 2010.

5.0 EQUIP MENT CALIBRATION

5.1 DGPS Navigation Integrity Check

In order to prove the correct operation of the navigation systems installed on board the *Kan Tan IV* a comparison of the independent primary and secondary DGPS was made during the Final Fix. The result of this check is provided in Table 5-1.

GDA94, MGA, UTM Zone 55, CM 147°E		
	Easting (m)	**Northing (m)**
Primary Navigation	334088.708	5580927.328
Secondary Navigation	334088.799	5580927.472
Difference	**0.091**	**0.144**

TABLE 5-1 : DGPS NAVIGATION INTEGRITY CHECK

Details of all positioning checks are provided in Appendix C.

5.2 Gyro Compass Calibration

The primary heading system Starfix.TOPS calculates a highly accurate real-time True heading using two GPS antennas set up at a known baseline and offset.

The calibration of the Starfix.TOPS heading system and survey gyro compasses comprised a total station traverse to determine the correction in heading from the GPS antenna baseline and the rig centreline.

These observations were carried out while the rig was alongside Lascelles Wharf in Geelong and stationary on 11 August 2009.

As the GPS baseline is a constant offset from the rig centreline and GPS is not affected by a slow ‘drift’ effect like conventional gyro compasses, therefore regular sun observations for a gyro compass correction are not required.

A C-O (Corrected-Observed) value of 99.98° was determined for the Starfix.TOPS baseline correction to align it to the rig centreline. This correction was applied in the navigation suite.

6.0 SURV EY PARAMETERS

6.1 Geodetic Parameters

All coordinates are referenced to the Geocentric Datum of Australia 1994 (GDA94) unless otherwise noted. The Global Positioning System (GPS) operates on the World Geodetic System 1984 (WGS84) datum. Fugro's Differential GPS Reference Stations are currently defined in the International Terrestrial Reference Frame 2000 (ITRF2000 Epoch 2009.5) datum. Due to the continual refinement of the WGS84 reference frame, for all cases, the transformation parameters indicate that the WGS84 and ITRF2000 reference frames are essentially identical.

Datum	**:**	**World Geodetic System 1984 (WGS84)**
Reference Spheroid	:	World Geodetic System 1984
Semi Major Axis	:	6378137.000m
Inverse flattening	:	298.257223563

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Reference Spheroid	:	Geodetic Reference System 1980 (GRS80)
Semi Major Axis	:	6378137.000m
Inverse flattening	:	298.257222101

The following seven parameter datum transformation (Table 6-1) was used in Fugr o's software to transform WGS84 (ITRF2000 Epoch 2010.5) coordinat es to GDA94 coordinates. These parameters are calculat ed from the 14 parameter transformation defined by Geoscience Australia. Fugro follows the coordinate Frame Rotation method (as defined by UKOOA convention) for datum transformations.

Transformation Parameters from WGS84 (ITRF2000 Epoch 2010.5) to GDA94			
dX	+0.0394m	rX	+0.019622"
dY	-0.0574m	rY	+0.016407"
dZ	-0.1383m	rZ	+0.020235"
dS	0.002286ppm		

TABLE 6-1 : TRANSFORMATION PARAMETERS

The proposed drilling location and all project coordinates are grid coordinates on the Map Grid of Australia.

Grid	**:**	**Map Grid of Australia (MGA94)**
Projection	:	Universal Transverse Mercator
Latitude of Origin	:	0°
Central Meridian	:	147° E (UTM Zone 55)
Central Scale Factor	:	0.9996
False Easting	:	500000m
False Northing	:	10000000m
Units :		Metres

6.2 Differential GPS Reference Stations

Fugro's Differential GPS Reference Stations are currently defined in the ITRF2005 (Epoch 2010.5) datum and are shown in Table 6-2.

STARFIX DGPS REFERENCE STATIONS (DATUM ITRF2005 EPOCH 2010.5)					
Station	**Id**	**Latitude**	**Longitude**	**Height (m)**	**Uplink**
Melbourne	385	37° 47' 59.25910" S	144° 57' 39.31317" E	67.446	OCSat
Bathurst	336	33° 25' 46.87252" S	149° 34' 01.97224" E	756.594	OCSat
Brisbane	275	27° 28' 38.48179" S	153° 01' 37.35492" E	93.022	OCSat

TABLE 6-2 : DGPS REFERENCE STATIONS

6.3 Project Coordinates and Tolerances

Project target coordinates and surface tolerance for Silvereye-1 were supplied by ADA Ltd and are shown in Table 6-3. Client supplied project information is provided in Appendix D.

GDA94, MGA, UTM Zone 55, CM 147°E			
Location	**Easting (m)**	**Northing (m)**	**Tolerance**
Silvereye-1	334084.00	5580925.00	10m radius

TABLE 6-3 : PROJECT DESIGN COORDINATES

7.0 SURVEY EQUIPMENT, VESSEL AND PERSONNEL

7.1 Equipment

Survey equipment used for positioning the *Kan Tan IV* is shown in Table 7-1.

Equipment Listing	
Ocean Patriot	
3 x	Starfix 8200HP (1 APSat link, 1 spare)
2 x	Starfix.TOPS Total Positioning System (1 OCSat link, 1 spare)
2 x	Pentium 4 computers, running Fugro's Starfix.Seis navigation software suite (1 spare)
5 x	20" monitors (2 spare)
1 x	SG Brown gyro compass
2 x	Uninterruptible power supply units (UPS)
2 x	Teledesign radio/modem (1 spare)
2 x	Esteem Wireless WiFi radios
1 x	Theodolite, tripod and dark glass
1 x	Printer
AHVs (complete system per vessel, plus one complete set of spares)	
1 x	Pentium 4 computer, running Starfix Display/Wombat
1 x	Monitor
1 x	Starfix 8200HP unit
1 x	Fluxgate compass
1 x	Teledesign radio/modem

TABLE 7-1 : EQUIPMENT LIST

All systems were provided complete with all necessary cabling, connectors, power supplies, antennae, accessories, manuals and consumables.

Refer to Figure 7-1 for an equipment flow diagram for the *Kan Tan IV* and Figure 7-2 for the equipment flow diagram for the AHVs.

7.2 Vessels

The vessels used for anchor handling and towing the *Kan Tan IV* were the *Far Fosna* and the *Far Scimitar*.

Refer to Figure 7-3 for the rig offsets.

7.3 Personnel

Fugro personnel involved in the rig move and positioning operations were as follows:

Stephen Armstrong	Surveyor in Charge	24 Nov – 06 Dec 2010
Brett Healy	Surveyor	24 – 29 Nov 2010

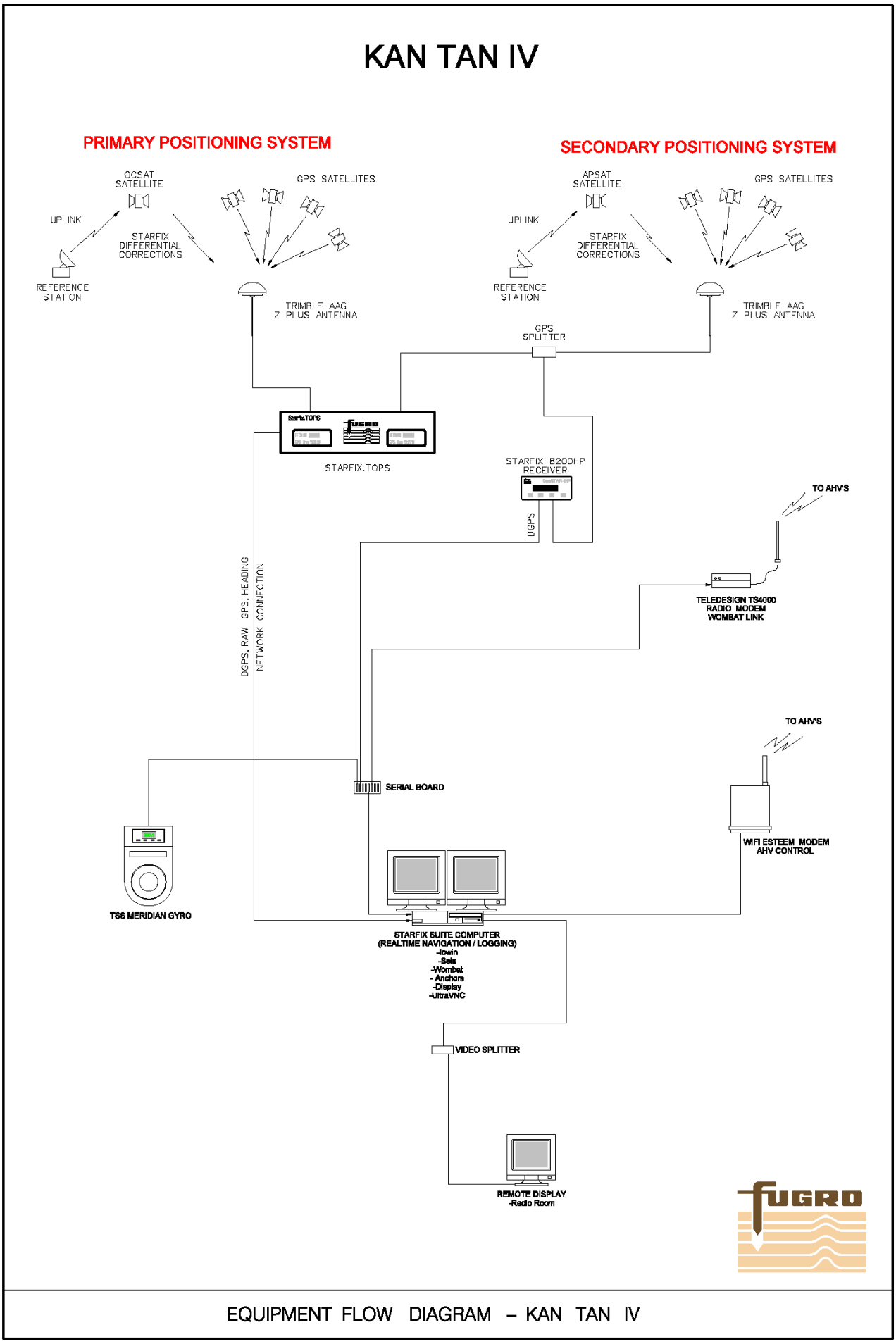


FIGURE 7-1 : EQUIPMENT FLOW DIAGRAM – MODU *KAN TAN IV*

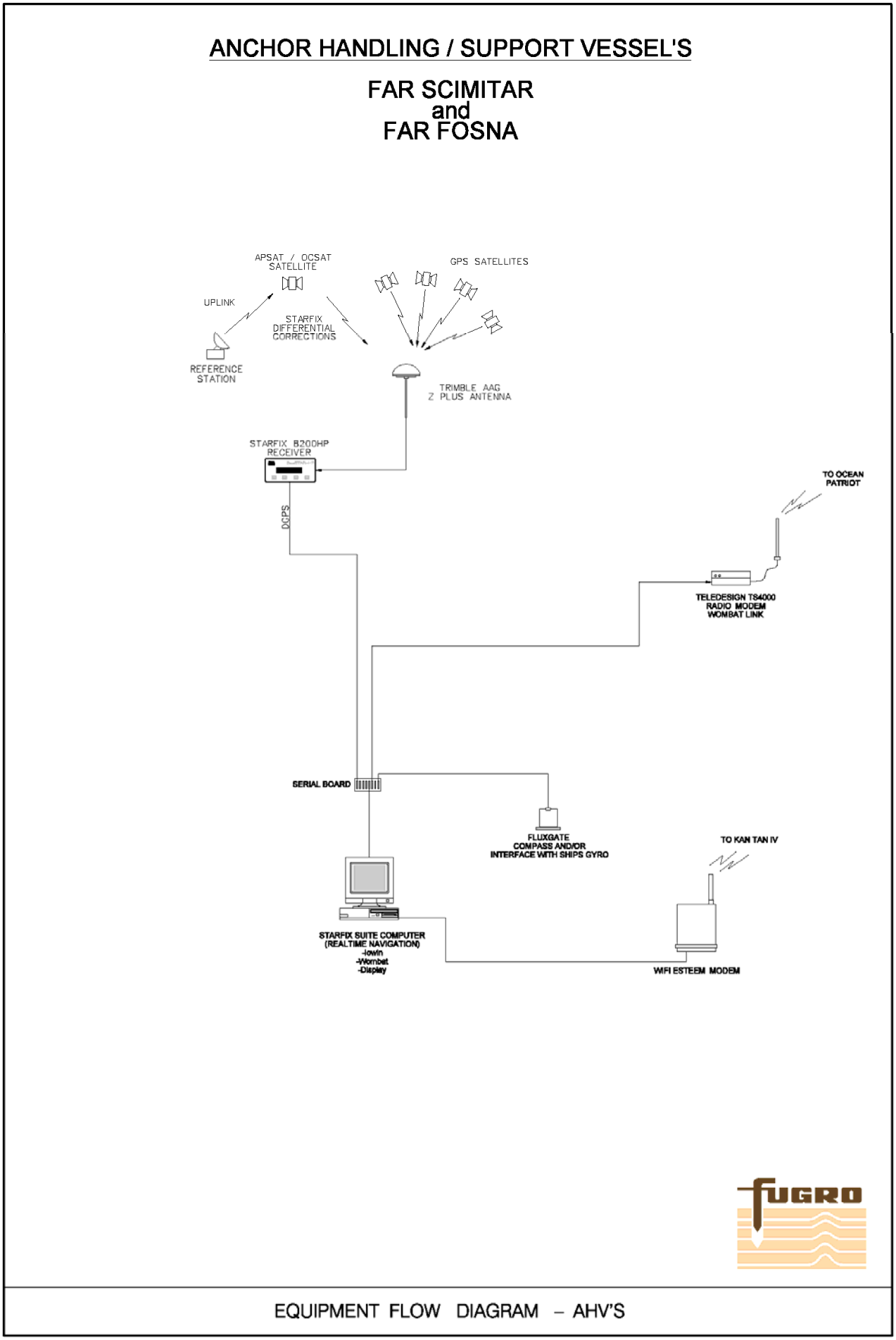


FIGURE 7-2 : EQUIPMENT FLOW DIAGRAM – AHVS

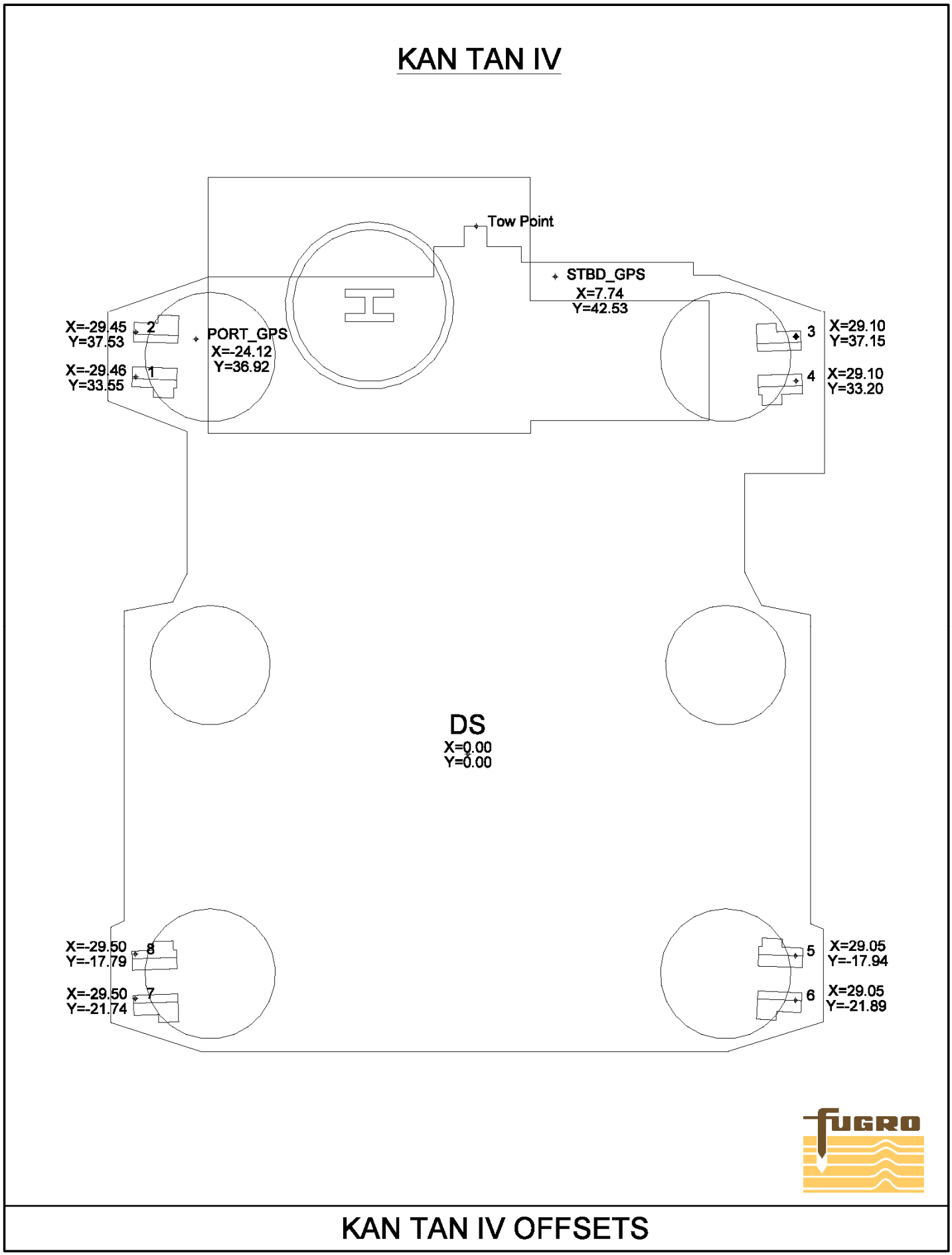


FIGURE 7-3 : RIG OFFSET DIAGRAM – MODU *KAN TAN IV*

8.0 CONCLUSIONS AND RECOMMENDATIONS

- The *Far Fosna* and *Far Scimitar* were successfully positio ned during the towing and anchoring operations.
- The surface position of the Silvereye-1 well was determined.
- Fugro personnel worked well together with the Tow-ma sters, Marine and AHV crews resulting in a safe, efficient and positive working environment.

9.0 DISTRIBUT ION

Copies of this report have been distributed as follows:

ADA Ltd	: 2 hard copies
Attn: Mr Rajiv Tikkoo	: 1 electronic copy

APPENDIX A :
DAILY OPERATIONS REPORTS

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: MELBOURNE, AUS	DATE: 24/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
		ALL TIMES NZDT
1200		S Armstrong & B Healy check in New Plymouth airport
1230	1320	Depart NP for Wellington
1600		Depart Wellington for Melbourne
		ALL TIMES NOW AEDT
1800	2359	Arrive Melbourne, check in to Holiday Inn Melbourne Airport, waiting on helicopter.

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION: HOLIDAY INN x 2					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-01

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 25/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0630		Check out of Holiday Inn, depart for Essendon airport
0700		Check in Bristow Heli Base, Essendon Airport
0745		Depart Melbourne for Kan Tan IV
0900		Arrive Kan Tan IV under tow to Silvereye-1
0930	1400	Checking navigation systems, multiple changes to Fugro nav system by other personnel during tow creating issues. Resolving faults, changing Geodesy and radios etc.
1100	1200	Wireless esteem modems not working. Fault finding
1200		Determined esteem modem fault as a melted cable on rig deck. Most likely due to welding near cable.
1350		Removed melted section of cable, reterminated, 7 out of 8 wires communicating, allowing communication with AHV PCs.
1400		All nav systems operational on Kan Tan IV and Far Scimitar
1900	1910	Pre rig move meeting
1910	2359	Continue tow to Silvereye-1

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	1	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0

Comments:

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-02

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 26/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001		Continue tow to Silvereye-1
0445	0600	Far Fosna called to come alongside
0600	0640	Far Fosna alongside checking nav
0640		Nav systems operational, Far Fosna radio link sending sporadic
0815		Statements of Facts, 1nm off Silvereye-1 Location
0835		Logging session 201011252135
0841		PCP # 6 passed to Far Fosna
0852		Far Scimitar towing ahead slowly
0856		Anchor 6 at roller of Far Fosna, orientated incorrectly, trying to correct
1030		Anchor 6 on bottom, 334893mE 5581918mN
1031	1057	Far Fosna chasing back
1057		PCP # 6 passed back to Kan Tan IV
1130	1256	PCP # 2 passed to Far Fosna, Far Fosna connecting Anchor 2
1256	1330	Far Fosna completed connected Anchor 2. Far Fosna running Anchor 2
1325		No. 2 appears to have knot in chain, putting Anchor 2 on bottom then assessing chain
1330	1353	Anchor 2 on bottom, 333502mE 5580258mN, Far Fosna chasing back
1353		PCP # 2 passed back to Kan Tan IV
1406		PCP # 7 passed to Far Fosna
1431	1449	Far Fosna running Anchor 7
1449		Anchor 7 on bottom, 335034mE 5580959mN
1450	1518	Far Fosna chasing back
1518		PCP # 7 passed back to Kan Tan IV
1544		PCP # 3 passed to Far Fosna
1606	1630	Far Fosna running Anchor 3
1630		Anchor 3 on bottom, 333110mE 5580879mN
1631	1657	Far Fosna chasing back
1637	1734	Far Scimitar shortening up to come off tow bridle
1657		PCP # 3 passed back to Kan Tan IV
1723		PCP # 8 passed to Far Fosna
1734		Far Scimitar released from tow bridle
1742	1800	Far Fosna running Anchor 8
1800		Anchor 8 on bottom
1802	1836	Far Fosna chasing back Anchor 8
1836	1850	Anchor 8 appears on its back, Far Fosna chasing back out to re-deploy
1850	1853	Far Fosna at Anchor 8, heaving to roller
1853		Anchor 8 orientated correctly, collar caught on shackle
1855	1909	Far Fosna preparing to re-deploy
1909		Anchor 8 on bottom, 334745mE 5580358mN
1930		PCP # 8 passed back to Kan Tan IV
1942		PCP # 1 passed to Far Fosna
2000	2041	Far Fosna running out Anchor 1
2041		Anchor 1 on bottom, 334113mE 5579966mN
2044	2112	Far Fosna chasing back on Anchor 1
2112		PCP # 1 passed back to Kan Tan IV
2136		PCP # 4 passed to Far Fosna
2155	2243	Far Fosna running out Anchor 4
2243		Anchor 4 on bottom, 333348mE 5581549mN
2248	2300	Far Fosna chasing back on Anchor 4
2300		PCP # 4 passed back to Kan Tan IV
2318		PCP # 5 passed to Far Fosna

2337		Anchor 5 slipped passed PCC
2358		Anchor 5 needs flipping

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	**NO.**	**EQUIPMENT REMOTE**	**NO.**	**PERSONNEL**	**TITLE**
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	**Client Representative Signature:**	**D O R Number**
		09011-03

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 27/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001		Far Fosna continues to flip Anchor 5
0012	0019	Anchor 5 up right, Far Fosna getting back online to run
0019	0044	Far Fosna running out Anchor 5
0044		Anchor 5 on bottom, 334033mE 5581861mN
0052	0128	Far Fosna chasing back Anchor 5
0128		PCP # 5 passed back to Kan Tan IV
0200	0400	Winch 3 & 4 power issues, fixing chain on Anchor 2
0400	0410	Commence heaving in on 3 & 7
0410	0425	3 & 7 stalled, commence 15min insurance test
0425		15min test on 3 & 7 complete
0436	0440	Commence heaving in on 4 & 8
0440	0455	4 & 8 stalled, commence 15min insurance test
0455		15min test on 4 & 8 complete
0533	0535	Commence heaving in on 1 & 5
0535	0550	1 & 5 stalled, commence 15min insurance test
0550		15min test on 1 & 5 complete
0503	0512	Commence heaving in on 2 & 6
0512	0527	2 & 6 stalled, commence 15min insurance test
0527		15min test on 2 & 6 complete, evening tensions and winching onto location
0600		On location at Silvereye-1
0610	0625	Start logging pre spud fix at Silvereye-1
0625		Pre Spud Fix completed and handed to ADA company man
0626	2359	B Healy waiting to depart Kan Tan IV, S Armstrong waiting to complete final fix

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0

Comments:

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-04

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 28/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	S Armstrong waiting on rig to complete final fix
1300	1400	B Healy departs Kan Tan IV for Melbourne
1430	2359	B Healy checks in to the Holiday Inn Melbourne Airport hotel.

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0

Comments:

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				

VEHICLES:
CONSUMABLES:
ACCOMMODATION: HOLIDAY INN X1

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-05

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 29/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	S Armstrong waiting on rig to complete final fix
1130		B Healy departs Melbourne for NZ

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1	B. Healy	Surveyor
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-06

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 30/11/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	Waiting on rig to complete final fix

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				

VEHICLES:
CONSUMABLES:
ACCOMMODATION:

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-07

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 01/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	Waiting on rig to complete final fix

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				

VEHICLES:
CONSUMABLES:
ACCOMMODATION:

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-08

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 02/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	Waiting on rig to complete final fix

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0

Comments:

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				

VEHICLES:
CONSUMABLES:
ACCOMMODATION:

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-09

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 03/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	Waiting on rig to complete final fix

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-10

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 04/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	0545	Waiting on rig to complete final fix
0545		Informed that 30' casing has been cemented
0550	0750	Start logging final fix at Silvereye-1
0750		Stop logging final fix, copy handed to ADA Company Man
0750	2359	Waiting on rig to depart Kan Tan IV

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-11

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 05/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	2359	Waiting on rig to depart Kan Tan IV
1030		Helicopter briefing for flight to Essendon
1200	1300	S Armstrong departs Kan Tan IV for Essendon airport
1330	2359	Check in Crown Promenade Hotel Melbourne, waiting for flight to NZ

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION: 1 X CROWN PROMENADE					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-12

Fugro-BTW
PM-F50
DAILY OPERATIONS REPORT

CLIENT: ADA PTY LTD	LOCATION: BASS STRAIT, AUS	DATE: 06/12/10
PROJECT: KAN TAN IV RIG MOVE TO SILVEREYE-1	VESSEL: KAN TAN IV	JOB NO: 09011

FROM	TO	SUMMARY OF OPERATIONS
0001	0700	Waiting to depart Melbourne for NZ
0700		Check out of Crown Promenade Hotel
0930	1500	Depart Melbourne for Auckland
		ALL TIMES NOW NZDT
1630	1730	Depart Auckland for New Plymouth

HSE DETAILS					
Emergency Muster	0	Toolbox Meetings	0	JHA's	0
Incidents	0	Hazard Cards Submitted	0	HSE / Project Meetings	0
Safety Drills Fire/Abandon	0	Safety Notices Received	0	Vessel inductions	0
Comments:					

EQUIPMENT RIG	NO.	EQUIPMENT REMOTE	NO.	PERSONNEL	TITLE
Starfix Seis	2	Starfix Wombat (remote)	2	S. Armstrong	Surveyor in Charge
Starfix HP DGPS	1	Fluxgate Compass	1		
Radio Modem	2	Radio Modem	2		
UPS	2	Starfix HP DGPS	2		
Theodolite	1				
SG Brown Gyro	1				
Starfix.TOPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		09011-13

APPENDIX B :
FINAL POSITIONING DATA

Starfix Final Fix Report

Fugro Job Number	**09011**
Job Name	**Rig Move to Silvereye-1**
Fugro Personnel	**S. Armstrong, B. Healy**
Client Name	**Australian Drilling Associates Pty Ltd**
Client Representative	**P. Jenkins**
Sampling Started	**04 Dec 2010 5:50:45 a.m. (local)**
Sampling Ended	**04 Dec 2010 7:50:49 a.m. (local)**
Comment	**Final Fix at Silvereye-1**

Intended Offset / Well Location

Geodetic Datum **GDA94**
Latitude 39°54'19.8971"S
Longitude 145°03'32.4406"E
Projection **Universal Transverse Mercator Zone: 55**
Easting 334084.000 m
Northing 5580925.000 m
Intended Rig Heading 245.00 °T

Final DGPS Position Fix Summary for Kan Tan IV At Silvereye-1, NZ

DS computed from MultiFix.GGA (Primary)

DS Offset From CRP
Starboard 0.000 m
Forward 0.000 m
Up 0.000 m

Geodetic Datum	**GDA94**	**WGS84**
Latitude	39°54'19.8250"S	39°54'19.7955"S
Longitude	145°03'32.6409"E	145°03'32.6545"E

Projection **Universal Transverse Mercator Zone: 55**
Easting 334088.708 m
Northing 5580927.328 m
Height 21.294 m (ellipsoidal)
Final Rig Heading 246.28 °T
245.03 °G (Convergence -1.25° Australia/New Zealand)
Gyro C-O 99.98 °
Position is 5.25 m @ 64.94 °T (63.70 °G) FROM intended location

DS computed from 8200HP_APSAT.GGA (Secondary)

Geodetic Datum **GDA94**
Latitude 39°54'19.8204"S
Longitude 145°03'32.6449"E
Projection **Universal Transverse Mercator Zone: 55**
Easting 334088.799 m
Northing 5580927.472 m
Height 21.425 m (ellipsoidal)
Position is 5.40 m @ 62.75 °T (61.51 °G) FROM intended location

Positioning System Comparison (System 2 minus System 1)
Delta Easting 0.091 m
Delta Northing 0.144 m
Delta Height 0.131 m

Party Chief: Steve Armstrong Client Representative:

Geodetic Parameters

Geodetic Datum	**GDA94**		
Ellipsoid	**GRS80**		
Semi-Major Axis	6378137.000 m		
Inverse Flattening	298.2572221010		
Eccentricity^2	0.006694380022901		
DX	0.0394 m	RX	0.0196 arc seconds
DY	-0.0574 m	RY	0.0164 arc seconds
DZ	-0.1383 m	RZ	0.0202 arc seconds
D Scale	0.0023 ppm		
Rotation Convention +RZ=-RLongitude			
Projection	**Universal Transverse Mercator Zone: 55**		
Latitude of Origin	0°00'00.0000"N		
Longitude of Origin	147°00'00.0000"E		
False Easting	500000.000 m		
False Northing	10000000.000 m		
Scale Factor	0.9996		

Final Primary Antenna Position (MultiFix.GGA)
1283 observations used out of a total of 1283

Primary Antenna Offset from CRP

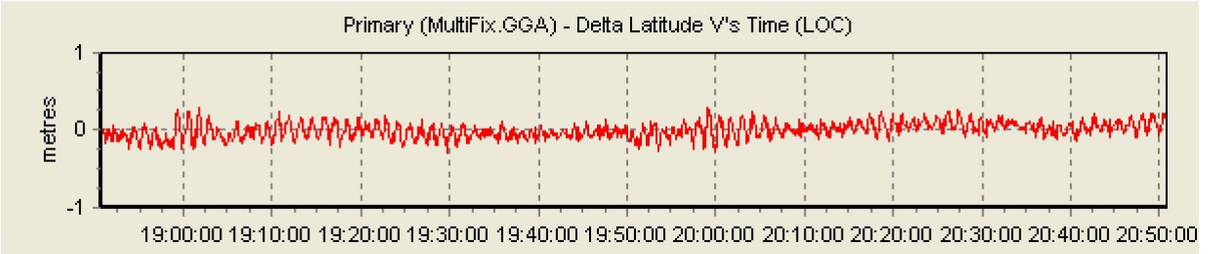
Starboard	7.740 m
Forward	42.530 m
Up	0.000 m

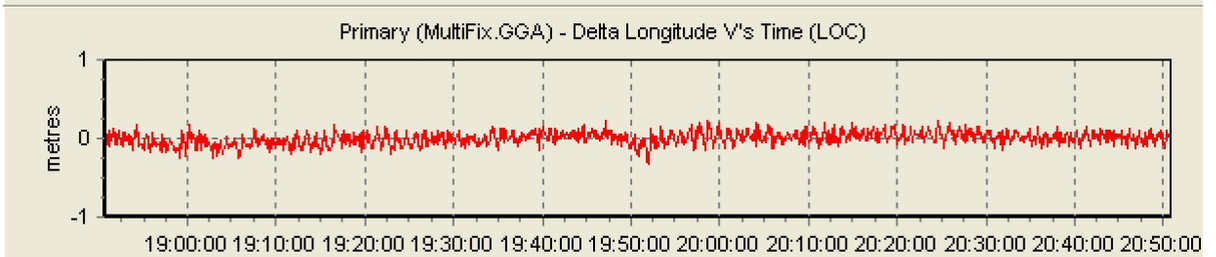
Mean

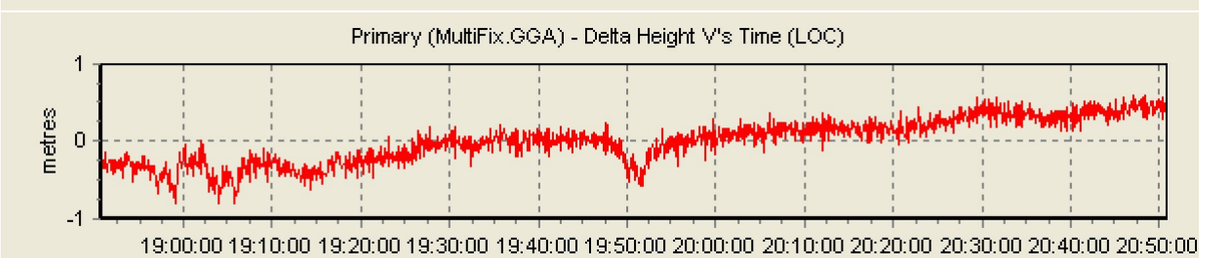
Geodetic Datum	**WGS84**
Latitude	39°54'20.1205"S
Longitude	145°03'30.8841"E
Ellipsoidal Ht	21.24 m
Geodetic Datum	**GDA94**
Latitude	39°54'20.1500"S
Longitude	145°03'30.8705"E
Ellipsoidal Ht	21.29 m
Projection	**Universal Transverse Mercator Zone: 55**
Easting	334046.886 m
Northing	5580916.391 m
HDOP	0.74
Heading	246.28 °T
Age Of Corrections	17.6 s
Satellites	16

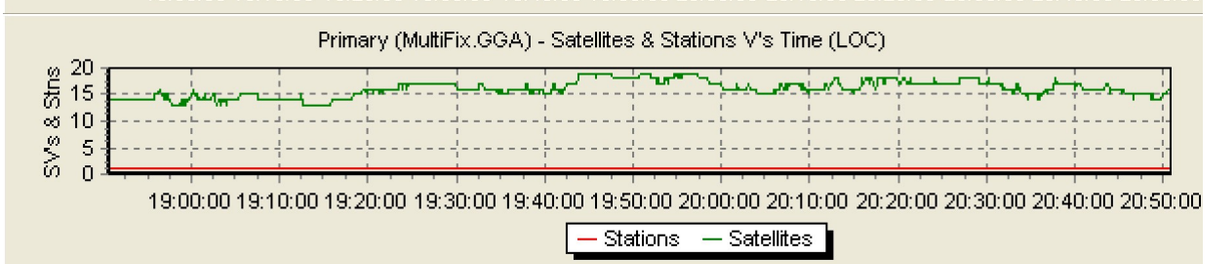
Standard Deviation

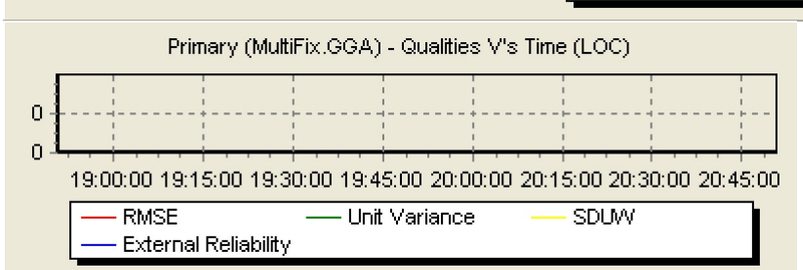
Latitude or Northing	0.10 m
Longitude or Easting	0.08 m
Ellipsoidal Height	0.29 m
HDOP	0.13
Heading	0.09 °T

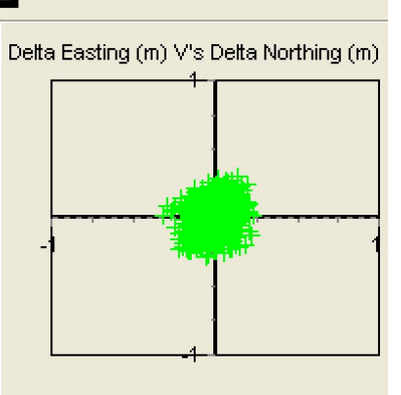

Primary (MultiFix.GGA) - Delta Latitude V's Time (LOC)
metres
1
0
-1
19:00:00 19:10:00 19:20:00 19:30:00 19:40:00 19:50:00 20:00:00 20:10:00 20:20:00 20:30:00 20:40:00 20:50:00

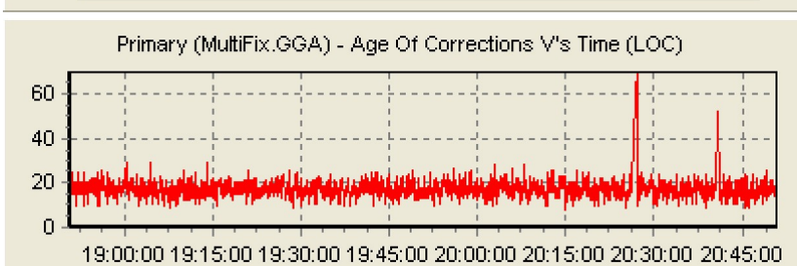

Primary (MultiFix.GGA) - Delta Longitude V's Time (LOC)
metres
1
0
-1
19:00:00 19:10:00 19:20:00 19:30:00 19:40:00 19:50:00 20:00:00 20:10:00 20:20:00 20:30:00 20:40:00 20:50:00


Primary (MultiFix.GGA) - Delta Height V's Time (LOC)
metres
1
0
-1
19:00:00 19:10:00 19:20:00 19:30:00 19:40:00 19:50:00 20:00:00 20:10:00 20:20:00 20:30:00 20:40:00 20:50:00


Primary (MultiFix.GGA) - Satellites & Stations V's Time (LOC)
SV's & Stns
20
15
10
5
0
19:00:00 19:10:00 19:20:00 19:30:00 19:40:00 19:50:00 20:00:00 20:10:00 20:20:00 20:30:00 20:40:00 20:50:00
Stations
Satellites

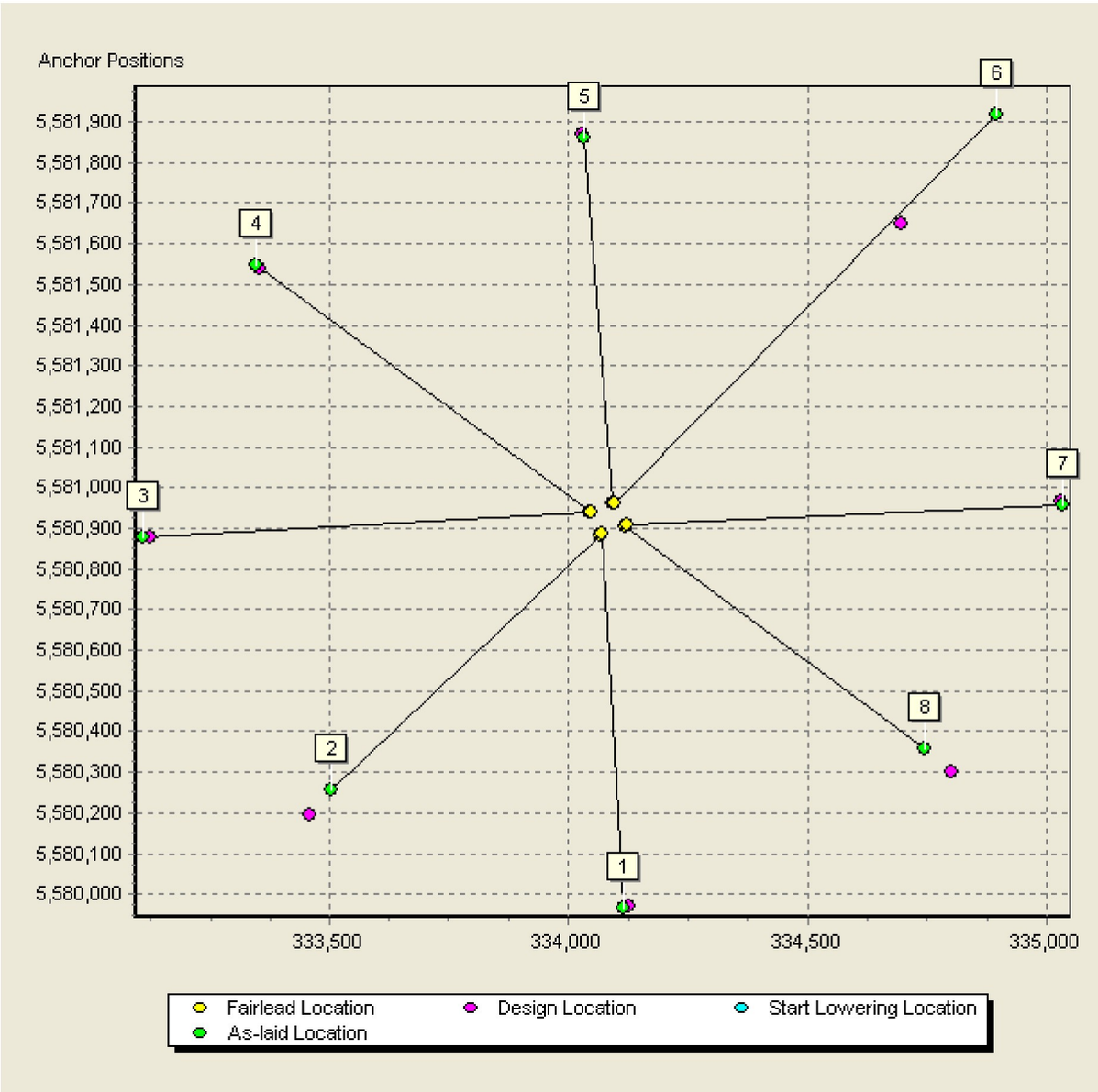

Primary (MultiFix.GGA) - Qualities V's Time (LOC)
0
0
19:00:00 19:15:00 19:30:00 19:45:00 20:00:00 20:15:00 20:30:00 20:45:00
RMSE
Unit Variance
SDUW
External Reliability


Delta Easting (m) V's Delta Northing (m)
1
-1
1
-1


Primary (MultiFix.GGA) - Age Of Corrections V's Time (LOC)
60
40
20
0
19:00:00 19:15:00 19:30:00 19:45:00 20:00:00 20:15:00 20:30:00 20:45:00

Anchors of Kan Tan IV

Fairlead	Status	Universal Transverse Mercator Zone: 55		
1	Laid	39°54'50.8306"S	145°03'33.3297"E	(Design)
		334125.848 m	5579971.679 m	
		39°54'51.0124"S	145°03'32.7914"E	(As-Laid)
		334113.189 m	5579965.795 m	
		13.960 m @	65°04'03.1488"	(TO design:Grid)
		921.643 m @	177°21'34.1434"	(FL TO A-L:Grid)
2	Laid	39°54'43.1217"S	145°03'05.4845"E	(Design)
		333459.527 m	5580194.967 m	
		39°54'41.1042"S	145°03'07.3442"E	(As-Laid)
		333502.327 m	5580258.137 m	
		76.304 m @	214°07'08.0719"	(TO design:Grid)
		843.611 m @	222°01'40.3081"	(FL TO A-L:Grid)
3	Laid	39°54'20.8123"S	145°02'52.0539"E	(Design)
		333125.590 m	5580875.870 m	
		39°54'20.7124"S	145°02'51.3898"E	(As-Laid)
		333109.752 m	5580878.607 m	
		16.072 m @	99°48'13.0969"	(TO design:Grid)
		934.884 m @	266°21'21.4474"	(FL TO A-L:Grid)
4	Laid	39°53'59.4370"S	145°03'02.2842"E	(Design)
		333354.130 m	5581540.249 m	
		39°53'59.1561"S	145°03'02.0222"E	(As-Laid)
		333347.718 m	5581548.777 m	
		10.670 m @	143°03'29.3128"	(TO design:Grid)
		926.843 m @	311°05'00.8498"	(FL TO A-L:Grid)
5	Laid	39°53'49.1797"S	145°03'30.9570"E	(Design)
		334028.177 m	5581871.353 m	
		39°53'49.5121"S	145°03'31.1546"E	(As-Laid)
		334033.093 m	5581861.207 m	
		11.275 m @	334°09'07.6739"	(TO design:Grid)
		901.943 m @	356°12'36.4739"	(FL TO A-L:Grid)
6	Laid	39°53'56.8868"S	145°03'58.7958"E	(Design)
		334694.468 m	5581648.063 m	
		39°53'48.2781"S	145°04'07.3853"E	(As-Laid)
		334892.713 m	5581917.912 m	
		334.842 m @	216°18'10.7213"	(TO design:Grid)
		1243.516 m @	39°49'34.3368"	(FL TO A-L:Grid)
7	Laid	39°54'19.1911"S	145°04'12.2401"E	(Design)
		335028.613 m	5580967.257 m	
		39°54'19.4602"S	145°04'12.4548"E	(As-Laid)
		335033.891 m	5580959.069 m	
		9.742 m @	327°11'38.9644"	(TO design:Grid)
		914.352 m @	86°54'31.6185"	(FL TO A-L:Grid)
8	Laid	39°54'40.5683"S	145°04'02.0149"E	(Design)
		334800.073 m	5580302.877 m	
		39°54'38.7585"S	145°03'59.7411"E	(As-Laid)
		334744.876 m	5580357.508 m	
		77.661 m @	134°42'17.9324"	(TO design:Grid)
		834.872 m @	131°15'38.3062"	(FL TO A-L:Grid)


Anchor Positions
5,581,900
5,581,800
5,581,700
5,581,600
5,581,500
5,581,400
5,581,300
5,581,200
5,581,100
5,581,000
5,580,900
5,580,800
5,580,700
5,580,600
5,580,500
5,580,400
5,580,300
5,580,200
5,580,100
5,580,000
333,500
334,000
334,500
335,000
1
2
3
4
5
6
7
8
Fairlead Location
Design Location
Start Lowering Location
As-laid Location

Starfix Pre Spud Fix Report

Fugro Job Number	**09011**
Job Name	**Rig Move to Silvereye-1**
Fugro Personnel	**S. Armstrong, B. Healy**
Client Name	**Australian Drilling Associates Pty Ltd**
Client Representative	**P. Jenkins**
Sampling Started	**27 Nov 2010 6:10:17 a.m. (local)**
Sampling Ended	**27 Nov 2010 6:25:20 a.m. (local)**
Comment	**Pre Spud Fix at Silvereye-1**

Intended Offset / Well Location

Geodetic Datum **GDA94**
Latitude 39°54'19.8971"S
Longitude 145°03'32.4406"E
Projection **Universal Transverse Mercator Zone: 55**
Easting 334084.000 m
Northing 5580925.000 m
Intended Rig Heading 245.00 °T

Final DGPS Position Fix Summary for Kan Tan IV At Silvereye-1, AUS

DS computed from MultiFix.GGA (Primary)

DS Offset From CRP
Starboard 0.000 m
Forward 0.000 m
Up 0.000 m

Geodetic Datum	**GDA94**	**WGS84**
Latitude	39°54'19.8504"S	39°54'19.8208"S
Longitude	145°03'32.5701"E	145°03'32.5837"E

Projection **Universal Transverse Mercator Zone: 55**
Easting 334087.044 m
Northing 5580926.508 m
Height 33.774 m (ellipsoidal)
Final Rig Heading 246.11 °T
244.87 °G (Convergence -1.25° Australia/New Zealand)
Gyro C-O 99.98 °
Position is 3.40 m @ 64.89 °T (63.64 °G) FROM intended location

The approximate as-dropped positions of the rig anchors are:

Anchor	Easting (m)	Northing (m)	Range (m)	Bearing (°T)
1	334113.2	5579965.8	920.8	177.3
2	333502.3	5580258.1	841.9	222.0
3	333109.8	5580878.6	933.1	266.4
4	333347.7	5581548.8	926.2	311.2
5	334033.1	5581861.2	902.6	356.3
6	334892.7	5581917.9	1245.3	39.9
7	335033.9	5580959.1	916.0	86.9
8	334744.9	5580357.5	835.6	131.1

Party Chief: Steve Armstrong Client Representative: P. Jenkins.

APPENDIX C :
RIG MOVE POSITIONING SYSTEM SETUP, CHECKS AND CALIBRATIONS

Configuration Summary

04/12/2010 00:00:00 LOC
*** FUGRO STARFIX.SEIS ***

```
Header : Project Name                     :   Rig Move to Silvereye-1
         Project Number                   :   09011
         Project Description              :
         Project Location                 :   Silvereye-1, AUS
         Client                           :   Australian Drilling Associates Pty Ltd
         Client Representative            :   P. Jenkins
         Client Reference Number          :
         Geophysical Contractor           :   Fugro
         Positioning Contractor           :   Fugro
         Positioning Processing Contractor:   Fugro
         Fugro Personnel                  :   S. Armstrong - Senior Surveyor
                                          :   B. Healy - Surveyor
         Configuration Created At         :   03/12/2010 21:15:52 LOC
         Time Source                      :   MasterSource
         Time Offset                      :   11:00 (Using LOC)
         Vessel                           :   Kan Tan IV

Files    Runline       :   C:\Fugro_Projects\09011\Settings\Data\Silvereye-1 Runlines.srn
         FLF           :   (None)
         Centreline    :   (None)
         Database      :   (None)
         Vector        :   C:\Fugro_Projects\09011\Vector\GDA94_147_zone55.dgn
         Waypoint      :   C:\Fugro_Projects\09011\Settings\Data\Silvereye-1 Waypoints.swy
         Client Logo   :   C:\Fugro_Projects\09011\Settings\Data\ADA Logo.jpg
         Coverage      :   C:\Fugro_Projects\09011\RawData\NonSession\09011.Coverage
         Swath         :   C:\Fugro_Projects\09011\RawData\NonSession\09011.Swath
         SVP Well      :   (None)

Logging: Directory     :   C:\Fugro_Projects\09011\RawData\NonSession\

Fixing : Mode          :   Time
         Start Mode    :   Manual
         Stop Mode     :   Manual
         Fix Devices   :
           Auto-Fix    :   SEIS
           Manual      :   SEIS
           External    :   (None)
           Offset      :   (None)
           MOB         :   (None)
         Fix Interval  :    30.000s
         Reset at SOL  :   No
         Next Fix No.  :    26783
         Fix Increment :        1
         Start FFID    :    26783
         Start Man. Fix:        2
         Early Start   :        5s
         Logging Start :        5s
         Fix Position  :   From Filter

Datum 1: Datum         :  GDA94-ITRF2010.50
         Spheroid      :  GRS80
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572221010
         Eccentricity^2:  0.006694380022901

         Projection    :  Universal Transverse Mercator
         Grid Name     :
         Lat. Origin   :    0d00'00.0000"N
         Lon. Origin   :  147d00'00.0000"E
         False East    :    500000.000m
         False North   :  10000000.000m
         Scale Factor  :  0.9996
         Convergence   :  Australia/New Zealand

Datum 2: Datum         :  WGS84
         Spheroid      :  WGS84
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572235630
         Eccentricity^2:  0.006694379990141

Datum2>1:Parameters    :  From WGS84 to GDA94-ITRF2010.50
         DX            :     0.0394m         RX            :     0.0196"
         DY            :    -0.0574m         RY            :     0.0164"
         DZ            :    -0.1383m         RZ            :     0.0202"
         D Scale       :     0.0023ppm       Rot Convention:  +RZ=-RLongitude

Sundry : Vertical Datum:
         Ell. Sep.     :     0.0000m
         Distances     :   Grid
         Bearings      :   Grid
         Units         :  metres
         Conversion    :     1.0000000000
```

Configuration Summary

```
Main Vessel            :  Kan Tan IV
                       :  Kan Tan IV

Nav. 1 : System        :  TOPS_OCSAT.GGA
         Type          :  Lat - Long
         Priority      :     2
         Time-out      :     5.0s
         Offset Name   :  PORT_GPS
         X Offset      :   -24.12m
         Y Offset      :    36.92m
         Ant. Height   :     0.00m
Nav. 2 : System        :  8200HP_APSAT.GGA
         Type          :  Lat - Long
         Priority      :     3
         Time-out      :     5.0s
         Offset Name   :  STBD_GPS
         X Offset      :     7.74m
         Y Offset      :    42.53m
         Ant. Height   :     0.00m
Nav. 3 : System        :  RAW_TOPS_HDG
         Type          :  Lat - Long
         Priority      :     4
         Time-out      :     5.0s
         Offset Name   :  STBD_GPS
         X Offset      :     7.74m
         Y Offset      :    42.53m
         Ant. Height   :     0.00m
Nav. 4 : System        :  MultiFix.GGA    (In Use)
         Type          :  Lat - Long
         Priority      :     1
         Time-out      :     5.0s
         Offset Name   :  STBD_GPS
         X Offset      :     7.74m
         Y Offset      :    42.53m
         Ant. Height   :     0.00m
Dead Reckoning: No   Timeout:  30.0s

Heading 1 : System        :  TOPS_HDG.HDT    (In Use)
         Priority      :     1
         Time-out      :     3.0s
         Offset Name   :  STBD_GPS
         X Offset      :     7.74m
         Y Offset      :    42.53m
         Z Offset      :     0.00m
         Correction    :    99.98 Degrees
Heading 2 : System        :  SGBrown
         Priority      :     2
         Time-out      :     3.0s
         Offset Name   :  CRP
         X Offset      :     0.00m
         Y Offset      :     0.00m
         Z Offset      :     0.00m
         Correction    :   177.20 Degrees

Offsets: Name                      X         Y         Z
         CRP      0.00      0.00      0.00
         PORT_GPS    -24.12     36.92      0.00
         STBD_GPS      7.74     42.53      0.00
         DS      0.00      0.00      0.00
         Tow Point      0.75     47.00      0.00

Fairlead:Name                      X         Y         Z
         1    -29.46     33.55      0.00
         2    -29.45     37.53      0.00
         3     29.10     37.15      0.00
         4     29.10     33.20      0.00
         5     29.05    -17.94      0.00
         6     29.05    -21.89      0.00
         7    -29.50    -21.74      0.00
         8    -29.50    -17.79      0.00


O/Ts   : Steered Point:  O/T 0
         Shot         :  O/T 0

O/T  0    PR Kan Tan IV/CRP                  Flt:    Pos Sys: Datum In-Use
O/T  3    PR Kan Tan IV/Tow Point            Flt:    Fxd Off: Tow Point
O/T  4    PR Kan Tan IV/OCSAT.GGA DAT        Flt:    Pos Sys: TOPS_OCSAT.GGA Datum
O/T  5    PR Kan Tan IV/APSAT.GGA DAT        Flt:    Pos Sys: 8200HP_APSAT.GGA Datum

O/T Legend:   PR=Print LG=Log SN=Snap to line


Waypoint : Silvereye1
```

Configuration Summary

```
Position :  39d54'19.8250"S 145d03'32.6409"E    0.0m
             334088.708mE  5580927.328mN        0.0m
Printing:
         Fix mark rate   :   1
         Config Changes  :   No
         System Timeouts :   No
         Concise Header  :   No

Software:Starfix Suite 9.1  (Service Pack 2)
         RC: Starfix Suite 9.1 COP RC3
         RC: Starfix Suite 9.1 FBFView RC5
         RC: Starfix Suite 9.1 GPS (Shared) RC2
         RC: Starfix Suite 9.1 RTCM3In RC2
         RC: Starfix Suite 9.1 TrimbleDCF RC2
         RC: Starfix Suite 9.1 FinalFix RC1
         RC: Starfix Suite 9.1 MeanPositionReport RC2
         RC: Starfix Suite 9.1 IOWIN RC12
         HF: Starfix Suite 9.1 ConfigIn HF1
         HF: Starfix Suite 9.1 FugroXpIn HF1
         HF: Starfix Suite 9.1 LeicaGSIIn HF1
         HF: Starfix Suite 9.1 SeisEngine HF2
         HF: Starfix Suite 9.1 Time Multicast HF2
         Seis       Ver 4.02.0015
         SeisEngine Ver 4.02.0018
         Display    Ver 4.02.0016
         Anchors    Ver 4.01.0026
         Print      Ver 4.01.0002
```

Fugro Party Chief: _____ Client Representative: _____

RIG POSITIONING
GEODESY AND COORDINATE CHECK LIST

Client :	**ADA**	**Job Number :**	**09011**
Rig :	**Kan Tan IV**	**Date:**	**December 8, 2010**
Project :	**Rig Move to Silvereye-1**		

1. CONFIRMATION OF PROPOSED RIG COORDINATES and HEADING.

Well Name	**Silvereye-1**		Ensure agreement with Client onsite prior to any positioning
Well Location – Latitude(ϕ)	-039° 54' 19.90"	S	Operations. OK (?) **Y** / N.
Well Location – Longitude(λ)	145° 03' 32.44"	E	
Rig Heading (True)	245° T		

2. GEODETIC PARAMETERS (WGS84 to LOCAL DATUM)

DATUM:	Dx	0.03940	m	Ensure agreement with Client onsite prior to positioning operations.
GRS80	Dy	-0.05740	m	OK (?) **Y** / N.
	Dz	-0.13830	m	
	Rx	0.01962	"	
Projection:	Ry	0.01641	"	
	Rz	0.02024	"	
Transverse Mercator (UTM)	Ds	0.00229	ppm	
UTM Zone		55		
Central Meridian		147° East		

3. CHECK TRANSFORMATION OF SITE COORDINATES.

Well Location – Easting	334084.0	Ensure agreement with Starfix.Seis. OK (?) **Y** / N
Well Location – Northing	5580925.0	If not, CHECK and RECALC.
Convergence at Location	-1.25 °	
Rig Heading (° Grid)	243.75°	

4. MEAS. ANT. OFFSETS from ANT. TO D/STEM (Rel. to Datum)
(Measure two (2) separate directions, verifying closure.)

	NAV #1 SYSTEM	**NAV #2 SYSTEM**
Delta X(m)	-24.12 m	7.74 m
Delta Y(m)	36.92 m	42.53 m
Angle between Rig Centreline and Antenna(s) (Grid)	326.84°	10.3°
Distance between Drill Stem and Antenna (m)	44.10 m	43.23 m

5. MANUAL COORDINATE VERIFICATION FOR ANTENNAS

		NAV #1 SYSTEM		**NAV #2 SYSTEM**	
Proposed Drill Stem Position	Easting	334084.0		334084.0	
	Northing	5580925.0		5580925.0	
Drill Stem to Antenna	Proposed Hdg (G)	243.755°		243.755°	
Brg (G) = Prop. Hdg. + Angle btwn centreline and antenna		210.598°		254.069°	
	Distance (m)	44.10 m		43.23 m	
Calculated Antenna	Easting	334061.55		334042.43	
Coordinates (Local Datum)	Northing	5580887.04		5580913.13	
	Latitude (ϕ)	-039° 54' 21.11"	S	-039° 54' 20.25"	S
	Longitude (λ)	145° 03' 31.46"	E	145° 03' 30.68"	E
Calculated Proposed Antenna Coords (WGS 84)	Latitude (ϕ)	-039° 54' 21.08"	S	-039° 54' 20.22"	S
	Longitude (λ)	145° 03' 31.47"	E	145° 03' 30.69"	E

6. POST RIG MOVE - OBSERVED ANTENNA COORD

Observed GPS Receiver Antenna Position in	Latitude (ϕ)	-39 °	54'	21.00 "	S	-39 °	54'	20.12 "	S
WGS84.	Longitude (λ)	145 °	3'	31.65 "	E	145 °	3'	30.89 "	E

Ensure agreement between calculated and observed coordinates. If **NO,** check calcs., antenna offsets. OK(?) Y / N

Surveyor : _____ Client Rep : _____ Date : _____

S. Armstrong 0

APPENDIX D :
CLIENT SUPPLIED INFORMATION

4.0 Well Data

4.1 General License and Field Data

Well Name	Silvereye-1
Well Type	Exploration
Field Name	Silvereye
License/Permit T/44P	
Well Operator	Origin Energy Resources Ltd
Permit Operator	Origin Energy Resources Ltd
Partners	Arc (Bass Gas) Pty Ltd
Earliest Spud Date	November 2010
Latest Spud Date	December 2010
Total Depth	2317mTVDSSm / 2343mTVDRT / 2400mMDRT
Well Type	Deviated
Water Depth	56m MSL

4.2 Surface Location

Spheroid and Datum	GDA94
Latitude	039º 54' 19.897" S
Longitude	145º 03' 32.441" E
Projection UTM	55
Easting 334	084.00mE
Northing	5 580 925mN
Surface Tolerance	10m radius, centred on proposed well location

4.3 Target Location

Top Primary Target Northing (1925mTVDSS)	5 580 985.29mN
Top Primary Target Easting (1925mTVDSS)	334 301.26mE
Total Depth Northing	5 581 026.72 m N
Total Depth Easting	334 450.53 m E
Projection UTM	55
Target Radius	50m at top primary target
Primary Target	Intra-EVCM sands, Upper Cretaceous sands
Secondary Target	N/A

4.4 MODU Data

Drilling Unit Owner	Sinopec Star Petroleum Company Ltd
Drilling Contractor	Maersk Drilling Pty Ltd
Drilling Unit	Kan Tan IV
Measurement Datum	Rotary Table (RT)
Datum Elevation	26m above MSL

No.	Chain lengths		Direction	Fluke angle	Max X-tension
	Hor (calc)	Counter			
1	1316 m	4248'	198º5	32°	Stall / 820 amps
2	1260 m	4160'	252º4	32°	Stall / 820 amps
3	1263 m	4252'	289º6	32°	Stall / 820 amps
4	1269 m	4268'	343º8	32°	Stall / 830 amps
5	1292 m	4236'	022º6	32°	Stall / 800 amps
6	1267 m	4148'	073º1	32°	Stall / 810 amps
7	1306 m	4298'	108º7	32°	Stall / 820 amps
8	1320 m	4252'	159º3	32°	Stall / 820 amps

4.2 The proposed new location for the "Kan Tan IV" is:

Designation: Silvereye-1, Bass Strait, Australia

Co-ordinates: Latitude: 39° 54' 19.897" S
Longitude: 145° 03' 32.441" E

Easting: 334 084.00mE
Northing: 5 580 925.00mN

Spheroid and Datum: GDA 94. Projection UTM 55.

Water Depth: 53.9 m LAT on location. In anchor pattern the water depth ranges from 53.3 m LAT to 54.7 m LAT.

Rig Heading: 245° True

Tolerance: Position, radius: 10 m centred on proposed well location

Sea Bed Data: Unconsolidated silty fine sand and unconsolidated silty medium sand

Obstructions: None

Proposed Mooring Arrangement:

No	Line length	Direction(T)	Additional back-up system	Anchor Fluke Settings
1	500 m / 1640 ft	177°5	N/A	32°
2	480 m / 1575 ft	222°5	N/A	32°
3	570 m / 1870 ft	267°5	N/A	32°
4	500 m / 1640 ft	312°5	N/A	32°
5	550 m / 1804 ft	357°5	N/A	32°
6	500 m / 1640 ft	042°5	N/A	32°
7	590 m / 1936 ft	087°5	N/A	32°
8	560 m / 1837 ft	132°5	N/A	32°

Main anchors: 2, 3, 6 and 7
Secondary anchors: 1, 4, 5 and 8

APPENDIX 8: CASING & CEMENTING REPORTS

Silvereye-1

RUNNING TALLY

13 3/8" CASING TALLY

Updated: 6th December 2010

Casing Specifications			Date Casing Run		
Grade	k-55		Casing Burst	5,000	psi (34.5 MPa)
Weight (ppf)	68	(101.4 kg/m)	Casing Collapse	2,280	psi (15.7 MPa)
Connection	Buttress		Pipe Yield	1,545,000	lb (687 kdaN)
Ave Thread Loss (m)	0.122	(4.803 in)	Connection Yield	1,300,000	lb (578 kdaN)
Casing OD (in)	13.375	(339.725 mm)	Calc. Capacity	0.4982	bbl/m (0.0792 M3/m)
Calipered ID (in)	12.503	(317.58 mm)	Calc. Capacity	20.926	US Gallons/metre
Hole ID (in)	17.500	(444.5 mm)	Calc. CE Displacemer	0.5701	bbl/m (0.0906 M3/m)
Mud Weight	9.50	ppg (1.14 SG)	Est. Dry Wt (lb)	247,195	(112.36 MT)
Bouyancy Factor	0.8547		Est. Bouyant Wt (lb)	211,283	(96.04 MT)
			Make-Up Torque	10,000 - 12,000	KLbs

** Make up loss from W'ford Data book and confirmed with measurement*

Centraliser Program

Shoe Joint - 2 x bow spring - 2 spaced equally between length of pipe. Pre-installed onshore

Float collar joint - 1 x bow sring - mid joint. - Pre-installed onshore

Casing - 5 x bow spring - 1 per joint above shoe track

Pup Joint lengths

#A	0.000	m
#B	0.000	m
#C	0.000	m

RKB to top of 30"	77.46	m
Hole Depth	1112.00	m
Rat Hole Required	9.10	m
13.375 in Landing Depth	1102.90	m
13.375 in Run Tally Length	1108.02	m
17.5 in Rat Hole/Stickup		m

Max Coupling OD 14.375

Comment:

Comment:

Seq No	IN / OUT	Joint Name	Joint Length	Effective Length	Cum. Length	Depth top Conn	Depth Bot Conn	Remarks	Cum Bouyed Wt (lb)	Cum PVT Displ (bbl)
1		Shoe Jt A	12.525	12.525	12.525	1090.38	1102.90	2 X Bow spring Centraliser	2400	7.1
2		Float Jt A	11.917	11.795	24.320	1078.58	1090.38	1 x Bow spring Centraliser	4670	13.9
3		105	11.531	11.409	35.729	1067.17	1078.58	1 x Bow spring Centraliser	6860	20.4
4		104	11.756	11.634	47.363	1055.54	1067.17	1 x Bow spring Centraliser	9090	27
5		103	11.491	11.369	58.732	1044.17	1055.54	1 x Bow spring Centraliser	11270	33.5
6		102	11.672	11.550	70.282	1032.62	1044.17	1 x Bow spring Centraliser	13490	40.1
7		101	11.725	11.603	81.885	1021.02	1032.62	1 x Bow spring Centraliser	15720	46.7
8		100	11.581	11.459	93.344	1009.56	1021.02		17920	53.2
9		99	10.612	10.490	103.834	999.07	1009.56		19930	59.2
10		98	11.567	11.445	115.279	987.62	999.07		22130	65.7
11		97	11.559	11.437	126.716	976.18	987.62		24320	72.2
12		96	10.917	10.795	137.511	965.39	976.18		26390	78.4
13		95	11.631	11.509	149.020	953.88	965.39		28600	85
14		94	11.076	10.954	159.974	942.93	953.88		30710	91.2
	out	93	0.122	0.000	159.974	942.93	942.93	Damaged on drill floor	30710	91.2
15		92	11.395	11.273	171.247	931.65	942.93		32870	97.6
16		91	12.175	12.053	183.300	919.60	931.65		35180	104.5
17		90	11.870	11.748	195.048	907.85	919.60		37440	111.2
18		89	11.590	11.468	206.516	896.38	907.85		39640	117.7
19		88	11.050	10.928	217.444	885.46	896.38		41740	124
20		87	11.605	11.483	228.927	873.97	885.46		43940	130.5
21		86	11.966	11.844	240.771	862.13	873.97		46210	137.3
22		85	11.827	11.705	252.476	850.42	862.13		48460	143.9
23		84	11.435	11.313	263.789	839.11	850.42		50630	150.4
24		83	11.406	11.284	275.073	827.83	839.11		52800	156.8
25		82	11.660	11.538	286.611	816.29	827.83		55010	163.4
26		81	11.545	11.423	298.034	804.87	816.29		57210	169.9
27		80	11.420	11.298	309.332	793.57	804.87		59370	176.4
28		79	10.790	10.668	320.000	782.90	793.57		61420	182.4

Seq No	IN / OUT	Joint Name	Joint Length	Effective Length	Cum. Length	Depth top Conn	Depth Bot Conn	Remarks	Cum Bouyed Wt (lb)	Cum PVT Displ (bbl)
29		78	11.675	11.553	331.553	771.35	782.90		63640	189
30		77	11.455	11.333	342.886	760.01	771.35		65820	195.5
31		76	11.400	11.278	354.164	748.74	760.01		67980	201.9
32		75	11.595	11.473	365.637	737.26	748.74		70180	208.5
33		74	11.405	11.283	376.920	725.98	737.26		72350	214.9
34		73	11.400	11.278	388.198	714.70	725.98		74510	221.3
35		72	11.705	11.583	399.781	703.12	714.70		76740	227.9
36		71	11.715	11.593	411.374	691.53	703.12		78960	234.5
37		70	11.460	11.338	422.712	680.19	691.53		81140	241
38		69	11.460	11.338	434.050	668.85	680.19		83310	247.5
39		68	11.435	11.313	445.363	657.54	668.85		85490	253.9
40		67	11.280	11.158	456.521	646.38	657.54		87630	260.3
41		66	11.135	11.013	467.534	635.37	646.38		89740	266.6
42		65	11.435	11.313	478.847	624.05	635.37		91910	273
43		64	11.295	11.173	490.020	612.88	624.05		94060	279.4
44		63	10.950	10.828	500.848	602.05	612.88		96140	285.6
45		62	11.765	11.643	512.491	590.41	602.05		98370	292.2
46		61	11.985	11.863	524.354	578.55	590.41		100650	299
47		60	11.475	11.353	535.707	567.19	578.55		102830	305.4
48		59	11.450	11.328	547.035	555.87	567.19		105000	311.9
49		58	11.410	11.288	558.323	544.58	555.87		107170	318.3
50		57	11.630	11.508	569.831	533.07	544.58		109380	324.9
51		56	11.020	10.898	580.729	522.17	533.07		111470	331.1
52		55	11.040	10.918	591.647	511.25	522.17		113560	337.3
53		54	12.715	12.593	604.240	498.66	511.25		115980	344.5
54		53	10.110	9.988	614.228	488.67	498.66		117900	350.2
55		52	11.520	11.398	625.626	477.27	488.67		120090	356.7
56		51	11.570	11.448	637.074	465.83	477.27		122280	363.2
57		50	11.945	11.823	648.897	454.00	465.83		124550	370
58		49	11.875	11.753	660.650	442.25	454.00		126810	376.7
59		32	11.815	11.693	672.343	430.56	442.25		129050	383.3
60		34	11.660	11.538	683.881	419.02	430.56		131270	389.9
61		35	11.400	11.278	695.159	407.74	419.02		133430	396.3
62		36	11.090	10.968	706.127	396.77	407.74		135540	402.6
63		37	11.295	11.173	717.300	385.60	396.77		137680	409
64		38	11.550	11.428	728.728	374.17	385.60		139880	415.5
65		39	11.865	11.743	740.471	362.43	374.17		142130	422.2
66		40	11.620	11.498	751.969	350.93	362.43		144340	428.7
67		41	11.495	11.373	763.342	339.56	350.93		146520	435.2
68		42	11.410	11.288	774.630	328.27	339.56		148690	441.7
69		43	11.360	11.238	785.868	317.03	328.27		150840	448.1
70		44	11.290	11.168	797.036	305.86	317.03		152990	454.4
71		45	11.430	11.308	808.344	294.56	305.86		155160	460.9
72		46	11.395	11.273	819.617	283.28	294.56		157320	467.3
73		47	11.740	11.618	831.235	271.67	283.28		159550	473.9
	out	33	0.122	0.000	831.235	271.67	271.67	Damaged on deck	159550	473.9
74		48	11.795	11.673	842.908	259.99	271.67		161790	480.6
75		1	11.420	11.298	854.206	248.69	259.99		163960	487
76		2	11.315	11.193	865.399	237.50	248.69		166110	493.4
77		3	11.520	11.398	876.797	226.10	237.50		168300	499.9
78		4	12.000	11.878	888.675	214.23	226.10		170580	506.7
79		5	11.701	11.579	900.254	202.65	214.23		172800	513.3
80		6	11.342	11.220	911.474	191.43	202.65		174950	519.7
81		7	11.685	11.563	923.037	179.86	191.43		177170	526.3
82		8	11.225	11.103	934.140	168.76	179.86		179300	532.6
83		9	11.336	11.214	945.354	157.55	168.76		181460	539

Seq No	IN / OUT	Joint Name	Joint Length	Effective Length	Cum. Length	Depth top Conn	Depth Bot Conn	Remarks	Cum Bouyed Wt (lb)	Cum PVT Displ (bbl)
84		10	11.790	11.668	957.022	145.88	157.55		183700	545.6
85		11	11.444	11.322	968.344	134.56	145.88		185870	552.1
86		12	11.295	11.173	979.517	123.38	134.56		188010	558.5
87		14	11.820	11.698	991.215	111.69	123.38		190260	565.1
88		15	11.790	11.668	1002.883	100.02	111.69		192500	571.8
89		NC Jt - A	12.036	11.914	1014.797	88.10	100.02		194790	578.6
90		Below	10.640	10.640	1025.437	77.46	88.10		196830	584.7
91		Above	0.900	0.900	1026.337	76.56	77.46		197000	585.2
92		R/Tool	1.550	1.550	1027.887	75.01	76.56	R/Tool + X/Over	197300	586
93		Pup Joint	2.940	2.940	1030.827	72.07	75.01			
94		1 Stand	28.950	28.950	1059.777	43.12	72.07		203420	604.2
95		2 Stand	28.940	28.940	1088.717	14.18	43.12		208970	620.7
96		Cmt Stand	19.300	19.300	1108.017	-5.12	14.18		212680	631.7
97			0.000	0.000	1108.017	-5.12	14.18		212680	631.7
	2		Joint Length	Effective Length	Cum. Length	Depth top Conn	Depth Bot Conn	Remarks	Cum Bouyed Wt (lb)	Cum PVT Displ (bbl)
			1118.997	1108.017	1108.017	-5.117	1102.900		212,680	631.7

RUN SUMMARY	Total	Run	Remain
Joints	105	86	19
Shoe Joint	2	1	1
Intermed	0	0	0
Float	2	1	1
No Cross	2	1	1
18 3/4" W/H	2	1	1
Pups	0	0	0
Total	113	90	23

ORIGIN
A.D.A

SILVEREYE-1
30" x 20" Conductor

SS-10C 18.75"
SubSea WellHead System

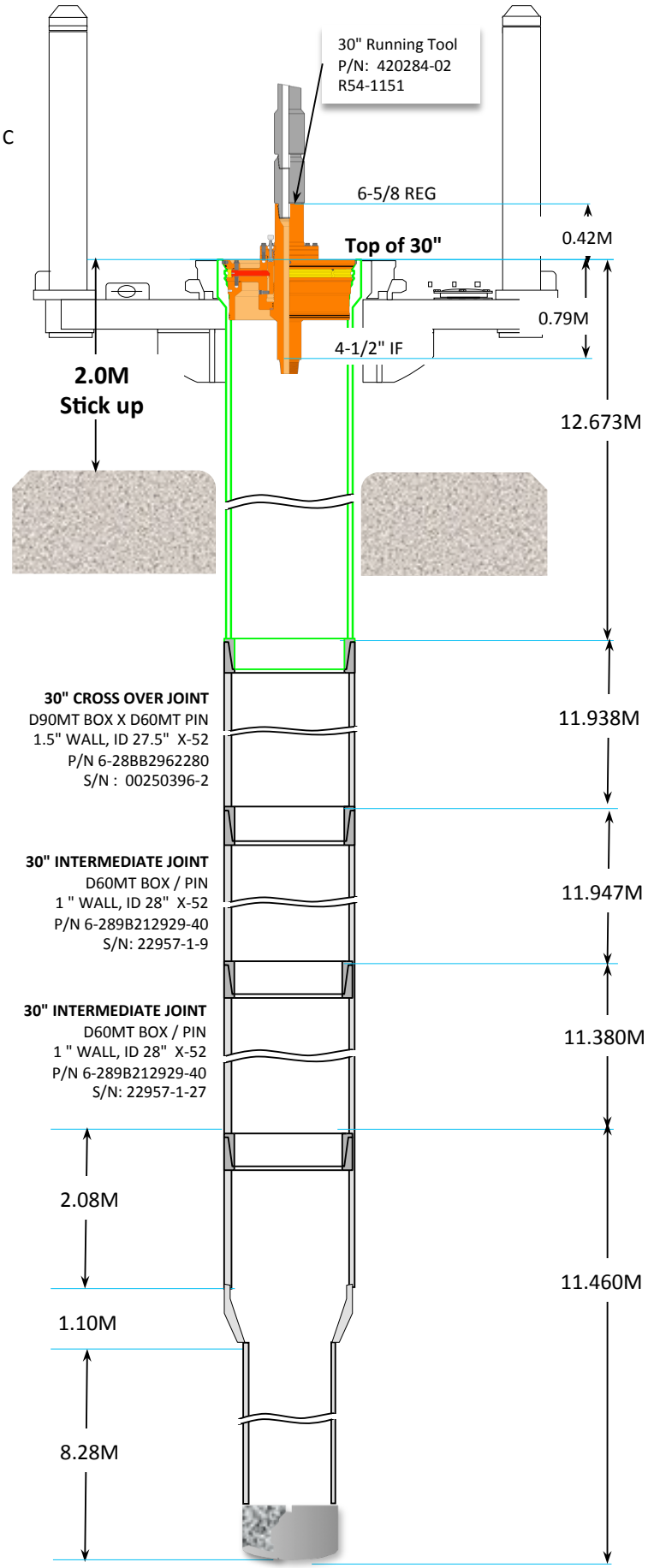
Australian Drilling Associates Pty Ltd

PGB
P/N 6-400119-06 C
S/N 22751/1-01

30" LP HOUSING
1 1/2" WALL, ID 27" X-52
P/N 6-400057-02R-E3007
S/N 00251516-03

SEABED: 80.0m

CONDUCTOR O.A.L
59.96m



30" Shoe: 129.1m

20" Shoe: 137.4m

36" TD: 141.0m

Prepared by: Ryan Olsen

Australian Drilling Associates Pty Ltd
Level 5 / Rialto North Tower
525 Collins St
Melbourne, VIC, 3000

Silvereye #1
Post Job Report

Prepared for Manelle Moussa
January 20, 2011
Rev.2

Submitted by Joon Yeoh
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Lvl 23 HWT Towers 40 City Rd. Southgate 3006
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HALLIBURTON

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1.1 Summary of operations

The Silvereye #1 well was drilled as part of exploration program for Origin who was part of a consortium that ADA managed. The well was drilled with Kan Tan IV semi-submersible MODU and was constructed of a 30" x 20" Conductor casing and a 13 3/8" casing finished off with three P&A cement plugs.

The 36" section was drilled to 141mMD with 30" x 20" Conductor casing set at 137.4mMD. As a pre-flush to cementing, 80 bbl of sea water with last 20 bbl of sea water with mica was pumped at 2bpm. Cement consisted of 270 bbls of 15.8ppg Halcem slurry. Using the Halliburton pump unit, the cement was displaced with 63.5bbls of sea water.

The 17 ½" section was drilled to 1112mMD and the 9 5/8" casing was set and cemented at 1102.9mMD. As a pre-flush to cementing, 50 bbls of seawater with last 20 bbl of sea water with mica was pumped at 7bpm. Cement consisted of 228 bbls of 12.5ppg EconoCem lead slurry and 84 bbls of 15.8ppg Halcem slurry. 20 bbls of spacer was pumped behind using the Halliburton pump unit, and the rest of the 476.3 bbls of displacement was handed over to the rig to be displaced. Plug was bumped. 5 bbls of fluid was bled back.

The 8 ½" Open Hole section was drilled to 2317mMD. The well was subsequently abandoned with three (3) cement plugs as follows. Two attempts to set the plug at the shoe had to be made.

Plug #1
#1a: 2170mMD - 2317mMD – 88 bbls of 15.8ppg PlugCem
#1b: 2020mMD – 2170mMD – 89 bbls of 15.8ppg PlugCem
#1c: 1920mMD – 2020mMD - 65 bbls of 15.8ppg PlugCem

Plug #2
#2: 1000mMD – 1150mMD – 90 bbls of 15.8ppg PlugCem
#2b: 996mMD – 1130mMD – 67 bbls of 15.8ppg PlugCem

Plug #3
#3: 100mMD – 200mMD – 55 bbls of 15.8ppg PlugCem

1.2 Lessons Learnt

- Minimum 40 bbls of spacer to be pump ahead for the shoe plug cementing operation
- Volume to pump is caliper +10% or if hole size is unknown, minimum 30% XS over gauged hole is programmed. Increase to 20% over caliper or 50% over gauge whichever is more.
- Mix and pump cement & displacement fluid rate at 2 bpm for the job as soon the slurry exit the cement stinger. Mix & Pump cement at ~5bpm. Displace at 2bpm
- Stinger to be POOH to 152m above the expected TOC and reverse circulate clean @ sensible safe rate (Provide pressure drop in annulus and determine maximum rate. Get rig to monitor any losses during all phases of job.
- Drop foam ball before the displacement fluid phase (Also drop foam ball ahead of cement after the seawater spacer)
- Reduce WOC on cement on shoe plug if necessary

1.3 Cementing Events

Date	Event
3/12/10	**Cement 30in Conductor to +/- 137mMD** - Mix and pump 270 bbl of 15.8ppg HalCem Slurry
7/12/10	**Cement 13 3/8in intermediate casing to +/- 1102mMD** - Mix and pump 228 bbls of 12.5ppg EconoCem and 84 bbls of 15.8ppg HalCem Slurry
17/12/10	**Set Plug 1a,** - Mix and pump 88 bbls of 15.8ppg PlugCem
17/12/10	**Set Plug 1b,** - Mix and pump 89 bbls of 15.8ppg PlugCem
17/12/10	**Set Plug 1c** - Mix and pump 65 bbls of 15.8ppg PlugCem
17/12/10	**Set Plug 2** - Mix and pump 90 bbls of 15.8ppg PlugCem
18/12/10	**Set Plug 2b** - Mix and pump 67 bbls of 15.8ppg PlugCem
19/12/10	**Surface Plug** - Mix and pump 55 bbls of 15.8ppg PlugCem

2.0 C EMENTING PROGRAM SUMMARY

Silvereye #1 will be drilled in the Bass straight from the semi submersible rig the Kan Tan IV. The following program outlines the cementation of the 30" conductor casing, 13-3/8" casing string and contingent 9 5/8" casing string.

Revision History

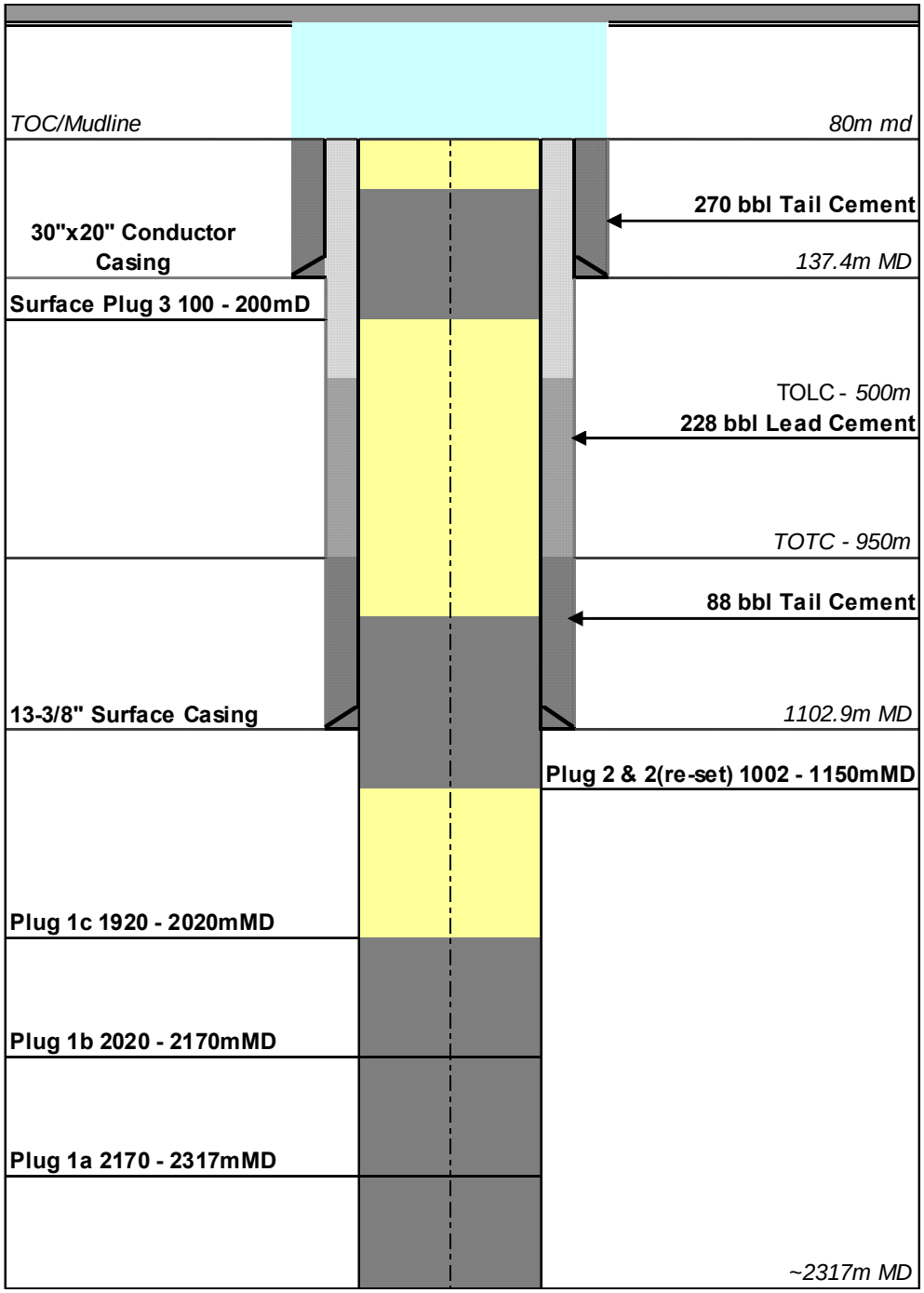
Draft Rev 1	11th August 2010	Initial program issues
D raft Rev.2	28th September 2010	Slurry design changed to 13 3/8"
Draft Rev.3	28th September 2010	Further simplify the slurry design on 13 3/8" tail
Draft Rev.4	15th November 2010	Includes 5 P&A Plugs
Rev.1	22nd November 2010	Rev.1 program issued out.
Rev.2	26th November 2010	Removed reference to bottom plug
Rev.3	30th November 2010	Updated cementing program
Rev.4	3rd December 2010	Updated Cement plug depth

2.1 Well Scope (Initial)

The following cement Jobs are detailed in Section 3:

Section Hole	Depth		Casing/Hole Size	Slurry Info
36" Hole	140 mMD	140 mTVD	30" Conductor casing	15.9ppg Class G Single Slurry
17 1/2" Hole	1100 mMD	1100 mTVD	13-3/8" Intermediate Casing	12.5ppg ExtandaCem Lead / 15.8ppg HalCem Tail
12 ¼" Hole	2400 mMD	2400 mTVD	P&A	15.8ppg P&A Plugs
	Base Top			
Plug 1a, b & c	2391 mMD	1941 mMD	12 ¼" Open Hole	15.8ppg PlugCem
Plug (contingent)	1541 mMD	1391 mMD	12 ¼" Open Hole	15.8ppg PlugCem
Shoe Plug (Plug 2)	1200 mMD	1050 mMD	12 ¼" Open Hole / 13 3/8" Casing	15.8ppg PlugCem
Surface Plug	140 mMD	40 mMD	13 3/8" Casing	15.8ppg PlugCem

2.2 Well Schematic as Cemented



2.3 Approxim ate Well Cost

Sales order No.	Desc	USD	AUD
7566239	Silverveye #1 casing equipment	$ 24,574.70	
7719198	Air freight recharge for casing equipment	$ 389.85	
7794977	Class G Cmt 83.9MT		$ 34,122.13
7790989	CHEMICALS - Econolite, SCR-100l, Halad 413L, Tuned Spacer E+	$ 111,083.00	
7817873	Class G Cmt 85.2MT		$ 34,650.84
7813314	SERVICES - People + Equipment		$ 54,056.80
7834535	7" Wiper Balls	$ 840.00	
	Total	**$136,887.55**	**$ 122,829.77**

2.4 Well Chemical and Cement usage

CHEMICALS & CEMENT								
CEMENT SLURRY	*30" Conductor*	*13 3/8" Lead*	*13 3/8" Tail*	*plug 1-2-3*	*plug 4*	*Shoe Plug*	*Surface Plug*	*TOTAL (no loadout excess)*
Total bbls	345	228.3	87.9	247.5	82.5	79.6	49.1	
Gal mix fluid per sk	5.32	12.3	5.11	5.16	5.16	5.16	5.28	
Yield cuft/sk	1.19	2.12	1.16	1.16	1.16	1.16	1.18	
DESCRIPTION								
Class G cement (sks)	1628	583	425	1197	399	385	234	4851
Class G cement (MT)	69	26	18	51	17	16	10	207
DESCRIPTION								
Econolite Liquid (gal)		268						268
SCR-100L (gal)		72	26	87	25	19		229
NF-6 gal) (	6	5	2	3	1	1	1	19
Halad-413L (gal)				441	147	142		730
Tuned Spacer E+				2025	675			2700
CaCl2 (lb)	1605						218	1823

2.5 I mportant Notes

1. Performing hydrostatic calculation for 30in Conductor casing for inner string job
2. Check SSR plugs once they arrive on location and go through SSR procedures manual. Ensure Bottom plug has been removed onshore. Bottom plug will not be run on this well.
3. All cement slurries proposed in the program are subject to change based on the lab testing up on customer approval.

3.0 CEMENT JOB SLURRY DESIGNS

3.1 30” x 20in Conductor Casing

JOB PARAMETERS

Casing measured depth:	140m	BHST temperature:	12°C
True vertical depth:	140m	BHCT temperature:	12°C
Depth to top cement:	82m	Drilling mud type:	Seawater & Sweeps
		Drilling mud density:	8.60ppg

WELLBORE

Casing/Tubing

0-91m	5 1/2in 19.5ppf Tubing
91-120m	30in xxxppf Casing (X52 D60/MT)
120-132m	30in xxxxppf Casing (X52 D90/MT)
132-140m	20in 94ppf Casing

Annulus

0-140m	36in open hole (200% excess)

SPACERS

Spacer #1 - 60.0bbl Seawater at 8.33ppg

(7m OH annular fill / 10min contact time)

Spacer #2 - 20.0bbl Mica at 8.33ppg

(2m OH annular fill / 3min contact time)

Contact times are based on the displacement rate.

CEMENT

Composition Properties

Lafarge Class G		Surface density:	15.80 ppg
Calcium Chloride 1%	1.00 %BWOC	Surface yield:	1.19 ft³/sk
Seawater	5.28 gal/sk	Total mixing fluid:	5.32 gal/sk
NF-6	0.25 gal/10bblMF	Thickening time (70 Bc):	4:00
		Comp strength at 12°C	50 psi in 6 hrs
		Comp strength at 12°C	500 psi in 7 hrs
		Comp strength at 12°C	2,000 psi in 24 hrs

Note that %BWOC are based on a 94 lb sack

VOLUME CALCULATIONS

Cement

30in Casing / 36in hole volume	29 m x 1.2620 bbl/m	36.0 bbl
30in Casing / 36in hole excess	2.00 x 36.0 bbl	71.9 bbl
30in Casing / 36in hole volume	12 m x 1.2620 bbl/m	15.1 bbl
30in Casing / 36in hole excess	2.00 x 15.1 bbl	30.3 bbl
20in Casing / 36in hole volume	9 m x 2.8555 bbl/m	24.3 bbl
20in Casing / 36in hole excess	2.00 x 24.3 bbl	48.5 bbl
Shoe track volume	9 m x 1.1656 bbl/m	9.9 bbl

Total slurry volume =236.0 bbl

Total Volume Pumped =270.0bbl

Quantity of cement	236.0 bbl x 5.6146 / 1.19 ft³/sk	1113 sks
Quantity of mix fluid	1113 sks x 5.32 gal/sk	141.0 bbl

Displacement

5 1/2in Tubing volume	91 m x 0.0763 bbl/m	6.9 bbl
30in Casing volume	29 m x 2.3233 bbl/m	66.2 bbl
30in Casing volume	12 m x 2.4986 bbl/m	30.0 bbl

Total displacement volume =103.1 bbl

Total volume Pumped =63.5 bbl

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x Casing volume:	226.0	8.0	28
Pump spacers:	80.0	8.0	10
Mix & pump cement:	345.0	4.0	86
Release top plug:	N/A	N/A	5
Pump displacement:	103.1	6.0	17

Total job time (including circulation):	***176 min***	***2hr 56min***
Minimum cement thickening time (with 2hr safety factor):	***228 min***	***3hr 48min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

Spacer #1 - Seawater		Actual used
Spacer #2 - Mica		
Cement (Including 10.0 bbl pit loss of mix fluid)		
Lafarge Class G	47.5 MT(1,113 ft³)	55 MT
Calcium Chloride 1%	1,046 lbs	1290 lbs
Seawater 139.92	bbl	
NF-6 3	.5 gals	5 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.2 30in Conductor Job Log

PERSONELL

PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE	hrs
00245364	Matt Noble	12	#N/A	Richard Doherty	12	#N/A	Gavin Hick	12		

EQUIPMENT

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK SUPPLY / TANKS	HOURS
10233437	HCS-ADV-25D CAT3406 ZONE II - RIG175	3			

FLOAT EQUIPMENT AND CASING EQUIPMENT

SAP#	FLOAT EQUIPMENT	QTY	SAP#	PLUGS	QTY
#N/A	20" Davice Lynch Float Shoe	1			

WELL PROFILE

NEW CASING	OPEN HOLE + EXCESS OR CALIPER DATA	PREVIOUS CASINGS
Non Tapered Casing , Conventional, 6m shoe track		
30in 456ppf X-52 D 90 Multi : 0mto 47.775mMD, mTVD 20in 133ppf X-52 D90 Multi : mto mMD, mTVD	36in, 200 percent excess, 0m to 60m	

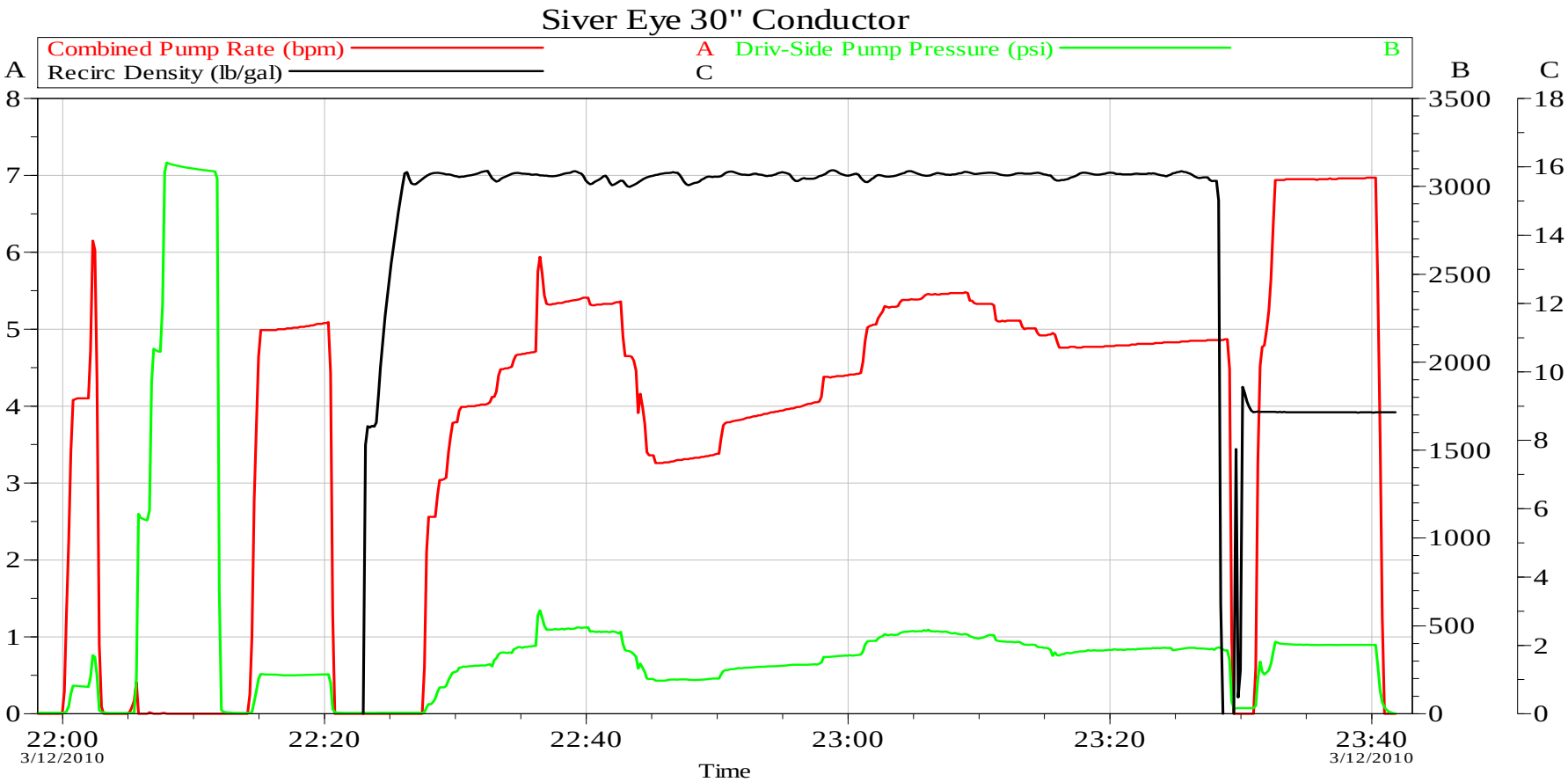
CEMENT DESIGNS

Tail				0				0			
DENSITY	15.8ppg	WATER	5.18gal/sk	DENSITY	15.8ppg	WATER	4.89gal/sk	DENSITY	0.0ppg	WATER	0.00gal/sk
YIELD	1.18cuft/ft	MIX FLUID	5.18gal/sk	YIELD	1.16cuft/ft	MIX FLUID	5.15gal/sk	YIELD	0.00cuft/ft	MIX FLUID	0.00gal/sk
WATER SOURCE	Seawater			WATER SOURCE	Drillwater			WATER SOURCE			
CEMENT TYPE	La Farge Class G at 94lb/sk			CEMENT TYPE	ABC Class 'G' at 94lb/sk			CEMENT TYPE	at lb/sk		
Total Cement Used	1290sks			Total Cement Used	455sks			Total Cement Used	MT		
Estimated TOC	0m			Estimated TOC	511.5m			Estimated TOC	m		
Additive	Concentration	Total Used		Additive	Concentration	Total Used		Additive	Concentration	Total Used	
Calcium Chloride	0.01	1290lbgals		CFR-3L	1.5 gal/10bbl	8.4gals					
NF-6	0.003 gal/10bbl	5gals		Gascon-469	15 gal/10bbl	84gals					
	ga	ls		SCR-100L	4 gal/10bbl	23gals					
				NF-6	0.25 gal/10bbl	1.4gals					

JOB LOGS

DATE DAY-MTH-YR	TIME HRS:MIN	VOLUME BBLS	PRESSURE (psi) HIGH	LOW	RATE J BPM	OB DESCRIPTION REMARKS/DETAILS
3/12/2010	17:40					Jsa
	19:59	20		250	5	Pump Spacer
	20:04	0.2	3000	1000	0.3	LineTest
	20:11	60		250	5	Pump Spacer
	20:13	20		250	5	Pump Spacer with Mica
	20:22	270	500	200	4.5	Mix And Pump 15.8ppg Slurry
	20:30	63.5		400		Displace Cement
	21:40					Bleed Off Check Floats / Floats Held

3.3 Silvereye #1 30in Conductor Job Plot



Customer: ADA / Origin Well Description: 30" Conductor	Job Date: 04-Dec-2010 Operator Matt Noble	Sales Order #: Comp Man Paul Jenkins,Paul Leatham

OptiCem v6.4.6
04-Dec-10 15:16

3.4 30in Conductor Lab Slurry Report

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON **CEMENT SLURRY LABORATORY REPORT**

Customer Information

Customer	:	ADA	Date	:	26-Nov-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112332 / 1
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	30" Conductor Casing	Lab	:	Sale

Well Information

BHST	:	25	°C
BHCT	:	25	°C
Measured Depth	:	141	m
Total Vertical depth	:	141	m

HalCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
La Farge Class G	94.00	lbs			25/11/10	Rig	SC00059
Calcium Chloride	1.000	BWOC	1.00	BWOC			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Seawater	5.18	gal/sk					

Total Mixing Fluid	:	5.18	gal/sk
Slurry Density	:	15.8	lb/gal
Slurry Yield	:	1.18	ft^3/sk

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
27	1:47	2:09	2:24

Pumping time at 25 °C & 455 psi is 2:24 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Notes:

Lafarge G class ex Kan Tan IV 25/11/2010 (SC00059), Sea water ex Kan Tan IV date 25/11/2010 (SW00042)
Actual well condition might varies.

Lab Technician: Dave Collins
Approved: Joon Yeoh

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3.5 1 3-3/8" Intermediate Casing

JOB PARAMETERS

Casing measured depth:	1,100m BHST	temperature:	65°C
True vertical depth:	1,100m	BHCT temperature:	48°C
Depth to top lead:	500m	Drilling mud type:	Sea water & Sweeps
Depth to top tail:	950m	Drilling mud density:	8.60ppg

WELLBORE

Casing/Tubing

0-82m	5 1/2in 19.5ppf Tubing
82-1,100m	13 3/8in 68ppf Casing (K55 BTC)

Annulus

0-82m 3	6in open hole
82-120m	30in casing (27in ID)
120-132m	30in casing (28in ID)
132-140m	20in 94ppf casing (19.124in ID)
140-1,100m	17.5in open hole (25% excess)

SPACERS

Spacer - 70.0bbl Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	(138m OH annular fill / 18min contact time) Estimated Pv: 1cP

Contact times are based on the displacement rate.

LEAD CEMENT

Composition Properties

Adelaide Brighton Class G		Surface density:	12.50 ppg
Econolite Liquid	15.00 gal/10bblMF	Surface yield:	2.20 ft³/sk
SCR-100L	4.00 gal/10bblMF	Total mixing fluid:	12.89 gal/sk
Seawater	12.30 gal/sk	Thickening time (70 Bc):	6:00
NF-6 0	.25 gal/10bblMF		

TAIL CEMENT

Composition Properties

Adelaide Brighton Class G		Surface density:	15.80 ppg
SCR-100L	5.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
Freshwater	5.05 gal/sk	Total mixing fluid:	5.11 gal/sk
NF-6	0.25 gal/10bblMF	Thickening time (70 Bc):	5:00

VOLUME CALCULATIONS

Lead Cement

13 3/8in Casing / 17.5in hole volume	450 m x 0.4059 bbl/m	182.7 bbl
13 3/8in Casing / 17.5in hole excess	0.25 x 182.7 bbl	45.7 bbl

Total lead slurry volume =228.3 bbl

Total Volume Pumped =228 bbl

Quantity of lead cement	228.3 bbl x 5.6146 / 2.20 ft³/sk	583 sacks
Quantity of lead mix fluid	583 sacks x 12.89 gal/sk	178.9 bbl

Tail Cement

13 3/8in Casing / 17.5in hole volume	150 m x 0.4059 bbl/m	60.9 bbl
13 3/8in Casing / 17.5in hole excess	0.25 x 60.9 bbl	15.2 bbl
Shoe track volume	24 m x 0.4912 bbl/m	11.8 bbl

Total tail slurry volume =87.9 bbl

Total Volume Pumped = 84.0 bbl

Quantity of tail cement	87.9 bbl x 5.6146 / 1.16 ft³/sk	425 sks
Quantity of tail mix fluid	425 sks x 5.11 gal/sk	51.7 bbl

Displacement

5 1/2in Tubing volume	82 m x 0.0763 bbl/m	6.3 bbl
13 3/8in Casing volume	994 m x 0.4912 bbl/m	488.3 bbl

Total displacement volume =494.5 bbl

Total Volume Pumped = 496.3 bbl

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x Casing volume:	1,012.6	8.0	127
Pump spacers:	70.0	8.0	9
Release ball/bottom plug:	N/A	N/A	5
Mix & pump lead cement:	228.3	5.0	46
Mix & pump tail cement:	87.9	5.0	18
Release dart/top plug:	N/A	N/A	5
Pump displacement:	494.5	4.0	124

Total job time (including circulation):	***364 min***	***6hr 04min***
Minimum lead cement thickening time (with 2hr safety factor):	***313 min***	***5hr 13min***
Minimum tail cement thickening time (with 2hr safety factor):	***267 min***	***4hr 27min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)		
Spacer - Freshwater (Including 10.0 bbl pit loss)		Actual Used
Freshwater 80	bbl	
Lead Cement		
Adelaide Brighton Class G	25 MT*(586 ft³)*	*25.6MT*
Econolite Liquid	268 gals	*279 gals*
SCR-100L 7	2 gals	*56 gals*
Seawater 1	70.8 bbl	
NF-6 5	gals	*5 gals*
Tail Cement		
Adelaide Brighton Class G	18 MT*(422 ft³)*	*17.5MT*
SCR-100L 2	6 gals	*25 gals*
Freshwater 5	1.1 bbl	
NF-6 2	gals	1.5 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.6 13 3/8" Job Log

PERSONELL

PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE	hrs
00245364	Matt Noble	12	# N/A	Richard Doherty	4	# N/A	Gavin Hick	12		

EQUIPMENT

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK SUPPLY / TANKS	HOURS
10233437	HCS-ADV-25D CAT3406 ZONE II - RIG175	3			

FLOAT EQUIPMENT AND CASING EQUIPMENT

SAP#	FLOAT EQUIPMENT	QTY	SAP#	PLUGS	QTY
	13 3/8" FLOAT COLLAR NR	1	# N/A	13 3/8 Top and Bottom SSR	1
	13 3/8" FLOAT SHOE	1			
SAP#	**CASING ATTACHMENTS**	**QTY**	**SAP#**	**OTHER**	**QTY**
# N/A	13 3/8 x 17 1/2 Bow Spring Centralisers	7			

WELL PROFILE

NEW CASING	OPEN HOLE + EXCESS OR CALIPER DATA	PREVIOUS CASINGS
Non Tapered Casing , Conventional, 6 m shoe track		
13.375in 68ppf K-55 Buttress : 61m to 1102.84m MD, m TVD	17.5in, 25 percent excess, 61m to 1112m	

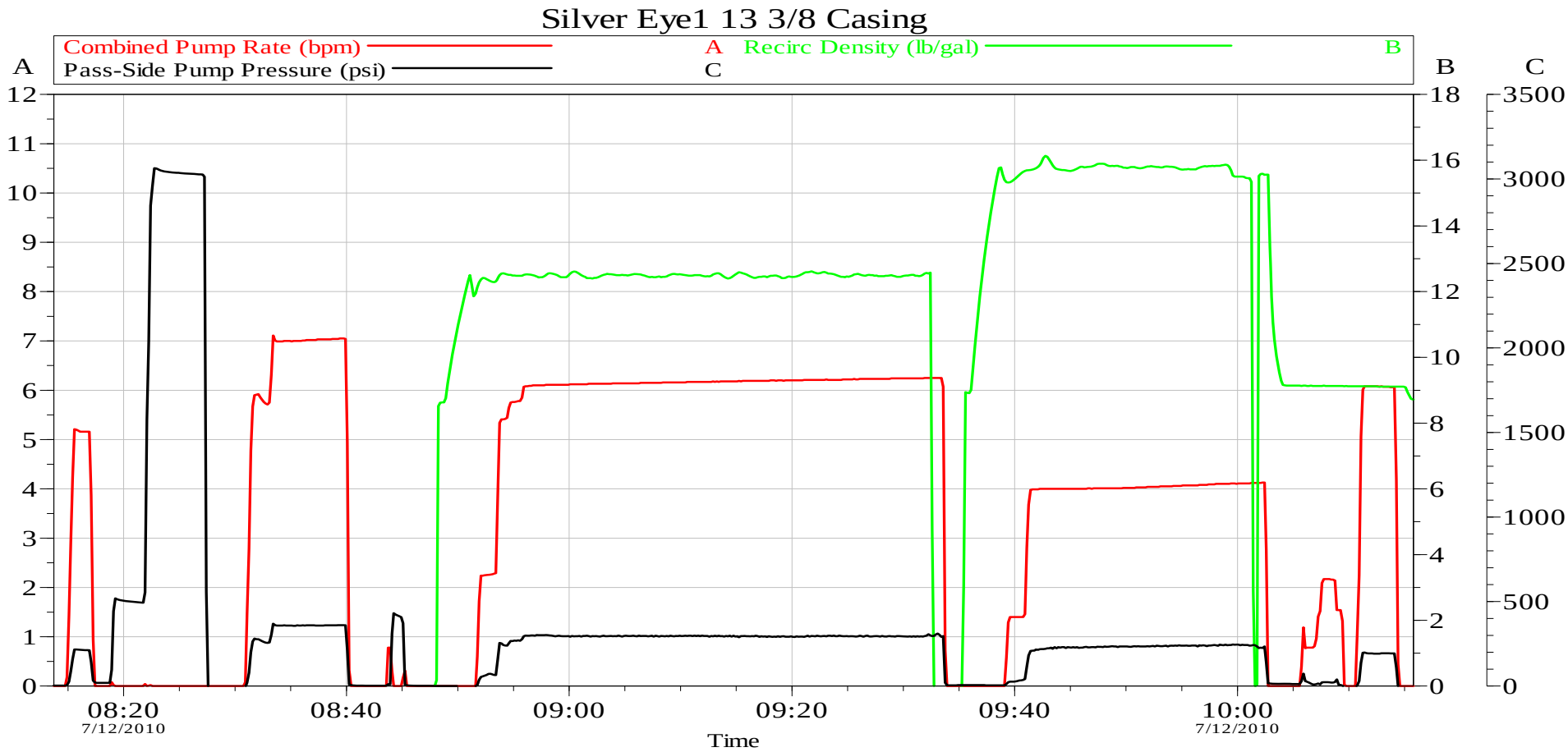
CEMENT DESIGNS

Lead				Tail				0			
DENSITY	12.5ppg	WATER	13.03gal/sk	DENSITY	15.8ppg	WATER	4.89gal/sk	DENSITY	0.0ppg	WATER	0.00gal/sk
YIELD	2.21cuft/ft	MIX FLUID	13.03gal/sk	YIELD	1.16cuft/ft	MIX FLUID	5.13gal/sk	YIELD	0.00cuft/ft	MIX FLUID	0.00gal/sk
WATER SOURCE	Seawater			WATER SOURCE	Drillwater			WATER SOURCE			
CEMENT TYPE	ABC Class 'G' at 94lb/sk			CEMENT TYPE	ABC Class 'G' at 94lb/sk			CEMENT TYPE	at lb/sk		
Total Cement Used	600sks			Total Cement Used	410sks			Total Cement Used	MT		
Estimated TOC	500m			Estimated TOC	950m			Estimated TOC	m		

Additive	Concentration	Total Used	Additive	Concentration	Total Used	Additive	Concentration	Total Used
Econolite Liquid	15 gal/10bbl	1290lbgals	SCR-100L	5 gal/10bbl	25gals			
SCR-100L	3 gal/10bbl	5gals	NF-6	0.25 gal/10bbl	1.5gals			
NF-6	0.25 gal/10bbl	5gals						

DAY-MTH-YR	HRS:MIN	BBLS	HIGH	LOW	BPM	REMARKS/DETAILS
7/12/2010	7:45					Jsa
	8:12	10		220	5	Pump Spacer
	8:15	0.2	3000	300	0.3	Line Test
	8:28	40		350	7	Pump Spacer
	8:34	20		350	7	Pump Spacer with Mica
	8:38	0.4		400	4.5	Drop Ball To Release Bottom Plug
	8:46	228		250	6	Mix And Pump 12.5ppg Lead Slurry
	9:38	84		200	4	Mix And Pump 15.8ppg Tail Slurry
	10:02					Pump Dart to Realease Top Plug
	10:04	20			6	Pump Spacer
	10:12	476.3		300	7	Hand Over to Rig to Displace (Bumped Plug)
	11:17	0.1		600	0.5	Equilise Pressure to Rig Floor
	11:20	3.5	2500	600	1	Test Casing
	11:40	5	2500	0		Bleed Off (Floats Held)

3.7 Silvereye #1 13 3/8" Casing Job Plot



Customer: Origin Well Description: Siver Eye 1	Job Date: 07-Dec-2010 Operator Matt Noble	Sales Order #: Comp Man Paul Jenkins

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09-Dec-10 11:38

3.8 13 3/8in Casing Lead Lab Report – Pilot Test

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON **CEMENT SLURRY LABORATORY REPORT**

Customer Information

Customer	:	ADA	Date	:	01-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112812 / 7
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	13 3/8 casing	Lab	:	Sale

Well Information

BHST	:	65	°C
BHCT	:	48	°C
Measured Depth	:	1100	m
Total Vertical depth	:	1100	m

EconoCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs					
Econolite Liquid	0.465	gal/sk	15.00	gal/10bbl			
SCR-100L	0.093	gal/sk	3.00	gal/10bbl			
NF-6	0.008	gal/sk	0.25	gal/10bbl			
Seawater	12.46	gal/sk					

Total Mixing Fluid	:	13.03	gal/sk
Slurry Density	:	12.5	lb/gal
Slurry Yield	:	2.21	ft^3/sk

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
2	4:48	5:19	5:38

Pumping time at 48 °C & 455 psi is 5:38 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Free Fluid 3.6 % Vertical at 27 °C

Slurry Rheology

Fann Readings (RPM)

	300	200	100	6	3	PV (cP)	YP ($lb_f/100ft^2$)
Mix Temp	12	10	7	5	5	7.5	5
Raised Temp 48 °C	10	8	6	4	3	6	4

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	12 hours	24 hours
	59 °C	3000 psi	5:25	303 psi	443 psi

Notes:

ABC G class ex bbmt 17/11/2010 (SC00057), Sea water ex bbmt 11/11/2010 (SW00034)

Lab Technician: David Collins
Approved: Joon Yeoh

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3.9 13 3/8in Casing Lead Slurry Lab Report – Confirmation Test

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON

CEMENT SLURRY LABORATORY REPORT

Customer Information

Customer	:	ADA	Date	:	06-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112812 / 7
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	13 3/8 casing	Lab	:	Sale

Well Information

BHST	:	65	°C
BHCT	:	48	°C
Measured Depth	:	1100	m
Total Vertical depth	:	1100	m

EconoCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs			5/12/10	From Rig	SC00062
Econolite Liquid	0.465	gal/sk	15.00	gal/10bbl			
SCR-100L	0.093	gal/sk	3.00	gal/10bbl			
NF-6	0.008	gal/sk	0.25	gal/10bbl			
Seawater	12.46	gal/sk					
Total Mixing Fluid :	13.03	gal/sk					
Slurry Density :	12.5	lb/gal					
Slurry Yield :	2.21	ft^3/sk					

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
	3:58	4:11	4:31

Pumping time at 48 °C & 455 psi is 4:31 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Notes:

ABC G class cement ex KAN TAN IV 05/12/2010 (SC00062), Sea water ex KAN TAN IV 05/12/2010 (SW00043)

Lab Technician: David Collins
Approved: Joon Yeoh

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3.10 13 3/8in Casing Tail Slurry Report – Pilot Test

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON **CEMENT SLURRY LABORATORY REPORT**

Customer Information

Customer	:	ADA	Date	:	26-Nov-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112813/2
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	13 3/8 casing	Lab	:	Sale

Well Information

BHST	:	65	°C
BHCT	:	48	°C
Measured Depth	:	1100	m
Total Vertical depth	:	1100	m

HalCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs					
SCR-100L	0.061	gal/sk	5.00	gal/10bbl			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Freshwater	5.06	gal/sk					

Total Mixing Fluid	:	5.13	gal/sk
Slurry Density	:	15.8	lb/gal
Slurry Yield	:	1.16	ft^3/sk

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
13	4:41	4:51	5:02

Pumping time at 48 °C & 455 psi is 5:02 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Free Fluid 1.4 % Vertical at 27 °C

Slurry Rheology

	Fann Readings (RPM) 300	200	100	6	3	PV (cP)	YP ($lb_f/100ft^2$)
Mix Temp	111	94	76	32	23	52.5	59
Raised Temp 48 °C	102	93	77	31	22	37.5	65

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	500psi	24 hours
	65 °C	3000 psi	5:36	6:39	3063 psi

Notes:

ABC G class ex bbmt 17/11/2010 (SC00057), Sale tap water 24/11/2010 (SW00039

Lab Technician: David Collins
Approved: Joon Yeoh

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3.11 13 3/8in Casing Tail Slurry Lab Report – Confirmation Test

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON **CEMENT SLURRY LABORATORY REPORT**

Customer Information

Customer	:	ADA	Date	:	06-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112813/2
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	13 3/8 casing	Lab	:	Sale

Well Information

BHST	:	65	°C
BHCT	:	48	°C
Measured Depth	:	1100	m
Total Vertical depth	:	1100	m

HalCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs			5/12/10	From Rig	SC00062
SCR-100L	0.061	gal/sk	5.00	gal/10bbl			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Freshwater	5.06	gal/sk					
Total Mixing Fluid :	5.13	gal/sk					
Slurry Density :	15.8	lb/gal					
Slurry Yield :	1.16	ft^3/sk					

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
7	4:16	4:39	4:49

Pumping time at 48 °C & 455 psi is 4:49 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Notes:

ABC G class cement ex KAN TAN IV 05/12/2010 (SC00062), Drill water ex KAN TAN IV 05/12/2010 (SW00045)

Lab Technician: David Collins
Approved: Joon Yeoh

The above pilot report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

3.12 Plug #1a Details - 12.25in hole

JOB PARAMETERS

Plug bottom MD:	2,391m	BHST temperature:	130°C
Plug bottom TVD:	2,343m	BHCT temperature:	106°C
Plug top MD:	2,241m	Drilling mud type:	KCL Polymer
Plug length:	150m	Drilling mud density:	9.80ppg
Plug length with DP in:	155m		

WELLBORE

Workstring

0-2,209m	5 1/2in 19.5ppf tubing
2,209-2,391m	3 1/2in 15.5ppf tubing

Annulus

0-1,100m	13 3/8in 68ppf casing (12.415in ID)
1,100-2,391m	12.25in open hole (15% excess)

SPACERS

Spacer #1 - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	20.0bbl ahead and 3.4bbl behind to balance (34m annular fill / 3min contact time)

Spacer #2 - Tuned Spacer E+ at 12.00ppg

Freshwater	35.80 gal/bbl	40.0bbl ahead and 5bbl behind to balance (68m annular fill / 7min contact time)
Tuned Spacer E+	15.00 lb/bbl	
Barite 190.1	4 lb/bbl	

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Properties

Adelaide Brighton Class G		Surface density:	15.80 ppg
Halad -413L	30.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
SCR-100L	6.00 gal/10bblMF	Total mixing fluid:	5.16 gal/sk
Freshwater 4	.72 gal/sk		
NF-6 0.1	25 gal/10bblMF		

VOLUME CALCULATIONS

Cement

12.25in hole volume	150 m x 0.4782 bbl/m	71.7 bbl
12.25in hole excess	0.15 x 71.7 bbl	10.8 bbl
	Slurry volume =82.5 bbl	
	Total Volume Pumped =88.0 bbl	
Quantity of cement	82.5 bbl x 5.6146 / 1.16 ft³/sk	399 sacks
Quantity of mix fluid	399 sacks x 5.16 gal/sk	49.0 bbl

Displacement

5 1/2in tubing volume	2,107 m x 0.0763 bbl/m	160.7 bbl
	Total displacement volume =160.7 bbl	
	Total Volume Pumped =116.0 bbl	

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	2,060.6	6.0	343
Pump spacers ahead:	60.0	6.0	10
Mix & pump cement:	82.5	5.0	17
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	8.3	6.0	1
Pump displacement:	160.7	6.0	27
Pull workstring 152 m above TOC:	302m	9 .1m/min	33
Circulate workstring clean:	149.0	6.0	25

Total job time (including circulation):	***491 min***	***8hr 11min***
Minimum cement thickening time (with 2hr safety factor):	***228 min***	***3hr 48min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

		Actual Total
Spacer #1 - Freshwater		
Freshwater 2	3.4 bbl	
Spacer #2 - Tuned Spacer E+		
Freshwater 3	8.3 bbl	
Tuned Spacer E+	675 lb	
Barite 8	,552 lb	
Cement		
Adelaide Brighton Class G	17 MT(399 ft³)	*16.8 MT*
Halad -413L	147 gals	*144 gals*
SCR-100L 2	9 gals	*19.2 gals*
Freshwater 4	4.8 bbl	
NF-6 1	gals	*3.0 gals*

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.13 Plug #1b Details - 12.25in hole

JOB PARAMETERS

Plug bottom MD:	2,241m	BHST temperature:	122°C
Plug bottom TVD:	2,216m	BHCT temperature:	99°C
Plug top MD:	2,091m	Drilling mud type:	KCL Polymer
Plug length:	150m	Drilling mud density:	9.80ppg
Plug length with DP in:	155m		

WELLBORE

Workstring

0-2,059m	5 1/2in 19.5ppf tubing
2,059-2,241m	3 1/2in 15.5ppf tubing

Annulus

0-1,100m	13 3/8in 68ppf casing (12.415in ID)
1,100-2,241m	12.25in open hole (15% excess)

SPACERS

Spacer #1 - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	20.0bbl ahead and 3.4bbl behind to balance (34m annular fill / 3min contact time)

Spacer #2 - Tuned Spacer E+ at 12.00ppg

Freshwater	35.80 gal/bbl	40.0bbl ahead and 5bbl behind to balance (68m annular fill / 7min contact time)
Tuned Spacer E+	15.00 lb/bbl	
Barite 1	90.14 lb/bbl	

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Propertie		**s**	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Halad -413L	30.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
SCR-100L	6.00 gal/10bblMF	Total mixing fluid:	5.16 gal/sk
Freshwater 4	.72 gal/sk		
NF-6 0	.125 gal/10bblMF		

VOLUME CALCULATIONS

Cement

12.25in hole volume	150 m x 0.4782 bbl/m	71.7 bbl
12.25in hole excess	0.15 x 71.7 bbl	10.8 bbl

Slurry volume =82.5 bbl

Total Volume Pumped = 89.0 bbl

Quantity of cement	82.5 bbl x 5.6146 / 1.16 ft³/sk	399 sacks
Quantity of mix fluid	399 sacks x 5.16 gal/sk	49.0 bbl

Displacement

5 1/2in tubing volume	1,957 m x 0.0763 bbl/m	149.3 bbl

Total displacement volume =149.3 bbl

Total Volume Pumped = 103.5 bbl

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	1,924.5	6.0	321
Pump spacers ahead:	60.0	6.0	10
Mix & pump cement:	82.5	5.0	17
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	8.3	6.0	1
Pump displacement:	149.3	6.0	25
Pull workstring 152 m above TOC:	302m	9.1m/min	33
Circulate workstring clean:	138.0	6.0	23

Total job time (including circulation):	***465 min***	***7hr 45min***
Minimum cement thickening time (with 2hr safety factor):	***224 min***	***3hr 44min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

		Actual Total
Spacer #1 - Freshwater		
Freshwater 2	3.4 bbl	
Spacer #2 - Tuned Spacer E+		
Freshwater 3	8.3 bbl	
Tuned Spacer E+	675 lb	
Barite 8,552	lb	
Cement		
Adelaide Brighton Class G	17 MT(399 ft³)	17 MT
Halad -413L	147 gals	147 gals
SCR-100L 29	gals	19.6 gals
Freshwater 4	4.8 bbl	
NF-6 1	gals	3 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.14 Plug #1c Details - 12.25in hole

JOB PARAMETERS

Plug bottom MD:	2,091m	BHST temperature:	114°C
Plug bottom TVD:	2,067m	BHCT temperature:	93°C
Plug top MD:	1,941m	Drilling mud type:	KCL Polymer
Plug length:	150m	Drilling mud density:	9.80ppg
Plug length with DP in:	155m		

WELLBORE

Workstring

0-1,909m	5 1/2in 19.5ppf tubing
1,909-2,091m	3 1/2in 15.5ppf tubing

Annulus

0-1,100m	13 3/8in 68ppf casing (12.415in ID)
1,100-2,091m	12.25in open hole (15% excess)

SPACERS

Spacer #1 - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	20.0bbl ahead and 3.4bbl behind to balance (34m annular fill / 3min contact time)

Spacer #2 - Tuned Spacer E+ at 12.00ppg

Freshwater	35.80 gal/bbl	40.0bbl ahead and 5bbl behind to balance (68m annular fill / 7min contact time)
Tuned Spacer E+	15.00 lb/bbl	
Barite 190.14	lb/bbl	

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Propertie		**s**	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Halad -413L	30.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
SCR-100L	6.00 gal/10bblMF	Total mixing fluid:	5.16 gal/sk
Freshwater 4.72	gal/sk		
NF-6 0.125	gal/10bblMF		

VOLUME CALCULATIONS

Cement

12.25in hole volume	150 m x 0.4782 bbl/m	71.7 bbl
12.25in hole excess	0.15 x 71.7 bbl	10.8 bbl
	Slurry volume =82.5 bbl	
	Total Volume Pumped =65.0 bbl	
Quantity of cement	82.5 bbl x 5.6146 / 1.16 ft³/sk	399 sacks
Quantity of mix fluid	399 sacks x 5.16 gal/sk	49.0 bbl

Displacement

5 1/2in tubing volume	1,807 m x 0.0763 bbl/m	137.8 bbl
	Total displacement volume =137.8 bbl	
	Total Volume Pumped = 100.0 bbl	

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	1,788.4	6.0	298
Pump spacers ahead:	60.0	6.0	10
Mix & pump cement:	82.5	5.0	17
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	8.3	6.0	1
Pump displacement:	137.8	6.0	23
Pull workstring 152 m above TOC:	302m	9.1m/min	33
Circulate workstring clean:	126.0	6.0	21

Total job time (including circulation):	***438 min***	***7hr 18min***
Minimum cement thickening time (with 2hr safety factor):	***220 min***	***3hr 40min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

Spacer #1 - Freshwater		
Freshwater 2	3.4 bbl	Actual Total
Spacer #2 - Tuned Spacer E+		
Freshwater 3	8.3 bbl	
Tuned Spacer E+	675 lb	
Barite 8,552	lb	
Cement		
Adelaide Brighton Class G	17 MT(399 ft³)	11.3 MT
Halad -413L	147 gals	99 gals
SCR-100L 29	gals	13.2 gals
Freshwater 4	4.8 bbl	
NF-6 1	gals	2 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.15 Contingent Plug Details - 12.25in hole (Did not Pump)

JOB PARAMETERS

Plug bottom MD:	1,554m	BHST temperature:	90°C
Plug bottom TVD:	1,541m	BHCT temperature:	72°C
Plug top MD:	1,404m	Drilling mud type:	KCL Polymer
Plug length:	150m	Drilling mud density:	9.80ppg
Plug length with DP in:	155m		

WELLBORE

Workstring

0-1,372m	5 1/2in 19.5ppf tubing
1,372-1,554m	3 1/2in 15.5ppf tubing

Annulus

0-1,100m	13 3/8in 68ppf casing (12.415in ID)
1,100-1,554m	12.25in open hole (15% excess)

SPACERS

Spacer #1 - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	20.0bbl ahead and 3.4bbl behind to balance (34m annular fill / 3min contact time)

Spacer #2 - Tuned Spacer E+ at 12.00ppg

Freshwater	35.80 gal/bbl	40.0bbl ahead and 5bbl behind to balance (68m annular fill / 7min contact time)
Tuned Spacer E+	15.00 lb/bbl	
Barite 190.14	lb/bbl	

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Propertie		**s**	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Halad -413L	30.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
SCR-100L	5.00 gal/10bblMF	Total mixing fluid:	5.16 gal/sk
Freshwater 4.73	gal/sk		
NF-6 0.125	gal/10bblMF		

VOLUME CALCULATIONS

Cement

12.25in hole volume	150 m x 0.4782 bbl/m	71.7 bbl
12.25in hole excess	0.15 x 71.7 bbl	10.8 bbl
	Slurry volume =	***82.5 bbl***
Quantity of cement	82.5 bbl x 5.6146 / 1.16 ft³/sk	399 sacks
Quantity of mix fluid	399 sacks x 5.16 gal/sk	49.0 bbl

Displacement

5 1/2in tubing volume	1,270 m x 0.0763 bbl/m	96.9 bbl
	Total displacement volume =	***96.9 bbl***

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	1,301.3	6.0	217
Pump spacers ahead:	60.0	6.0	10
Mix & pump cement:	82.5	5.0	17
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	8.3	6.0	1
Pump displacement:	96.9	6.0	16
Pull workstring 152 m above TOC:	302m	9.1m/min	33
Circulate workstring clean:	86.0	6.0	14

Total job time (including circulation):	***343 min***	***5hr 43min***
Minimum cement thickening time (with 2hr safety factor):	***206 min***	***3hr 26min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

Spacer #1 - Freshwater

Freshwater 2	3.4 bbl

Spacer #2 - Tuned Spacer E+

Freshwater 3	8.3 bbl
Tuned Spacer E+	675 lb
Barite 8,552	lb

Cement

Adelaide Brighton Class G	17 MT(399 ft^3)
Halad -413L	147 gals
SCR-100L 25	gals
Freshwater 4	4.9 bbl
NF-6 1	gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.16 Shoe Plug (Plug 2) Details - 13 3/8in casing x 12.25in hole

JOB PARAMETERS

Plug bottom MD:	1,200m	BHST temperature:	71°C
Plug bottom TVD:	1,200m	BHCT temperature:	57°C
Plug top MD:	1,050m	Drilling mud type:	KCL Polymer
Plug length:	150m	Drilling mud density:	9.80ppg
Plug length with DP in:	155m		

WELLBORE

Workstring

0-1,018m	5 1/2in 19.5ppf tubing
1,018-1,200m	3 1/2in 15.5ppf tubing

Annulus

0-1,100m	13 3/8in 68ppf casing (12.415in ID)
1,100-1,200m	12.25in open hole (15% excess)

SPACERS

Spacer - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	40.0bbl ahead and 6bbl behind to balance (68m annular fill / 7min contact time)

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Propertie		**s**	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Halad -413L	30.00 gal/10bblMF	Surface yield:	1.16 ft³/sk
SCR-100L	4.00 gal/10bblMF	Total mixing fluid:	5.16 gal/sk
Freshwater 4.74	gal/sk		
NF-6 0.125	gal/10bblMF		

VOLUME CALCULATIONS

Cement

13 3/8in casing volume	50 m x 0.4912 bbl/m	24.6 bbl
12.25in hole volume	100 m x 0.4782 bbl/m	47.8 bbl
12.25in hole excess	0.15 x 47.8 bbl	7.2 bbl

Slurry volume =79.6 bbl

Total Volume Pumped Plug 2 = 90 bbl

Total Volume Pumped Plug 2b = 67 bbl

Quantity of cement	79.6 bbl x 5.6146 / 1.16 ft³/sk	385 sacks
Quantity of mix fluid	385 sacks x 5.16 gal/sk	47.3 bbl

Displacement

5 1/2in tubing volume	947 m x 0.0763 bbl/m	72.2 bbl

Total displacement volume =72.2 bbl

Total Volume Pumped = 49.4 bbl

Total Volume Pumped = 48 bbl

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	980.2	6.0	163
Pump spacers ahead:	40.0	6.0	7
Mix & pump cement:	79.6	5.0	16
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	6.0	6.0	1
Pump displacement:	72.2	6.0	12
Pull workstring 152 m above TOC:	302m	9.1m/min	33
Circulate workstring clean:	59.0	6.0	10

Total job time (including circulation):	***277 min***	***4hr 37min***
Minimum cement thickening time (with 2hr safety factor):	***197 min***	***3hr 17min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

Spacer - Freshwater

Freshwater 4	6 bbl	Actual Total	Actual Total

Cement

Adelaide Brighton Class G	16 MT(375 ft³)	15.7 MT	13.4 MT
Halad -413L	142 gals	147 gals	120 gals
SCR-100L 19	gals	19.6 gals	16 gals
Freshwater 4	3.4 bbl		
NF-6 1	gals	3 gals	2 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.17 Surface Plug Details - 13 3/8in casing

JOB PARAMETERS			
Plug bottom MD:	140m	BHST temperature:	12°C
Plug bottom TVD:	140m	BHCT temperature:	9°C
Plug top MD:	40m	Drilling mud type:	KCL Polymer
Plug length:	100m	Drilling mud density:	9.80ppg
Plug length with DP in:	104m		

WELLBORE

Workstring

0-140m	3 1/2in 15.5ppf tubing

Annulus

0-140m	13 3/8in 68ppf casing (12.415in ID)

SPACERS

Spacer - Freshwater at 8.34ppg

Freshwater	42.00 gal/bbl	40.0bbl ahead and 0.8bbl behind to balance (88m annular fill / 7min contact time)

Contact times are based on the displacement rate.

CEMENT SLURRY

Composition Properties

Adelaide Brighton Class G		Surface density:	15.80 ppg
Calcium Chloride 1%	1.00 %BWOC	Surface yield:	1.18 ft³/sk
Seawater	5.26 gal/sk	Total mixing fluid:	5.28 gal/sk
NF-6 0.	125 gal/10bblMF		

Note that %BWOC are based on a 94 lb sack

VOLUME CALCULATIONS

Cement

13 3/8in casing volume	100 m x 0.4912 bbl/m	49.1 bbl
	Slurry volume =49.1 bbl	
	Total Volume Pumped = 55.0 bbl	
Quantity of cement	49.1 bbl x 5.6146 / 1.18 ft³/sk	234 sacks
Quantity of mix fluid	234 sacks x 5.28 gal/sk	29.4 bbl

Displacement

Total displacement volume =0.0 bbl
Total Volume Pumped = 3.0 bbl

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 2 x bottoms up:	126.6	6.0	21
Pump spacers ahead:	40.0	6.0	7
Mix & pump cement:	49.1	5.0	10
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	0.8	6.0	0
Pump displacement:	0.0	6.0	0
Pull workstring 152 m above TOC:	252m	9.1m/min	28

Total job time (including circulation):	***101 min***	***1hr 41min***
Minimum cement thickening time (with 2hr safety factor):	***163 min***	***2hr 43min***

MINIMUM MATERIAL REQUIREMENTS (Double for loadout)

Spacer - Freshwater		Actual Total
Freshwater 4	0.8 bbl	
Cement		
Adelaide Brighton Class G	10 MT(235 ft³)	10.9 MT
Calcium Chloride 1%	218 lbs	240 lbs
Seawater 29	.3 bbl	
NF-6 1	gals	5 gals

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.

3.18 Silvereye #1 Plug 1a), 1b) &1c) Job Log

PERSONELL

PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE		hrs	PERSONNEL / EXPOSURE	hrs
00455519	Steven Gardner	12	# N/A	Daniel West	12	# N/A	Nic Petrovic	12		

EQUIPMENT

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK SUPPLY / TANKS	HOURS
# N/A	Advantage skid 25 bbl		# N/A	RIG BULK TANKS	

FLOAT EQUIPMENT AND CASING EQUIPMENT

SAP#	CASING ATTACHMENTS	QTY	SAP#	OTHER	QTY
			# N/A	7" FOAM WIPER BALL	2

WELL PROFILE

NEW CASING	OPEN HOLE + EXCESS OR CALIPER DATA	PREVIOUS CASINGS
Non Tapered Casing , SSR, m shoe track		
	17.5in, 15 percent excess, 1103m to 1112m	30in, 310ppf, 80m to 141m
	12.25in, 15 percent excess, 1112 to 2391	13.375in, 68ppf, 80m to 1103m

FOR PLUG AND LINER JOBS PLEASE INDICATE WORKSTRIN(5in 19.5ppf Drill Pipe with 184.3m of 2.875 in in ppf Stinger

CEMENT DESIGN

Plug 1a				Plug 1b				Plug 1c			
DENSITY	15.8ppg	WATER	4.75gal/sk	DENSITY	15.8ppg	WATER	4.75gal/sk	DENSITY	15.8ppg	WATER	4.75gal/sk
YIELD	1.16cuft/ft	MIX FLUID	5.17gal/sk	YIELD	1.16cuft/ft	MIX FLUID	5.17gal/sk	YIELD	1.16cuft/ft	MIX FLUID	5.17gal/sk
WATER SOURCE	Drillwater			WATER SOURCE	Drillwater			WATER SOURCE	Drillwater		
CEMENT TYPE	LaFarge Class G at 94lb/sk			CEMENT TYPE	LaFarge Class G at 94lb/sk			CEMENT TYPE	LaFarge Class G at 94lb/sk		
Total Cement Used	16.8MT			Total Cement Used	17MT			Total Cement Used	11.3MT		
Estimated TOC	2170m			Estimated TOC	2020m			Estimated TOC	1920m		
Additive	Concentration	Total Used		Additive	Concentration	Total Used		Additive	Concentration	Total Used	
SCR-100L	0.049 gal/sk	19.2gals		SCR-100L	0.049 gal/sk	19.6gals		SCR-100L	0.049 gal/sk	13.2gals	
Halad-413L	0.369 gal/sk	144gals		Halad-413L	0.369 gal/sk	147gals		Halad-413L	0.369 gal/sk	99gals	
NF6	0.003 gal/sk	3gals		NF-6	0.003 gal/sk	3gals		NF-6	0.003 gal/sk	2gals	

Plug 2				Plug 2b				Surface Plug			
DENSITY	15.8ppg	WATER	4.66gal/sk	DENSITY	15.8ppg	WATER	4.66gal/sk	DENSITY	15.8ppg	WATER	5.18gal/sk
YIELD	1.16cuft/ft	MIX FLUID	5.08gal/sk	YIELD	1.16cuft/ft	MIX FLUID	5.08gal/sk	YIELD	1.18cuft/ft	MIX FLUID	5.18gal/sk
WATER SOURCE	Drillwater			WATER SOURCE	Drillwater			WATER SOURCE	Seawater		
CEMENT TYPE	ABC Class 'G' at 94lb/sk			CEMENT TYPE	ABC Class 'G' at 94lb/sk			CEMENT TYPE	ABC Class 'G' at 94lb/sk		
Total Cement Used	15.7MT			Total Cement Used	13.4MT			Total Cement Used	10.9MT		
Estimated TOC	1000m			Estimated TOC	996m			Estimated TOC	100m		
Additive	Concentration	Total Used		Additive	Concentration	Total Used		Additive	Concentration	Total Used	
Halad-413L	0.363 gal/sk	147gals		Halad-413L	0.363 gal/sk	120gals		Calcium Chloride	1%BWOC	8sks	
SCR-100L	0.048 gal/sk	19.6gals		SCR-100L	0.048 gal/sk	16gals		NF-6	0.003 gal/sk	5gals	
NF-6	0.003 gal/sk	3gals		NF-6	0.003 gal/sk	2gals					

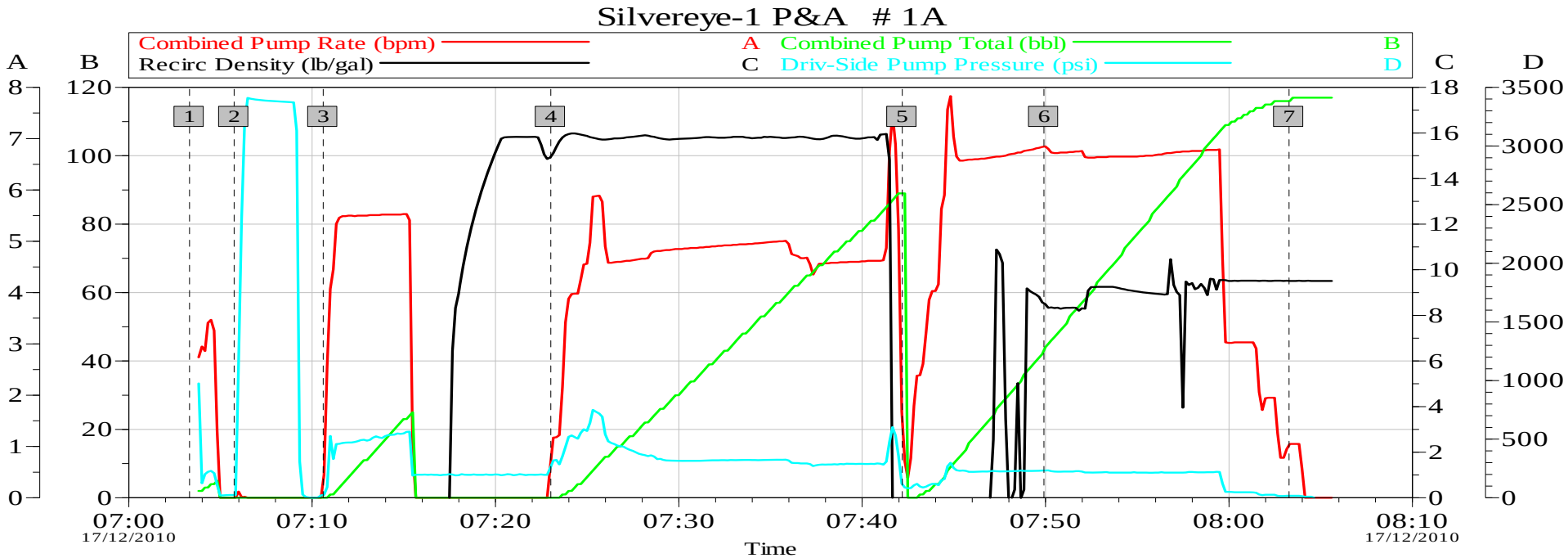
JOB LOGS

DATE DAY-MTH-YR	TIME HRS:MIN	VOLUME BBLS	PRESSURE (psi) HIGH	PRESSURE (psi) LOW	RATE BPM	JOB DESCRIPTION REMARKS/DETAILS
17/12/2010						
Plug 1a)	6:25					Hold Jsa
	7:03	5	700	350	3.5	Pump 5bbl water spacer ahead
	7:05	0.25	3200	3110	0.251	Test surface lines to 3000psi
	7:10	25	400	495	5.5	Pump 25bbl spacer ahead
	7:24	88	585	220	4.5	Mix & Pump 88bls of 15.8ppg Slurry
	7:42	3.4	110	95	2	Pump 3,4bbl spacer behind
	7:49	116	360	210	7	Displace with 116bbls of Mud (5bbl under displacement)
	8:03	0.5				Bleed off and check returns
Plug 1b)	10:11	5	230	180	4	Pump 5bbl spacer ahead
	10:14	0.25	3150	3020	0.251	Test surface lines to 3000psi
	10:19	25	515	480	6	Pump 25bbl spacer ahead
	10:37	89	680	240	5	Mix & Pump 89bbls of 15.8ppg Slurry
	10:48	3.5	95	80	3	Pump 3.5bbls of spacer behind
	10:58	103.5	250	180	6	Displace with 103.5bbls of Mud (5bbl under displacement)
	11:07					Bleed off and check for returns
Plug 1c)	13:10	5	200	180	3.5	Pump 5bbl spacer ahead
	13:12	0.25	3700	3620	0.251	Test surface lines to 3000psi
	13:16	25	600	510	6	Pump 25bbl spacer ahead
	13:32	65	600	250	5	Mix & Pump 65bbls of 15.8ppg Slurry
	13:41	1	80	70	1	Pump 1bbl spacer behind
	13:50	100	250	210	7	Displace with 100bbls of Mud (5bbl under displacement)
	13:58	0.5				Bleed off and check returns

3.19 Silvereye #1 Plug 2, 2b & Surface Plug Job Log

Plug 2	17:48	5	70	65	3.5	Pump 5bbl spacer ahead
	17:52	0.25	3050	3020	0.251	Test surface lines to 3000psi
	17:56	25	500	440	7	Pump 25bbl spacer ahead
	18:19	90	460	300	4.8	Mix & Pump 90bbls of 15.8ppg slurry
	18:29	2.6	65	60	2	Pump 2.6 bbls of spacer behind
	18:32	49.4	250	220	7	Displace with 49.4 bbls of Mud
	18:36	1				Bleed off and check for returns
						Plug 2 at shoe to be redone due to plug slumping below shoe. Possibl
						overgauge of rathole is the suspected cause.
18/12/2010						
Plug 2b)	20:43	5	220	200	4	Pump 5bb spacer ahead
	20:47	0.25	3100	3050	0.251	Test surface lines to 3000psi
	20:52	25	240	500	6	Pump 25bbl spacer ahead
	21:09	67	590	410	5	Mix & Pump 67bbls of 15.8pp Slurry
	21:18	6.5	180	160	3	Pump 6.5bbl spacer behind
	21:22	48	950	500	10	Displace with 48bbls of mud (3.5bbl under displacement)
	21:25	1				Bleed off and check for returns
19/12/2010						
Surface Plug	10:52	5	180	160	5	Pump 5bbl spacer ahead
	10:55	0.25	3050	3010	0.251	Test surface lines to 3000psi
	11:00	25	250	220	5.5	Pump 25bbl spacer ahead
	11:11	55	210	190	4.8	Mix & Pump55bbls of 15.8ppg Slurry
	11:21	3	85	60	2.5	Displace with 3 bbls of mud
	11:23	0.5				Bleed off and check for returns
END OF JOB LOGS						

3.20 Silvereye #1 P&A 1A Job Plot



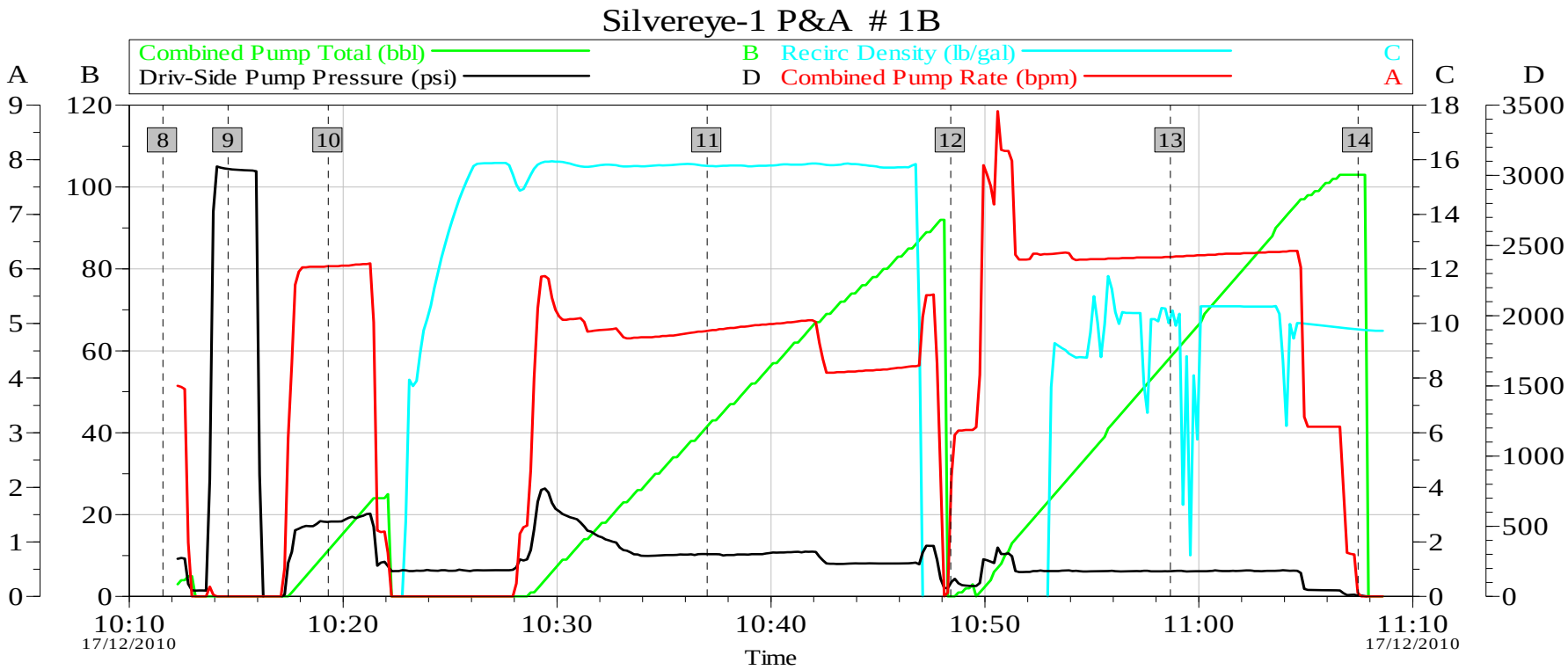
Global Event Log

1	Pump Spacer	07:03:19	2	Test Surface Lines	07:05:45	3	Pump Spacer	07:10:36
4	Mix & Pump 15.8ppg Slurry	07:23:01	5	Pump 3.4 bbls H20 behind	07:42:11	6	Displace 116 Bbls of mud	07:49:55
7	Bleed of to balance plug	08:03:17						

Customer: Origin/ADA Well Description: Exploration	Job Date: 19-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 17:00

3.21 Silvereye #1 P&A 1B Job Plot



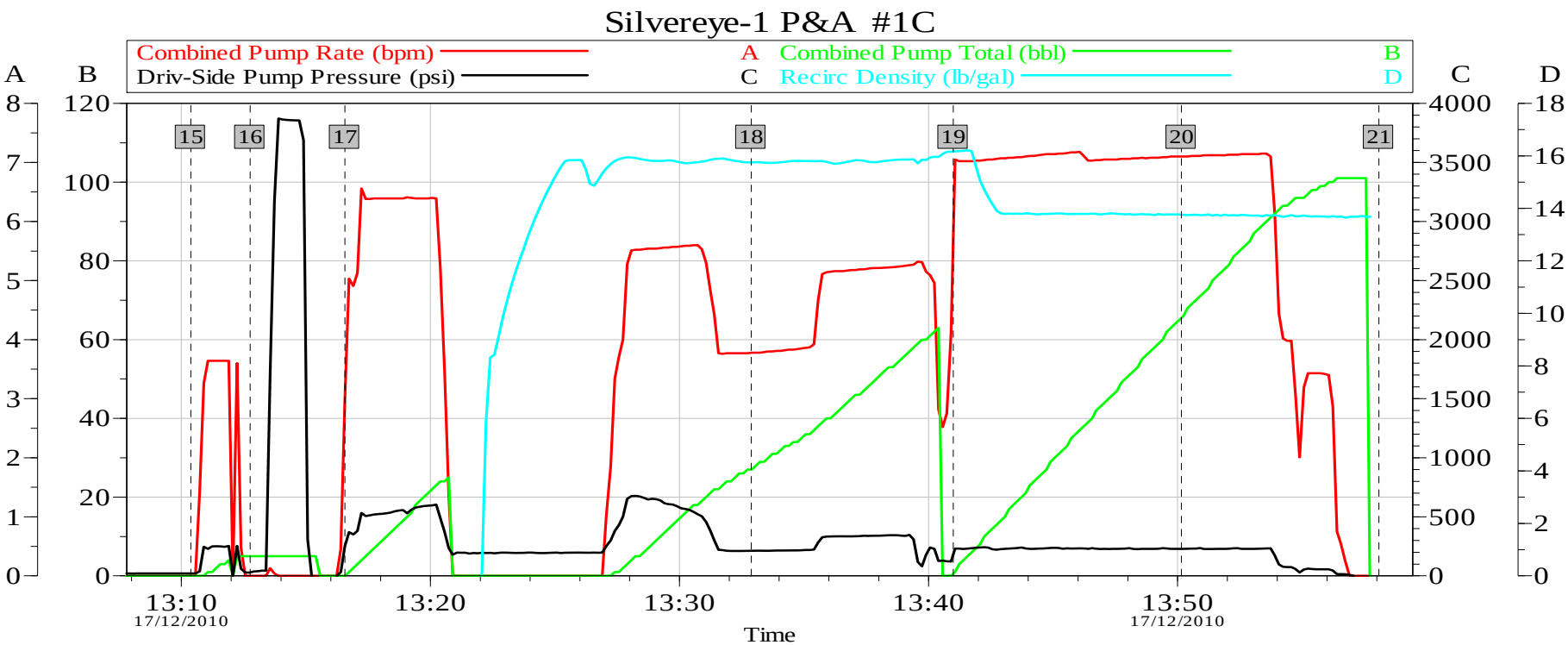
Global Event Log

8	Pump Spacer ahead	10:11:35	9	Test surface lines	10:14:38	10	Pump spacer ahead	10:19:19
11	Mix & Pump 15.8ppg Slurry	10:37:01	12	Pump 3.5bbls H20 Behind	10:48:24	13	Displace 103.5 bbls of Mud	10:58:40
14	Bleed off and check returns	11:07:27						

Customer: Origin/ADA Well Description: Exploration	Job Date: 17-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 17:07

3.22 Silvereye #1 P&A 1C Job Plot



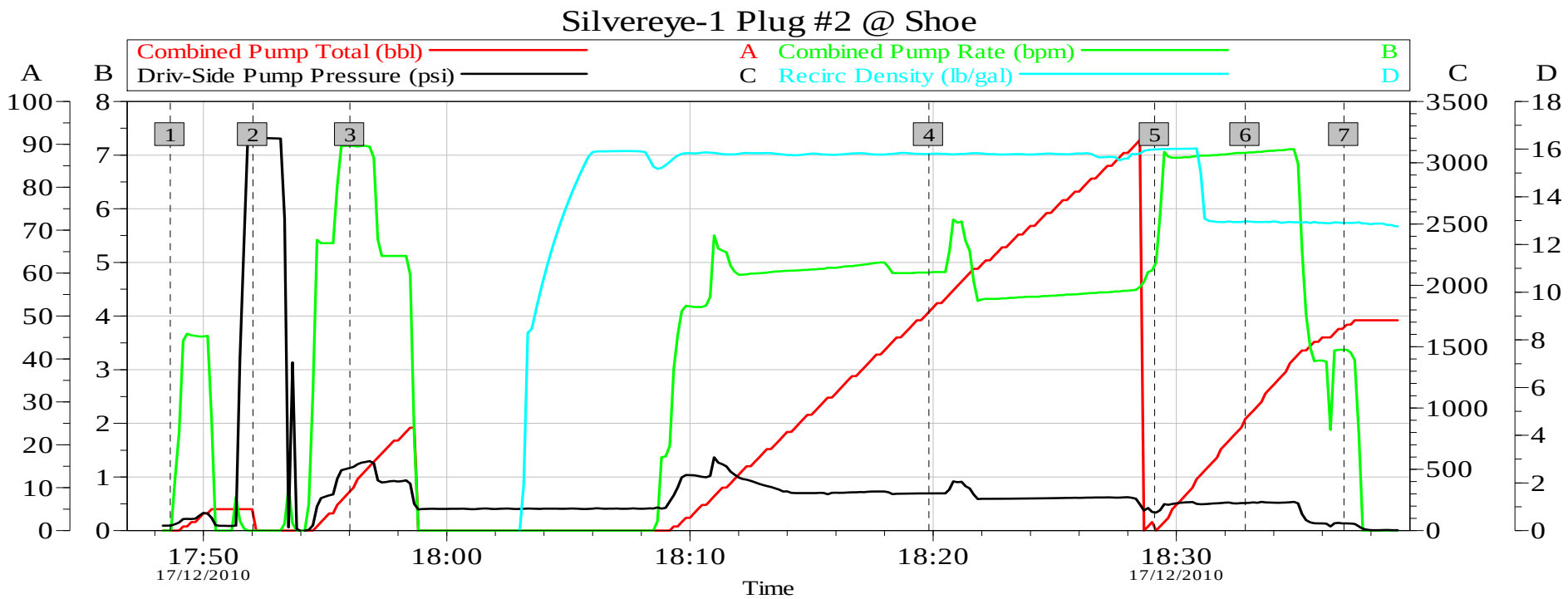
Global Event Log

15	Pump Spacer	13:10:23	16	Test Surface Lines	13:12:46	17	Pump Spacer	13:16:34
18	Mix & Pump 15.8ppg Slurry	13:32:53	19	Pump 1Bbl of H20 behind	13:41:00	20	Displace with 100 Bbls of mud	13:50:09
21	Bleed off check for returns	13:58:05						

Customer: Origin/ADA Well Description: Exploration	Job Date: 17-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 17:16

3.23 Silvereye #1 Plug 2 Job Plot



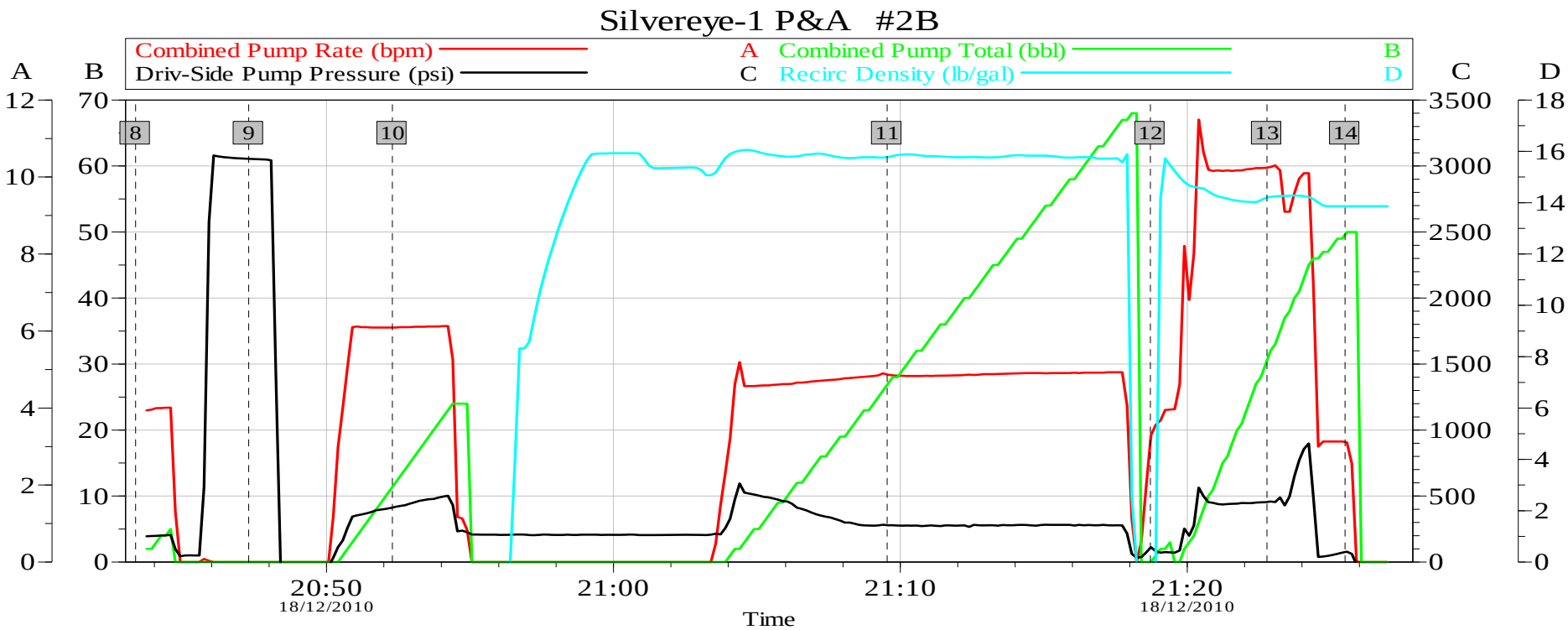
Global Event Log

1	Spacer ahead	17:48:38	2	Test surface lines	17:52:02
3	Spacer ahead	17:56:01	4	Mix & Pump 15.8ppg Slurry	18:19:49
5	2.6bbls behind	18:29:06	6	Displace with 49.4 Bbls of mud	18:32:50
7	Bleed off & check returns	18:36:53			

Customer: Origin/ADA Well Description: Exploration	Job Date: 18-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 16:24

3.24 Silvereye #1 P&A Plug 2B Job Plot



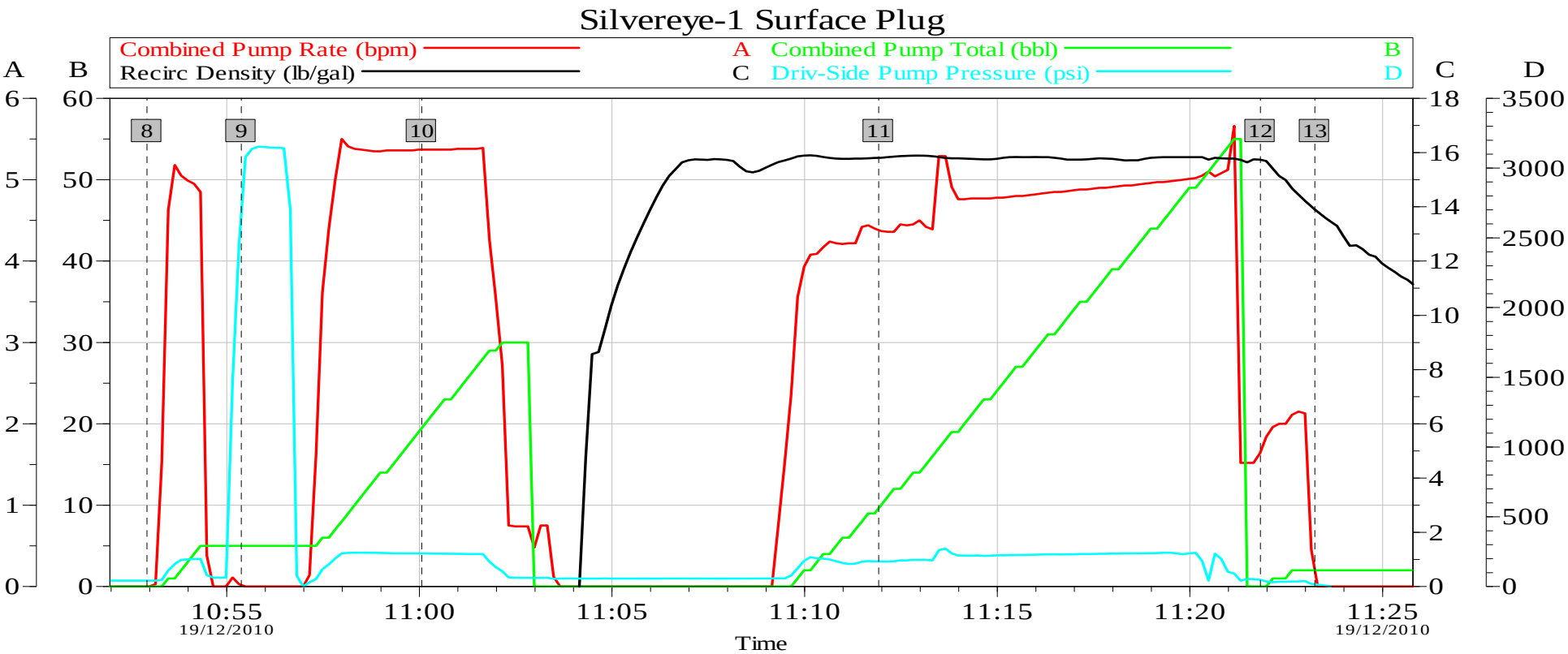
Global Event Log

8	Pump Spacer	20:43:21	9	Test Surface Lines	20:47:17	10	Pump Spacer	20:52:18
11	Mix & Pump 15.8ppg Slurry	21:09:32	12	Pump 6.5 Bbls behind	21:18:43	13	Displace with Mud	21:22:47
14	Bleed Off check returns	21:25:30						

Customer: Origin Well Description: Exploration	Job Date: 18Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 16:43

3.25 Silvereye #1 P&A Surface Plug Job Plot



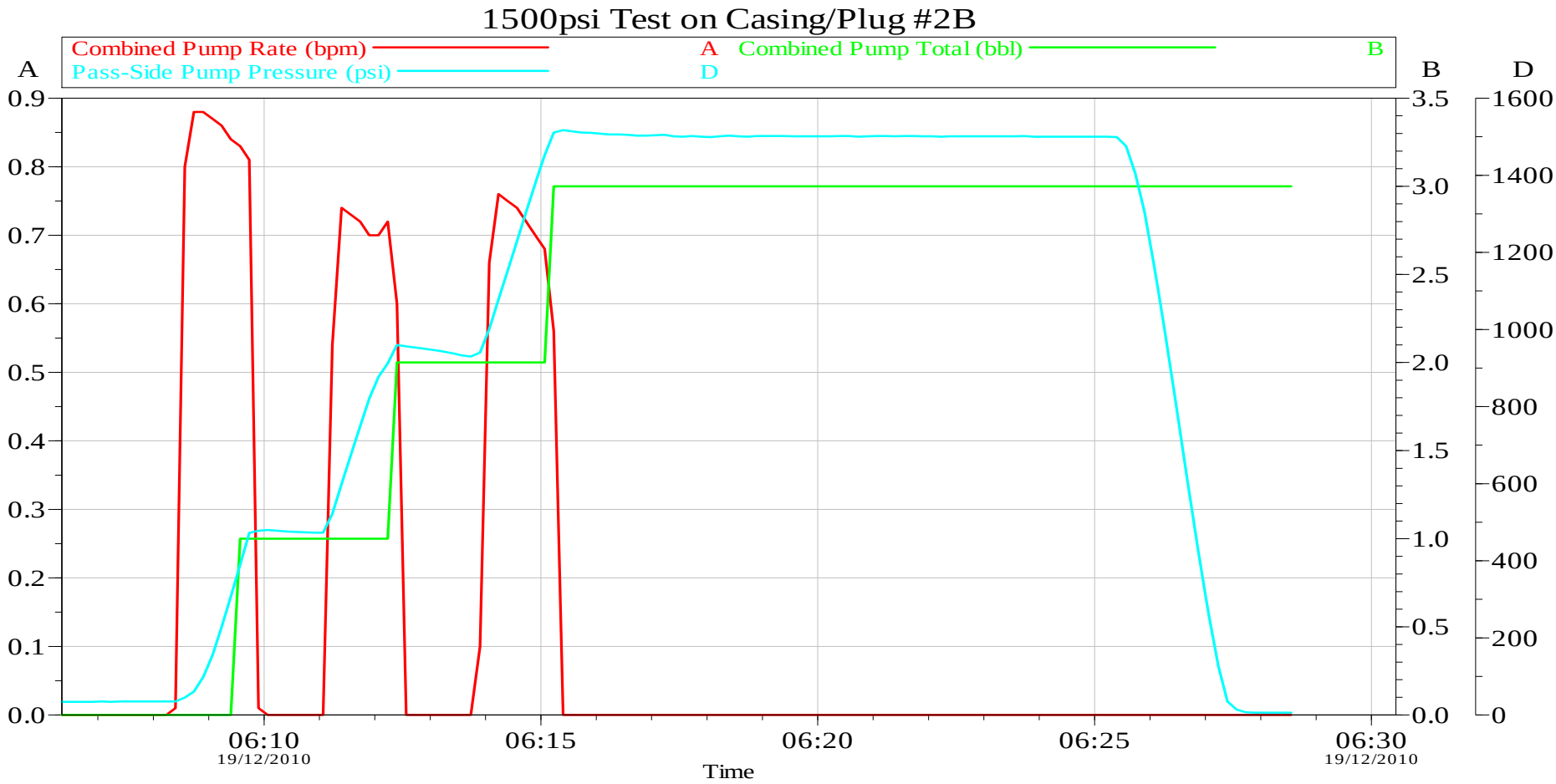
Global Event Log

8	Pump Spacer	10:52:56	9	Teat Surface Lines	10:55:23	10	Pump Spacer	11:00:04
11	Mix & Pump 15.8ppg Slurry	11:11:55	12	Displace with 3 bbls off Mud	11:21:50	13	Bleed Off	11:23:15

Customer: Origin/ADA Well Description: Exploration	Job Date: 19-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 16:33

3.26 1500 psi Test on Casing/Plug 2B



Customer: Well Description:	Job Date: 19-Dec-2010 UWI:	Sales Order #:

OptiCem v6.4.6
19-Dec-10 16:16

3.27 P&A Plug 1a, b & c Slurry Lab Report

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON

CEMENT SLURRY LABORATORY REPORT

Customer Information

Customer	:	ADA	Date	:	09-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	114597 / 4
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	Plug P&A	Lab	:	Sale

Well Information

BHST	:	130	°C
BHCT	:	106	°C
Measured Depth	:	2391	m
Total Vertical depth	:	2343	m

PlugCem™ cement Casing Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs			5/12/10	From Rig	SC00063
Halad-413L	0.369	gal/sk	30.00	gal/10bbl			
SCR-100L	0.049	gal/sk	4.00	gal/10bbl			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Freshwater	4.75	gal/sk					
Total Mixing Fluid :	5.17	gal/sk					
Slurry Density :	15.8	lb/gal					
Slurry Yield :	1.16	ft^3/sk					

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
13	3:48	4:11	4:15

Pumping time at 106 °C & 455 psi is 4:15 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Free Fluid Traces Deviated at 106 °C

API Fluid Loss 46 cc/30 mins. at 82 °C and 1,000 psi

Slurry Rheology

	Fann Readings (RPM) 300	200	100	6	3	PV (cP)	YP ($lb_f/100ft^2$)
Mix Temp	175	122	70	9	5	157.5	18
Raised Temp 106 °C	97	75	47	6	3	75	22

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	500psi	24 hours
	114 °C	3000 psi	3:32	4:05	3270

Notes:

ABC G class ex Kan Tan IV 05/12/2010 (SC00063), Drill water ex Kan TAn IV 05/12/2010 (SW00045)

Lab Technician: David Collins
Approved: Joon Yeoh

The above pilot report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

3.28 P&A Plug @ 1554mMD Lab Report (Did not use)

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON

CEMENT SLURRY LABORATORY REPORT

Customer Information

Customer	:	ADA	Date	:	09-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	115180 / 4
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	Plug @ 1554m	Lab	:	Sale

Well Information

BHST	:	90	°C
BHCT	:	72	°C
Measured Depth	:	1554	m
Total Vertical depth	:	1541	m

PlugCem™ cement Plug Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
ABC Class G	94.00	lbs			5/12/10	From Rig	SC00063
Halad-413L	0.369	gal/sk	30.00	gal/10bbl			
SCR-100L	0.031	gal/sk	2.50	gal/10bbl			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Freshwater	4.76	gal/sk					
Total Mixing Fluid :	5.17	gal/sk					
Slurry Density :	15.8	lb/gal					
Slurry Yield :	1.16	ft^3/sk					

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
2	4:00	4:13	4:22

Pumping time at 72 °C & 455 psi is 4:22 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Free Fluid Traces Deviated at 72 °C

API Fluid Loss 38 cc/30 mins. at 72 °C and 1,000 psi

Slurry Rheology

	Fann Readings (RPM)						
	300	200	100	6	3	PV (cP)	YP ($lb_f/100ft^2$)
Mix Temp	167	117	67	6	3	150	17
Raised Temp 72 °C	94	71	41	4	2	79.5	15

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	500psi	24 hours
	80 °C	3000 psi	4:53	6:22	2909 psi

Notes:

ABC G class cement ex Kan Tan IV 05/12/2010 (SC00063), Drill water ex Kan TAn IV 05/12/2010 (SW00045)

Lab Technician: David Collins
Approved: Joon Yeoh

The above pilot report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

3.29 P&A Plug 2 & 2b Slurry Lab Report

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON **CEMENT SLURRY LABORATORY REPORT**

Customer Information

Customer	:	ADA	Date	:	09-Dec-10
Rig Name	:	Kan Tan IV	Lab Reference	:	115184 / 1
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	Shoe Plug	Lab	:	Sale

Well Information

BHST	:	71	°C
BHCT	:	57	°C
Measured Depth	:	1200	m
Total Vertical depth	:	1200	m

PlugCem™ cement Plug Slurry Design

MATERIAL	Conc.	Unit	Conc.	Unit	Date	Source	Batch #
La Farge Class G	94.00	lbs			25/11/10	From Rig	SC00059
Halad-413L	0.363	gal/sk	30.00	gal/10bbl			
SCR-100L	0.048	gal/sk	4.00	gal/10bbl			
NF-6	0.003	gal/sk	0.25	gal/10bbl			
Freshwater	4.66	gal/sk					

Total Mixing Fluid	:	5.08	gal/sk
Slurry Density	:	15.8	lb/gal
Slurry Yield	:	1.16	ft^3/sk

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
18	3:48	4:01	4:15

Pumping time at 57 °C & 455 psi is 4:15 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Free Fluid Traces Vertical at 27 °C

API Fluid Loss 34 cc/30 mins. at 57 °C and 1,000 psi

Slurry Rheology

	Fann Readings (RPM)						
	300	200	100	6	3	PV (cP)	YP (lb_f/100ft^2)
Mix Temp	192	139	83	9	5	163.5	29
Raised Temp 57 °C	129	98	58	7	4	106.5	23

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	500psi	24 hours
	64 °C	3000 psi	4:27	6:01	2840 psi

Notes:

Lafarge G class ex Kan Tan IV 25/11/2010 (SC00059), Drill water ex Kan Tan IV 05/12/2010 (SW00045)

Lab Technician: David Collins
Approved: Joon Yeoh

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3.30 P&A Surface Plug Slurry Lab Report

Cement Laboratory Report		HALLIBURTON MANAGEMENT SYSTEM Australasia		
DOCUMENT NO:	PREPARED BY	APPROVED BY	REVISION NO:	DATE
	Megan Beale		12	25-Jun-07

HALLIBURTON

CEMENT SLURRY LABORATORY REPORT

Customer Information

Customer	:	ADA	Date	:	26-Nov-10
Rig Name	:	Kan Tan IV	Lab Reference	:	112332 / 1
Well Name	:	Silvereye #1		:	
Pipe Size / Casing Size	:	Surface Plug	Lab	:	Sale

Well Information

BHST	:	25	°C
BHCT	:	25	°C
Measured Depth	:	141	m
Total Vertical depth	:	141	m

HalCem™ cement Casing Slurry Design

MATERIAL		Conc.	Unit	Conc.	Unit	Date	Source	Batch #
La Farge Class G		94.00	lbs			25/11/10	Rig	SC00059
Calcium Chloride		1.000	BWOC	1.00	BWOC			
NF-6		0.003	gal/sk	0.25	gal/10bbl			
Seawater		5.18	gal/sk					
Total Mixing Fluid	:	5.18	gal/sk					
Slurry Density	:	15.8	lb/gal					
Slurry Yield	:	1.18	ft^3/sk					

Laboratory Test Results

Thickening Time

Initial BC	30	50	70
27	1:47	2:09	2:24

Pumping time at 25 °C & 455 psi is 2:24 hrs:mins

Slurry thickening time test is performed with slurry in motion, not in static condition

Compressive Strength

Non Destructive (UCA)	Temp	Pressure	50psi	500psi	24 hours
	21 °C	3000 psi	2:56	8:18	1664 psi

Notes:

Lafarge G class ex Kan Tan IV 25/11/2010 (SC00059), Sea water ex Kan Tan IV date 25/11/2010 (SW00042)
Actual well condition might varies.

Lab Technician: Dave Collins
Approved: Joon Yeoh

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4.0 PRIMARY CEMENTING BEST PRACTICES

The considerations reviewed in this summary are based on sound Cementing Best Practices that are known to enhance the probability of success when they are followed. Primary cement job failures are predominately due to a breakdown in the "displacement process." This typically results in poor zonal isolation manifested by channeling or nonuniform displacement of the annular fluids (by the cementing fluids). These guidelines, when applied in conjunction with the Halliburton OptiCem job design program to optimize displacement parameters, will enhance the displacement process and improve the probability of successful primary cementing.

1) Flow Rate:

Three flow regimes that a non-Newtonian fluid (such as cement) may exist as are Turbulent, Laminar, and Plug Flow. When reduced to its simplest terms, maximum displacement efficiency is achieved when the maximum available energy is transferred to the annulus and applied to the fluids to be mobilized. Therefore, regardless of the flow regime, high-energy displacement rates are most effective for ensuring good displacement. Turbulent flow conditions are usually more desirable, but frequently cannot be achieved or are not always required. When turbulent flow is not a viable option for a situation, use the highest pump rate that is feasible for the wellbore conditions. The best results are obtained when (1) the spacer and/or cement is pumped in such a way as to deliver maximum energy to the annulus, (2) the spacer or flush is appropriately designed to remove the drilling fluid, (3) and a competent cement is used. The OptiCem job design program can be used to determine the optimum pump rates under the given conditions of geometry, fluid properties, and eccentricity to obtain the best displacement and while maintaining safe ECD's.

2) Conditioning the Drilling Fluid:

The condition of the drilling fluid is one of the most important variables in achieving good displacement during a cement job. A fluid that has excellent properties for drilling may be inappropriate for cementing purposes. Regaining and maintaining good mobility is the key. An easily displaced drilling fluid will have low, nonprogressive gel strengths and low fluid loss. Pockets of gelled fluid, which commonly exist following the drilling of a wellbore, make displacement difficult. These volumes of gelled fluid must be broken up and mobilized.

To condition the drilling fluid in preparation for a cement job, perform the following:

a Determine the volume of the circulatable hole and evaluate the percentage of the hole that is being circulated. Good fluid returns at the surface do not reliably indicate the mobility of fluid in the annular space. For best results, use a fluid caliper to determine downhole fluid mobility.

b When making the last bit trip, and especially when the casing is on bottom, the mud must be prepared for the cement job. Circulate, treat, and condition the drilling fluid to help break its gel structure, remove gas, and lower the low-gravity solids content. This will decrease the viscosity and increase the mobility of the mud. Continue until equilibrium is achieved.

c NEVER allow the drilling fluid to set static for extended periods, especially at elevated temperatures. Even when the drilling fluid is well conditioned (mud properties in equals mud properties at the outlet), continue circulating the drilling fluid until the cementing program begins.

d Modify the flow properties of the drilling fluid to optimize drilling fluid mobility and removal of drill cuttings. Yield Point (YP) and Gel Strengths should be maintained as low as possible without causing settling and barite sag downhole. Mud weight and temperature dictate allowable plastic viscosity (PV) and yield point (YP) values. As such, these variables must be evaluated on a case-by-case basis given prevailing circumstances.

e Measure gel strengths at 10 seconds, 10 minutes, 30 minutes, and 4 hours to examine the gel strength profile of the drilling fluid. In addition, an HTHP gel strength test should be run at some point in the design and planning stages. When conditioning just prior to the job, verification readings taken at 10 seconds, 10 minutes, and 30 minutes are typically sufficient. An optimum drilling fluid will have flat, non-progressive gel strengths such that the 10 minute is less than twice the 10 second (Example: gel strength values of 8, 12 and 14).

f Decreasing the filtrate loss into a permeable zone enhances the creation of a thin filter cake. A high fluid loss creates a thick, highly gelled mud layer immediately adjacent to the formation wall that is difficult to mobilize without mechanical or chemical intervention. The fluid loss of the mud should be minimized prior to running casing and cementing.

In deviated wellbores, a higher-viscosity drilling fluid may be required to help prevent solids from settling on the low side of the wellbore. The presence of large drill cuttings may also necessitate higher viscosity fluids. The higher-viscosity fluid needs to be optimized based on wellbore conditions and inclination. Regardless of the final fluid properties, it is critical to communicate this information to the cementing engineer so that any necessary adjustments to the cementing program can be made.

3) Spacers and Flushes:

Spacers and flushes are effective displacement aids because they separate unlike fluids such as cement and drilling fluid, and enhance the removal of gelled mud allowing a better cement bond. Spacers can be designed to serve various needs. For example, weighted spacers can help with well control, and reactive spacers can provide increased mud-removal benefits. Compatibility of the drilling fluid/spacer interface as well as the compatibility of the spacer/cement slurry is of prime importance. Application of the compatibility procedures as outlined in the API SPEC RP10B, 22nd Edition, December 1997 is highly recommended.

Parameters governing the effectiveness of a spacer include flow rate, volume, contact time, and fluid properties. To achieve maximum mud displacement, adhere to the following guidelines:

a Pump the spacer fluid at an optimized rate based on OptiCem.
b Provide a contact time and volume of spacer that will provide optimum amount of mud removal. Typically 8 to 10 minutes contact time or 1000 feet of annular space are adequate.
c Make sure that the viscosity, yield point, and density of the spacer and the following cement slurry provide for adequate solids support and has the required rheological profiles as recommended by the errodibility calculations in OptiCem.
d When an oil-based or synthetic-based drilling fluid is used, ensure that the spacer package is formulated to thoroughly water-wet the surface of the pipe and the formation, ensuring a strong bond between the cement, the pipe, and the formation. The use of Halliburton's newly developed apparent wettability testing technique that has been endorsed by the API is highly recommended for customizing the spacer/surfactant package to ensure water wetting.

Flushes are used for thinning and dispersing drilling fluid particles. They go into turbulence at low rates, helping to clean drilling fluid surfactants from the annulus. However, flushes generally have a density that is less than the drilling fluid and may not provide proper well control. Running the spacer or the cement slurry at a higher density can compensate for the lack of density. While jobs are frequently pumped with only a flush ahead of the cement, spacers are usually recommended to ensure greatest displacement efficiency. The chemistry of specific reactive flushes are also intended to react with and mobilize muds with certain chemical components. While water-based muds composed primarily of bentonite and associated dispersants are best attacked with MudFlush or SuperFlush, muds containing PHPA or other polymers are best attacked with PHPA PreFlush. When used, preflushes for nonaqueous muds are usually composed of a volume of base oil that may or may not contain solvents or

4. Pipe Centralization:

Centralizing the casing with mechanical centralizers across the intervals to be isolated helps optimize drilling fluid displacement. In poorly centralized casing, cement will bypass the drilling fluid by following the path of least resistance; as a result, the cement travels down the wide side of the annulus, leaving drilling fluid in the narrow side. Good pipe standoff insures a uniform flow pattern around the casing and helps equalize the force that the flowing cement exerts around the casing, increasing drilling fluid removal. In a deviated wellbore, standoff is even more critical to prevent a solids bed from accumulating on the low-side of the annulus. Generally the industry strives for about 70% standoff. However, the preferred standoff should be developed from computer modeling and will vary with well conditions. When adequate centralization cannot be achieved, use the eccentricity option in OptiCem to help compensate as much as possible with other parameters such as rate and fluid rheologies.

Centralizers and other mechanical cementing aids as are commonly used in the industry may also provide inline flow disturbances, changing the flow pattern of the fluids. This can promote better mud removal for short distances in the annulus.

5) Pipe Movement:

Pipe movement is one of the most effective methods of transferring energy downhole. Pipe rotation or reciprocation before and during cementing helps break up gelled, stationary pockets of drilling fluid and loosens cuttings trapped in the gelled drilling fluid. Pipe movement allows high displacement efficiency at lower pump rates because it helps to keep the drilling fluid flowing. If the pipe is poorly centralized, pipe movement can compensate by changing the flow path through the annulus and allowing the slurry to circulate completely around the casing. The industry does not specify a minimum requirement for pipe movement, however it is acknowledged the even a small amount of movement will enhance the displacement process.

In some instances, pipe movement is not recommended. For example, when equivalent circulating density and fracture pressure are very similar, or shallow gas or water influx is at a critical potential, moving the pipe can induce surge and swab pressures that could promote pipe sticking, and induce flows or formation failures. The use of mechanical devices, such as some types of liner hangers, may also prevent casing movement. All of these factors must be considered when designing the displacement program. Use of hydraulics simulators with surge and swab capability such as Baroid's DFG-Win is advised in these situations.

6) Hole Size:

Best mud displacement under optimum rates is achieved when annular tolerances are approximately 1.5 to 2 inches. Centralization of very small annuli is very difficult, and pipe movement and displacement rates may be severely restricted. Very large annuli may require extreme displacement rates to generate enough flow energy to remove the drilling fluid and cuttings. Combined small and large intervals resulting from the use of bi-centered bits below small casings can be very challenging. Very careful hydraulics modeling is required in such cases.

7) Gas Flow:

Although gas flow may not be apparent at surface, it may occur between zones, damaging the cement job and eventually lead to casing pressure at the surface. The OptiCem program can be utilized as a tool to determine the gas flow potential (GFP) on any primary cement job. The Halliburton GFP calculation, when combined with local engineering experience, is the premier industry solution to gas flow problems through unset cement.

8) Wiper Plugs:

Top & bottom wiper plugs are recommended on every primary cementing job unless prohibited by mechanical or other special restrictions. The bottom plug serves to minimize contamination of the cement as it is pumped, in some cases it may be prudent to use multiple bottom plugs to separate mud/spacer and spacer/cement interfaces. The top plug is used to prevent any contamination of the cement slurry by the displacement fluid and minimize the chances of leaving a cement sheath inside the casing. The top plug also gives a positive indication that the cement has been displaced.

9) Rat Hole:

When applicable, a weighted, viscous pill in the rat hole prevents cement from swapping with lighter weight mud during the cement job or when displacement stops.

10) Shoe Joint:

A shoe joint is recommended on all primary casing/liner jobs. The length of the shoe joint will vary. The absolute minimum length is one joint of pipe. If conditions exist, such as not running a bottom plug, two joints of pipe is a minimum requirement.

APPENDIX 9: FIT/LOT SUMMARY SHEETS

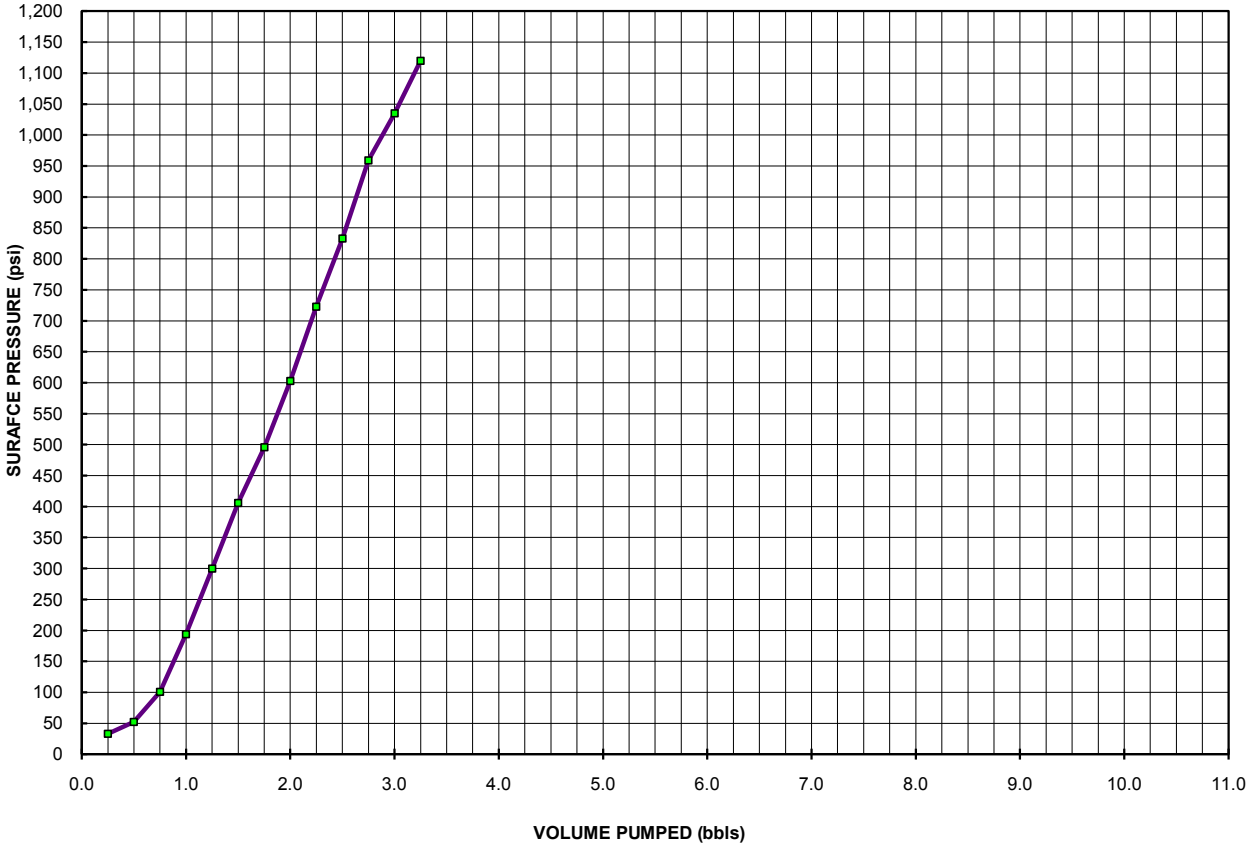
FORMATION LEAK-OFF TEST

WELL NAME	Silvereye-1	**RIG**	Kan Tan IV	**DATE**	9th Dec 10
Casing size	13 3/8"	Mud Weight	10.00 ppg	Surface pressure	1120 psi
Setting Depth mMD	1102.84	PV		Leak-off (Yes/No)	no
Setting depth mTVD	1102.7	YP		Volume pumped	3 psi
		Gels		Volume returned	2.25

FORMATION INTEGRITY VALUE

15.95 ppg EMW

Volume Pumped (bbls)	Surface Pressure (psi)
0.25	33.00
0.50	52.00
0.75	101.00
1.00	194.00
1.25	300.00
1.50	406.00
1.75	496.00
2.00	603.00
2.25	723.00
2.50	833.00
2.75	959.00
3.00	1035.00
3.25	1120.00



Pumps Off (mins)	(psi)
	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

COMMENTS : Bled pressure off to zero via cement unit displacement tank, total pumped 3.25 bbls, total returned 2.75 bbls

REPORT BY:		**DATE:**	**9-Dec-10**

APPENDIX 10: DAILY DRILLING REPORTS

Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 1
Silvereye-1

26 Nov 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

Silvereye-1

Date:	26 Nov 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	1	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.897 "	**Longitude (East):**	145 ° 3 ' 32.441 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field		TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$1,184,736
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$1,184,736
Wtr Dpth (LAT)	54.0m	Days on well	0.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	390
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Completed cross tensioning of anchors. Preparing to pick up DC & DP & rack in the derrick.		
Datum		Last BOP Test		Planned Op	Continue to pick up DC & DP & rack in the derrick. Ballast down to drilling draft. Prepare to spud Silvereye 1.		

Summary of Period 0000 to 2400 Hrs

****Arrived on location Silvereye-1 @ 10:30hrs on 26th November, 2010****
Commenced running Anchors.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
JSA	31	0 Days	Pre Job Safety Meetings	Morning pre-tour Good Active card participation - from cards; ensure HP hoses have correct fittings. Do not change fittings unless you are qualified to crimp them on. Keep the noise down in the accommodation corridors. 2. Excellent TBT noted during permit audits today. Very detailed and well documented. Well done. 3. Housekeeping - please keep work areas tidy. PTW should not be signed off as complete unless this is done. Evening pre-tour Crew Short Change / Placing Anchors
Permit To Work	27	0 Days	Permits administered	
Pre Job Safety Meeting	29	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	31	0 Days	STOP Cards	

Operations For Period 0000 Hrs to 2400 Hrs on 26 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M4	1030	1200	1.50	0.0m	1030 Anchor on bottom. ***End of tow and START of Silvereye-1 @ 10:30 hrs on 26 November 2010*** 1033 #6 holding. Far Fosna commenced stripping back on #6 1056 #6 disconnected from fosna 1103 #6 PCP passed back to rig 1134 #2 PCP passed to Fosna 1152 All stop # 2 @ 492 ft connecting anchor up to chain
P1	P	M4	1200	1800	6.00	0.0m	1256 #2 anchor connected up - prepare to run anchor to stern roller 1323 #2 anchor winch stopped. Suspected knot / kink in chain 1329 #2 Anchor on bottom 1356 #2 PCP passed back to rig 1406 #7 PCP passed to Fosna 1448 #7 anchor on bottom 1523 #7 PCP passed back to rig 1545 #3 PCP passed to Fosna 1630 #3 anchor on bottom 1637 Scimitar heaving in on tow wire 1700 #3 PCP passed back to rig - all primary anchors deployed 1723 #8 PCP passed to Fosna

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M4	1800	2400	6.00	0.0m	1734 Tow bridle disconnected from scimitar 1740 Tow bridle secured back on rig 1800 #8 anchor on bottom 1850 Scimitar alongside stbd, offload 2x anchors & backload MT food containers. 1908 # 8 anchor on the bottom 1934 # 8 PCP passed back to rig 1942 # 1 PCP passed to Fosna 2040 # 1 anchor on the bottom 2119 #1 PCP back to rig 2135 # 4 PCP to Fosna 2242 # 4 anchor on the bottom 2311 # 4 PCP back to rig 2317 # 5 PCP to Fosna

Operations For Period 0000 Hrs to 0600 Hrs on 27 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M4	0000	0130	1.50	0.0m	0044 Anchor # 5 on the bottom 0125 # 5 PCP back to rig 0135 Commenced cross tensioning of anchors 0137 All stop on cross tensioning - power lost to anchor winch 3 and 4
P1	TP (RE)	M4	0130	0400	2.50	0.0m	Repaired Anchor winch 3 & 4 while also untangling knot on #2 Anchor winch chain, in the chain locker.
P1	P	M4	0400	0600	2.00	0.0m	Continued cross tensioning anchors. Cross tensioning completed at 06:00 hrs.

Phase Data to 2400hrs, 26 Nov 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	13.5	26 Nov 2010	26 Nov 2010	13.50	0.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 26 Nov 2010

Operational Comments	Daytime maintenance report as follows: Mechanical: Assist Stewart & Stevenson: No2 EMD generator bearing renewal complete and engine on line. No1 EMD isolated and preparation for generator bearing removal. RBS: 6 month PM ongoing. Omnipure sewage unit: Trouble shooting ongoing. Electrical: Omnipure sewage unit: Trouble shooting ongoing. Two lights repaired at No3 lifeboat. TDS: Renewed hose for purge pressure switch. Tested o.k. Make up power cables for Core - IRM. Rig Welders: Fabricated and installed new bracket for Gaitronics speaker at No4 Lifeboat. Fabricated stair treads for installation on ladder to No2 lifeboat davit platform. Cranes: Fabricating cover plates for holes in deck at cab level in way of lifting eyes. Core - IRM Welders: Modification of possum belly complete. Cut doubler plate for installation in ballast tank C3 PB. Prepared equipment to carry out the job. No access while running anchors No 7 + 8. Core-IRM NDT Man: Prepare reports for HP Stand pipe repair + assist Core - IRM Welders. Taylor Brothers: Completed installation of sound insulated bulkhead to separate engine room and engine room workshop. Rig up to reinstate various areas of insulation around rig. Still to be delivered , with expected departure from the U.K. of 24 November, are 4 outside fire dampers (one for each of the accommodation AHUs) + 2 each fire dampers for the laundry.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board
Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Removal & Cleaning of No.2 EMD Turbocharger screen. Anchor Winches checked out during operation. Both

General Comments

Fuel Oil Purifiers shut-down & cleaned. Housekeeping in Engine Room Workshop. SAP Notifications & Orders. Rig Air Compressor Maintenance. All Accommodation Ventilation Dampers function tested.

Electrical
Electrical PM's on Lifeboat Battery Chargers, Welding Equipment & Ballast Pumps. Accommodation dampers inspected. Isolations & De-Isolations

Welding
Sorting out storage area in Column P3, installing brackets & re-arranging equipment

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	30	0	418.0
Drill Water	m3	0	5	0	290.0
Pot Water	m3	42	35	0	208.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	51.8
Barite	MT	0	0	0	0.0
Bentonite	MT	0	0	0	0.0
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	41
ADA	4
OMS	26
Fugro Survey	2
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Other Contractor	3
Noble Denton	1
Other Contractor	2
Other Contractor	1
Total	87

Marine

Weather on 26 Nov 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	14kn	110.0deg	1011.0mbar	14C°	0.6m	110.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
4.6m	3.2deg	1.3deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
	0.0deg		

Rig Support

Anchors	Tension (klb)
1	187.0
2	212.0
3	185.0
4	229.0
5	62.0
6	301.0
7	107.0
8	10.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Enroute to melbourne	

Item	Unit	Used	Quantity
Fuel	Ton	13	382
Potable Water	3m³	59	309
Drill Water	3m³		388
Bentonite	Ton		39
Barite	Ton		135
Brine			365

Transferred towing bridle back to KT4.
Unloaded 2x anchors to KT4
Received MT Food Containers.
Commenced run to Melbourne.

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 26 Nov 2010		

Item	Unit	Used	Quantity
Fuel	Ton	13	485

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Item	Unit	Used	Quantity
Potable Water	3m³		394
Drill Water	3m³		500
Bentonite	Ton		40
Barite	Ton		80
'G' Cmt	Ton		60
Brine	ltrs		0

Running Anchors

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	09:04 / 09:18	10 / 11	
2	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	12:42 / 12:56	12 / 10	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 2
Silvereye-1

27 Nov 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

Silvereye-1

Date:	27 Nov 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	2	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.897 "	**Longitude (East):**	145 ° 3 ' 32.441 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field		TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$636,689
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$1,821,425
Wtr Dpth (LAT)	54.0m	Days on well	1.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	391
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Waiting On Weather.		
Datum		Last BOP Test		Planned Op	Make up spud BHA & RIH. Mix Spud Mud.		

Summary of Period 0000 to 2400 Hrs

Continued running anchors.
Commenced cross tensioning of anchors .
Removed Sea fastenings & prepared rig floor to pick up tubulars.
Picked up 5" DP & DC from the deck & racked in the derrick.
Commenced ballasting rig down to drilling draft.
Offline, pressure tested C&K manifold.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	1	0 Days	Fire & Abandon drill	Simulated fire on helideck. Muster at aft life boats. Good response.
JSA	34	0 Days	Pre Job Safety Meetings	Morning pre-tour Main Deck walkway - Improved grip new paint, Top Drive service - Good comms, barriers and toolbox talk (keep up TBT), Loading Helo prevent loose items, Care with electrical leads, Continue Houskeeping, FAC - Line handling awareness / Escape Route re-iterated. Evening pre-tour Stand by for Routine Drill / ACTIVE card participation encouraged / Harness fall arrestor equipment to be maintained / inspected - return to RSA if required.
Permit To Work	19	0 Days	Permits administered	
Pre Job Safety Meeting	27	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	20	0 Days	STOP Cards/ Award Winner-Grant Cox - Floorman	I observed a person working over the side without a harness and in an area without hand rails to stop him falling over the side. I paged the person, but he didn't respond. I approached him and advised him of the risks he was taking. Perhaps some signage to advise that the area requires the use of a harness would be helpful.

Operations For Period 0000 Hrs to 2400 Hrs on 27 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M4	0000	0130	1.50	0.0m	0044 Anchor # 5 on the bottom 0125 # 5 PCP back to rig 0135 Commenced cross tensioning of anchors 0137 All stop on cross tensioning - power lost to anchor winch 3 and 4
P1	TP (RE)	M4	0130	0400	2.50	0.0m	Repaired Anchor winch 3 & 4 while also untangling knot on #2 Anchor winch chain, in the chain locker.
P1	P	M4	0400	0600	2.00	0.0m	Continued cross tensioning anchors. Cross tensioning completed at 06:00 hrs.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M4	0600	0730	1.50	0.0m	Removed sea fastenings & prepared rig floor to pick up tubulars.
P1	TP (WO)	M4	0730	0900	1.50	0.0m	Waited on cranes, cranes working stbd aft pontoon for UT inspections.
P1	P	G2	0900	1800	9.00	0.0m	Picked up 5" DP & DC from the deck & racked in the derrick. Offline: backloaded 2 x anchors to the Fosna.
P1	P	M3	1800	2400	6.00	0.0m	Commenced ballasting rig down to drilling draft. Offline: pressure tested C&K manifold.

Operations For Period 0000 Hrs to 0600 Hrs on 28 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0030	0.50	0.0m	Continued ballasting rig down to drilling draft.
P1	TP (WOW)	M3	0030	0600	5.50	0.0m	Waiting On Weather 01:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 02:00 Wind speed- 38knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 04:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 06:00 Wind speed- 38knts/ Wave Ht- 1.4m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m.

Phase Data to 2400hrs, 27 Nov 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	37.5	26 Nov 2010	27 Nov 2010	37.50	1.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 27 Nov 2010

Operational Comments	Daytime maintenance report as follows: Mechanical: Assist Stewart & Stevenson: No1 EMD generator bearing change out ongoing. Assist Core-IRM with tank & pontoon repairs. Electrical: Calibrate Lidan Brake. Completed repair of Gaitronics at No4 Lifeboat. Cleaned and checked exciter on No1 EMD Generator. Rig Welders: Cranes: Fabricating cover plates for holes in deck at cab level in way of lifting eyes. Installed new stair treads from main deck to radio room. Assist Core-IRM with tank and pontoon repairs. Core - IRM Welders: Installed doubler plate in ballast tank C3 - P - B Weld repair to stb aft pontoon. Core-IRM NDT Man: Inspect ballast tank C3 -P-B and stb aft pontoon before and after repairs. Taylor Brothers: Commenced to reinstate various areas of insulation around rig. Still to be delivered , with expected departure from the U.K. of 24 November, are 4 outside fire dampers (one for each of the accommodation AHUs) + 2 each fire dampers for the laundry.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board
Operational Comments	Mechanical Port Crane Fuel Tank Drained, Cleaned out and Flushed Outside Watermaker. Sea Water Feed Pump mechanical Seal repair. Purifier maintenance Machinery Running Hours recorded Weekly Oil & Chemical Inventory taken Electrical PM's on Elmagco Brake & Outisde Watermaker Unit Port Crane Fuel Tank sender unit Electrical Power lead repairs Welding Fabrication of louvres for Deck Air Compressor. Port Crane Fuel Tank sender unit. Electrical Power lead repairs Electrical Electrical PM's on Lifeboat Battery Chargers, Welding Equipment & Ballast Pumps. Accommodation dampers inspected. Isolations & De-Isolations Welding

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General Comments

	Sorting out storage area in Column P3, installing brackets & re-arranging equipment

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	15	0	403.0
Drill Water	m3	0	0	0	290.0
Pot Water	m3	42	36	0	214.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	51.8
Barite	MT	0	0	0	0.0
Bentonite	MT	0	0	0	0.0
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	41
ADA	4
OMS	26
Fugro Survey	2
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Other Contractor	3
Noble Denton	1
Other Contractor	2
Other Contractor	1
Total	87

Marine

Weather on 27 Nov 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	32kn	210.0deg	1008.0mbar	11C°	1.0m	215.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.8m	1.5deg	1.4deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	230.0deg		

Rig Support

Anchors	Tension (klb)
1	172.0
2	166.0
3	183.0
4	200.0
5	137.0
6	121.0
7	138.0
8	89.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Alongside melbourne	

Item	Unit	Used	Quantity
Fuel	Ton	13	667
Potable Water	3m³	10	299
Drill Water	3m³		388
Bentonite	Ton		39
Barite	Ton		135
Brine			365

0000 - 0900 En-route to Melbourne
0900 - 2400 Alongside Melbourne
Loaded 300T Fuel.

Far Fosna	07:00 26 Nov 2010		Running stand-by

Item	Unit	Used	Quantity
Fuel	Ton	14	471
Potable Water	3m³	3	391
Drill Water	3m³		500
Bentonite	Ton		40
Barite	Ton		80
'G' Cmt	Ton		60
Brine	ltrs		0

0001-0130 Running Anchors
0130-0800 Anchors complete vessel to running stand-by
0800-0930 Load deck cargo
0930-1330 Running stand-by

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Printed on 29 Nov 2010

1330-1530 Close stand-by
1530-2359 Running stand-by

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	/	/	No Choppers today due to Fog & weather conditions.
2	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	/	/	No Choppers today due to Fog & weather conditions.

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 3
Silvereye-1

28 Nov 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

Silvereye-1

Date:	28 Nov 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	3	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.897 "	**Longitude (East):**	145 ° 3 ' 32.441 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field		TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$660,831
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$2,482,256
Wtr Dpth (LAT)	54.0m	Days on well	2.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	392
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Offloading bulks from the Fosna.		
Datum		Last BOP Test		Planned Op	Offload Bulks & Spud equipment. Pick up spud BHA & RIH. Spud Well.		

Summary of Period 0000 to 2400 Hrs

Continued ballasting rig down to drilling draft.
Waited On Weather.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	1 Day	Fire & Abandon drill	
JSA	19	0 Days	Pre Job Safety Meetings	Morning pre-tour Donations Pike River Coal Mine Disaster, Use of re-usable Plastic Chain / Barrier Tape, Safe Observations Picking Up / Racking back DP - Teamwork / Comms, Looking after each other, TBT Evening pre-tour Donations Pike River Coal Mine Disaster, Use of re-usable Plastic Chain / Barrier Tape, Safe Observations - Teamwork / Comms, Looking after each other, TBT. Reactive - Complete tasks 100% (e.g deck grating / nails in dunnage). Windy - Require chin straps / Tie down loose equipment.
Permit To Work	17	0 Days	Permits administered	
Pre Job Safety Meeting	17	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	41	0 Days	STOP Cards/ Safety Card Winner -Tim Warger - Welder	The Stinger on the Stbd Crane hook latch is held closed with duct tape and the eyes are crushed out of shape. I asked the Roustabouts about it and they tell me it has just passed an inspection?? The Barge Engineer has added a comment to say "we do this when anchor handling to prevent an accidental release. Good spotting and follow-up by the welder.
Weekly Safety Meeting	7	0 Days		Drill x2, Marine x2, Catering,Admin,x3

Operations For Period 0000 Hrs to 2400 Hrs on 28 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0030	0.50	0.0m	Continued ballasting rig down to drilling draft.
P1	TP (WOW)	M3	0030	0600	5.50	0.0m	Waiting On Weather 01:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 02:00 Wind speed- 38knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 04:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m. 06:00 Wind speed- 38knts/ Wave Ht- 1.4m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m.
P1	TP (WOW)	M3	0600	1200	6.00	0.0m	Waiting On Weather 08:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.5/ Heave 2m.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							10:00 Wind speed- 40knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 12:00 Wind speed- 45knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.8/ Heave 2m.
P1	TP (WOW)	M3	1200	1800	6.00	0.0m	Waiting On Weather 14:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m. 16:00 Wind speed- 42knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 2.8/ Heave 2m. 18:00 Wind speed- 41knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 2.2/ Heave 2m.
P1	TP (WOW)	M3	1800	2400	6.00	0.0m	Waiting On Weather 20:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.7/ Heave 2m. 22:00 Wind speed- 36knts/ Wave Ht- 1.2m/ Swell- 2.4m/ Pitch- 1.8/ Heave 2m. 24:00 Wind speed- 34knts/ Wave Ht- 1.2m/ Swell- 2.6m/ Pitch- 1.2/ Heave 2m.

Operations For Period 0000 Hrs to 0600 Hrs on 29 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0600	6.00	0.0m	Weather decreased enough to pick up the cranes & call in Fosna. Offloaded bulk Barite, Gel & Drill water from Far Fosna. Organised decks to receive spud loadout from Far Scimtar on arrival from Melbourne. Removed Diverter from rotary table & laid out to the deck.

Phase Data to 2400hrs, 28 Nov 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	61.5	26 Nov 2010	28 Nov 2010	61.50	2.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 28 Nov 2010

Operational Comments	Mechanical: Day Assist Stewart & Stevenson: No1 EMD generator bearing change out complete. Brief test run. Eight hour test run with 80% steady load planned for this evening. No8 anchor winch pawl release cylinder fitting renewed. Port crane: Changed fuel filters and test run engine. Electrical: Renew speed pickup on No1 EMD. Monkeyboard GA speaker installed and connected. Still to test. Ballast tank 11SA . Checking out level sensor. Ongoing. Rig Welders: Renew ladder to stb fwd lifeboat davit. Taylor Brothers: Reinstate insulation in air handling units + gym. Still to be delivered , with expected departure from the U.K. of 24 November, are 4 outside fire dampers (one for each of the accommodation AHUs) + 2 each fire dampers for the laundry.
Operational Comments	Maintenance Dept Night Report as follows:- Mechanical No.4 EMD Isolated for Generator Bearing change out No.4 EMD Water Pump changed out No.1 EMD Run on Load Test @ 80% after overhaul Fwd Start Air Receiver Isolation Lifeboat T-Card holder repaired Mechanical PM's SAP Notifications & Orders Electrical Port Crane Fuel Tank Sender Unit repaired and fitted Galley Chiller de-frosted Electrical PM's Welding Fabrication of Deck Compressor Louvres Repair of Mud Pump Suction Manifold Earthing Boss fitted for Elmagco Brake Preparation of Materials for deluge pipework repairs
Operational Comments	Drilling Press tested C&K manifold. Press tested standpipe manifold. Press tested all surface equipment. Continued with rig maintenance & PMs.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	13	0	390.0
Drill Water	m3	0	147	0	143.0
Pot Water	m3	27	26	0	215.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	51.8
Barite	MT	0	0	0	0.0
Bentonite	MT	0	0	0	0.0
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	39
ADA	4
OMS	24
Fugro ROV	7
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Dril-Quip	1
Other Contractor	2
Total	84

Marine

Weather on 28 Nov 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	29kn	190.0deg	1017.0mbar	11C°	1.0m	195.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.8m	2.1deg	1.6deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	230.0deg		

Rig Support

Anchors	Tension (klb)
1	157.0
2	147.0
3	178.0
4	182.0
5	123.0
6	114.0
7	145.0
8	98.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Enroute KT4	

Item	Unit	Used	Quantity
Fuel	Ton	9	658
Potable Water	3m³	2	377
Drill Water	3m³		625
Bentonite	Ton		39
Barite	Ton		135
Brine			365

0000 - 1505 Alongside Melbourne
1505 - 2400 En-route to KT IV

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 26 Nov 2010		Running stand-by

Item	Unit	Used	Quantity
Fuel	Ton	10	461
Potable Water	3m³	3	388
Drill Water	3m³		500
Bentonite	Ton		40
Barite	Ton		80
'G' Cmt	Ton		60
Brine	ltrs		0

0001-0115 Running stand-by
0115-0145 Under stbd crane / rough weather no work
0145-2330 Running stand-by
2330-2359 Move in under stbd crane start pump operations

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	12:15 / 12:30	7 / 10	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 4
Silvereye-1

29 Nov 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

Silvereye-1

Date:	29 Nov 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	4	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$666,456
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$3,148,712
Wtr Dpth (LAT)	54.0m	Days on well	3.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	393
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.		
Datum		Last BOP Test		Planned Op	RIH with 36" drilling BHA & spud well.		

Summary of Period 0000 to 2400 Hrs

Waiting on EPBC Referral Approval.
Continued offloading spud equipment from Far Scimitar.
Continued with rig maintenance & servicing.
Picked up and made up 26" bit & 36" hole opener BHA and racked back in the derrick.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	2 Days	Fire & Abandon drill	
JSA	25	0 Days	Pre Job Safety Meetings	Morning pre-tour All crew good work in windy conditions ie. Heli Ops. Highlights need to complete jobs 100% - Housekeeping on completion of task Evening pre-tour Prevention - Equip checks prior lift, Conducting PM's requesting advice from Mechanic, Roustabout identified paint fume hazard, Housekeeping - all crew effort
Permit To Work	17	0 Days	Permits administered	
Pre Job Safety Meeting	20	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	34	0 Days	STOP Cards/ Safety Card Winner - Peter Phelan - Floorman / Trent Pallett - Roustabout	Observed a Bulk Bags of rubbish over-flowing. Removed excess rubbish to another bag and marked a damaged bag. Informed the Crane Operator to be aware the damaged one. We don't want over-full bags or damaged bags dropping stuff on the decks or into the sea. Went to the store and got some more bags to distribute the rubbish now that the tow is completed. While painting the stairwell in P1 I noticed we were starting to get affected by the fumes despite the ventilation going. I stopped the job so we could get out for a break, and grabbed some masks while we had an opportunity to make sure we could go back safely, instead of getting sick.
Weekly Safety Meeting	0	1 Day		Drill x2, Marine x2, Catering,Admin,x3

Operations For Period 0000 Hrs to 2400 Hrs on 29 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0600	6.00	0.0m	Weather decreased enough to use the cranes & call in Fosna. Offloaded bulk Barite, Gel & Drill water from Far Fosna. Organised decks to receive spud loadout from Far Scimitar on arrival from Melbourne. Removed Diverter from rotary table & laid out to the deck.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0600	1200	6.00	0.0m	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
P1	TP (WO)	M3	1200	1630	4.50	0.0m	Waiting on EPBC Referral Approval. Offloaded spud equipment from Far Scimitar. Continued with rig maintenance & servicing.
P1	P	M3	1630	1800	1.50	0.0m	Held PJSM, picked up and made up 26" bit & 36" hole opener BHA and racked back in the derrick.
P1	TP (WO)	M3	1800	2400	6.00	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing. Welder removed padeyes from 30" conductor.

Operations For Period 0000 Hrs to 0600 Hrs on 30 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0000	0600	6.00	0.0m	Waiting on EPBC Referral Approval. Offloaded bulks from Far Scimitar. Continued with rig maintenance & servicing.

Phase Data to 2400hrs, 29 Nov 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	85.5	26 Nov 2010	29 Nov 2010	85.50	3.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 29 Nov 2010

Operational Comments	Daytime maintenance report as follows: Mechanical: Assist Stewart & Stevenson: No4 EMD generator bearing change out complete. Brief test run. Test on load this evening. Repaired leak on Iron Roughneck. Drawworks checks ongoing. Outside watermaker booster pump. Stripped for overhaul. Electrical: No4 EMD generator exciter cleaned and checked. Tracing earth fault. Ongoing. Port elevator: Trouble shooting. Rig Welders: Fabricate and replace grating over the side below Cement unit. Remove old vent hose from below Cement Unit and recover hammerlock. Remove sea fastenings on catwalk. Modify brackets on port & stb flare boom deluge lines so they will not damage bulk hoses. Fabricate 3 grid mesh panels for BOP transporter. Taylor Brothers: Trying to build scaffold for insulation installation in the engine room. Still to be delivered are 4 outside fire dampers (one for each of the accommodation AHUs) + 2 each fire dampers for the laundry.
Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Spare EMD Water Pump overhauled No.4 Generator Run on Test overnight Cooling Water Tests & Dosing Crane Weekly PM's Purifier Maintenance Scaffold Erected in Engine Room for Taylor Bros Electrical Repositioning of Comms Satellite Dome Electrical PM's Welding Fabrication & Install of Deck Compressor Louvres Grating for Transporter Mud Manifold repair completed & inspected
Operational Comments	Drilling Press tested C&K manifold. Press tested standpipe manifold. Press tested all surface equipment. Continued with rig maintenance & PMs.

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General Comments

Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	155	20	0	525.0
Drill Water	m3	610	99	0	654.0
Pot Water	m3	37	28	0	224.0
Brine	m3	50	0	0	50.0
Cement class \'G\'	MT	55	0	0	106.8
Barite	MT	91.5	0	0	91.5
Bentonite	MT	30.5	0	0	30.5
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	39
ADA	4
OMS	26
Fugro ROV	7
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Dril-Quip	1
Other Contractor	2
Total	86

Marine

Weather on 29 Nov 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	16kn	100.0deg	1021.0mbar	13C°	1.0m	95.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
4.4m	1.3deg	1.0deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	180.0deg		

Rig Support

Anchors	Tension (klb)
1	149.0
2	121.0
3	159.0
4	182.0
5	145.0
6	124.0
7	154.0
8	98.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Stby KT4	

Item	Unit	Used	Quantity
Fuel	Ton	8	650
Potable Water	3m³	2	375
Drill Water	3m³		625
Bentonite	Ton		39
Barite	Ton		135
Brine			365

Offload Spud equip.
Stby kt4

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 26 Nov 2010		Running stand-by

Item	Unit	Used	Quantity
Fuel	Ton	20	441
Potable Water	3m³	3	268
Drill Water	3m³		20
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	ltrs		0

0001-0145 Under stbd crane discharge bulk cargo
0145-0215 Move vessel to port side
0215-1130 Working bulks and water port side
1130-2000 Depart field steam to pilot station
2000-2359 Pilot onboard continue passage to berth

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Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	09:00 / 09:12	7 / 5	Crew Change

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Australian Drilling Associates Pty Ltd

30 Nov 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

DRILLING MORNING REPORT # 5
Silvereye-1

Silvereye-1

Date:	30 Nov 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	5	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$634,655
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$3,783,367
Wtr Dpth (LAT)	54.0m	Days on well	4.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	394
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.		
Datum		Last BOP Test		Planned Op	RIH W/ 36" BHA & Spud Silvereye 1 well.		

Summary of Period 0000 to 2400 Hrs

Waiting on EPBC Referral Approval.
Continued with rig maintenance & servicing.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	3 Days	Fire & Abandon drill	
JSA	33	0 Days	Pre Job Safety Meetings	Morning pre-tour Prevention - Equip checks prior lift, Conducting PM's requesting advice from Mechanic, Roustabout identified paint fume hazard, Debris left after job completion (job not complete until area cleaned), Reminder Log book gas monitor sign out/in - return equipment clean ready for safe use. Evening pre-tour Prevention - Noise Loss is Painless; Crewman issued crewmate double hearing protection when entering Main Engine Room, Good TBT and Task planning; Moving fishing tools drill floor (discussed manual handling technique / hand and body placement, Unloading stores Galley Crew conducted TBT for all involved, Prior commence deck lifts and working the supply vessel. Reminder Log book gas monitor sign out/in - return equipment clean ready for safe use.
Permit To Work	28	0 Days	Permits administered	
Pre Job Safety Meeting	34	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		ADA Conference Call
STOP Card	30	0 Days	STOP Cards/ Safety Card Winner - Alan Farmer - Crane Op	The Water Maker roof beside the Riser Deck is often used as a storage area. At any given time it can have 5 ton on it. I have asked on a number of occasions for a 'weight rating' on it to ensure that it does not get over-loaded. To date I have yet to receive any feedback. To say that the Water Maker roof has 'always been a storage area' is not good enough. We would all hate to see an accident become the prompt for answering such questions, and we don't want another occurrence like that of the riser racks.
Weekly Safety Meeting	0	2 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 30 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP	M3	0000	0600	6.00	0.0m	Waiting on EPBC Referral Approval.

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Printed on 30 Nov 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
	(WO)						Offloaded bulks from Far Scimitar. Continued with rig maintenance & servicing.
P1	TP (WO)	M3	0600	0700	1.00	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
P1	P	M3	0700	1030	3.50	0.0m	M/Up 30" casing running tool & racked in the derrick. M/Up 18 3/4 R/tool & laid out to the deck.
P1	TP (WO)	M3	1030	2400	13.50	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

Operations For Period 0000 Hrs to 0600 Hrs on 01 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0000	0600	6.00	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

Phase Data to 2400hrs, 30 Nov 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	109.5	26 Nov 2010	30 Nov 2010	109.50	4.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 30 Nov 2010

Operational Comments	Daytime maintenance report as follows: Mechanical: Assist Stewart & Stevenson: No2 EMD generator .Test on load. Drawworks checks ongoing. Outside watermaker booster pump overhaul complete. Electrical: Test anchor winch emergency release pawls o.k. TDS HPU No1: Stripped contractor and cleaned contacts. Repaired light installed in derrick. Rig Welders: Renewed grating and cross member on BOP Transporter. Oil tank on Drawworks roof: Renewed one leg and prepared others. Taylor Brothers: Commenced installation of insulation in the engine room. Completed one of four sections. Still to be delivered are 4 outside fire dampers (one for each of the accommodation AHUs) + 2 each fire dampers for the laundry.
Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Scaffold dismantled & erected in Engine Rm for Taylor Bros PM's on Compressors, Fuel Pumps, Transfer Pumps Maintenance on Sanitary System Maintenance on Air Winches SAP Notifications & Orders Electrical Welding Machine No.3 repaired PM's on Cranes, Various Pumps & Communication Systems Welding Old Pad Eyes removed from Main Deck Port Fwd Stairway repaired from Riser Deck to Drill Floor Louvres installed on Deck Air Compressor Gas Bottle & Steel Inventory taken Steps to Helideck repaired Samson Posts by V-Door repaired
Operational Comments	Drilling Press tested C&K manifold. Press tested standpipe manifold. Press tested all surface equipment. Continued with rig maintenance & PMs.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	12	0	513.0
Drill Water	m3	0	10	0	644.0
Pot Water	m3	36	21	0	239.0
Brine	m3	0	0	0	50.0

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Cement class \'G\'	MT	0	0	0	106.8
Barite	MT	29.5	0	0	121.0
Bentonite	MT	23.4	0	0	53.9
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	39
ADA	4
OMS	26
Fugro ROV	7
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Dril-Quip	1
Other Contractor	2
Total	86

Marine

Weather on 30 Nov 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	16kn	124.0deg	1021.0mbar	13C°	1.0m	120.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.4m	1.7deg	1.6deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	115.0deg		

Rig Support

Anchors	Tension (klb)
1	132.0
2	144.0
3	141.0
4	168.0
5	149.0
6	137.0
7	174.0
8	98.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Stby KT4	

Item	Unit	Used	Quantity
Fuel	Ton	13	480
Potable Water	3m³	2	373
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		106
Brine			0

Offload Spud equip.
Stby kt4

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 26 Nov 2010	28 Nov 2010	Alongside 28 South

Item	Unit	Used	Quantity
Fuel	Ton	4	437
Potable Water	3m³	3	265
Drill Water	3m³		400
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		84
Brine	ltrs		0

0001-2359 Alongside 28 South
Load Cement / Water

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	/	/	No Chopper today.

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 6
Silvereye-1

01 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Rob Oliver

Silvereye-1

Date:	01 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	6	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$630,582
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$4,413,949
Wtr Dpth (LAT)	54.0m	Days on well	5.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	395
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.		
Datum		Last BOP Test		Planned Op	RIH with 36" drilling BHA & spud Silvereye-1 well.		

Summary of Period 0000 to 2400 Hrs

Waiting on EPBC Referral Approval.
Continued with rig maintenance & servicing.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	4 Days	Fire & Abandon drill	
JSA	13	0 Days	Pre Job Safety Meetings	Morning pre-tour Prevention & Interventions - Observed driller intervene to review correct change procedure changing out snake - following manufacturers guidelines. Good TBT and Task planning; Moving fishing tools drill floor (discussed manual handling technique / hand and body placement, Noise Loss is Painless; Crewman issued crewmate double hearing protection when entering Main Engine Room, Deck ensured areas cleaned up after job completion - housekeeping. Evening pre-tour Prevention - Noise reduction initiative - Improved sound reduction noticed by crewman working in Mechanics workshop with recent install of sound proof bulkhead - Equipment checks: Snatch block observed to require attention during checks, informed supervisor / placed out of service. Housekeeping - Paint tins left sculling near ROV area outside S3. Return all paint to Paint Store. Encourage "Info Tags".
Permit To Work	12	0 Days	Permits administered	
Pre Job Safety Meeting	15	0 Days	Tool Box talks	
Safety Meeting	8	0 Days		Safety Awareness Presentation x2 - Bo Johansen CPH Safety Coach
STOP Card	30	0 Days	STOP Cards/ Safety Card Winner - Daniel Bonney - ROV / Ian Healey - Mechanic	Man wearing a harness that was incorrectly fitted. Informed him of the dangers of not configuring the harness correctly, and sorted it out for him. While loading scrap metal into a cage, the Barge Engineer made me aware that it only had a one tonne capacity, so it was overloaded. He directed me to a box nearby to place my scrap into. I appreciated the advice, knowledge and intervention, thanks.
Weekly Safety Meeting	0	3 Days		Drill x2, Marine x2, Catering,Admin,x3

Operations For Period 0000 Hrs to 2400 Hrs on 01 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0000	2400	24.00	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

Operations For Period 0000 Hrs to 0600 Hrs on 02 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0000	0600	6.00	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.

Phase Data to 2400hrs, 01 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	133.5	26 Nov 2010	01 Dec 2010	133.50	5.563	0.0m

General Comments

00:00 TO 24:00 Hrs ON 01 Dec 2010

Operational Comments	Daytime maintenance report as follows: Mechanical: Preparing service exchange equipment for back load. Planned Maintenance Electrical: IR HPU No2: Fault find starting problem: Loose connection fixed. Repair lights outside shaker house + port pontoon pump room. Repaired Medic's magnifying light. Disconnected old dryer in laundry. Prepare for removal. Welder: Completed renewal of oil tank legs on drawworks roof. Fixed water leak on drawworks roof. Renewal of nuts & bolts on stairway between riser deck and drill floor ongoing. Removed pins from 2 anchor chain kenter links. Taylor Brothers: Completed installation of insulation in the engine room. Preliminary checks into outstanding damper installation. 2 laundry dampers + 4 accommodation dampers due on next boat.
Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Needle Gunning Deck in Column P2 Boxing up Stewart & Stevenson Equipment Stbd Prop Room Oil Storage Tank drained Maintenance on Machinery Dampers PM's on Various Pumps Fwd Start Air Receiver de-isolated Electrical Repairs to Portable Grinders PM's on Sterilisers & Compressors Purchase Requisitions Welding Brackets welded on Pipe Deck beams Fabrication of Stairs for Drawworks Roof Handrail repairs on Pipe Deck
Operational Comments	Drilling Preparing rig equipment for spud. Continued with rig maintenance & PMs.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	13	0	500.0
Drill Water	m3	0	2	0	642.0
Pot Water	m3	38	25	0	252.0
Brine	m3	0	0	0	50.0
Cement class \'G\'	MT	0	0	0	106.8
Barite	MT	0	0	0	121.0

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Bentonite	MT	0	0	0	53.9
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	39
ADA	4
OMS	26
Fugro ROV	7
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Dril-Quip	1
Total	84

Marine

Weather on 01 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	39kn	127.0deg	1016.0mbar	13C°	2.0m	120.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.6m	0.9deg	2.2deg	250.0deg		787.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
3.5m	245.0deg		

Rig Support

Anchors	Tension (klb)
1	137.0
2	148.0
3	144.0
4	166.0
5	153.0
6	142.0
7	174.0
8	114.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		22:00 26 Nov 2010	Stby KT4	

Item	Unit	Used	Quantity
Fuel	Ton	6	474
Potable Water	3m³	2	371
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		106
Brine			0

Stby kt4

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 26 Nov 2010	28 Nov 2010	Alongside 28 South

Item	Unit	Used	Quantity
Fuel	Ton	1	638
Potable Water	3m³	3	364
Drill Water	3m³		400
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		84
Brine	ltrs		0

0001-2359 Alongside 28 South
Load deck cargo / load water / load bunkers / load provisions / load general stores

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	08:53 / 09:09	5 / 7	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 7
Silvereye-1

02 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	02 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	7	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	0.0m	Cur. Hole Size		AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	0.0m	Last Casing OD		AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT		Daily Cost	AU$ 0
Rig	Kan Tan IV	Days from spud		Shoe MDBRT		Cumul. Cost	AU$4,413,949
Wtr Dpth (LAT)	54.0m	Days on well	6.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	396
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Working stuck pipe @ 123m.		
Datum		Last BOP Test		Planned Op	Free stuck pipe. Continue to drill 36" hole to section TD. Run and cement 30" conductor.		

Summary of Period 0000 to 2400 Hrs

Waited on EPBC Referral Approval.
Continued with rig maintenance & servicing.
RIH with 36" BHA & tagged sea bed at 80m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	5 Days	Fire & Abandon drill	
JSA	24	0 Days	Pre Job Safety Meetings	Morning pre-tour Prevention - Noise reduction initiative - Improved sound reduction noticed by crewman working in Mechanics workshop with recent install of sound proof bulkhead separating adjacent Engine Room. Equipment checks: Snatch block observed to require attention during checks, informed supervisor / placed out of service. Housekeeping - Paint tins left sculling near ROV area outside S3. Return all paint to Paint Store. Encourage "Info Tags". Evening pre-tour Pre Start Checks prevents equip failure - Roustabout tightens air line connection on Air powered grease gun. Crane Op checks fuel ball valve in correct position. Housekeeping - Wood lashed down secured. Crew mate gives assistance to ensure buddy has correct aligned / prepared blade on hacksaw. Encourage ACTIVE card participation - all crew participation
Permit To Work	21	0 Days	Permits administered	
Pre Job Safety Meeting	26	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		Safety Awareness Presentation x2 - Bo Johansen CPH Safety Coach
STOP Card	39	0 Days	STOP Cards/ Safety Card Winner -Anaru Hales - Floorman	Went to check a snatch block before using it, and found it to be damaged. I took it to the supervisor and pointed out the damage, then placed it in quarantine for inspection. It just proves the need to check the gear before we use it, but would be better to report damage as it happens.
Weekly Safety Meeting	0	4 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 02 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	TP (WO)	M3	0000	1730	17.50	0.0m	Waiting on EPBC Referral Approval. Continued with rig maintenance & servicing.
P2	P	F2	1730	1900	1.50	0.0m	Commenced mixing spud mud & kill mud.
P2	P	G6	1900	2230	3.50	80.0m	Held PJSM. RIH with 36" BHA & tagged seabed @ 80m tide corrected with ROV assistance.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P2	P	G6	2230	2400	1.50	80.0m	Water depth = 54m. Offline: continued mixing spud mud & kill mud. Function tested Anderdrift Tool. Good test - 0° recorded. Continued to mix spud mud & kill mud. Held PJSM and discussed spud & shallow gas procedures.

Operations For Period 0000 Hrs to 0600 Hrs on 03 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P2	P	D2	0000	0200	2.00	130.0m	Took survey ½˚. Spudded well @ 00:00 hrs. Drilled 36" hole from 80m to 130m with 1000gpm, 50rpm and 5 -10 WOB. Pumped 50 bbl Hi Vis sweeps every 15m.
P2	TP (RE)	D2	0200	0400	2.00	130.0m	Cross threaded stand of DP while making connection. Unable to back out tool joint, finally worked tool joint down low enough to get tongs on & break free.
P2	TP (WB)	G21	0400	0600	2.00	130.0m	Broke out tool joint and racked stand back in the derrick. Made up Top Drive - unable to move pipe up or down or rotate. Full circulation achieved. Working stuck pipe @ 123m.

Phase Data to 2400hrs, 02 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	6.5	02 Dec 2010	02 Dec 2010	157.50	6.563	80.0m

General Comments

00:00 TO 24:00 Hrs ON 02 Dec 2010

Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Trouble Shooting Iron Roughneck. Make-Up Break-Out function fault Iron Roughneck. HPU pumps changed over. . PM's on Lifeboats. Needle gunning in Column P2 2m3 Waste Oil transferred from Storage Tank to Desk Flask No.1 Purifier Stripped & Cleaned SAP Notifications & Orders Electrical PM's on Lifeboats Checking out Iron Roughneck Fault Charge Pump No.3 not starting in Auto - ongoing Welding Fabrication of Drill Floor Stairs Handrail Fabrication & Repairs
Operational Comments	Drilling Preparing rig equipment for spud. Continued with rig maintenance & PMs.
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	6	0	494.0
Drill Water	m3	0	10	0	632.0
Pot Water	m3	38	30	0	260.0
Brine	m3	0	0	0	50.0
Cement class \'G\'	MT	0	0	0	106.8
Barite	MT	0	0	0	121.0
Bentonite	MT	0	0	0	53.9
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	39
ADA	4
OMS	26

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Personnel On Board

Fugro ROV	7
Halliburton	3
Baroid	1
Reach	1
Other Contractor	2
Dril-Quip	1
Total	84

Marine

Weather on 02 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	21kn	89.0deg	1012.0mbar	13C°	1.3m	100.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.9deg	1.5deg	250.0deg		1312.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.5m	120.0deg		

Rig Support

Anchors	Tension (klb)
1	152.0
2	131.0
3	139.0
4	181.0
5	164.0
6	126.0
7	162.0
8	100.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		18:15 02 Dec 2010	en-route to Melbourne	

Item	Unit	Used	Quantity
Fuel	Ton	9	465
Potable Water	3m³	2	369
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		106
Brine			0

0000 - 1815 At KT IV
1815 - 2400 en-route to Melbourne

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	23:50 02 Dec 2010	28 Nov 2010	Stby KT4

Item	Unit	Used	Quantity
Fuel	Ton	13	625
Potable Water	3m³	3	361
Drill Water	3m³		400
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		84
Brine	ltrs		0

0001-0600 Alongside 28 South
0600-1000 Pilot onboard depart for Kan Tan IV
1000-1900 Pilot away set passage to rig
1900-2359 Arrive on location set-up under stbd crane discharge deck cargo

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	/	/	No Choppers today.

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 8
Silvereye-1

03 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	03 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	8	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	141.0m	Cur. Hole Size	36.000in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	141.0m	Last Casing OD	30.000in	AFE No.	
Drill Co.	Maersk	Progress	61.0m	Shoe TVDBRT	137.4m	Daily Cost	AU$718,482
Rig	Kan Tan IV	Days from spud	1.00	Shoe MDBRT	137.4m	Cumul. Cost	AU$5,770,616
Wtr Dpth (LAT)	54.0m	Days on well	7.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	397
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Laying out damaged tubulars from the derrick.		
Datum		Last BOP Test		Planned Op	Pick up 5" DP from the deck. Make up 17 1/2" BHA & RIH.		

Summary of Period 0000 to 2400 Hrs

Spud well @ 00:00 hrs, 3rd December, 2010. Drilled 36" hole from 80m to 130m .
Cross threaded stand of DP while making connection.
Made up Top Drive - unable to move pipe up or down or rotate.
Working stuck pipe @ 123m.
Pipe free. POOH from 123m, pumped & back reamed to above seabed.
RIH, washed down from seabed to 130m.
Drilled 36" hole to 141m
Displaced well to 11ppg weighted mud
POOH to surface.
ROV positioned marker buoy's around the well.
Rigged up & ran 30" Conductor.
Commenced pumping cement as per programme.
Waited on cement.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	0	6 Days	Fire & Abandon drill	
JSA	31	0 Days	Pre Job Safety Meetings	Morning pre-tour Pre Start Checks prevents equip failure - Roustabout tightens air line connection on Air powered grease gun. Crane Op checks fuel ball valve in correct position. Housekeeping - Wood lashed down secured. Crew mate gives assistance to ensure buddy has correct aligned / prepared blade on hacksaw. Encourage ACTIVE card participation - all crew participation Evening pre-tour Proactive - Good work observed Drill crew and Roustabout mixing mud in hoppers last night. Safe Day handling casing - and Deck crew working the boat. ReActive - Forklift left unattended with forks fully laden. Still barrier chains around rig with no info tags. Harnesses need to be returned to appropriate places. Only 1x harness left on Drill Floor - Return to correct stowage when borrowed. Maintain safety equipment and hang up post use.
Permit To Work	23	0 Days	Permits administered	
Pre Job Safety Meeting	31	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	28	0 Days	STOP Cards/ No Safety Card Winner	
Weekly Safety Meeting	0	5 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 03 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P2	P	D2	0000	0200	2.00	130.0m	Took survey ½ deg. Spudded well @ 00:00 hrs.

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Printed on 05 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							Drilled 36" hole from 80m to 130m with 1000gpm, 50rpm and 5 -10 WOB. Pumped 50 bbl Hi Vis sweeps every 15m.
P2	TP (RE)	D2	0200	0400	2.00	130.0m	Cross threaded stand of DP while making connection. Unable to back out tool joint, finally worked tool joint down low enough to get tongs on & break free.
P2	TP (WB)	G21	0400	0630	2.50	130.0m	Broke out tool joint and racked stand back in the derrick. Made up Top Drive - unable to move pipe up or down or rotate. Full circulation achieved. Working stuck pipe @ 123m.
P2	TP (WB)	G8	0630	0830	2.00	130.0m	Pipe Free. POOH from 123m, pumped & backreamed to above seabed racking back over torqued stands of HWDP. Confirmed with ROV bit & hole opener OK.
P2	TP (RE)	G21	0830	0930	1.00	130.0m	Mechanics & electricians inspected Top Drive for possible damage, no problems found.
P2	TP (WB)	G8	0930	1030	1.00	130.0m	RIH, washed down from seabed to 130m.
P2	P	D2	1030	1100	0.50	141.0m	Drilled 36" hole from 130m to 141m tide corrected. Took survey at TD - 1/2 deg.
P2	P	F3	1100	1130	0.50	141.0m	Pumped 100bbl sweep & displaced well to 11ppg weighted mud @ 1100gpm/ 950psi.
P2	P	G8	1130	1330	2.00	141.0m	POOH from 141m to surface, racked back BHA in the derrick. ROV positioned marker bouys around the well.
P3	P	G1	1330	1400	0.50	141.0m	Held PJSM. Rigged up 30" Conductor running equipment.
P3	P	G9	1400	1630	2.50	141.0m	Held PJSM. Picked up shoe joint, checked float & RIH 30" conductor
P3	P	G9	1630	1800	1.50	141.0m	Installed C plate, ran 1 stand Of 5" DP stinger & made up 30" Running Tool to 30" housing. Lowered 30" conductor & made up 30" to PGB in the moon pool under Dril Quip supervision.
P3	P	G9	1800	1930	1.50	141.0m	Filled casing with SW & RIH hole to set PGB 2m above seabed. Made up cement stand & washed down last 10m. ROV confirmed PGB heading & checked bullseyes. Stbd bullseye 3/4 deg to Port. Aft bullseye 1/4 deg to Port.
P3	P	F3	1930	2200	2.50	141.0m	Held PJSM. Commenced pumping cement as per programme. Pumped 20bbl of SW & performed line test 300/3000psi 5/10min. Pumped 60bbl of SW followed by 20bbl of SW with Mica. Mixed & pumped 280bbls of 15.8ppg cement slurry @ 5bbl/pm. Displaced with 64bbls of SW. Opened bleed off to confirm floats holding.
P3	P	G9	2200	2400	2.00	141.0m	Waited on cement.

Operations For Period 0000 Hrs to 0600 Hrs on 04 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P3	P	G9	0000	0200	2.00	141.0m	Continued to wait on cement. ROV observing PGB for movement.
P3	P	G8	0200	0330	1.50	141.0m	Held PJSM. Slacked off landing string weight & observed PGB for slumping or movement. ROV confirmed hard cement all around conductor. Unlatched 30" R/tool & POOH. Strapped out string 77.6m RKB to 30" W/head. Laid out R/tool to the deck. Bullseye readings - no change. Stbd bullseye 3/4 deg to Port Aft bullseye 1/4 deg to Port
P3	P	G2	0330	0530	2.00	141.0m	Laid out 36" BHA from the derrick to the deck for backloading.
P3	TP (RE)	G2	0530	0600	0.50	141.0m	(IN PROGRESS) Held PJSM. Laid out damaged 5" DP & HWDP to the deck for backloading.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 03 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	10.5	03 Dec 2010	03 Dec 2010	181.50	7.563	141.0m

General Comments

00:00 TO 24:00 Hrs ON 03 Dec 2010

Operational Comments	Maintenance Dept Night Report as follows:-

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General Comments

	Mechanical Port Contaminated Water Tank lowered via OWS. 2000 ltrs Engine Oil transferred into Pedestal Storage Tank. Sprinkler Head in Laundry relocated to enable installation of new machine. Potable Water Tank chlorinated. Iron Roughneck hydraulic system fault finding. Electrical Stbd Propulsion Rm faulty bilge float changed out & tested ok. Loose contact block repaired BOP Hydraulic Pump No.1 Charge Pump No.3 Hand / Auto selector switch repaired Smoke Detector Head in laundry relocated to enable installation of new machine Welding Fabrication of stairs for Drawworks roof. Fabrication of handrails / bumper bar for Riser Deck
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

WBM Data

Cost Today

Mud Type:	Pre Hydrated Gel	API FL:	Cl:	Solids(%vol):		Viscosity	155sec/qt
		Filter-Cake:	K+C*1000:	H2O:		PV	
Sample-From:	pit#3	HTHP-FL:	Hard/Ca:	Oil(%):		YP	
Time:	0130	HTHP-cake:	MBT:	Sand:		Gels 10s	
Weight:	8.60ppg		PM:	pH:	9	Gels 10m	
Temp:	25C°		PF:	PHPA:		Fann 003	
						Fann 006	
						Fann 100	
						Fann 200	
						Fann 300	
						Fann 600	

Comment: Mixed 450 bbl 11 ppg Kill mud in pit#2 and continue mixing PHG for Hi-Vis sweeps while drilling 36" hole. Pumped ~50 bbl Hi-Vis sweeps into annulus every half stand and around the BHA on connections. Spotted ~300 bbl kill mud in open hole and POOH. Building more kill mud and PHG at report time

Bit # 1

Wear	I	O1	D	L	B	G	O2	R
	0	0	NO	A	0	I	NO	TD

Bitwear Comments:

Size (''):	26.00in	IADC#		**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	Smith Bits	WOB(avg)		No.	Size	Progress	61.0m	Cumul. Progress	61.0m
Type:	Rock	RPM(avg)		1	18/32nd"	On Bottom Hrs	2.5h	Cumul. On Btm Hrs	2.5h
Serial No.:	203A3	F.Rate	874gpm	3	16/32nd"	IADC Drill Hrs		Cumul. IADC Drill Hrs	0.0h
Bit Model	XR-VCPS	SPP		3	24/32nd"	Total Revs		Cumul. Total Revs	0
Depth In	80.0m	HSI				ROP(avg)	24.40 m/hr	ROP(avg)	24.40 m/hr
Depth Out	141.0m	TFA	2.163						

Bit Comment

BHA # 1

Weight(Wet)	44.00klb	Length	122.5m	Torque(max)	4000ft-lbs	D.C. (1) Ann Velocity	37fpm
Wt Below Jar(Wet)		String	210.00klb	Torque(Off.Btm)	800ft-lbs	D.C. (2) Ann Velocity	35fpm
		Pick-Up	210.00klb	Torque(On.Btm)	2500ft-lbs	H.W.D.P. Ann Velocity	33fpm
		Slack-Off	210.00klb			D.P. Ann Velocity	33fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.65m	26.00in		6175	XR-VCPS
Hole Opener	2.72m	36.00in		TOT36-HO-2	3 x 18 nozzles
Bit Sub	0.90m	9.50in	3.00in		Non ported float installed
Anderdrift	3.10m	9.56in	3.00in	ADFT09500078	
X/O	1.12m	9.50in	2.50in	95	TOTCO ring installed
Drill Collar	37.50m	8.25in	2.88in		
HWDP	56.40m	5.00in	3.00in		

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	30	0	464.0
Drill Water	m3	325	183	0	774.0
Pot Water	m3	34	33	0	261.0
Brine	m3	0	0	0	50.0
Cement class \'G\'	MT	0	68	0	38.8
Barite	MT	0	19	0	102.0
Bentonite	MT	0	0	0	53.9
Shaker Screen 84	Screens	0	0	0	12.0

Personnel On Board

Company	Pax
Maersk	38
ADA	4
OMS	26
Fugro ROV	7
Halliburton	3
Baroid	2
Reach	1
Other Contractor	2
Dril-Quip	1
Weatherford	1
Other Contractor	1
Geoservices	3
PCS	2
Sperry	3
Total	94

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

				Equipment	Description	Mesh Size	Comments
Available	**1370.0bbl**	**Losses**	**0.0bbl**				
Active	980.0bbl	Downhole					
Mixing		Surf+ Equip	0.0bbl				
Hole Slug		Dumped De-Gasser					
Reserve	390.0bbl	De-Sander					
Kill		De-Silter					
		Centrifuge					

Marine

Weather on 03 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	13kn	352.0deg	1008.0mbar	16C°	0.8m	45.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	1.2deg	1.1deg	250.0deg		1312.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	45.0deg		

Rig Support

Anchors	Tension (klb)
1	152.0
2	135.0
3	144.0
4	183.0
5	164.0
6	123.0
7	156.0
8	91.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar		18:15 02 Dec 2010	Melbourne

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	11	754
Potable Water	3m³	2	548
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		106

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				Item	Unit	Used	Quantity
				Brine			0

0000 - 0940 en-route to Melbourne
0940 - 2400 Melbourne

				Item	Unit	Used	Quantity
Far Fosna	23:50 02 Dec 2010	28 Nov 2010	Stby KT4	Fuel	Ton	18	607
				Potable Water	3m³	3	358
				Drill Water	3m³		80
				Bentonite	Ton		0
				Barite	Ton		0
				'G' Cmt	Ton		84
				Brine	ltrs		0

0001-2359 Work port and stbd crane deck cargo and water

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	09:48 / 10:01	10 / 5	Crew Change
2	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	13:08 / 13:17	5 / 0	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 9
Silvereye-1

04 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	04 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	9	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	537.0m	Cur. Hole Size	36.000in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	537.0m	Last Casing OD	30.000in	AFE No.	
Drill Co.	Maersk	Progress	396.0m	Shoe TVDBRT	137.4m	Daily Cost	AU$672,588
Rig	Kan Tan IV	Days from spud	2.00	Shoe MDBRT	137.4m	Cumul. Cost	AU$6,443,204
Wtr Dpth (LAT)	54.0m	Days on well	8.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	398
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Drilling ahead 17 1/2" hole @ 705m.		
Datum		Last BOP Test		Planned Op	Drill ahead 17 1/2" hole to section TD. POOH, rig up & run 13 3/8" casing.		

Summary of Period 0000 to 2400 Hrs

Continued to wait on cement.
Unlatched 30" R/tool & POOH.
Laid out 36" BHA & damaged 5" tubular from the derrick to the deck for back loading.
Picked up 30 joints of 5" DP from the deck & racked in the derrick.
Picked up & made up 17 1/2" BHA & RIH to top of cement.
Drilled out cement & shoe track to 141m.
Drilled ahead 17 1/2" hole from 141m to 537m.
Pumped & displaced open hole volume to Gel mud.
POOH on elevators from 537m to 396m. No tight spots or over pull observed.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill	1	0 Days	Fire & Abandon drill	Fire Exercise Laundry/ Abandon Rig Drill
JSA	20	0 Days	Pre Job Safety Meetings	Morning pre-tour Proactive - Good work observed Drill crew and Roustabout mixing mud in hoppers last night. Safe Day handling casing - and Deck crew working the boat. ReActive - Forklift left unattended with forks fully laden. Still barrier chains around rig with no info tags. Harnesses need to be returned to appropriate places. Maintain safety equipment and hang up post use. Evening pre-tour 3rd Party Tidying their various work sites today, Good work Dogman clearing area by welding shack when moving container, Cementers using new barrier chain during high pressure testing, Observed good pre-job TBT before running conductor - Hazards highlighted to crew involved. Man in Rec room with Boots (booty covers), Beware body position between stump and load coming up from deck.
Permit To Work	18	0 Days	Permits administered	
Pre Job Safety Meeting	22	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	48	0 Days	STOP Cards/ Safety Card Winner-Anthony Reihana - Welder	I observed a huge grappling hook on the riser deck has broken a hand-rail due to rig movement and insufficient sea-fastening. The pressure on the hand-rail has exceeded the yield strength of the steel. I think we need to have purpose built securing points for gear of this size and weight, and keep plant away from hand-rails and secure them properly.
Weekly Safety Meeting	0	6 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 04 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P3	P	G9	0000	0200	2.00	141.0m	Continued to wait on cement. ROV observing PGB for movement.
P3	P	G8	0200	0330	1.50	141.0m	Held PJSM. Slacked off landing string weight & observed PGB for slumping or movement. ROV confirmed hard cement all around conductor. Unlatched 30" R/tool & POOH. Strapped out string 77.6m RKB to 30" W/head. Laid out R/tool to the deck. Bullseye readings - no change. Stbd bullseye 3/4 deg to Port Aft bullseye 1/4 deg to Port
P3	P	G2	0330	0530	2.00	141.0m	Laid out 36" BHA from the derrick to the deck for backloading.
P3	TP (RE)	G2	0530	0730	2.00	141.0m	Held PJSM. Laid out damaged 5" DP & HWDP to the deck for backloading.
P3	P	G2	0730	1000	2.50	141.0m	Held PJSM, cleared & cleaned Rig floor. Picked up 30 joints of 5" DP from the deck & racked in the derrick.
P7	P	G6	1000	1330	3.50	141.0m	Held PJSM. Picked up & made up 17 1/2" BHA. Connected guide ropes in the moonpool. Continued to RIH picking up BHA to top of 30" housing, stabbed into housing with ROV assistance & continued to pick up BHA & RIH to 100m.
P7	P	G15	1330	1400	0.50	141.0m	Shallow tested MWD W/ 1000gpm/ 200spm/ 1520psi.
P7	P	G8	1400	1430	0.50	141.0m	Continued to RIH to 131m top of cement.
P7	P	G2	1430	1530	1.00	141.0m	Drilled out cement & shoe track from 131m to 141m. Shoe @ 138m. Reamed through shoe 3 times.
P7	P	D2	1530	2300	7.50	537.0m	Drill ahead 17 1/2" hole from 141m to 537m. 1200gpm/2200psi/ 100rpm/ 5-10 WOB.
P7	P	D2	2300	2330	0.50	537.0m	Pumped 30bbl sweep & displaced with 300bbls of SW. Pumped & displaced open hole volume to Gel mud.
P7	P	G8	2330	2400	0.50	537.0m	POOH (wiper trip) on elevators from 537m to 396m. No tight spots or overpull observed.

Operations For Period 0000 Hrs to 0600 Hrs on 05 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P7	P	G8	0000	0100	1.00	537.0m	Continued to POOH (wiper trip) on elevators from 396m to 136m. No tight spots or overpull observed. ROV Cleaning cuttings build up from around the well head.
P7	P	G8	0100	0200	1.00	537.0m	Broke circulation at the shoe & pumped out 30" casing Volume. RIH from 136m to 537m. Hole in good condition, no drag & no fill on Bottom.
P7	P	D2	0200	0600	4.00	705.0m	Continued to drill ahead new 17 1/2" hole from 537m to 705m. 1150gpm/2350psi/ 10-20 WOB/ 3-4 Torque. ROP 42-50m p/hr. Pumped 50bbl of pre hyd gel sweeps every 15m. Took surveys on every stand.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 04 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	14	04 Dec 2010	04 Dec 2010	205.50	8.563	537.0m

General Comments

00:00 TO 24:00 Hrs ON 04 Dec 2010

Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Oil & Chemical Inventory taken Port Crane Starting problem checked out Tracing Potable Water Supply to rig floor. Long Term Isolations Reviewed. Machinery Running Hours recorded. Engine Lub Oil transferred to Storage Tank. Engine Room Blower Fan overhauled. Spare Parts Inventory updated. Electrical Faulty Smoke Detector Head No.62 replaced. New power lead installed to Mess Room Microwave. Aft Lifeboat Davit PM's. Aft Crane Whip Line Isolation / De-Isolation. Crane Boom Hoist pressure transducer installation Welding Fuel Meter Spool Pieces fabricated Fabrication of Bumper Bar for Riser Deck
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

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WBM Data

Cost Today

Mud Type:	Pre Hydrated Gel	API FL:	Cl:	Solids(%vol):		Viscosity	149sec/qt
Sample-From:	pit#3	Filter-Cake:	K+C*1000:	H2O:		PV	
Time:	2130	HTHP-FL:	Hard/Ca:	Oil(%):		YP	
Weight:	8.50ppg	HTHP-cake:	MBT:	Sand:		Gels 10s	
Temp:	25C°		PM:	pH:	9	Gels 10m	
			PF:	PHPA:		Fann 003	
						Fann 006	
						Fann 100	
						Fann 200	
						Fann 300	
						Fann 600	

Comment: Continue building more kill mud and PHG. Mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling.

Note: Cost of Guar Gum and Lime is not reflecting in Product / Fluid cost - Will rectify in later report.

Bit # 2

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	17.50in	IADC#		**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	SMITH	WOB(avg)	6.50klb	No.	Size	Progress	396.0m	Cumul. Progress	396.0m
Type:	Rock	RPM(avg)	77	3	16/32nd"	On Bottom Hrs	4.4h	Cumul. On Btm Hrs	4.4h
Serial No.:	STPR4067	F.Rate	1122gpm	3	12/32nd"	IADC Drill Hrs		Cumul. IADC Drill Hrs	0.0h
Bit Model	XR-VEJ3PS	SPP	1988psi			Total Revs		Cumul. Total Revs	0
Depth In	138.0m	HSI				ROP(avg)	90.00 m/hr	ROP(avg)	90.00 m/hr
Depth Out	1112.0m	TFA	0.920						

Bit Comment

BHA # 2

Weight(Wet)	65.00klb	Length	193.6m	Torque(max)	3500ft-lbs	D.C. (1) Ann Velocity	115fpm
Wt Below Jar(Wet)	50.00klb	String	240.00klb	Torque(Off.Btm)	1000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	245.00klb	Torque(On.Btm)	1500ft-lbs	H.W.D.P. Ann Velocity	98fpm
		Slack-Off	230.00klb			D.P. Ann Velocity	98fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.44m	17.50in		STPR4067	
HWDP	84.51m	5.00in	3.00in		
Mud Motor	9.24m	17.25in		963387	
String Stabiliser	2.17m	17.25in	3.00in	207A210	
MWD	9.89m	9.63in	3.38in	11230617	
Float Sub	0.76m	9.50in	3.00in	10782943	
X/O	1.12m	9.50in	2.88in	92	
Drill Collar	65.72m	8.50in	2.88in		
Jar	9.15m	8.00in	3.00in	214A3	
X/O	1.17m	8.00in	2.88in	508A40	
Drill Collar	9.40m	8.50in	2.88in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
169.07	0.34	207.46	169.07	-0.34	-0.4	-0.2	0.1	
198.00	0.69	248.98	198.00	-0.57	-0.6	-0.4	0.5	
226.95	0.53	294.13	226.95	-0.85	-0.6	-0.7	0.5	
313.71	0.53	265.36	313.70	-1.55	-0.5	-1.5	0.1	
342.60	0.28	302.85	342.59	-1.73	-0.4	-1.7	0.4	

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Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
371.49	0.39	275.52	371.48	-1.87	-0.4	-1.8	0.2	
400.39	0.25	319.71	400.38	-1.99	-0.3	-2.0	0.3	
429.33	0.25	316.06	429.32	-2.05	-0.2	-2.1	0.0	

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	8	0	456.0
Drill Water	m3	0	5	0	769.0
Pot Water	m3	0	38	0	223.0
Brine	m3	0	0	0	50.0
Cement class \'G\'	MT	73	0	0	111.8
Barite	MT	0	0	0	102.0
Bentonite	MT	0	0	0	53.9
Shaker Screen 84	Screens	0	0	0	12.0

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	136.00m / 136.00m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cmt at the seabed.

Personnel On Board

Company	Pax
Maersk	38
ADA	4
OMS	26
Fugro ROV	7
Halliburton	3
Baroid	2
Reach	1
Other Contractor	2
Dril-Quip	1
Weatherford	1
Other Contractor	1
Geoservices	3
PCS	2
Sperry	3
Total	94

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

				Equipment	Description	Mesh Size	Comments
Available	**1168.0bbl**	**Losses**	**0.0bbl**				
Active	778.0bbl	Downhole					
Mixing		Surf+ Equip	0.0bbl				
Hole Slug		Dumped					
		De-Gasser					
Reserve	390.0bbl	De-Sander					
Kill		De-Silter					
		Centrifuge					

Marine

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Weather on 04 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	19kn	207.0deg	1008.0mbar	13C°	1.3m	220.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.9deg	1.1deg	250.0deg		1312.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.0m	240.0deg		

Rig Support

Anchors	Tension (klb)
1	157.0
2	143.0
3	144.0
4	183.0
5	157.0
6	116.0
7	156.0
8	91.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar		18:15 02 Dec 2010	en-route to KT IV	

Item	Unit	Used	Quantity
Fuel	Ton	7	747
Potable Water	3m³	2	546
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		106
Brine	Ton		76

0000 - 1752 Melbourne
1752 - 2400 en-route to KT IV

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Fosna	23:50 02 Dec 2010	28 Nov 2010	Stby KT4	

Item	Unit	Used	Quantity
Fuel	Ton	10	597
Potable Water	3m³	3	355
Drill Water	3m³		80
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	ltrs		0

0001-0625 Work port and stbd crane deck cargo / water / cement
0625-1000 Running stand-by
1000-1545 Close stand-by for moon pool operations
1545-1630 Running stand-by
1630-1845 Close stand-by for moon pool operations
1845-2330 Under stbd crane back load deck cargo
2330-2359 Running stand-by

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	/	/	No Helicopters today.

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 10
Silvereye-1

05 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	05 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	10	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	1112.0m	Cur. Hole Size	36.000in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1112.0m	Last Casing OD	30.000in	AFE No.	
Drill Co.	Maersk	Progress	573.0m	Shoe TVDBRT	137.4m	Daily Cost	AU$724,804
Rig	Kan Tan IV	Days from spud	3.00	Shoe MDBRT	137.4m	Cumul. Cost	AU$7,168,008
Wtr Dpth (LAT)	54.0m	Days on well	9.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	399
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	POOH & rack BHA.		
Datum		Last BOP Test		Planned Op	Rig up & run 13 3/8" casing.		

Summary of Period 0000 to 2400 Hrs

Continued to POOH (wiper trip).
RIH to 537m. Hole in good condition, no drag & no fill on bottom.
Continued to drill ahead new 17 1/2" to 1112m section TD tide corrected.
Pumped 2 x 100bbl Hi Vis sweeps & circulated hole clean.
Took survey & displaced well to 1200bbls of 9.5ppg mud.
POOH on elevators to 500m.
Cranes shut down due to high winds 35+ knots.
RIH from 500m to 1112m section TD. Wiper trip -no restrictions observed.
Offline mixing new mud & sweeps to clean well.
Pumped 60bbl Hi Vis Sweep, circulated out with seawater.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill		1 Day	Fire & Abandon drill	Fire Exercise Laundry/ Abandon Rig Drill
JSA	22	1 Day	Pre Job Safety Meetings	Morning pre-tour 3rd Party Tidying their various work sites today, Good work Dogman clearing area by welding shack when moving container, Cementers using new barrier chain/ info sign during high pressure testing. Unsafe Electrical cord was identified and reported (repaired), Man in Rec room with Boots (booty covers), Drill Floor - Beware body position between stump and load coming up from deck. Evening pre-tour Housekeeping - Waste Segregation bins arrived onboard will encourage Environmental measures, Good cleanup Night SubSea in Hydrolic Room, Bulk Bags with empty chemical bags inside secured, Deck crew safe job landing riser - good comms all involved.
Permit To Work	20	1 Day	Permits administered	
Pre Job Safety Meeting	21	1 Day	Tool Box talks	
Safety Meeting	6	1 Day		
STOP Card	40	1 Day	STOP Cards/ Safety Card Winner- Karen Clarke - Medic/ John Varga - Asst Crane Operator	Observed the Sack Room Forklift was left unattended with a sack load positioned about 2 mtrs above the floor. Spoke to the Barge Engineer who went to rectify the hazard. The MIPEGs in the Cranes need regular PM's and calibration. They seem to drop their accuracy on a regular basis. If incorrect weights are being recorded by the MIPEG then there is a potential for lifting gear to be inadequate for the SWL of the lift. This could result in a rigging failure and a potentially catastrophic result.
Weekly Safety Meeting	2	7 Days		General Safety Meeting x2

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Operations For Period 0000 Hrs to 2400 Hrs on 05 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P7	P	G8	0000	0100	1.00	537.0m	Continued to POOH (wiper trip) on elevators from 396m to 136m. No tight spots or overpull observed. ROV Cleaning cuttings build up from around the well head.
P7	P	G8	0100	0200	1.00	537.0m	Broke circulation at the shoe & pumped out 30" casing Volume. RIH from 136m to 537m. Hole in good condition, no drag & no fill on Bottom.
P7	P	D2	0200	0600	4.00	705.0m	Continued to drill ahead new 17 1/2" hole from 537m to 705m. 1150gpm/2350psi/ 10-20 WOB/ 3-4 Torque. ROP 42-50m p/hr. Pumped 50bbl of pre hyd gel sweeps every 15m. Took surveys on every stand.
P7	P	D2	0600	1630	10.50	1112.0m	Continued to drill ahead new 17 1/2" hole from 705m to 1038m. Slide to 1053m. Drilled to 1061m. Slide to 1070m. Drilled to 1089m. Slide to 1094m. Drilled to 1112m section TD tide corrected. 1150gpm/2450psi/ 10-30 WOB/ 3-8 Torque. ROP 37 - 40m p/hr. Pumped 50bbl of pre hyd gel sweeps every 15m. Took surveys on every stand.
P7	P	F4	1630	1730	1.00	1112.0m	Pumped 2 x 100bbl Hi Vis sweeps & circulated hole clean @ 200spm/ 1000gpm/ 2450psi.
P7	P	F3	1730	1900	1.50	1112.0m	Took survey & displaced well to 1200bbls of 9.5ppg mud @ 190spm/ 1000gpm/ 1950psi.
P7	P	G8	1900	2200	3.00	1112.0m	POOH on elevators from 1112m to 500m. Numerous tight spots between 1068m - 940m & 780 - 583m, up to 60k over pull. Pulled through & wiped all tight spots. Cranes shut down due to high winds 35+ knots.
P7	P	G8	2200	2330	1.50	1112.0m	RIH from 500m to 1112m section TD. Wiper Trip. No restrictions observed. Washed last stand to bottom, 8m of fill. Offline mixing new mud & sweeps to clean well.
P7	P	F4	2330	2400	0.50	1112.0m	Pumped 60bbl Hi Vis Sweep, circulated with seawater @ max rate of 1200gpm/ 1150psi.

Operations For Period 0000 Hrs to 0600 Hrs on 06 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P7	P	F4	0000	0100	1.00	1112.0m	Continued to circulate out Hi Vis Sweep. Displaced well to 9.5ppg mud.
P7	P	F4	0100	0500	4.00	1112.0m	POOH on elevators from 1112m to 193m. Tight spots between 1080m - 1070m & 930m - 925m, up to 50k over pull. Pulled through & wiped all tight spots.
P7	P	G6	0500	0530	0.50	1112.0m	POOH BHA from 193m to 75m.
P7	P	F4	0530	0600	0.50	1112.0m	Make up Top Drive & flushed around well head & PGB. Stopped pumping due to mud motor causing excessive vibration of the top drive.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 05 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	38	04 Dec 2010	05 Dec 2010	229.50	9.563	1112.0m

General Comments

00:00 TO 24:00 Hrs ON 05 Dec 2010

Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Port Contaminated Water Tank lowered via OWS. Needle Gunning in P2 100' leve.l PM's on Cranes & Anchor Winches. Installation of New Tumble Dryer in Laundry Cooling Water Tests carried out Electrical Aft Crane Boom Pressure transducer & readout installed. PM's on DC Motors & Compressors Welding Fabrication of Riser Deck Bumper Bar / Handrail Fabrication of Ventilation Ducting
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

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WBM Data

Cost Today

Mud Type:	PAD Mud	API FL:	Cl:	18500mg/l	Solids(%vol):	5%	Viscosity	180sec/qt
Sample-From:	pit#3	Filter-Cake:	K+C*1000:		H2O:	94%	PV	16cp
Time:	1730	HTHP-FL:	Hard/Ca:	600mg/l	Oil(%):		YP	36lb/100ft²
Weight:	9.50ppg	HTHP-cake:	MBT:	20	Sand:		Gels 10s	22
Temp:	25C°		PM:	0.5	pH:	9	Gels 10m	26
			PF:	0.05	PHPA:		Fann 003	20
							Fann 006	22
							Fann 100	39
							Fann 200	47
							Fann 300	52
							Fann 600	68

Comment

Continue building more kill mud and PHG. Mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling.Prepared ~1150 bbl of 9.5 ppg PAD mud, by blending the 11 pph Kill mud with PHG and seawater. At TD, displaced the hole to 9.5 ppg PAD mud. Received 776 bbl of 9.5 ppg KCL brine ex FAR SCIMITAR. Mixing ~1000 bbl 9.5 ppg PAD mud and more Hi-Vis sweeps in anticiaption of wiper trip at time of report.

Note: Fluid check shown is for PAD mud.

Bit # 2

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	17.50in	IADC#		**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	SMITH	WOB(avg)	25.00klb	No.	Size	Progress	573.0m	Cumul. Progress	969.0m
Type:	Rock	RPM(avg)	77	3	16/32nd''	On Bottom Hrs	9.1h	Cumul. On Btm Hrs	13.5h
Serial No.:	STPR4067	F.Rate	1085gpm	3	12/32nd''	IADC Drill Hrs		Cumul. IADC Drill Hrs	0.0h
Bit Model	XR-VEJ3PS	SPP	2526psi			Total Revs	162	Cumul. Total Revs	162
Depth In	138.0m	HSI				ROP(avg)	62.97 m/hr	ROP(avg)	71.78 m/hr
Depth Out	1112.0m	TFA	0.920						

Bit Comment

BHA # 2

Weight(Wet)	65.00klb	Length	193.6m	Torque(max)	3500ft-lbs	D.C. (1) Ann Velocity	112fpm
Wt Below Jar(Wet)	50.00klb	String	240.00klb	Torque(Off.Btm)	1000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	245.00klb	Torque(On.Btm)	1500ft-lbs	H.W.D.P. Ann Velocity	95fpm
		Slack-Off	230.00klb			D.P. Ann Velocity	95fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.44m	17.50in		STPR4067	
HWDP	84.51m	5.00in	3.00in		
Mud Motor	9.24m	17.25in		963387	
String Stabiliser	2.17m	17.25in	3.00in	207A210	
MWD	9.89m	9.63in	3.38in	11230617	
Float Sub	0.76m	9.50in	3.00in	10782943	
X/O	1.12m	9.50in	2.88in	92	
Drill Collar	65.72m	8.50in	2.88in		
Jar	9.15m	8.00in	3.00in	214A3	
X/O	1.17m	8.00in	2.88in	508A40	
Drill Collar	9.40m	8.50in	2.88in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
458.20	0.43	297.24	458.19	-2.16	-0.1	-2.2	0.2	
487.12	0.18	317.57	487.11	-2.26	-0.1	-2.3	0.3	
545.02	0.37	308.44	545.01	-2.41	0.1	-2.5	0.1	
573.93	0.49	302.31	573.92	-2.54	0.3	-2.7	0.1	

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Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
602.86	0.46	313.77	602.85	-2.69	0.4	-2.9	0.1	
631.79	0.40	313.58	631.78	-2.80	0.5	-3.1	0.1	
660.77	0.37	319.21	660.76	-2.89	0.7	-3.2	0.1	
689.68	0.37	312.14	689.67	-2.98	0.8	-3.3	0.0	
718.63	0.37	319.88	718.62	-3.07	1.0	-3.5	0.1	
747.59	0.45	313.35	747.57	-3.17	1.1	-3.6	0.1	
805.44	0.34	320.74	805.42	-3.35	1.4	-3.9	0.1	
834.36	0.28	307.88	834.34	-3.43	1.5	-4.0	0.1	
863.29	0.32	334.24	863.27	-3.49	1.6	-4.1	0.1	
892.19	0.39	303.40	892.17	-3.57	1.7	-4.2	0.2	
921.11	0.33	321.61	921.09	-3.66	1.9	-4.3	0.1	
979.03	0.37	339.05	979.01	-3.75	2.2	-4.5	0.1	
1007.96	0.40	314.26	1007.94	-3.80	2.3	-4.6	0.2	
1036.86	0.29	23.92	1036.84	-3.81	2.5	-4.6	0.4	
1065.77	1.77	56.98	1065.74	-3.34	2.8	-4.2	1.6	
1088.00	2.80	63.79	1087.96	-2.48	3.2	-3.5	1.4	

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	17	0	439.0
Drill Water	m3	0	99	0	670.0
Pot Water	m3	0	21	0	202.0
Brine	m3	133	0	0	183.0
Cement class \'G\'	MT	0	0	0	111.8
Barite	MT	48	20	0	130.0
Bentonite	MT	0	8	-25	20.9
Shaker Screen 84	Screens	0	0	0	12.0

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	136.00m / 136.00m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cmt at the seabed.

Personnel On Board

Company	Pax
Maersk	37
ADA	4
OMS	26
Fugro ROV	6
Halliburton	3
Baroid	2
Reach	1
Other Contractor	2
Dril-Quip	1
Weatherford	1
Other Contractor	1
Geoservices	2
PCS	6
Sperry	3
Swaco	1
Total	96

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Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	2126.0bbl	Losses	0.0bbl
Active	1026.0bbl	Downhole	
Mixing		Surf+ Equip	0.0bbl
Hole Slug		Dumped	
		De-Gasser	
Reserve	1100.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments

Marine

Weather on 05 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	36kn	95.0deg	1014.0mbar	13C°	3.0m	90.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.6m	1.5deg	1.6deg	250.0deg		1515.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
4.5m	90.0deg		

Rig Support

Anchors	Tension (klb)
1	146.0
2	128.0
3	138.0
4	177.0
5	173.0
6	127.0
7	172.0
8	98.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	18:15 02 Dec 2010	en-route to KT IV

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	16	731
Potable Water	3m³	2	544
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		59
Brine	Ton		0

0000 - 0630 en-route to KT IV
0630 - 2400 At KT IV

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	23:50 02 Dec 2010	07:00 5 Dec 2010	Melbourne

Item	Unit	Used	Quantity
Fuel	Ton	18	579
Potable Water	3m³	3	352
Drill Water	3m³		80
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		84
Brine	ltrs		0

0001-0200 Running stand-by
0200-0430 Close stand-by for moon pool operations
0430-0655 Running stand-by
0655-0720 Under stbd crane backload deck
0720-1600 Depart field steam to pilotage
1600-2018 Pilot onboard steam to berth first line ashore
2018-2045 Tie-up at South 28
2045-2359 Alongside South 28

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	11:32 / 11:47	5 / 3	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 11
Silvereye-1

06 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	06 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	11	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	1112.0m	Cur. Hole Size	36.000in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1112.0m	Last Casing OD	30.000in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	137.4m	Daily Cost	AU$712,788
Rig	Kan Tan IV	Days from spud	4.00	Shoe MDBRT	137.4m	Cumul. Cost	AU$7,880,796
Wtr Dpth (LAT)	54.0m	Days on well	10.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	400
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	RIH 13 3/8" casing on landing string.		
Datum		Last BOP Test		Planned Op	Cement 13 3/8" casing. POOH landing string & lay out R/tool. Rig up & run riser & BOPs.		

Summary of Period 0000 to 2400 Hrs

Displaced well to 9.5ppg mud.
POOH on elevators from to 193m. Wiped all tight spots.
POOH BHA from 75m to surface & rack back in the derrick.
RIH with 5" DP & jetted well head & PGB. POOH with same.
Waited on weather.
Picked up 18 ¾" well head & running tool. Installed plug set.
Picked up & made up Weatherford cement head.
Rigged up & ran 13 3/8" casing.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill		2 Days	Fire & Abandon drill	
JSA	25	0 Days	Pre Job Safety Meetings	Morning pre-tour Housekeeping - Waste Segregation bins arrived onboard will encourage Environmental measures, Rig floor housekeeping great shape, Deck crew made area aware of heavy lift - warned others, Welder removing sharp objects, Wind Speed up - chin stays, be safe. Evening pre-tour Risk assessment performed - Safe crane ops. Making up 18 3/4 Running tool and Halliburton Plug - All crew involved TBT (Deck, Drill & Halliburton) Observed Pinch Points, Body Position, Good Comms.
Permit To Work	25	0 Days	Permits administered	
Pre Job Safety Meeting	25	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	45	0 Days	STOP Cards/ Safety Card Winner- Matt Potter - Crane Op/ Rhyse Bartlett - Floorman	While lifting an Oxy set from the Rig Floor, the dogman stopped the job and took time to screw protection caps on the cylinders to prevent the taps etc from damage. Good attitude and foresight in proactive prevention of a potential incident. New Master Bushings have a big hole at the bottom where the bushing saver sits (4 holes). We have learned from an incident on the Ocean Bounty where a dog collar spanner fell through this hole and into the well. There is a potential for items to fall into the well causing major issues. I believe it would be wise to weld a blank on the bottom with a small hole so mud and debris can be cleaned away, but tools cannot pass through.
Weekly Safety Meeting	2	8 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 06 Dec 2010

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Printed on 06 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P7	P	F4	0000	0100	1.00	1112.0m	Continued to circulate out Hi Vis Sweep. Displaced well to 9.5ppg mud.
P7	P	F4	0100	0500	4.00	1112.0m	POOH on elevators from 1112m to 193m. Tight spots between 1080m - 1070m & 930m - 925m, up to 50k over pull. Pulled through & wiped all tight spots.
P7	P	G6	0500	0530	0.50	1112.0m	POOH BHA from 193m to 75m.
P7	P	F4	0530	0600	0.50	1112.0m	Make up Top Drive & flushed around well head & PGB. Stopped pumping due to mud motor causing excessive vibration of the top drive.
P7	P	G6	0600	0700	1.00	1112.0m	Continued to POOH BHA from 75m to surface & racked back in the derrick.
P7	P	F4	0700	0800	1.00	1112.0m	RIH with 5" DP & jetted well head & PGB. POOH with same.
P7	TP (WOW)	F4	0800	0930	1.50	1112.0m	Waited on weather. Winds in excess of 40 knots.
P9	P	F4	0930	1030	1.00	1112.0m	Held PJSM. Discussed adverse weather conditions. Picked up 18 3/4" well head & running tool. Installed plug set as per Dril Quip instructions & laid out same to the deck.
P9	P	F4	1030	1130	1.00	1112.0m	Held PJSM. Picked up & made up Weatherford cement head & laid out same to the deck.
P9	P	G1	1130	1200	0.50	1112.0m	Rigged up 13 3/8" casing running equipment.
P9	P	F4	1200	1230	0.50	1112.0m	Held PJSM. Picked up & ran shoe track. Checked floats were functioning as they should.
P9	P	G8	1230	1330	1.00	1112.0m	Commenced running 13 3/8" casing as per programme. Installed guide ropes in the moon pool. Continued to RIH & stabbed shoe joint into the well head @ 77.6m with ROV assistance.
P9	P	G8	1330	1400	0.50	1112.0m	Continued to RIH 13 3/8" casing from 30" well head to the 20" casing shoe at 138m.
P9	P	G8	1400	2200	8.00	1112.0m	Continued to RIH 13 3/8" casing in open hole from 138m to 530m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.
P7	TP (WB)	F4	2200	2230	0.50	1112.0m	Casing held up at 530m. Attempted to work through with no luck. Made up circulating swedge to a stand of 5" DP & washed through section with 500gpm. Casing slipped through with very little resistance. Removed circulating swedge & racked back stand of DP.
P9	P	G8	2230	2400	1.50	1112.0m	Continued to RIH 13 3/8" casing in open hole from 530m to 630m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.

Operations For Period 0000 Hrs to 0600 Hrs on 07 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P9	TP (WOW)	G23	0000	0030	0.50	1112.0m	Weather conditions affecting the safe running of current casing operations. Stopped job, reassessed operation & changed the current plan to better suit the conditions.
P9	P	G8	0030	0430	4.00	1112.0m	Continued to RIH 13 3/8" casing in open hole from 630m to 1014m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.
P9	P	G8	0430	0500	0.50	1112.0m	Picked up, made up & ran 18 3/4" well head housing joint as per Dril Quip instruction.
P9	P	G8	0500	0600	1.00	1112.0m	RIH 13 3/8" casing on landing string. Picked up & made up cement head & washed in the hole from 1080m to 1102m & landed out 18 3/4" Hanger 30" well head. Confirmed well head latched with 50k over pull.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 06 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	48	04 Dec 2010	06 Dec 2010	239.50	9.979	1112.0m
Intermediate Casing (1)(P9)	14	06 Dec 2010	06 Dec 2010	253.50	10.563	1112.0m

General Comments

00:00 TO 24:00 Hrs ON 06 Dec 2010

Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Overhaul of Engine Room Blower Fan Lube Oil transferred from drums to Storage Tanks. Needle Gunning deck in P2. Housekeeping around technical spaces. PM's on Anchor Winches & Safety Equipment

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General Comments

	Electrical PM"s on Galley Equipment & DC Motors Repairs to Convotherm Ovens Rewiring Engine Room blower Welding Fabrication of platform frame for Geoservices Fabrication of Riser Deck Bumper Bar
Operational Comments	Riser Running tool inspected, load ring found to be damaged. No spares on board

WBM Data — Cost Today

Mud Type:	API FL:	Cl:	Solids(%vol): 5%	Viscosity	
Sample-From:	Filter-Cake:	K+C*1000:	H2O: 94%	PV	
Time:	HTHP-FL:	Hard/Ca:	Oil(%):	YP	
Weight:	HTHP-cake:	MBT:	Sand:	Gels 10s	
Temp:		PM:	pH:	Gels 10m	26
		PF:	PHPA:	Fann 003	
				Fann 006	
				Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	
Comment	Build more 9.5 ppg PAD mud and Hi-Vis sweeps. Circulate hole clean and displace hole to 9.5 ppg PAD mud.				

Bit # 2

Wear	I	O1	D	L	B	G	O2	R
	1	1	NO	A	0	I	NO	TD

Bitwear Comments:

Size (''):	17.50in	IADC#		**Nozzles**		**Drilled over last 24 hrs**	**Calculated over Bit Run**
Mfr:	SMITH	WOB(avg)	25.00klb	No.	Size	Progress 0.0m	Cumul. Progress 971.0m
Type:	Rock	RPM(avg)	77	3	12/32nd"	On Bottom Hrs 0.0h	Cumul. On Btm Hrs 13.5h
Serial No.:	STPR4067	F.Rate	1085gpm	3	16/32nd"	IADC Drill Hrs 22.0h	Cumul. IADC Drill Hrs 22.0h
Bit Model	XR-VEJ3PS	SPP	2526psi			Total Revs 162	Cumul. Total Revs 324
Depth In	141.0m	HSI				ROP(avg) N/A	ROP(avg) 71.93 m/hr
Depth Out	1112.0m	TFA	0.920				

Bit Comment

BHA # 2

Weight(Wet)	65.00klb	Length	193.6m	Torque(max)	3500ft-lbs	D.C. (1) Ann Velocity	112fpm
Wt Below Jar(Wet)	50.00klb	String	240.00klb	Torque(Off.Btm)	1000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	245.00klb	Torque(On.Btm)	1500ft-lbs	H.W.D.P. Ann Velocity	95fpm
		Slack-Off	230.00klb			D.P. Ann Velocity	95fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.44m	17.50in		STPR4067	
Mud Motor	9.24m	17.25in		963387	
String Stabiliser	2.17m	17.25in	3.00in	207A210	
MWD	9.89m	9.63in	3.38in	11230617	
Float Sub	0.76m	9.50in	3.00in	10782943	
X/O	1.12m	9.50in	2.88in	92	
Drill Collar	65.72m	8.50in	2.88in		
Jar	9.15m	8.00in	3.00in	214A3	
X/O	1.17m	8.00in	2.88in	508A40	
Drill Collar	9.40m	8.50in	2.88in		
HWDP	84.51m	5.00in	3.00in		

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	6	0	433.0
Drill Water	m3	65	0	0	735.0
Pot Water	m3	0	35	0	167.0
Brine	m3	0	0	0	183.0
Cement class \'G\'	MT	0	0	0	111.8
Barite	MT	0	25.5	0	104.5
Bentonite	MT	0	0	0	20.9
Shaker Screen 84	Screens	0	0	0	12.0

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.

Personnel On Board

Company	Pax
Maersk	35
ADA	4
OMS	28
Fugro ROV	6
Halliburton	3
Baroid	2
Reach	1
Other Contractor	2
Dril-Quip	1
Weatherford	1
Other Contractor	1
Geoservices	2
PCS	6
Sperry	3
Swaco	1
Total	96

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	**1215.0bbl**	**Losses**	**1400.2bbl**
Active	1095.0bbl	Downhole	
Mixing		Surf+ Equip	1400.2bbl
Hole Slug		Dumped	
		De-Gasser	
Reserve	120.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments

Marine

Weather on 06 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	36kn	95.0deg	1011.0mbar	13C°	3.0m	90.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.6m	1.5deg	1.6deg	250.0deg		1515.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
4.5m	90.0deg		

Rig Support

Anchors	Tension (klb)
1	150.0
2	122.0
3	133.0
4	173.0
5	179.0
6	134.0
7	172.0
8	109.0

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Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar	06:30 5 Dec 2010	18:15 02 Dec 2010	en-route to KT IV	

Item	Unit	Used	Quantity
Fuel	Ton	11	720
Potable Water	3m³	2	542
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		59
Brine	Ton		0

0000 - 2400 At KT IV

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Fosna	23:50 02 Dec 2010	07:00 5 Dec 2010	Melbourne	

Item	Unit	Used	Quantity
Fuel	Ton	2	577
Potable Water	3m³	6	344
Drill Water	3m³		180
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	ltrs		0

0001-2359 Alongside South 28 continue with general maintenance

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	08.49 / 09.03	11 / 11	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 12
Silvereye-1

07 Dec 2010

From: Paul Jenkins/ Paul Leathem
To: Bob Miller

Silvereye-1

Date:	07 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Peter McParlin
Report Number:	12	**Night Representative:**	Paul Leathem	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1112.0m	Cur. Hole Size	17.500in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1111.9m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.9m	Daily Cost	AU$694,519
Rig	Kan Tan IV	Days from spud	5.00	Shoe MDBRT	1102.9m	Cumul. Cost	AU$8,575,315
Wtr Dpth (LAT)	54.0m	Days on well	11.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	401
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Rigging up to run BOPs.		
Datum		Last BOP Test		Planned Op	Run riser & BOPs. Land out & latch BOPs. Rig down riser running equipment. RIH 12 1/4" BHA.		

Summary of Period 0000 to 2400 Hrs

Weather conditions affecting the safe running of current casing operations.
Stopped job, reassessed operation & changed the current plan to better suit the conditions.
Continued to RIH 13 3/8" casing in open hole to 1014m.
Picked up, made up & ran 18 3/4" well head housing joint.
RIH 13 3/8" casing on landing string.
Picked up & made up cement head & washed in the hole to 1102m.
Landed out & latched 18 3/4" well head hanger.
Held PJSM. Commenced cement job as per programme.
Released 18 ¾" well head running tool. Laid down cement head & POOH.
Waited on weather.
Laid out excess 17 1/2" BHA from the derrick.
Picked up and made up 12 1/4" BHA & rack back in the derrick.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Fire / Abandonment Drill		3 Days	Fire & Abandon drill	
JSA	27	0 Days	Pre Job Safety Meetings	Morning pre-tour Good Pre Job Risk Assessment performed - Safe crane ops running casing - factoring weather conditions. Tool Box Talk - Short change yesterday - TBT conducted new crew made aware of task. Interventions and looking out for each other - Observed Pinch Points, Body Position. Watertight doors must be kept closed. Evening pre-tour ProActive Housekeeping - Crewman removed oily filter and oily rags from general waste bin and placed in old 20 litre paint tin with intentioin of placing in proper bin when it arrives. Excellent crew training conducted - Refresher fire fighting equipment training given to deck crew. Following SJA procedure - Deck crew watching weather changes - casing job was stopped - safety stand down and reassessed. Safety First - Well done.
Permit To Work	23	0 Days	Permits administered	
Pre Job Safety Meeting	32	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	44	0 Days	STOP Cards/ Safety Card Winner- Lloyd Skipper - Floorman. Grant Forman - Floorman	I observed the Barite and Gel tanks were still showing 25 psi residual pressure on the gauges The is a danger for personnel when they go to sound the tanks. The vent-lines were showing open but the pressure was not bleeding off. I informed the barge Engineer and he agreed that there

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Weekly Safety Meeting	2	9 Days		was a problem with a valve somewhere. I noticed the explosive detonators container had no warning or danger tape around it. I took time to find some and erect a barrier to warn people of the potentially dangerous product.

Operations For Period 0000 Hrs to 2400 Hrs on 07 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P9	TP (WOW)	G23	0000	0030	0.50	1112.0m	Weather conditions affecting the safe running of current casing operations. Stopped job, reassessed operation & changed the current plan to better suit the conditions.
P9	P	G8	0030	0500	4.50	1112.0m	Continued to RIH 13 3/8" casing in open hole from 630m to 1014m. Filling every 5 joints with mud. Ran casing with caution due to weather conditions.
P9	P	G8	0500	0530	0.50	1112.0m	Picked up, made up & ran 18 3/4" well head housing joint as per Dril Quip instruction.
P9	P	G8	0530	0700	1.50	1112.0m	RIH 13 3/8" casing on landing string. Washed through tight spot from 1060m to 1088m. Picked up & made up cement head. Washed in the hole from 1088m to 1102m & landed out 18 3/4" Hanger into the 30" well head. Confirmed well head latched with 50klb over pull.
P9	P	F4	0700	0800	1.00	1112.0m	Circulated 1.5 x casing volume @ 700gpm/ 320psi with seawater.
P9	P	F3	0800	1200	4.00	1112.0m	Held PJSM. Commenced cement job as per programme. Performed Line Test 300/3000psi. Pumped 60bbl seawater spacer. Dropped ball & pressured up to 1100psi to release bottom plug. Mixed & pumped 228bbls of class G 12.5 ppg lead slurry, followed by 84bbls of class G 15.8ppg tail slurry. Released dart & cement unit displaced with 20bbls of drillwater. Dart sheared at 5.3bbls/500psi. Switched to rig pumps & displaced cement with a further 473bbls of seawater at 11-12 bbl/min. Bumped plug with 650psi. Pressured up with cement unit to 2500psi/10mins. Bled off pressure, floats held.
P9	P	G1	1200	1300	1.00	1112.0m	Released 18 3/4' well head running tool. Laid down cement head.
P9	P	G8	1300	1330	0.50	1112.0m	POOH. Laid out 18 3/4' running tool to the deck. Strapped length, 76.7m RKB to top of 18 3/4' well head.
P9	P	P1	1330	1430	1.00	1112.0m	Pressure tested new piping on standpipe manifold - 5000psi.
P9	TP (WOW)	G8	1430	1930	5.00	1112.0m	Waited on weather. 16:00 Winds 30-35 knts/ Seas 4m/ Swell 4.2m/ Pitch 2.9/ Roll 2.1/ Heave 1.2m. 18:00 Winds 28-32 knts/ Seas 4m/ Swell 4.3m/ Pitch 1.7/ Roll 2.1/ Heave 1.4m.
P9	P	G6	1930	2230	3.00	1112.0m	Held PJSM. Laid out excess 17 1/2" BHA from the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool.
P11	P	G6	2230	2400	1.50	1112.0m	Picked up and made up 12 1/4" BHA. Tested MWD tools & rack back in the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool. Offline: ROV installed VX ring into 18 3/4 well head.

Operations For Period 0000 Hrs to 0600 Hrs on 08 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	G6	0000	0330	3.50	1112.0m	Continued to pick up and make up 12 1/4" BHA. Tested MWD tools & racked back in the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool.
P6	P	G13	0330	0530	2.00	1112.0m	Rigged up riser running equipment. Offline: function tested BOP through newly repaired Blue pod.
P6	P	G13	0530	0600	0.50	1112.0m	Commenced picking up double of riser to latch into BOP.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 07 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
Production Hole (1)(P11)	1.5	07 Dec 2010	07 Dec 2010	277.50	11.563	1112.0m

General Comments

00:00 TO 24:00 Hrs ON 07 Dec 2010

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General Comments

Operational Comments	Maintenance Dept Night Report as follows:- Mechanical Port Contaminated Water Tank lowered via OWS. Needle Gunning & Buffing in Column P2, 100' level. Working in Laundry repositioning machines, to allow access to dampers. Monkey-board tugger hose renewed SAP Notifications Electrical Disconnection / Re-connection of machines and light fittings in laundry. Electrical PM's. Troubleshooting Iron Roughneck HPU tripping breaker fault. Stbd Crane Engine Oil Temp cut-out switch re-instated Welding Fabrication of Riser Deck bumper bar Fabrication of step-up frame for Geoservices Fabrication of Tank vents

WBM Data

Cost Today

Mud Type:	API FL:	Cl:	Solids(%vol):	Viscosity	
Sample-From:	Filter-Cake:	K+C*1000:	H2O:	PV	
Time:	HTHP-FL:	Hard/Ca:	Oil(%):	YP	
Weight:	HTHP-cake:	MBT:	Sand:	Gels 10s	
Temp:		PM:	pH:	Gels 10m	26
		PF:	PHPA:	Fann 003	
				Fann 006	
				Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	
Comment	Build more 9.5 ppg PAD mud. Cleaned all mud pits. Began mixing KCL/PHPA/CLAYSEAL PLUS mud as per program. Will show the mud (pit) volumes and charge off all chemicals used at later report.				

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	21	0	412.0
Drill Water	m3	41	179	45	642.0
Pot Water	m3	0	38	0	129.0
Brine	m3	0	0	0	183.0
Cement class \'G\'	MT	0	42.5	0	69.3
Barite	MT	0	0	0	104.5
Bentonite	MT	0	0	0	20.9
Shaker Screen 84	Screens	0	0	0	12.0

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/	1102.90m / 1102.90m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
Maersk	35
ADA	4
OMS	27
Fugro ROV	6
Halliburton	2
Baroid	2
Origin Energy	2
Other Contractor	2
Dril-Quip	1
Weatherford	1
Other Contractor	1
Geoservices	6
PCS	2
Sperry	5

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Personnel On Board

Swaco	1
Total	97

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	508.9bbl	Losses	0.0bbl
Active Mixing		Downhole	
		Surf+ Equip	0.0bbl
Hole	508.9bbl	Dumped	
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments

Marine

Weather on 07 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	20kn	45.0deg	1003.0mbar	16C°	4.0m	50.0deg	

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
2.0m	1.4deg	1.1deg	250.0deg		1343.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
4.5m	50.0deg		

Rig Support

Anchors	Tension (klb)
1	142.0
2	122.0
3	140.0
4	185.0
5	180.0
6	124.0
7	162.0
8	85.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	18:15 02 Dec 2010	en-route to KT IV

0000 - 2400 At KT IV

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	12	708
Potable Water	3m³	2	540
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		55
Brine	Ton		0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	23:50 02 Dec 2010	07:00 5 Dec 2010	Melbourne

0001-2359 Alongside South 28 continue with general maintenance

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	2	575
Potable Water	3m³	4	340
Drill Water	3m³		280
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	ltrs		0

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	BRISTOW HELICOPTERS AUSTRALIA PTY LTD	11:30 / 11:43	8 / 7	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 13
Silvereye-1

08 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	08 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	13	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1112.0m	Cur. Hole Size	17.500in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1111.9m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$793,886
Rig	Kan Tan IV	Days from spud	6.00	Shoe MDBRT	1102.9m	Cumul. Cost	AU$9,369,201
Wtr Dpth (LAT)	54.0m	Days on well	12.56	FIT/LOT:	/	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	402
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	RIH with 12¼" BHA picking up 5" DP from deck.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	RIH. Tag cement and drill out shoe track. Displace well to 10ppg KCL PHPA mud system. Drill 3m of new hole. Circulate clean and perform LOT. Drill ahead 12¼" hole.		

Summary of Period 0000 to 2400 Hrs

Continued to make up 12¼" BHA and racked back in derrick.
Rigged up to run BOPs. Function tested Blue Pod. Made up riser double and connected to BOPs. Installed guide lines and dressed BOPs for running. Ran BOPs in on double, made up slip joint and landing joint. Installed Kill and Choke lines and pressure tested same. Installed MRTs and saddles. Landed off BOP on 18 3/4" wellhead, locked and confirmed with 50klbs overpull. Pressure tested connector to 2500psi. Laid out landing joint and installed diverter. Rigged down riser handling equipment.
Made up Sperry drilling stand and 12¼" bit.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill		4 Days	Fire & Abandon drill	
JSA	27	0 Days	Pre Job Safety Meetings	Morning pre-tour ProActive Housekeeping - Crewman removed oily filter and oily rags from general waste bin and placed in old 20 litre paint tin with intention of placing in proper bin when it arrives. Excellent crew training conducted - Refresher fire fighting equipment training given to deck crew. Following SJA procedure - Deck crew watching weather changes - casing job was stopped - safety stand down and reassessed. Safety First - Well done. Evening Pre-Tour Housekeeping / Environmental - Rubbish bin facing wrong way, lid was flapping in wind, potential suck out contents - crew man turned it around and made secure. Gas cylinders on trolley - secured to prevent roll. Reminder - Check pockets of clothing prior place in laundry.
Permit To Work	19	0 Days	Permits administered	
Pre Job Safety Meeting	27	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	40	0 Days	STOP Cards/ Safety Card Winner- Rick James - Crane Operator / Jason McKerrow - Floorman	I removed an Oil Filter and some Oily Rags from a general waste bin into an old 20 ltr paint pale while we wait to bring on the segregated waste bins from the supply vessel. Good housekeeping is easy if we think before placing waste into the wrong bins to be covered by general waste. I found a Derrick-man's Harness in the harness locker that was faulty, and must be quarantined. The Harnes was being used without a working leg strap which does not secure correctly. I immediately took it out of service and reported the finding to the Safety Advisor and my supervisor.

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Weekly Safety Meeting	0	10 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 08 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	G6	0000	0330	3.50	1112.0m	Continued to pick up and make up 12 1/4" BHA. Tested MWD tools & racked back in the derrick. No close standby cover from Scimitar to perform BOP work in the Moonpool.
P6	P	G13	0330	0530	2.00	1112.0m	Rigged up riser running equipment. Offline: function tested BOPs through newly repaired Blue pod.
P6	P	G13	0530	0700	1.50	1112.0m	Made up riser double plus 10ft riser pup.
P6	P	G13	0700	0830	1.50	1112.0m	Moved BOP to well centre on transporter and made up riser assembly to same.
P6	P	G13	0830	1100	2.50	1112.0m	Dressed BOPs for running. Installed guide lines and installed transponder.
P6	P	G13	1100	1130	0.50	1112.0m	Picked up BOPs, removed transporter and ran BOPs through splash zone.
P6	P	G13	1130	1330	2.00	1112.0m	Made up Slip Joint and Landing Joint to riser.
P6	P	G13	1330	1430	1.00	1112.0m	Installed Choke and Kill hoses to Slip Joint
P6	P	G13	1430	1530	1.00	1112.0m	Flushed Kill and Choke lines. Pressure tested Kill and Choke lines to 500psi/5mins - 5000psi/10mins.
P6	P	G13	1530	1730	2.00	1112.0m	Installed MRTS lines to load ring. Installed storm saddles for umbilical hoses. Skidded rig over well centre.
P6	P	G13	1730	1800	0.50	1112.0m	Landed BOPs on 18 3/4" wellhead with 50klbs down weight. Latched BOP connector, confirmed indicator movement with ROV. Confirmed latch with 50klbs overpull on connector. Reduced weight to 170klbs MD. Pre land off weight 320klbs MD
P6	P	G13	1800	1830	0.50	1112.0m	Installed RBQ plates to umbilical reels.
P6	P	G13	1830	1930	1.00	1112.0m	Pressure tested BOP connector against BSR 350psi/5mins - 2500psi/10mins. Good test
P6	P	G13	1930	2030	1.00	1112.0m	Stroked open slip joint and laid out landing joint.
P6	P	G13	2030	2130	1.00	1112.0m	Installed diverter assembly and function tested same.
P6	P	G13	2130	2230	1.00	1112.0m	Rigged down riser handling equipment from drill floor.
P11	P	G7	2230	2400	1.50	1112.0m	Picked up Sperry drilling stand from derrick and made up bit and commenced downloading data to Sperry tools.

Operations For Period 0000 Hrs to 0600 Hrs on 09 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	G7	0000	0100	1.00	1112.0m	Continued to download data to Sperry tools. Installed radio active sources in BHA.
P11	P	G6	0100	0300	2.00	1112.0m	Continued to make up 12¼" BHA to 341m. (Shallow tested Sperry MWD/LWD/Geopilot at 130m)
P11	P	G2	0300	0400	1.00	1112.0m	RIH from 241m to 386m picking up 5" DP from deck. (15 joints of DP made up)
P11	P	P3	0400	0500	1.00	1112.0m	Function tested BOPs on blue Pod from drillers panel and on yellow pod from the koomey unit.
P11	P	G2	0500	0600	1.00	1112.0m	RIH from 386m to 531m picking up 5" DP from deck. (30 joints of DP made up)

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 08 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
Production Hole (1)(P11)	6.5	07 Dec 2010	08 Dec 2010	282.50	11.771	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	301.50	12.563	1112.0m

General Comments

00:00 TO 24:00 Hrs ON 08 Dec 2010

Operational Comments	18 3/4" Well Head Jt installed Part No:- 6-400229-02R Serial No:- 00251238-01

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General Comments

Operational Comments	Bullseyes After BOP landout. Flex Jt:- 1.5°/2.5° Aft/Stbd LMRP Port:- 1° Aft/Slightly Stbd BOP Upper:- 1.75° Aft/Slightly Port BOP Aft:- 0.5° Fwd PGB Stbd:- 1° Port PGB Aft:- 0.25° Port/Fwd

WBM Data

Cost Today

Mud Type:	API FL:	Cl:	Solids(%vol):	Viscosity	
Sample-From:	Filter-Cake:	K+C*1000:	H2O:	PV	
Time:	HTHP-FL:	Hard/Ca:	Oil(%):	YP	
Weight:	HTHP-cake:	MBT:	Sand:	Gels 10s	
Temp:		PM:	pH:	Gels 10m	26
		PF:	PHPA:	Fann 003	
				Fann 006	
				Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	
Comment	Continue mixing KCL/PHPA/CLAYSEAL PLUS mud as per program. Filled sand traps with KCL/PHPA/CLAYSEAL PLUS mud. Dressed shakers with 12 x API 20 - top scalper screens and 16 x API 80 - bottom screens.				

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	6	0	406.0
Drill Water	m3	10	29	0	623.0
Pot Water	m3	30	30	-2	127.0
Brine	m3	0	0	0	183.0
Cement class \'G\'	MT	0	0	0	69.3
Barite	MT	0	38	0	66.5
Bentonite	MT	0	0	0	20.9
Shaker Screen 84	Screens	0	0	0	12.0

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	4
Maersk	36
OMS	25
Fugro ROV	6
Halliburton	1
Baroid	2
Other Contractor	2
Dril-Quip	1
Reach	1
Other Contractor	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	95

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Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	2168.9bbl	Losses	0.0bbl
Active Mixing		Downhole Surf+ Equip	0.0bbl
Hole	610.9bbl	Dumped	
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
KCL/PHPA/CLAYSTAB	1558.0bbl	Centrifuge	

Equipment	Description	Mesh Size	Comments

Marine

Weather on 08 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	15kn	270.0deg	1000.0mbar	15C°	2.6m	270.0deg	4s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.7deg	0.9deg	250.0deg	224.00klb	1200.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.6m	270.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	147.0
2	136.0
3	144.0
4	182.0
5	147.0
6	121.0
7	133.0
8	84.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	18:15 02 Dec 2010	Stand by at KT IV

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	13	695
Potable Water	3m³	2	538
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		55
Brine	Ton		0

0000 - 2400 At KT IV

Diesel adjusted -12 and Pot water -2 to agree with Scimitar ROB

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	23:50 02 Dec 2010	07:00 5 Dec 2010	Enroute to KT4

Item	Unit	Used	Quantity
Fuel	Ton	5	570
Potable Water	3m³	4	336
Drill Water	3m³		413
Bentonite	Ton		37
Barite	Ton		0
'G' Cmt	Ton		85
Brine	bbl		930

0001-2100 Alongside South 28 continue with general maintenance
Load Drill Water, 133m3 / Brine, 930bbl / Cement, 85mt / Gel, 37mt / Deck Cargo
2100-2359 Depart for rig. Pilot onboard

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	09:11 / 09:25	9 / 11	Crew Change

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 14
Silvereye-1

09 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	09 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	14	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1165.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1164.7m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	53.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$776,987
Rig	Kan Tan IV	Days from spud	7.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$10,146,188
Wtr Dpth (LAT)	54.0m	Days on well	13.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	403
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Repairing rig. Breaking over torqued TDS connection.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Drill ahead 12¼" hole.		

Summary of Period 0000 to 2400 Hrs

Made up Sperry GeoPilot BHA and shallow tested same. Completed making up BHA. RIH picking up 5" DP to 388m. Function tested BOPs. Continued to RIH picking up DP to 677m. Racked DP back in derrick. RIH picking up 5" DP to 954m. RIH and tagged TOC at 1087m. Drilled out shoe track.
Drilled 12¼" hole from 1113m to 1117m while displacing well to 10ppg mud. Circulated and conditioned mud. Pulled into shoe and performed FIT. Recorded SCRs. Drilled 12¼" hole from 1117m to 1165m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill		5 Days	Fire & Abandon drill	
JSA	38	0 Days	Pre Job Safety Meetings	Morning pre-tour Gas cylinders on trolley - secured to prevent roll. Reminder - Check pockets of clothing prior place in laundry. Awareness - during on tour, work to anticipate gas - good observing, good communication (don't assume somebody else has seen changes also i.e shakers / driller / moonpool. Prevention - TBT - don't forget to mention the routine things (don't assume i.e confirm comms between manrider and tugger operator prior to ascent). Evening Pre-Tour Deck & Drill crews working well today - looking out for each other - Pinch & caught between awareness.
Permit To Work	30	0 Days	Permits administered	
Pre Job Safety Meeting	34	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	31	0 Days	STOP Cards/ Matt O'Connor - ROV Pilot / Patrick Repping - Floorman	1:- I noted the welders arc screen was about to depart in the wind, and the wind speed was increasing. As it was unsafe for anyone working nearby, I moved it and secured it. 2:- When a short break came up I went to the crown to do an inspection. I noted 2 safety slings for the sheaves in the derrick were 'broken'. Went down and got 2 new slings and replaced the damaged ones. We need to keep up the inspections and take time when we have it, to physically handle the equipment when checking it, not just a visual check from a distance.
Weekly Safety Meeting	0	11 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 09 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	G7	0000	0100	1.00	1112.0m	Continued to download data to Sperry tools. Installed radioactive sources in BHA.
P11	P	G6	0100	0330	2.50	1112.0m	Continued to make up 12¼" BHA to 241m. (Shallow tested Sperry MWD/LWD/Geopilot at 151m).
P11	P	G2	0330	0400	0.50	1112.0m	RIH from 241m to 388m picking up 5" DP from deck. (15 joints of DP made up).
P11	P	P3	0400	0500	1.00	1112.0m	Function tested BOPs on blue Pod from drillers panel and on yellow pod from the koomey unit.
P11	P	G2	0500	0630	1.50	1112.0m	RIH from 388m to 677m picking up 5" DP from deck. (45 joints of DP made up).
P11	P	G2	0630	0700	0.50	1112.0m	Racked back 10 stands of 5" DP in derrick to 388m.
P11	P	G2	0700	1100	4.00	1112.0m	RIH from 388m to 959m picking up 5" DP from deck. (Total 135 joints DP picked with another 10 stands racked back in derrick).
P11	P	G8	1100	1130	0.50	1112.0m	RIH from 959m to 1040m.
P11	P	F1	1130	1200	0.50	1112.0m	Washed in hole from 1040m to tag cement plugs at 1087m.
P11	P	D1	1200	1700	5.00	1113.0m	Drilled out cement plugs, float and shoe track from 1087m to shoe at 1103m with seawater and Guar Gum Hi vis pills. Cleaned out rat hole to 1113m. Commenced displacing well to 10ppg KCL PHPA WBM mud system.
P11	P	D4	1700	1730	0.50	1117.0m	Drilled 12¼" hole from 1113m to 1117m while displacing well to 10ppg KCL PHPA WBM mud system.
P11	P	F1	1730	1830	1.00	1117.0m	Racked back stand and attempted to pull into shoe. Recorded overpull pulling into shoe. Worked shoe area to clear obstruction.
P11	P	F4	1830	1900	0.50	1117.0m	Shoe cleared. Circulated bottoms up at 1081m.
P11	P	P1	1900	1930	0.50	1117.0m	Rigged up to perform LOT. Held PJSM.
P11	P	P1	1930	2000	0.50	1117.0m	Pumped 7bbl of mud with cement unit to flush and confirm lines. Pressure tested surface lines to 1000psi. Performed FIT to 1120psi with 10.0ppg mud against upper annular. No break over. Test stopped. 3bbls pumped. 2.25bbls returned EMW 15.95ppg.
P11	P	P1	2000	2030	0.50	1117.0m	Opened upper annular and pumped down string and kill line indivdually with returns to trip tank to double check line up for FIT was correct.
P11	P	F1	2030	2100	0.50	1117.0m	Rigged down lines for FIT. BHA held up on shoe when RIH. Reamed shoe to clear obstruction.
P11	P	P1	2100	2130	0.50	1117.0m	With bit at 1104m, closed upper annular and pressured up formation to 500psi with the rig pumps to eliminate possibilty of FIT testing against a plugged shoe. No leak off occurred.
P11	P	P3	2130	2200	0.50	1117.0m	Recorded SCRs and choke line friction losses.
P11	P	D4	2200	2400	2.00	1165.0m	Drilled 12¼" hole from 1117m to 1165m. 10klbs wob, 120rpm, 4kftlbs torq, 900gpm, 2100psi. Av ROP 24m/hr.

Operations For Period 0000 Hrs to 0600 Hrs on 10 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0200	2.00	1222.0m	Drilled 12¼" hole from 1165m to 1222m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
P11	TP (RE)	D4	0200	0230	0.50	1222.0m	Slips jammed in bushing on connection. Released slips from pipe.
P11	P	D4	0230	0330	1.00	1250.0m	Drilled 12¼" hole from 1222m to 1250m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
P11	TP (RE)	D4	0330	0400	0.50	1250.0m	Unable to break TDS saver sub on connection. Attempted to break Top drive connection without success.
P11	TP (RE)	D4	0400	0430	0.50	1250.0m	Manriding winch wire broke after hanging up on TDS. (No person on wire). Circulated while stop for safety held and derrick checked for any remaining hazards.
P11	TP (RE)	D4	0430	0600	1.50	1250.0m	Laid out second single from TDS and reconnected TDS to string to enable Top Drive to be brought to rig floor. Continued to work on breaking out Saver Sub connection on Top Drive. Moved string and circulated at regular intervals to ensure pipe free.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 09 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m

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Phase Data to 2400hrs, 09 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	30.5	07 Dec 2010	09 Dec 2010	325.50	13.563	1165.0m

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.1cc/30min	Cl:	48000mg/l	Solids(%vol):	6%
Sample-From:	Pit#2	Filter-Cake:	2/32nd"	K+C*1000:	8%	H2O:	90%
Time:	2200	HTHP-FL:	10.5cc/30min	Hard/Ca:	600mg/l	Oil(%):	0%
Weight:	10.00ppg	HTHP-cake:		MBT:	2.5	Sand:	
Temp:	30C°			PM:	1	pH:	9.7
				PF:	1.5	PHPA:	

Comment: Continue mixing KCL/PHPA/CLAYSEAL PLUS mud as per program. Displaced the hole to 10 ppg KCL/PHPA/CLAYSEAL+ mud. Treated out any cement contamination with citric acid in active system. Adding CLAYSEAL+ to bring up the concentration upto 2% v/v and EZ MUS as per program.

Cost Today

Viscosity	63sec/qt
PV	12cp
YP	23lb/100ft²
Gels 10s	9
Gels 10m	10
Fann 003	7
Fann 006	8
Fann 100	21
Fann 200	28
Fann 300	35
Fann 600	47

Bit # 3

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

				Nozzles		Drilled over last 24 hrs		Calculated over Bit Run	
Size (''):	12.25in	IADC#	M124	No.	Size	Progress	53.0m	Cumul. Progress	53.0m
Mfr:	Halliburton	WOB(avg)	11.00klb	6	16/32nd"	On Bottom Hrs	2.0h	Cumul. On Btm Hrs	2.0h
Type:	PDC	RPM(avg)	102			IADC Drill Hrs	2.5h	Cumul. IADC Drill Hrs	2.5h
Serial No.:	11548586	F.Rate	856gpm			Total Revs	27000	Cumul. Total Revs	27000
Bit Model	FXG65	SPP	1912psi			ROP(avg)	26.50 m/hr	ROP(avg)	26.50 m/hr
Depth In	1102.0m	HSI							
Depth Out		TFA	1.178						

Bit Comment

BHA # 3

Weight(Wet)	71.00klb	Length	242.4m	Torque(max)	4300ft-lbs	D.C. (1) Ann Velocity	270fpm
Wt Below Jar(Wet)	47.00klb	String	290.00klb	Torque(Off.Btm)	960ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	290.00klb	Torque(On.Btm)	2530ft-lbs	H.W.D.P. Ann Velocity	168fpm
		Slack-Off	290.00klb			D.P. Ann Velocity	168fpm

BHA Run Description

BHA Run Comment: Recovered from ditch magnet for 24hr period:- 45gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.49m	12.25in		11548586	FXG65 PDC
Geo_Pilot	9.38m	12.18in		NZ9026560	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.51m	12.00in		NZ90258874	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	2.46m	8.00in		10562335	
Float Sub	0.71m	8.00in	2.75in	10786189	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

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Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1125.20	3.84	63.79	1125.09	4.20	4.2	-1.5	2.8	Sperry HOC tool
1153.95	6.12	72.77	1153.73	5.08	5.1	0.8	8.4	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	19	0	387.0
Drill Water	m3	0	49	0	574.0
Pot Water	m3	26	30	0	123.0
Brine	m3	0	48	0	135.0
Cement class \'G\'	MT	96	0	-1.3	164.0
Barite	MT	33	25	-2.5	72.0
Bentonite	MT	36	0	-1.9	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.20	97	63	2500	316	1117.0	30	140	150	40	210	200	50	260	250
2	Continental Emsco	6.50	1.20	97	63	2500	316	1117.0	30	140	150	40	200	200	50	260	250
3	Continental Emsco	6.50	1.20	97	64	2500	318		30			40			50		

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	26
Fugro ROV	3
Halliburton	2
Baroid	2
Schlumberger (Wireline)	5
GRN	1
Other Contractor	1
Reach	1
Other Contractor	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	96

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Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	1706.6bbl	Losses	146.7bbl
Active	776.0bbl	Downhole	
Mixing		Surf+ Equip	146.7bbl
Hole	619.6bbl	Dumped	
Slug		De-Gasser	
Reserve	311.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size
Shaker 1	VSM-300	20 20 20 80 80 80 80
Shaker 1	VSM-300	20 20 20 80 80 80 80
Shaker 1	VSM-300	20 20 20 80 80 80 80
Shaker 1	VSM-300	20 20 20 80 80 80 80

Comments

Marine

Weather on 09 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	16kn	270.0deg	1006.0mbar	14C°	1.6m	270.0deg	4s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.6m	1.1deg	1.3deg	250.0deg	224.00klb	970.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	270.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	138.0
2	138.0
3	147.0
4	182.0
5	148.0
6	119.0
7	138.0
8	94.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	11:15 09 Dec 2010	At Melbourne

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	13	695
Potable Water	3m³	2	538
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		55
Brine	Ton		0

Depart KT4 for Melbourne at 11:15

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	09:30 09 Dec 2010	07:00 5 Dec 2010	At KT4

Item	Unit	Used	Quantity
Fuel	Ton	19	551
Potable Water	3m³	4	332
Drill Water	3m³		413
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-0930 On passage to Kan Tan IV
0930-2200 Enter 500m Zone work stbd crane / discharge deck cargo / discharge cement & Gel / back load deck cargo
2200-2359 Running stand-by

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	09:35 / 09:47	10 / 9	Third Party

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 15
Silvereye-1

10 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	10 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	15	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1570.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1556.6m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	405.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$897,338
Rig	Kan Tan IV	Days from spud	8.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$11,166,857
Wtr Dpth (LAT)	54.0m	Days on well	14.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	404
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Drilling 12¼" hole.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Drill ahead 12¼" hole. Perform wiper trip to shoe. Continue to drill ahead 12¼" hole.		

Summary of Period 0000 to 2400 Hrs

Drilled 12¼" hole from 1165m to 1251m. Unable to break TDS connection. Broke out saver sub with single and POOH to shoe. Continued repairs to TDS. RIH and drill 12¼" hole from 1251m to 1570m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill		6 Days	Fire & Abandon drill	
JSA	32	0 Days	Pre Job Safety Meetings	Morning pre-tour Waste segregation onboard - do not use temp containers i.e. empty chemical. No whip connection on HP hose (instructed crew correct use and set up). Plywood dunnage trip hazard near drill floor entrance (removed / secured). Evening Pre-Tour Drill - Body Position - Awareness between stump & mouse hole. Drill crew picking up trip hazards without being asked. Deck - Good mentoring by crew for new hand, showing correct procedures and safety.
Permit To Work	26	0 Days	Permits administered	
Pre Job Safety Meeting	29	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	40	0 Days	STOP Cards/ Luke Bartlett - Floorman / Eoin O'Mahoney - Roustabout	1:- While working in the moon pool I went to climb over a hand-rail to the deck after working on the slip-joint. While doing so the hand-rail snapped off. I informed the sub-sea engineer who advised the welder for repair. We should get him to check all the moon pool hand rails while he is there 2:- Found 4 drums of flammable liquid were placed in an empty container for 'safe keeping'. The container was not labelled and there were no caution stickers. I got some flammable stickers and placed them on the drums, and also put a sticker on the container door. We must always ensure that dangerous goods are correctly labelled and have correct signage in place.
Weekly Safety Meeting	0	12 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 10 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0200	2.00	1224.0m	Drilled 12¼" hole from 1165m to 1224m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
P11	TP (RE)	D4	0200	0230	0.50	1224.0m	Slips jammed in bushing on connection. Released slips from pipe.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0230	0330	1.00	1251.0m	Drilled 12¼" hole from 1224m to 1251m. 20klbs wob, 160rpm, 4kftlbs torq, 950gpm, 2700psi.
P11	TP (RE)	D4	0330	0400	0.50	1251.0m	Unable to break TDS saver sub on connection. Attempted to break Top drive connection without success.
P11	TP (RE)	D4	0400	0430	0.50	1251.0m	Manriding winch wire broke after hanging up on TDS. (No person on wire). Circulated while stop for safety held and derrick checked for any remaining hazards.
P11	TP (RE)	D4	0430	0730	3.00	1250.0m	Laid out second single from TDS and reconnected TDS to string to enable Top Drive to be brought to rig floor. Removed pipe handler and drilling bails from Top Drive. Broke out saver sub from Top Drive with rig tongs, laid out single with saver sub. (Moved string and circulated at regular intervals to ensure pipe free).
P11	TP (RE)	D4	0730	0830	1.00	1251.0m	POOH from 1251m to inside shoe at 1091m.
P11	TP (RE)	D4	0830	1200	3.50	1251.0m	Re-installed pipe handler and new saver sub to Top Drive. Repaired damaged air/oil line on Top Drive.
P11	TP (RE)	D4	1200	1230	0.50	1251.0m	RIH from 1091m to 1225m.
P11	TP (RE)	D4	1230	1300	0.50	1251.0m	Washed in hole from 1225m to 1251m. (4m of filled at bottom of hole).
P11	P	D4	1300	1800	5.00	1425.0m	Drilled 12¼" hole from 1251m to 1425m. 22klbs wob, 160rpm, 6kftlbs torq, 1000gpm, 2650psi.
P11	P	D4	1800	2130	3.50	1512.0m	Drilled 12¼" hole from 1425m to 1512m. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps.
P11	P	D4	2130	2230	1.00	1512.0m	Unable to read data from Sperry tools after connection. Troubleshot pulsar failure. Pump pressure 500psi higher after connection coinciding with failure to read signals. Pressure eventually returned to normal with communications returning to sperry tools. Failure and pressure anomaly unexplained.
P11	P	D4	2230	2400	1.50	1570.0m	Drilled 12¼" hole from 1512m to 1570m. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps.

Operations For Period 0000 Hrs to 0600 Hrs on 11 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0030	0.50	1573.0m	Drilled 12¼" hole from 1570m to 1573m. Made connection. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps
P11	TP (RE)	D4	0030	0230	2.00	1573.0m	Threads crossed on RBS connection. Unable to back out crossed threads. Picked up drill string and worked tool joint down to workable height near DF with 40/60 rpm, 350gpm, 500psi. (Installed spare elevators around pipe at rotary for safety). Broke crossed connection with rig tongs and racked back 2 stands with damaged tool joints. Washed back to bottom.
P11	P	D4	0230	0600	3.50	1657.0m	Drilled 12¼" hole from 1573m to 1657m. 15/25klbs wob, 160rpm, 8kftlbs torq, 1000gpm, 2760ps.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 10 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	54.5	07 Dec 2010	10 Dec 2010	349.50	14.563	1570.0m

General Comments

00:00 TO 24:00 Hrs ON 10 Dec 2010

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WBM Data — Cost Today US$ 53475

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.8cc/30min	Cl:	36000mg/l	Solids(%vol):	6%	Viscosity	48sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	91%	PV	9cp
Sample-From:	Pit#2	HTHP-FL:	11.0cc/30min	Hard/Ca:	540mg/l	Oil(%):	0%	YP	20lb/100ft²
Time:	2130	HTHP-cake:	2/32nd"	MBT:	5	Sand:		Gels 10s	8
Weight:	10.00ppg			PM:	0.5	pH:	9	Gels 10m	11
Temp:	48C°			PF:	0.05	PHPA:		Fann 003	7
								Fann 006	9
								Fann 100	19
								Fann 200	25
								Fann 300	29
								Fann 600	38

Comment: Adding CLAYSEAL+ to bring up the concentration upto 2% v/v and EZ MUD as per program.Treat out calcium with soda ash. Maintain properties with DEXTRID, PAC-L, KCL brine and citric acid. Brought 10ppb of BARACARB 150 into active.

Bit # 3

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	12.25in	IADC#	M124	**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	Halliburton	WOB(avg)	20.00klb	No.	Size	Progress	405.0m	Cumul. Progress	458.0m
Type:	PDC	RPM(avg)	159	6	16/32nd"	On Bottom Hrs	7.9h	Cumul. On Btm Hrs	9.9h
Serial No.:	11548586	F.Rate	997gpm			IADC Drill Hrs	14.0h	Cumul. IADC Drill Hrs	16.5h
Bit Model	FXG65	SPP	2760psi			Total Revs	80000	Cumul. Total Revs	107000
Depth In	1102.0m	HSI				ROP(avg)	51.27 m/hr	ROP(avg)	46.26 m/hr
Depth Out		TFA	1.178						

Bit Comment

BHA # 3

Weight(Wet)	71.00klb	Length	242.4m	Torque(max)	12550ft-lbs	D.C. (1) Ann Velocity	314fpm
Wt Below Jar(Wet)	47.00klb	String	315.00klb	Torque(Off.Btm)	3590ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	315.00klb	Torque(On.Btm)	6610ft-lbs	H.W.D.P. Ann Velocity	195fpm
		Slack-Off	326.00klb			D.P. Ann Velocity	195fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.49m	12.25in		11548586	FXG65 PDC
Geo_Pilot	9.38m	12.18in		NZ9026560	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.51m	12.00in		NZ90258874	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	2.46m	8.00in		10562335	
Float Sub	0.71m	8.00in	2.75in	10786189	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1182.32	8.29	78.88	1181.88	5.92	5.9	4.3	8.1	Sperry HOC tool
1209.91	10.13	80.17	1209.11	6.72	6.7	8.6	6.7	Sperry HOC tool
1241.51	12.76	79.14	1240.08	7.85	7.9	14.8	8.3	Sperry HOC tool
1267.50	13.03	77.50	1265.41	9.03	9.0	20.5	1.8	Sperry HOC tool
1296.88	15.07	76.43	1293.91	10.64	10.6	27.4	7.0	Sperry HOC tool

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Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1325.19	15.96	75.50	1321.19	12.48	12.5	34.8	3.3	Sperry HOC tool
1354.45	16.30	74.55	1349.30	14.58	14.6	42.6	1.5	Sperry HOC tool
1383.62	15.73	73.69	1377.34	16.78	16.8	50.4	2.1	Sperry HOC tool
1412.81	16.05	74.58	1405.41	18.97	19.0	58.0	1.4	Sperry HOC tool
1442.05	16.23	74.71	1433.50	21.12	21.1	65.9	0.6	Sperry HOC tool
1470.78	16.47	76.71	1461.07	23.11	23.1	73.7	2.1	Sperry HOC tool
1501.94	16.25	78.21	1490.97	25.02	25.0	82.3	1.5	Sperry HOC tool
1531.25	16.25	78.78	1519.11	26.66	26.7	90.3	0.5	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	31	0	356.0
Drill Water	m3	0	5	0	569.0
Pot Water	m3	24	24	0	123.0
Brine	m3	0	86	0	49.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	10	0	62.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.20	97	83	2760	415	1510.0	30	140	150	40	250	200	50	330	250
2	Continental Emsco	6.50	1.20	97	83	2760	415	1510.0	30	210	150	40	240	200	50	330	250
3	Continental Emsco	6.50	1.20	97	34	2760	170	1510.0	30	210	150	40	240	200	50	330	250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	23
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	94

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Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	2792.5bbl	Losses	111.6bbl
Active	1604.0bbl	Downhole	
Mixing		Surf+ Equip	111.6bbl
Hole	788.5bbl	Dumped	
Slug		De-Gasser	
Reserve	400.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	

Marine

Weather on 10 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
8.0nm	50kn	300.0deg	1002.0mbar	12C°	3.6m	270.0deg	6s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
1.3m	1.0deg	1.4deg	250.0deg	224.00klb	1110.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
6.0m	270.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	146.0
2	155.0
3	178.0
4	219.0
5	178.0
6	122.0
7	126.0
8	70.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	11:15 09 Dec 2010	Melbourne

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	13	695
Potable Water	3m³	2	538
Drill Water	3m³		625
Bentonite	Ton		0
Barite	Ton		55
Brine	Ton		0

0000 - 2400 Melbourne

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	09:30 09 Dec 2010	07:00 5 Dec 2010	At KT4

Bulks

Item	Unit	Used	Quantity
Fuel	Ton	10	541
Potable Water	3m³	4	328
Drill Water	3m³		413
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-2359 Running stand-by in foul weather

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	08:57 / 09:08	10 / 12	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 16
Silvereye-1

11 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	11 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	16	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1812.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1790.5m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	242.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$822,708
Rig	Kan Tan IV	Days from spud	9.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$11,989,565
Wtr Dpth (LAT)	54.0m	Days on well	15.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	405
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	WOW.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Change out Sperry MWD/LWD tools and Geopilot. Make up BHA, RIH and drill ahead 12¼" hole.		

Summary of Period 0000 to 2400 Hrs

Drilled 12¼" hole from 1570m to 1573m. Cross threaded tool joint on connection. Resolved problem. Drilled 12¼" hole from 1573m to 1812m. Sperry downhole tool failure. Circulated shakers clean. POOH from 1812m to 1544m. Pumped out of hole from 1544m to 1515m. POOH from 1515m to 1341m. Pumped out of hole from 1341m to 1081m. Circulated shakers clean. Flow checked, pumped slug and POOH. Removed radioactive sources and commenced downloading sperry tools.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	1	0 Days	Simulated Fire in Toolpusher's Office. Emergency Teams to emergency muster stations & Non-essential personnel to muster in TR. Fire exercise and Search & rescue to be carried out by Fire Teams.	1944 General alarm sounded - All Emergency Teams to Emergency muster points & non-essential personnel to muster station in TR. 1945 Far Fosna notified of situation and closing up to rig. 1946 Accommodation checked and clear & smoke reported in Upper Accommodation. 1948 Accommodation Ventilation shutdown. 1951 Fire Marshall reports - Smoke observed coming from Toolpusher's Office. 1953 Fire Marshal notified by ECC - I person un-accounted for from Muster. Fire Marshal reports BA team suited up and entering Toolpusher's Office with fire hose to extinguish fire & for search and rescue. 1956 Fire Marshall reports one person located in Toolpushers office. Identified as Senior Toolpusher with Smoke Inhalation. All personnel now accounted for & Full POB - 94. 1958 Fire Marshall reports fire extinguished. Casualty to be moved to Safe area at stbd side of rig & medical team required. Medical Team notified and mobilised. 2000 Medical Team x 3 on scene for treatment of casualty. 2001 Fire confirmed fully extinguished & Tech Team re-start ventilation for accommodation venting and clearance of smoke. 2003 End of exercise. Test of PAPA & Toxic Hazard alarms completed. 2010 De-brief held in Pilot house with all Essential Drill Personnel.
JSA	20	0 Days	Pre Job Safety Meetings	Morning pre-tour Drill - Body Position - Awareness between stump & mouse hole. Drill crew picking up trip hazards without being asked. Deck - Good mentoring by crew for new hand, showing correct procedures and safety awareness onboard KT4.

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			Evening Pre-Tour Derrickman identified yellow tugger required tension to prevent snag - he informed crew below to improve. Reminder to use trailing hand technique.
Permit To Work	16	0 Days	Permits administered	
Pre Job Safety Meeting	17	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	31	0 Days	STOP Cards/ Steve Gardner - Cementer / Nick Langtree - Roustabout	1:- Observed man driving the forklift between the Sack Room and the Cement Room. The operator did not sound any horn or alarm when driving through the narrow entrance way. It is good practise when driving amongst pedestrian areas to warn people that may be walking around a blind corner, unaware of the moving hazard. 2:-On looking over the Fire Station I noted that some of the 'in-use' BA Set cylinders were not fully charged. I asked the supervisor what should be done to ensure that the BA sets were always fully checked and ready for action if they were needed. He showed me how we check and re-fill the cylinders.
Weekly Safety Meeting	0	13 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 11 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0030	0.50	1573.0m	Drilled 12¼" hole from 1570m to 1573m. Made connection. 20klbs wob, 160rpm, 6.6kftlbs torq, 1000gpm, 2760ps
P11	TP (RE)	D4	0030	0230	2.00	1573.0m	Threads crossed on RBS connection. Unable to back out crossed threads. Picked up drill string and worked tool joint down to workable height near DF with 40/60 rpm, 350gpm, 500psi. (Installed spare elevators around pipe at rotary for safety). Broke crossed connection with rig tongs and racked back 2 stands with damaged tool joints. Washed back to bottom.
P11	P	D4	0230	0600	3.50	1657.0m	Drilled 12¼" hole from 1573m to 1657m. 15/25klbs wob, 160rpm, 8kftlbs torq, 1000gpm, 2760ps.
P11	P	D4	0600	1200	6.00	1780.0m	Drilled 12¼" hole from 1657m to 1780m. 15/30klbs wob, 160rpm, 8kftlbs torq, 1000gpm, 2780ps.
P11	P	D4	1200	1300	1.00	1812.0m	Drilled 12¼" hole from 1780m to 1812m. 20/25klbs wob, 160rpm, 10kftlbs torq, 1000gpm, 2800ps.
P11	P	D4	1300	1330	0.50	1812.0m	Sperry communication link to downhole tools failed. Troublehot problem.
P11	P	F4	1330	1400	0.50	1812.0m	Circulated well clean.
P11	P	P3	1400	1430	0.50	1812.0m	Flow checked well on trip tank. Well stable.
P11	P	G8	1430	1600	1.50	1812.0m	POOH on elevators from 1812m to 1544m. Encountered tight spots at 1752m, 1717m, 1704m, 1663m, 1544m. Max overpull 70klbs.
P11	P	D7	1600	1630	0.50	1812.0m	Pumped out of hole (no rotation) from 1544m to 1515m. 800gpm, 1600psi.
P11	P	G8	1630	1700	0.50	1812.0m	POOH on elevaters from 1515m to 1341m.
P11	P	D7	1700	1830	1.50	1812.0m	Pumped out of hole (no rotation) from 1341m to inside shoe at 1081m. 800gpm, 1500psi. Held trip drill. 15secs to stab and close IBOP.
P11	P	F4	1830	1930	1.00	1812.0m	Circulated well clean. Flow checked well on trip tank. Well static.
P11	TP (RE)	G8	1930	2100	1.50	1812.0m	POOH from 1081m to 1050m. Pumped slug and continued to POOH from 1050m to 242m.
P11	TP (RE)	G6	2100	2330	2.50	1812.0m	Racked back BHA. Laid out stab and float sub.
P11	TP (RE)	G7	2330	2400	0.50	1812.0m	Sperry removed radioactive sources from tools and commenced down loading data from HCIM/Geopilot/resistivity tools.

Operations For Period 0000 Hrs to 0600 Hrs on 12 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	TP (RE)	G7	0000	0030	0.50	1812.0m	Continued downloading sperry tools. Unable to read data from tools above HCIM.
P11	TP (RE)	G7	0030	0130	1.00	1812.0m	Downloaded data fron BAT Sonic tool.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	TP (RE)	G7	0130	0330	2.00	1812.0m	(Cranes down due to high winds) 00:00 Wind 45knts, gusting 48knts 01:00 Wind 45knts, gusting 50knts 02:00 Wind 40knts, gusting 45knts Sperry continued to trouble shoot and isolate failures in tools while WOW. Unable to read ALD-CTN from bottom of tool. Connected into top of ALD-CTN tool and down loaded data.
P11	TP (RE)	G7	0330	0500	1.50	1812.0m	Racked back sperry stand in derrick. Broke out bit and set Geopilot in slips. 03:00 Wind 37knts, gusting 44knts 04:00 Wind35knts, gusting 38knts
P11	TP (RE)	G7	0500	0600	1.00	1812.0m	(IN PROGRESS) Waited on Weather. 05:00 Wind 35knts 06:00 Wind 28knts gusting 33knts 07:00 Wind 28knts gusting 32knts

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 11 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	78.5	07 Dec 2010	11 Dec 2010	373.50	15.563	1812.0m

General Comments

00:00 TO 24:00 Hrs ON 11 Dec 2010

WBM Data

Cost Today US$ 68461

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.7cc/30min	Cl:	44000mg/l	Solids(%vol):	8%	Viscosity	53sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	9%	H2O:	89%	PV	14cp
Sample-From:	Pit#2	HTHP-FL:	12.0cc/30min	Hard/Ca:	360mg/l	Oil(%):	0%	YP	30lb/100ft²
Time:	2200	HTHP-cake:	2/32nd"	MBT:	7.5	Sand:		Gels 10s	14
Weight:	10.10ppg			PM:	0.5	pH:	9	Gels 10m	18
Temp:				PF:	0.05	PHPA:		Fann 003	11
								Fann 006	12
								Fann 100	28
								Fann 200	37
								Fann 300	44
								Fann 600	58

Comment: Adding CLAYSEAL+ to bring up the concentration upto 2% v/v and EZ MUD as per program.Treat out calcium with soda ash. Maintain properties with DEXTRID, PAC-L, KCL brine and citric acid. Treated active with BARAZAN D+ prior to POOH for hole cleaning

Bit # 3

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	12.25in	IADC#	M124	**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	Halliburton	WOB(avg)	20.00klb	No.	Size	Progress	242.0m	Cumul. Progress	700.0m
Type:	PDC	RPM(avg)	169	6	16/32nd"	On Bottom Hrs	6.0h	Cumul. On Btm Hrs	15.9h
Serial No.:	11548586	F.Rate	884gpm			IADC Drill Hrs	11.0h	Cumul. IADC Drill Hrs	27.5h
Bit Model	FXG65	SPP	2748psi			Total Revs	79000	Cumul. Total Revs	186000
Depth In	1102.0m	HSI				ROP(avg)	40.33 m/hr	ROP(avg)	44.03 m/hr
Depth Out		TFA	1.178						

Bit Comment

BHA # 3

Weight(Wet)	71.00klb	Length	242.4m	Torque(max)	13250ft-lbs	D.C. (1) Ann Velocity	278fpm
Wt Below Jar(Wet)	47.00klb	String	315.00klb	Torque(Off.Btm)	4200ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	315.00klb	Torque(On.Btm)	11340ft-lbs	H.W.D.P. Ann Velocity	173fpm

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	Slack-Off 326.00klb		D.P. Ann Velocity 173fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.49m	12.25in		11548586	FXG65 PDC
Geo_Pilot	9.38m	12.18in		NZ9026560	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.51m	12.00in		NZ90258874	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	2.46m	8.00in		10562335	
Float Sub	0.71m	8.00in	2.75in	10786189	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1561.83	16.31	77.89	1548.46	28.39	28.4	98.7	0.8	Sperry HOC tool
1586.46	16.24	77.71	1572.10	29.85	29.8	105.5	0.4	Sperry HOC tool
1616.48	16.06	78.20	1600.94	31.59	31.6	113.6	0.8	Sperry HOC tool
1642.31	16.17	78.50	1625.75	33.04	33.0	120.7	0.5	Sperry HOC tool
1673.72	17.17	76.35	1655.84	35.00	35.0	129.4	3.7	Sperry HOC tool
1702.70	15.87	77.15	1683.63	36.90	36.9	137.5	4.6	Sperry HOC tool
1731.61	16.05	79.02	1711.42	38.54	38.5	145.2	1.9	Sperry HOC tool
1760.22	15.85	80.22	1738.93	39.95	40.0	153.0	1.3	Sperry HOC tool
1789.99	15.85	81.83	1767.57	41.22	41.2	161.0	1.5	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	20	0	336.0
Drill Water	m3	0	5	0	564.0
Pot Water	m3	58	25	0	156.0
Brine	m3	0	33	0	16.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	8	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1 (gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.20	97	83	2830	415	1775.0	30	170	150	40	240	200	50	300	250
2	Continental Emsco	6.50	1.20	97	83	2830	415	1775.0	30	160	150	40	225	200	50	300	250
3	Continental Emsco	6.50	1.20	97	34	2830	170	1510.0	30	210	150	40	240	200	50	330	250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m /	Lead:12.5ppg G cement. 228 bbls.

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Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
		1102.70m	Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	23
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	94

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	**2336.7bbl**	**Losses**	**121.2bbl**
Active	798.0bbl	Downhole	
Mixing		Surf+ Equip	121.2bbl
Hole	842.7bbl	Dumped	
Slug		De-Gasser	
Reserve	696.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 80 80 80 80	
Shaker 1	VSM-300	20 20 20 100 100 100 100	

Marine

Weather on 11 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
3.0nm	45kn	295.0deg	993.0mbar	11C°	3.3m	295.0deg	6s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
2.0m	1.3deg	1.9deg	250.0deg	224.00klb	1010.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
4.6m	295.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	136.0
2	158.0
3	182.0
4	228.0
5	173.0
6	128.0
7	124.0
8	70.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	06:30 5 Dec 2010	11:15 09 Dec 2010	Transit to KT4

Bulks

Item	Unit	Used	Quantity
Fuel	m³	10	662
Potable Water	m³	4	530
Drill Water	m³		625
Bentonite	Ton		0
Barite	Ton	0	0
Brine	Ton		0

0000-1126 Alongside sth wharf
1126 - 2400 Transit to KT4

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Far Fosna	09:30 09 Dec 2010	07:00 5 Dec 2010	At KT4

Item	Unit	Used	Quantity
Fuel	m³	12	529
Potable Water	m³	4	324
Drill Water	m³		413
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-1400 Running stand-by in foul weather
1400-1500 Move in under port crane load deck cargo
1500-2359 Running stand-by in foul weather

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 17
Silvereye-1

12 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	12 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	17	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	1860.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	1824.9m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	48.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$802,922
Rig	Kan Tan IV	Days from spud	10.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$12,792,487
Wtr Dpth (LAT)	54.0m	Days on well	16.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	406
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Drilling 12¼' hole.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Drill ahead 12¼" hole to TD.		

Summary of Period 0000 to 2400 Hrs

Completed down loading data from Sperry tools. Racked Sperry tool stand back in derrick and broke off bit. WOW. Laid out Sperry MWD/LWD tools and Geopilot. Made up new BHA and shallow tested same. RIH to 1500m. Took weight. Washed/reamed in hole from 1500m to 1812m. Drilled 12¼" hole from 1812m to 1860m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	1 Day		
JSA	30	0 Days	Pre Job Safety Meetings	Morning pre-tour Reminder to use trailing hand technique and both hands (minimum of one). Busy in Sack Room (Forklift, mixing chemicals, multiple crew working in area) - crewman stopped the job and highlighted awareness to all. Hearing protection. Ensure all drums are correctly labelled (identifying correct contents ensures personal & environmental safety). BA sets checks. MSDS see RSA or HSE. Evening Pre-Tour Driller ensures correct procedure pulling slips - Back injury prevention. Slippery Deck was observed - crewman stopped and cleaned up (made safe - good prevention). Dunnage on decks with nails - hammer down made safe.
Permit To Work	21	0 Days	Permits administered	
Pre Job Safety Meeting	23	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	50	0 Days	STOP Cards/ Grant Forman - Floorman / Hamish Brown - Mechanic	1:- When rigging up the slip-joint I noticed the 85T Shackles had welding wire instead of Split Pins. I went and found some split pins the correct size and fitted them as we worked. Gear this size must have the right safety pins fitted. 2:-Whilst conducting an Oil Change on the Pt Crane, I noticed that the oil in the drum marked 15W40 Engine Oil, was the wrong colour and smelled of Gear Oil. Someone had refilled the drum with oil and not re-labelled the drum correctly. It was impossible to tell exactly what was in the drum so I discarded it to the Waste Oil tank. We must remove labels and re-label any containers with the correct description.
Weekly Safety Meeting	6	0 Days	Interdepartmental and third party	Third / Drill / Marine / Technical / Catering / Administration

Operations For Period 0000 Hrs to 2400 Hrs on 12 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	TP (RE)	G7	0000	0030	0.50	1812.0m	Continued downloading sperry tools. Unable to read data from tools above HCIM.
P11	TP (RE)	G7	0030	0130	1.00	1812.0m	Downloaded data fron BAT Sonic tool.
P11	TP (RE)	G7	0130	0330	2.00	1812.0m	(Cranes down due to high winds) 00:00 Wind 45knts, gusting 48knts 01:00 Wind 45knts, gusting 50knts 02:00 Wind 40knts, gusting 45knts Sperry continued to trouble shoot and isolate failures in tools while WOW. Unable to read ALD-CTN from bottom of tool. Connected into top of ALD-CTN tool and down loaded data.
P11	TP (RE)	G7	0330	0500	1.50	1812.0m	Racked back sperry stand in derrick. Broke out bit and set Geopilot in slips. 03:00 Wind 37knts, gusting 44knts 04:00 Wind35knts, gusting 38knts
P11	TP (RE)	G7	0500	0730	2.50	1812.0m	Waited on Weather. 05:00 Wind 35knts 06:00 Wind 28knts gusting 33knts 07:00 Wind 28knts gusting 32knts
P11	TP (RE)	G7	0730	0930	2.00	1812.0m	Checked mouse hole for broken protectors. Laid out HOC, Q BAT Sonic, ALD+CTN, RLL, and Geopilot.
P11	TP (RE)	G7	0930	1100	1.50	1812.0m	Picked up and made up replacement Geopilot, RLL, ALD+CTN, Q BAT, HOC tools.
P11	TP (RE)	G7	1100	1200	1.00	1812.0m	Downloaded data to Sperry tools.
P11	TP (RE)	G7	1200	1230	0.50	1812.0m	Installed radioactive sources in LWD tools.
P11	TP (RE)	G6	1230	1330	1.00	1812.0m	Continued to make up 12¼" BHA to 242m.
P11	TP (RE)	G7	1330	1400	0.50	1812.0m	Shallow tested LWD/MWD tools. 860gpm, 1460psi.
P11	TP (RE)	G8	1400	1530	1.50	1812.0m	RIH from 242m to 1081m.
P11	P	G11	1530	1600	0.50	1812.0m	Serviced rig. Adjusted RBS, greased crown.
P11	P	G8	1600	1700	1.00	1812.0m	RIH from 1081m to 1500m. Took 40klbs weight at 1500m.
P11	P	F1	1700	2130	4.50	1812.0m	Washed/reamed from 1500m to 1812m. Attempted to RIH at various stages without success. 140rpm, 3/15kftlbs torq, 0/10klbs wob, 1000gpm, 3000psi.
P11	P	D4	2130	2400	2.50	1860.0m	Drilled 12¼" hole from 1812m to 1860m. 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi.

Operations For Period 0000 Hrs to 0600 Hrs on 13 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0600	6.00	1965.0m	Drilled 12¼" hole from 1860m to 1965m. Control drilled at 20m/hr from 1900m for log quality. 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 12 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	102.5	07 Dec 2010	12 Dec 2010	397.50	16.563	1860.0m

General Comments

00:00 TO 24:00 Hrs ON 12 Dec 2010

Operational Comments	Carbide "bomb" dropped at 1890m. Hole gauged at 110.8% or 13.6" average OD

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WBM Data — Cost Today US$ 11630

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.5cc/30min	Cl:	40000mg/l	Solids(%vol):	7%	Viscosity	48sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	9%	H2O:	90%	PV	11cp
Sample-From:	Pit#2	HTHP-FL:	11.5cc/30min	Hard/Ca:	400mg/l	Oil(%):	0%	YP	25lb/100ft²
Time:	2300	HTHP-cake:	2/32nd"	MBT:	10	Sand:		Gels 10s	11
Weight:	10.05ppg			PM:	0.5	pH:	9	Gels 10m	15
Temp:	48C°			PF:	0.05	PHPA:		Fann 003	9
								Fann 006	10
								Fann 100	23
								Fann 200	30
								Fann 300	36
								Fann 600	47

Comment: Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150.
Changed shaker #4 to API 100 mesh screens.

Bit # 3

Wear	I	O1	D	L	B	G	O2	R
	5	4	CT	A	X	I	BT	DTF

Bitwear Comments:

				Nozzles		Drilled over last 24 hrs		Calculated over Bit Run	
Size (''):	12.25in	IADC#	M124	No.	Size	Progress	0.0m	Cumul. Progress	700.0m
Mfr:	Halliburton	WOB(avg)	20.00klb	6	16/32nd"	On Bottom Hrs	0.0h	Cumul. On Btm Hrs	15.9h
Type:	PDC	RPM(avg)	169			IADC Drill Hrs	0.0h	Cumul. IADC Drill Hrs	27.5h
Serial No.:	11548586	F.Rate	884gpm			Total Revs	79000	Cumul. Total Revs	265000
Bit Model	FXG65	SPP	2748psi			ROP(avg)	N/A	ROP(avg)	44.03 m/hr
Depth In	1102.0m	HSI							
Depth Out	1812.0m	TFA	1.178						

Bit Comment

Bit # 4

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

				Nozzles		Drilled over last 24 hrs		Calculated over Bit Run	
Size (''):	12.25in	IADC#	M322	No.	Size	Progress	48.0m	Cumul. Progress	48.0m
Mfr:	Halliburton	WOB(avg)	18.00klb	7	15/32nd"	On Bottom Hrs	1.7h	Cumul. On Btm Hrs	1.7h
Type:	PDC	RPM(avg)	165			IADC Drill Hrs	2.5h	Cumul. IADC Drill Hrs	2.5h
Serial No.:	10932505	F.Rate	999gpm			Total Revs	15000	Cumul. Total Revs	15000
Bit Model	FMF3753Z	SPP	2951psi			ROP(avg)	28.24 m/hr	ROP(avg)	28.24 m/hr
Depth In	1812.0m	HSI							
Depth Out		TFA	1.208						

Bit Comment

BHA # 3

Weight(Wet)	71.00klb	Length	242.4m	Torque(max)	13250ft-lbs	D.C. (1) Ann Velocity	278fpm
Wt Below Jar(Wet)	47.00klb	String	315.00klb	Torque(Off.Btm)	4200ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	315.00klb	Torque(On.Btm)	11340ft-lbs	H.W.D.P. Ann Velocity	173fpm
		Slack-Off	326.00klb			D.P. Ann Velocity	173fpm

BHA Run Description

BHA Run Comment

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.49m	12.25in		11548586	FXG65 PDC
Geo_Pilot	9.38m	12.18in		NZ9026560	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.51m	12.00in		NZ90258874	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	2.46m	8.00in		10562335	

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Equipment	Length	OD	ID	Serial #	Comment
Float Sub	0.71m	8.00in	2.75in	10786189	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

BHA # 4

Weight(Wet)	71.00klb	Length	242.5m	Torque(max)	13690ft-lbs	D.C. (1) Ann Velocity	315fpm
Wt Below Jar(Wet)	47.00klb	String	330.00klb	Torque(Off.Btm)	4000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	325.00klb	Torque(On.Btm)	9140ft-lbs	H.W.D.P. Ann Velocity	196fpm
		Slack-Off	330.00klb			D.P. Ann Velocity	196fpm

BHA Run Description

BHA Run Comment Recovered from ditch magnet for 24hr period:- 42gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.64m	12.25in		1932505	FMF3753Z PDC
Geo_Pilot	9.38m	12.18in		1121G79	
RLL Nuke String	9.67m	12.13in		NZ9029455	
LWD Tools	11.50m	12.00in		NZ90264132	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	3.10m	8.00in		1061502	
Float Sub	0.71m	8.00in	2.75in	10782946	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1820.02	15.95	79.90	1796.45	42.53	42.5	169.1	1.8	Sperry HOC tool
1847.06	16.55	76.98	1822.41	44.05	44.0	176.5	3.7	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	6	0	330.0
Drill Water	m3	0	118	0	446.0
Pot Water	m3	56	37	0	175.0
Brine	m3	0	0	0	16.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.20	97	62	3150	310		30		150	40		200	50		250
2	Continental Emsco	6.50	1.20	97	68	3150	340		30		150	40		200	50		250
3	Continental	6.50	1.20	97	70	3150	350		30	210	150	40		200	50		250

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Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
	Emsco																

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	23
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	94

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	**3369.0bbl**	**Losses**	**30.6bbl**
Active	1740.0bbl	Downhole	
Mixing		Surf+ Equip	30.6bbl
Hole	925.0bbl	Dumped	
Slug		De-Gasser	
Reserve	704.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size
Shaker 1	VSM-300	20 20 20 100 100 100 100
Shaker 1	VSM-300	20 20 20 100 100 100 100
Shaker 1	VSM-300	20 20 20 100 100 100 100
Shaker 1	VSM-300	20 20 20 100 100 100 100

Comments

Marine

Weather on 12 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	19kn	270.0deg	1008.0mbar	10C°	2.0m	270.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.6deg	0.8deg	250.0deg	224.00klb	980.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.0m	270.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	154.0
2	145.0
3	162.0
4	192.0
5	147.0
6	122.0
7	144.0
8	78.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	00:15 12 Dec 2010	11:15 09 Dec 2010	Running stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	12	650
Potable Water	m³	4	526
Drill Water	m³		625
Bentonite	Ton		0

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				Item	Unit	Used	Quantity
				Barite	Ton	0	0
				Brine	Ton		0

0000- 0015 Transit to KT4
0015 - 1100 Running stby
1100 - 1245 Discharge/backload deck cargo
1245 - 2400 Running stby

				Item	Unit	Used	Quantity
Far Fosna	09:30 09 Dec 2010	00:01 12 Dec 2010	Alongside at South Wharf 28	Fuel	m³	14	515
				Potable Water	m³	4	320
				Drill Water	m³		413
				Bentonite	Ton		0
				Barite	Ton		0
				'G' Cmt	Ton		0
				Brine	bbl		930

0001-1000 Depart Kan Tan IV for Melbourne
1000-1200 Stand-by at pilot station
1200-1600 Pilot onboard steam into Port Melbourne
1600-1645 Stand-by off berth waiting for berth to be cleared
1645-1700 Move into berth first line ashore
1700-2359 Alongside at South Wharf 28

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 18
Silvereye-1

13 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	13 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	18	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	2193.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2154.8m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	333.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$836,844
Rig	Kan Tan IV	Days from spud	11.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$13,629,331
Wtr Dpth (LAT)	54.0m	Days on well	17.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	407
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Drilling 12¼" hole.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Drill ahead 12¼" hole to TD. Circulate well clean. POOH and lay out Sperry BHA. Make up 2 7/8" cement stinger and RIH.		

Summary of Period 0000 to 2400 Hrs

Drilled 12¼" hole from 1860m to 2193m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	2 Days		
JSA	40	0 Days	Pre Job Safety Meetings	Morning pre-tour Driller ensures correct procedure pulling slips - Back injury prevention. Slippery Deck was observed - crewman stopped and cleaned up (made safe - good prevention). Dunnage on decks with nails - hammer down made safe. Keep Safe. Evening Pre-Tour Stop the Job - was conducted during Crane Op's - Loading drill bit & breaker into container - avoided swinging movement by re assessment. ToolBox Talks - Good TBT conducted prior Forklift Ops - designated crewman to assist with guiding and rearranging awkward load - made safe job.
Permit To Work	29	0 Days	Permits administered	
Pre Job Safety Meeting	35	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	53	0 Days	STOP Cards/ John Varga - Dogman / Stephen Welch - Mud Engineer	1:- We are repeatedly asked to do PM's on the Supply & Exhaust Fans. We do not have enough knowledge of the system to do these PM's properly. If we are to inspect these systems and sign our names to the PM sheets we need training in what to look for and how to operate the system correctly. None of the crew are 100% sure what we are doing without appropriate training by the mechanics. 2:-There was a lot of work going on while mixing in the sack-room with lots of foot traffic in the area. I spoke with the F/lift operator to advise multiple people in the area, and I spoke to the crew to raise awareness of the moving machinery. I stopped the job to ensure the crew would be more vigilant, and asked the F/lift operator to sound the horn when entering the confined area.
Weekly Safety Meeting	1	0 Days	Interdepartmental and third party	Third party meeting

Operations For Period 0000 Hrs to 2400 Hrs on 13 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0600	6.00	1966.0m	Drilled 12¼" hole from 1860m to 1966m. Control drilled at 25m/hr max rop from 1900m for log quality. 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi
P11	P	D4	0600	1200	6.00	2046.0m	Drilled 12¼" hole from 1966m to 2046m. Control drilled at 25m/hr max rop for log quality. 10/20klbs wob, 160rpm, 10/16kftlbs torq, 1000gpm, 3100psi
P11	P	D4	1200	1800	6.00	2120.0m	Drilled 12¼" hole from 2046m to 2120m. Control drilled at 25m/hr max rop for log quality. 5/30klbs wob, 160rpm, 10/19.5kftlbs torq, 940gpm, 3011psi
P11	P	D4	1800	2400	6.00	2193.0m	Drilled 12¼" hole from 2120m to 2193m. Control drilled at 25m/hr max rop for log quality. 10/30klbs wob, 135rpm, 11/21.5kftlbs torq, 907gpm, 2860psi

Operations For Period 0000 Hrs to 0600 Hrs on 14 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0600	6.00	2211.0m	Drilled 12¼" hole from 2193m to 2211m. ROP began dropping off at 2192m. Drilled ahead at 4m/hr 30/40klbs wob, 120/160rpm, 16/18kftlbs torq, 900gpm, 2760psi

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 13 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	126.5	07 Dec 2010	13 Dec 2010	421.50	17.563	2193.0m

General Comments

00:00 TO 24:00 Hrs ON 13 Dec 2010

WBM Data

Cost Today US$ 44528

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	40000mg/l	Solids(%vol):	8%	Viscosity	51sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%	PV	12cp
Sample-From:	Pit#2	HTHP-FL:	11.0cc/30min	Hard/Ca:	400mg/l	Oil(%):	0%	YP	26lb/100ft²
Time:	2100	HTHP-cake:	2/32nd"	MBT:	10	Sand:	.5	Gels 10s	9
Weight:	10.15ppg			PM:	0.1	pH:	9	Gels 10m	12
Temp:	55C°			PF:	0.05	PHPA:	2ppb	Fann 003	9
								Fann 006	10
								Fann 100	25
								Fann 200	32
								Fann 300	38
								Fann 600	50

Comment

Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150.

Screened up across all shakers to API 120's to help lower the mud weight .

Bit # 4

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	12.25in	IADC#	M322	**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	Halliburton	WOB(avg)	10.00klb	No.	Size	Progress	333.0m	Cumul. Progress	381.0m
Type:	PDC	RPM(avg)	134	7	15/32nd"	On Bottom Hrs	16.6h	Cumul. On Btm Hrs	18.3h
Serial No.:	10932505	F.Rate	907gpm			IADC Drill Hrs	24.0h	Cumul. IADC Drill Hrs	26.5h
Bit Model	FMF3753Z	SPP	2863psi			Total Revs	161000	Cumul. Total Revs	176000
Depth In	1812.0m	HSI				ROP(avg)	20.06 m/hr	ROP(avg)	20.82 m/hr
Depth Out		TFA	1.208						

Bit Comment

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BHA # 4

Weight(Wet)	71.00klb	Length	242.5m	Torque(max)	21610ft-lbs	D.C. (1) Ann Velocity	286fpm
Wt Below Jar(Wet)	47.00klb	String	350.00klb	Torque(Off.Btm)	8000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	345.00klb	Torque(On.Btm)	16950ft-lbs	H.W.D.P. Ann Velocity	178fpm
		Slack-Off	350.00klb			D.P. Ann Velocity	178fpm

BHA Run Description

BHA Run Comment: Recovered from ditch magnet for 24hr period:- 710gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.64m	12.25in		1932505	FMF3753Z PDC
Geo_Pilot	9.38m	12.18in		1121G79	
RLL Nuke String	9.67m	12.13in		NZ9029455	
LWD Tools	11.50m	12.00in		NZ90264132	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	3.10m	8.00in		1061502	
Float Sub	0.71m	8.00in	2.75in	10782946	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
1875.84	16.40	74.79	1850.01	46.04	46.0	184.5	2.2	Sperry HOC tool
1903.76	15.96	73.72	1876.82	48.15	48.1	191.9	1.9	Sperry HOC tool
1932.30	16.14	74.60	1904.25	50.30	50.3	199.5	1.1	Sperry HOC tool
1960.96	15.78	74.71	1931.81	52.38	52.4	207.1	1.3	Sperry HOC tool
1991.07	16.57	74.52	1960.72	54.61	54.6	215.2	2.6	Sperry HOC tool
2020.60	16.44	73.87	1989.04	56.90	56.9	223.3	0.8	Sperry HOC tool
2048.98	15.67	72.94	2016.31	59.14	59.1	230.8	2.9	Sperry HOC tool
2077.36	16.14	73.20	2043.60	61.40	61.4	238.3	1.7	Sperry HOC tool
2138.28	16.09	74.79	2102.13	66.06	66.1	254.5	0.7	Sperry HOC tool
2168.53	15.61	74.35	2131.23	68.26	68.3	262.5	1.6	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	24	0	306.0
Drill Water	m3	0	102	0	344.0
Pot Water	m3	51	41	0	185.0
Brine	m3	0	16	0	0.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1 (gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.20	97	84	2860	420	2177.0	30	240	150	40	310	200	50	390	250
2	Continental Emsco	6.50	1.20	97					30		150	40		200	50		250
3	Continental	6.50	1.20	97	96	2860	480	2177.0	30	230	150	40	280	200	50	360	250

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Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
	Emsco																

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	26
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	97

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	**3711.0bbl**	**Losses**	**175.1bbl**
Active	1872.5bbl	Downhole	
Mixing		Surf+ Equip	35.1bbl
Hole	1082.5bbl	Dumped	140.0bbl
Slug		De-Gasser	
Reserve	756.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 100 100 100 100	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 13 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	13kn	250.0deg	1014.0mbar	13C°	1.3m	250.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.5m	0.4deg	0.8deg	250.0deg	224.00klb	1070.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	250.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	147.0
2	143.0
3	162.0
4	194.0
5	148.0
6	124.0
7	145.0
8	88.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks

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Far Scimitar	00:15 12 Dec 2010	11:15 09 Dec 2010	Running stby

Item	Unit	Used	Quantity
Fuel	m³	12	638
Potable Water	m³	3	523
Drill Water	m³		625
Bentonite	Ton		0
Barite	Ton	0	0
Brine	Ton		0

0000- 1035 Running stby
1035 - 1654 Close stby
1654 - 1800 Cargo backload
1800 - 2105 Close stby
2105 - 2400 Running stby

Far Fosna	09:30 09 Dec 2010	00:01 12 Dec 2010	En route to KT4

Item	Unit	Used	Quantity
Fuel	m³	10	505
Potable Water	m³	4	316
Drill Water	m³		413
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-1750 Alongside at South Wharf 28 / discharge & load deck cargo
1750-2135 Depart pilot onboard transit Port Phillip
2135-2359 Pilot away set course to Kan Tan IV

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	09:43 / 09:54	10 / 7	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 19
Silvereye-1

14 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	14 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	19	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	2215.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2176.5m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	22.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$813,477
Rig	Kan Tan IV	Days from spud	12.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$14,442,808
Wtr Dpth (LAT)	54.0m	Days on well	18.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	408
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	RIH with 12¼" rotary BHA.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	RIH to 2215m. Drill ahead to TD. Circulate well clean. POOH. Make up cement stinger and RIH.		

Summary of Period 0000 to 2400 Hrs

Drilled 12¼" hole from 2193m to 2215m. Decision made to POOH due to low ROP. Flow checked well. POOH from 2215m to 1920m. Pumped out of hole from 1920m to 1399m. POOH from 1399m to 1081m. Circulated bottoms up. Slipped and cut drilling line. POOH and racked back BHA. Commenced making up new BHA.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	3 Days		
JSA	48	0 Days	Pre Job Safety Meetings	Morning pre-tour Stop the Job - was conducted during Crane Op's - Loading drill bit & breaker into container - avoided swinging movement by re assessment. ToolBox Talks - Good TBT conducted prior Forklift Ops - designated crewman to assist with guiding and rearranging awkward load - made safe job. Evening Pre-Tour Hearing protection - reminded personnel that it is mandatory to wear minimum ear plugs. Obey signs i.e. double protection if required. Electrical cable identified rubbing against sharp surface, notified electrician and rectified. Pit drill - shakers, pit room and geoservices responded very quickly with good comms throughout.
Permit To Work	30	0 Days	Permits administered	
Pre Job Safety Meeting	36	0 Days	Tool Box talks	
Safety Meeting	7	0 Days		
STOP Card	41	0 Days	STOP Cards/ Alex Ingram - MWD Tech / Robert Sullivan - Mud Logger	1:- I found a crude home-made knife lying on a walk-way, and disposed of it to the steel waste area. Home-made tools (especially knives) have no place in this environment. 2:-While working on a stroke sensor, I found a spanner lying on the edge of the coffin which could easily have fallen into the moving pistons. I removed the tool from the area to prevent potential damage or injury. We need to improve housekeeping when we have finished a job making sure that a clean-up has been completed.
Weekly Safety Meeting	0	1 Day		

Operations For Period 0000 Hrs to 2400 Hrs on 14 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D4	0000	0600	6.00	2211.0m	Drilled 12¼" hole from 2193m to 2211m.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							ROP began dropping off at 2192m. Drilled ahead at 3-4m/hr. 30/40klbs wob, 120/160rpm, 16/18kftlbs torq, 900gpm, 2760psi .
P11	P	D4	0600	1030	4.50	2215.0m	Drilled 12¼" hole from 2211m to 2215m. Drilled ahead at less than 3m/hr deceasing to less than 1m/hr. Pressure differential between on and off bottom increased to 400psi and torque differential dropped to 2kftlbs; indicating possible bit failure. 40/50klbs wob, 120/160rpm, 16/20kftlbs torq, 884gpm, 2905psi.
P11	P	P3	1030	1100	0.50	2215.0m	Decision made to POOH due to low ROP. Removed geolograph cables from Top Drive. Flow checked well. Well static.
P11	P	G8	1100	1200	1.00	2215.0m	POOH from 2215m to 1920m. Overpulls up to 50klbs and well starting to swab.
P11	P	F1	1200	1500	3.00	2215.0m	Pumped out of the hole from 1920m to 1399m.
P11	P	G8	1500	1530	0.50	2215.0m	POOH from 1399m to inside show at 1081m.
P11	P	F4	1530	1600	0.50	2215.0m	Circulated bottoms up. Flow checked well.
P11	P	G11	1600	1730	1.50	2215.0m	Slipped and cut 120ft of drilling line.
P11	P	G8	1730	1900	1.50	2215.0m	POOH from 1081m to 242m.
P11	P	G6	1900	2030	1.50	2215.0m	Racked back BHA from 242m to 40m.
P11	P	G7	2030	2230	2.00	2215.0m	Laid out HOC tool. Sperry removed radioactive sources and down loaded data from LWD/MWD tools.
P11	P	G6	2230	2330	1.00	2215.0m	Racked back LWD/MWD stand. Laid out bit and Geopilot.
P11	P	G6	2330	2400	0.50	2215.0m	Picked up LWD/MWD stand from derrick.

Operations For Period 0000 Hrs to 0600 Hrs on 15 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	TP (TP)	G7	0000	0130	1.50	2215.0m	Connector failed at bottom of RLL tool. Racked back LWD stand with single of DP on top and replaced RLL tool.
P11	P	G6	0130	0300	1.50	2215.0m	Made up flex joint and NB stab to RLL tool. Made up to LWD stand, picked up new HOC tool. Made up 12¼" bit.
P11	P	G7	0300	0400	1.00	2215.0m	Sperry down loaded data to LWD/MWD tools and installed radioactive sources to ALD+CTN tools.
P11	P	G6	0400	0600	2.00	2215.0m	Continued to make up BHA to 255m. Made up 2 additional 8¼" DCs in BHA. Shallow tested LWD/MWD on first stand of HWDP. 800gpm, 1420psi.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 14 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	150.5	07 Dec 2010	14 Dec 2010	445.50	18.563	2215.0m

General Comments

00:00 TO 24:00 Hrs ON 14 Dec 2010

WBM Data

Cost Today US$ 7803

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%	Viscosity	48sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%	PV	12cp
Sample-From:	Pit#2	HTHP-FL:	11.0cc/30min	Hard/Ca:	400mg/l	Oil(%):	0%	YP	26lb/100ft²
Time:	2200	HTHP-cake:	2/32nd"	MBT:	10	Sand:	.5	Gels 10s	9
Weight:	10.10ppg			PM:	0.1	pH:	9	Gels 10m	12
Temp:	55C°			PF:	0.05	PHPA:	2ppb	Fann 003	9
								Fann 006	10
								Fann 100	25
								Fann 200	32
								Fann 300	38
								Fann 600	50

Comment

Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150.

Screened up across all shakers to API 120's to help lower the mud weight .

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Bit # 4

Wear	I	O1	D	L	B	G	O2	R
	2	8	RO	T	X	I	CT	PR

Bitwear Comments: Ring out 2" deep from outer edge leaving 8¼" ID inner with inner teeth intact.

Size (''):	12.25in	IADC#	M322	**Nozzles**		**Drilled over last 24 hrs**	**Calculated over Bit Run**
Mfr:	Halliburton	WOB(avg)	40.00klb	No.	Size	Progress 22.0m	Cumul. Progress 403.0m
Type:	PDC	RPM(avg)	145	7	15/32nd"	On Bottom Hrs 8.4h	Cumul. On Btm Hrs 26.7h
Serial No.:	10932505	F.Rate	884gpm			IADC Drill Hrs 10.5h	Cumul. IADC Drill Hrs 37.0h
Bit Model	FMF3753Z	SPP	2905psi			Total Revs 75000	Cumul. Total Revs 251000
Depth In	1812.0m	HSI				ROP(avg) 2.62 m/hr	ROP(avg) 15.09 m/hr
Depth Out	2215.0m	TFA	1.208				

Bit Comment

BHA # 4

Weight(Wet)	71.00klb	Length	242.5m	Torque(max)	21610ft-lbs	D.C. (1) Ann Velocity	278fpm
Wt Below Jar(Wet)	47.00klb	String	350.00klb	Torque(Off.Btm)	8000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	345.00klb	Torque(On.Btm)	16950ft-lbs	H.W.D.P. Ann Velocity	173fpm
		Slack-Off	350.00klb			D.P. Ann Velocity	173fpm

BHA Run Description

BHA Run Comment Recovered from ditch magnet for 24hr period:- 245gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.64m	12.25in		1932505	FMF3753Z PDC
Geo_Pilot	9.38m	12.18in		1121G79	
RLL Nuke String	9.67m	12.13in		NZ9029455	
LWD Tools	11.50m	12.00in		NZ90264132	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	3.10m	8.00in		1061502	
Float Sub	0.71m	8.00in	2.75in	10782946	Non Ported Float Installed
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8" Stab
Drill Collar	65.72m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in		
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
2193.23	16.26	78.01	2154.98	69.87	69.9	269.1	4.8	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	22	0	284.0
Drill Water	m3	0	25	0	319.0
Pot Water	m3	58	30	0	213.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs

No.	Type	Liner	MW	Eff (%)	SPM	SPP	Flow

Slow Pump Data

Depth	SPM1	SPP1	Flow1(gpm)	SPM2	SPP2	Flow2	SPM3	SPP3	Flow3

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Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
		(in)	(sg)		(SPM)	(psi)	(gpm)	(m)	(SPM)	(psi)		(SPM)	(psi)	(gpm)	(SPM)	(psi)	(gpm)
1	Continental Emsco	6.50	1.20	97	88	2900	442	2177.0	30	240	150	40	310	200	50	390	250
2	Continental Emsco	6.50	1.20	97					30		150	40		200	50		250
3	Continental Emsco	6.50	1.20	97	88	2900	442	2177.0	30	230	150	40	280	200	50	360	250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	26
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	97

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	2625.0bbl	Losses	39.7bbl
Active	759.0bbl	Downhole	
Mixing		Surf+ Equip	9.7bbl
Hole	1134.0bbl	Dumped	30.0bbl
Slug		De-Gasser	
Reserve	732.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

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Weather on 14 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	23kn	45.0deg	1008.0mbar	15C°	1.3m	45.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.4m	0.3deg	0.4deg	250.0deg	224.00klb	1070.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	45.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	147.0
2	134.0
3	153.0
4	118.0
5	158.0
6	134.0
7	150.0
8	90.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	00:15 12 Dec 2010	10:45 14 Dec 2010	Alongside melb

Bulks

Item	Unit	Used	Quantity
Fuel	m³	18	620
Potable Water	m³	3	520
Drill Water	m³		625
Bentonite	Ton		0
Barite	Ton	0	0
Brine	Ton		0

0000 - 1020 Running stby
1020 - 1045 Backload cargo
1045 - 2236 Transit to melb
2236 - 2400

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 14 Dec 2010	00:01 12 Dec 2010	En route to KT4

Item	Unit	Used	Quantity
Fuel	m³	14	491
Potable Water	m³	4	312
Drill Water	m³		413
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-0700 Vessel underway to Kan Tan IV
0700-0845 On location move in under stbd crane discharge deck cargo
0845-2145 Close stand-by for overside work
2145-2359 Running stand-by

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 20
Silvereye-1

15 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	15 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	20	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	2282.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2239.3m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	67.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$719,501
Rig	Kan Tan IV	Days from spud	13.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$15,162,309
Wtr Dpth (LAT)	54.0m	Days on well	19.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	409
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Drilling 12¼" hole.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Drill ahead to TD. Circulate well clean. POOH. Make up cement stinger and RIH.		

Summary of Period 0000 to 2400 Hrs

Changed out faulty RLL tool. Made up new 12¼" rotary BHA. Shallow tested MWD/LWD and RIH to shoe. Serviced rig. RIH from 1094m to 2145m. Washed in hole from 2145m to 2193m. Relogged well from 2193m to 2215m. Drilled 12¼" hole from 2215m to 2282m.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	4 Days		
First Aid Case	1	0 Days	Foreign object in eye	Pt had been needle gunning, was wearing correct PPE changed job and started to fire watch for welding and grinding, pt states was wearing eye protection at all times. Pt states right eye started to become irritated and gradually worsened, he flushed eye with eyewash no relief, worsened during night, pt presented to medic in the morning (15th Dec), who then identified a metal fragment imbedded in right eye, minor redness and irritation. PT was then treated accordingly.
JSA	24	0 Days	Pre Job Safety Meetings	Morning pre-tour Hearing protection - reminded personnel that it is mandatory to wear minimum ear plugs. Obey signs i.e. double protection if required. Electrical cable identified rubbing against sharp surface, notified electrician and rectified. Personnel working within barriered off areas unauthorized. "Stop the job" was initiated and TBT conducted to rectify the situation. Reminded to keep clear of barriered off areas unless authorized. Evening Pre-Tour FAC - Foreign body in IP's right eye, found metal fragment. Correct PPE was worn at all times, report to Medic immediately after first signs of irritation. Food container stored in front of fire fighting equipment container causing an obstruction. Informed Barge eng to remove for easy access. Observed Dogman standing on spare steel plate to attach sling to paint locker vent before removal. "Stop the job" was initiated and Dogman was advised to use a ladder for the job.
Permit To Work	16	0 Days	Permits administered	
Pre Job Safety Meeting	22	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	28	0 Days	STOP Cards/ Rik James - Crane Operator / Shay Bernett - Floorman	1:- Bunkering Hose floatation retainer straps need replacing. The stainless steel bands are breaking off. Reported to Barge Engineer. Will replace with a better type to prevent the hose becoming entangled in the boat prop. Need to ensure the straps are strong enough for the job.

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Weekly Safety Meeting	0	2 Days		2:-Whilst tripping out today, I released the dog collar and a segment fell off. Even though it had been checked, a pin had come out. I took the collar away immediately and repaired it with new pins. Just goes to show that we can never check out the gear enough for the potential of something falling down the hole.

Operations For Period 0000 Hrs to 2400 Hrs on 15 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	TP (TP)	G7	0000	0130	1.50	2215.0m	Connector failed at bottom of RLL tool. Racked back LWD stand with single of DP on top and replaced RLL tool.
P11	P	G6	0130	0230	1.00	2215.0m	Made up flex joint and NB stab to RLL tool. Made up to LWD stand, picked up new HOC tool. Made up 12¼" bit.
P11	P	G7	0230	0400	1.50	2215.0m	Sperry down loaded data to LWD/MWD tools and installed radioactive sources to ALD+CTN tools.
P11	P	G6	0400	0600	2.00	2215.0m	Continued to make up BHA to 255m. Made up 2 additional 8¼" DCs in BHA. Shallow tested LWD/MWD on first stand of HWDP. 800gpm, 1350psi.
P11	P	G8	0600	0730	1.50	2215.0m	RIH with 12¼" rotary assembly from 255m to 1094m.
P11	P	G11	0730	0800	0.50	2215.0m	Serviced Top Drive and travelling blocks.
P11	P	G8	0800	1000	2.00	2215.0m	RIH in open hole from 1094m to 2145m.
P11	P	F1	1000	1100	1.00	2215.0m	Washed in hole from 2145m to 2193m. 800gpm, 2350psi.
P11	P	F1	1100	1200	1.00	2215.0m	Re logged hole section from 2193m to 2215m.
P11	P	D2	1200	1800	6.00	2248.0m	Broke in new bit and drilled 12¼" hole from 2215m to 2248m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
P11	P	D2	1800	2400	6.00	2282.0m	Drilled 12¼" hole from 2248m to 2282m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.

Operations For Period 0000 Hrs to 0600 Hrs on 16 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D2	0000	0600	6.00	2308.0m	Drilled 12¼" hole from 2282m to 2308m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 15 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	174.5	07 Dec 2010	15 Dec 2010	469.50	19.563	2282.0m

WBM Data — Cost Today US$ 11585

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	37000mg/l	Solids(%vol):	8%	Viscosity	42sec/qt
		Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%	PV	10cp
Sample-From:	Pit#2	HTHP-FL:	11.0cc/30min	Hard/Ca:	520mg/l	Oil(%):	0%	YP	28lb/100ft²
Time:	2000	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5	Gels 10s	9
Weight:	10.05ppg			PM:	0.1	pH:	9	Gels 10m	13
Temp:	60C°			PF:	0.05	PHPA:	2ppb	Fann 003	8
								Fann 006	10
								Fann 100	26
								Fann 200	33
								Fann 300	38
								Fann 600	48

Comment: Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol. Maintain system with Baracarb 150.

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Bit # 5

Wear	I	O1	D	L	B	G	O2	R

Bitwear Comments:

Size (''):	12.25in	IADC#	437X	**Nozzles**		**Drilled over last 24 hrs**	**Calculated over Bit Run**
Mfr:	Smith Bits	WOB(avg)	37.00klb	No.	Size	Progress 67.0m	Cumul. Progress 67.0m
Type:	inst	RPM(avg)	121	1	18/32nd''	On Bottom Hrs 10.4h	Cumul. On Btm Hrs 10.4h
Serial No.:	PR2119	F.Rate	949gpm	3	20/32nd''	IADC Drill Hrs 12.0h	Cumul. IADC Drill Hrs 12.0h
Bit Model	GFS10BODVCPS	SPP	3131psi			Total Revs 71000	Cumul. Total Revs 71000
Depth In	2215.0m	HSI				ROP(avg) 6.44 m/hr	ROP(avg) 6.44 m/hr
Depth Out		TFA	1.169				

Bit Comment

BHA # 5

Weight(Wet)	78.00klb	Length	255.2m	Torque(max)	17450ft-lbs	D.C. (1) Ann Velocity	0fpm
Wt Below Jar(Wet)	56.00klb	String	360.00klb	Torque(Off.Btm)	8000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	400.00klb	Torque(On.Btm)	15290ft-lbs	H.W.D.P. Ann Velocity	0fpm
		Slack-Off	350.00klb			D.P. Ann Velocity	0fpm

BHA Run Description

BHA Run Comment Recovered from ditch magnet for 24hr period:- 224gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	12.25in		PR2119	GFS10BOVCPS Insert Bit
NB Stab	2.10m	8.00in		207A144	12¼'' Stab Non Ported Float Installed
Flex joint	2.44m	8.00in	2.75in	10544571	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.50m	12.00in		NZ90264132	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	3.10m	8.00in		11230617	
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8'' Stab
Drill Collar	84.58m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in	1167	
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
2241.21	18.18	93.36	2200.83	70.83	70.8	283.1	10.2	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	271	14	0	541.0
Drill Water	m3	305	5	0	619.0
Pot Water	m3	61	26	0	248.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs

No.	Type	Liner	MW	Eff (%)	SPM	SPP	Flow

Slow Pump Data

Depth	SPM1	SPP1	Flow1(gpm)	SPM2	SPP2	Flow2	SPM3	SPP3	Flow3

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Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
		(in)	(sg)		(SPM)	(psi)	(gpm)	(m)	(SPM)	(psi)		(SPM)	(psi)	(gpm)	(SPM)	(psi)	(gpm)
1	Continental Emsco	6.50	1.21	97	69	3180	345	2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97	76	3180	380	2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97	43	3180	215		30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	38
OMS	24
Fugro ROV	3
Halliburton	3
Baroid	2
Schlumberger (Wireline)	7
GRN	1
Reach	1
Geoservices	6
Sperry	2
Sperry	3
Swaco	1
Total	97

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	2699.9bbl	Losses	27.9bbl
Active	746.0bbl	Downhole	
Mixing		Surf+ Equip	27.9bbl
Hole	1124.9bbl	Dumped	
Slug		De-Gasser	
Reserve	829.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 15 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	20kn	250.0deg	1006.0mbar	13C°	0.6m	250.0deg	4s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.4m	0.6deg	0.7deg	250.0deg	224.00klb	1130.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	270.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	152.0
2	151.0
3	153.0
4	195.0
5	145.0
6	120.0
7	142.0
8	86.0

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Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar	00:15 12 Dec 2010	10:45 14 Dec 2010	Alongside melb	

Item	Unit	Used	Quantity
Fuel	m³	1	619
Potable Water	m³	3	520
Drill Water	m³		625
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

0000 - 2400 Alongside melb

Bunkered 66t of Barite

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Fosna	07:00 14 Dec 2010	00:01 12 Dec 2010	Running stand-by KT4 Discharged 250m³ FO and 295m³ DW to KT4	

Item	Unit	Used	Quantity
Fuel	m³	260	231
Potable Water	m³	4	308
Drill Water	m³	295	118
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-0500 Running stand-by
0500-0845 Under port crane discharge drill water
0845-1130 Running stand-by
1130-1550 Under stbd crane discharge fuel oil and load deck cargo
1550-2359 Running stand-by

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	08:55 / 09:10	6 / 6	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 21
Silvereye-1

16 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	16 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	21	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	Nick Jackson

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	35.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$734,026
Rig	Kan Tan IV	Days from spud	14.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$15,896,335
Wtr Dpth (LAT)	54.0m	Days on well	20.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	410
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Circulating bottoms up.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Set cement plugs and abandon well. Lay out excess DP while WOW. Recover wear bushing.		

Summary of Period 0000 to 2400 Hrs

Drilled 12¼" hole from 2282m to well TD at 2317m. Circulated bottoms up. Flow checked well and POOH from 2317m to BHA. Pumped out through tight sections. POOH with BHA. Laid out jars and 2 x DCs. Laid out Sperry LWD/MWD tools. Commenced picking up 2 7/8" cement stinger from deck.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	5 Days		
JSA	13	0 Days	Pre Job Safety Meetings	Morning pre-tour FAC - Foreign body in IP's right eye, found metal fragment. Correct PPE was worn at all times, report to Medic immediately after first signs of irritation. Food container stored in front of fire fighting equipment container causing an obstruction. Informed Barge eng to remove for easy access. Observed Dogman standing on spare steel plate to attach sling to paint locker vent before removal. "Stop the job" was initiated and Dogman was advised to use a ladder for the job. Evening Pre-Tour Man using an empty caustic soda drum in the worksite. No attempt was made to blank out the name of the chemical. Explained hazard and advised man to blank out label if he wished to continue use of the drum. Deluge pipe on stbd side accommodation about to fall off. Brackets had rusted through completely. Initiated working at heights permit and then removed and replaced brackets. After Maersk have advised their intentions for the crew, crew need to stay focused on the job at hand. It is easy to lose focus on the negative aspects as the project draws to a close. When doing BHA there was excellent TBT's conducted. When plan changed, job was stopped and a new TBT was held due to changing out tools. Good communication between all parties involved.
Permit To Work	11	0 Days	Permits administered	
Pre Job Safety Meeting	10	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	26	0 Days	STOP Cards/ Alex Hodgeman - Mechanic / Andrew Staite - Mechanic	1:- Observed personnel working over the side, not attached properly (i.e. lanyard to hand-rail or storm guard). Informed the watchman to stop the job and hang an inertia reel above the work-site. 2:-I found a harness laying on the deck in a pool of water. I washed it up and hung it up to dry. We need to take better care of this type of equipment.

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Weekly Safety Meeting	0	3 Days		

Operations For Period 0000 Hrs to 2400 Hrs on 16 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P11	P	D2	0000	0600	6.00	2308.0m	Drilled 12¼" hole from 2282m to 2308m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
P11	P	D2	0600	1000	4.00	2317.0m	Drilled 12¼" hole from 2308m to well TD at 2317m. 45klbs wob, 11/14kftlbs torq, 120rpm, 950gpm, 3200psi.
P11	P	F4	1000	1100	1.00	2317.0m	Circulated bottoms up.
P11	P	P3	1100	1130	0.50	2317.0m	Attempted TD survey. No success. Removed geolograph lines from Top Drive and flow checked well. Well static.
P11	P	G8	1130	1200	0.50	2317.0m	Pulled out of hole from 2317m to 2127m.
P11	P	D7	1200	1230	0.50	2317.0m	Pumped out of tight hole section from 2127m to 2106m. 750gpm, 2000psi.
P11	P	G8	1230	1400	1.50	2317.0m	POOH from 2106m to 1730m.
P11	P	D7	1400	1500	1.00	2317.0m	Pumped out of tight hole section from 1730m to 1643m. 850gpm, 2400psi.
P11	P	G8	1500	1600	1.00	2317.0m	POOH from 1643m to inside shoe at 1094m. Held trip drill. 31secs to stab and close IBOP.
P11	P	P3	1600	1630	0.50	2317.0m	Flow checked well. Well static. Installed auto slips and pipe wiper.
P11	P	G8	1630	1730	1.00	2317.0m	POOH from 1094m to 255m.
P11	P	G6	1730	1930	2.00	2317.0m	Racked back BHA. Laid out 8" jars and 2 x DCs to deck.
P11	P	G7	1930	2130	2.00	2317.0m	Removed radioactive sources from Sperry ALD+CTN tools. Down loaded data from LWD/MWD tools.
P11	P	G2	2130	2300	1.50	2317.0m	Laid out Sperry HOC, Q BAT Sonic, ALD+CTN, RLL and flex joint, stabs and bit.
P21	P	G2	2300	2400	1.00	2317.0m	Rigged up DF and picked up first 5 joints + elephant shoe of 2 2/7" cement stinger.

Operations For Period 0000 Hrs to 0600 Hrs on 17 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G2	0000	0130	1.50	2317.0m	Continued to pick up and make up 2 7/8" cement stinger. Total of 20 joints picked up. Made up Top Drive and pumped through stinger to confirm clear.
P21	P	G8	0130	0500	3.50	0.0m	RIH with cement stinger from 188m to 2184m.
P21	P	D7	0500	0600	1.00	2317.0m	Precautionary wash in hole from 2184m to 2317m.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 16 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	492.50	20.521	2317.0m
Suspend and Abandon(P21)	1	16 Dec 2010	16 Dec 2010	493.50	20.563	2317.0m

General Comments

00:00 TO 24:00 Hrs ON 16 Dec 2010

WBM Data

Cost Today US$ 8002

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%
Sample-From:	Pit#2	Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%
Time:	2200	HTHP-FL:	11.0cc/30min	Hard/Ca:	360mg/l	Oil(%):	0%
Weight:	10.10ppg	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5
Temp:				PM:	0.1	pH:	9
				PF:	0.05	PHPA:	2ppb

Viscosity	44sec/qt
PV	12cp
YP	26lb/100ft²
Gels 10s	9
Gels 10m	12
Fann 003	9
Fann 006	10
Fann 100	25
Fann 200	32
Fann 300	38
Fann 600	50

Comment: Cont. to making additions of EZ-MUD, DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to keep system as per program. Treating out calcium with Soda Ash, and maintaining concentration of Baracarb 150 in the active.

Bit # 5

Wear	I	O1	D	L	B	G	O2	R
	2	5	WT	G	F	I	CT	TD

Bitwear Comments:

Size (''):	12.25in	IADC#	437X	**Nozzles**		**Drilled over last 24 hrs**		**Calculated over Bit Run**	
Mfr:	Smith Bits	WOB(avg)	43.00klb	No.	Size	Progress	35.0m	Cumul. Progress	102.0m
Type:	inst	RPM(avg)	123	1	18/32nd''	On Bottom Hrs	7.8h	Cumul. On Btm Hrs	18.2h
Serial No.:	PR2119	F.Rate	946gpm	3	20/32nd''	IADC Drill Hrs	10.0h	Cumul. IADC Drill Hrs	22.0h
Bit Model	GFS10BODVCPS	SPP	3188psi			Total Revs	63000	Cumul. Total Revs	134000
Depth In	2215.0m	HSI				ROP(avg)	4.49 m/hr	ROP(avg)	5.60 m/hr
Depth Out	2217.0m	TFA	1.169						

Bit Comment

BHA # 5

Weight(Wet)	78.00klb	Length	255.2m	Torque(max)	17450ft-lbs	D.C. (1) Ann Velocity	0fpm
Wt Below Jar(Wet)	56.00klb	String	360.00klb	Torque(Off.Btm)	8000ft-lbs	D.C. (2) Ann Velocity	0fpm
		Pick-Up	400.00klb	Torque(On.Btm)	16170ft-lbs	H.W.D.P. Ann Velocity	0fpm
		Slack-Off	350.00klb			D.P. Ann Velocity	0fpm

BHA Run Description

BHA Run Comment: Recovered from ditch magnet for 24hr period:- 110gms

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	12.25in		PR2119	GFS10BOVCPS Insert Bit
NB Stab	2.10m	8.00in		207A144	12¼'' Stab Non Ported Float Installed
Flex joint	2.44m	8.00in	2.75in	10544571	
RLL Nuke String	9.72m	12.13in		NZ90264131	
LWD Tools	11.50m	12.00in		NZ90264132	ALD+CTN
LWD Tools	6.74m	8.56in		NZ90264134028	Q BAT Sonic
HOC	3.10m	8.00in		11230617	
String Stab	2.46m	8.00in	2.88in	207A313	12 1/8'' Stab
Drill Collar	84.58m	8.50in	2.88in		
Drilling Jars	9.15m	7.88in	3.00in	214A3	
Drill Collar	9.40m	8.50in	2.88in	1167	
X/O	1.17m	8.00in	2.88in	508A40	
HWDP	112.86m	5.00in	3.00in		

Survey

MD (m)	Incl (deg)	Azim (deg)	TVD (m)	Vsec (deg)	N/-S (m)	E/-W (m)	DLS (deg/30m)	Tool Type
2283.36	20.17	100.27	2240.65	69.15	69.2	296.8	7.2	Sperry HOC tool

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	21	0	520.0
Drill Water	m3	0	13	0	606.0
Pot Water	m3	36	31	-2	251.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	164.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs

No.	Type	Liner	MW	Eff (%)	SPM	SPP	Flow

Slow Pump Data

Depth	SPM1	SPP1	Flow1(gpm)	SPM2	SPP2	Flow2	SPM3	SPP3	Flow3

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Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
		(in)	(sg)		(SPM)	(psi)	(gpm)	(m)	(SPM)	(psi)		(SPM)	(psi)	(gpm)	(SPM)	(psi)	(gpm)
1	Continental Emsco	6.50	1.21	97	63	3200	318	2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97	63	3200	318	2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97	64	3200	320		30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Origin Energy	2
Maersk	36
OMS	24
Fugro ROV	5
Halliburton	3
Baroid	2
Dril-Quip	1
GRN	1
Reach	1
Geoservices	6
Smith Red Barron	1
Sperry	3
Total	89

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	**2221.0bbl**	**Losses**	**567.6bbl**
Active	745.0bbl	Downhole	
Mixing		Surf+ Equip	22.6bbl
Hole	1185.0bbl	Dumped	545.0bbl
Slug		De-Gasser	
Reserve	291.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

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Weather on 16 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	21kn	295.0deg	1003.0mbar	12C°	0.6m	295.0deg	4s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.7m	0.7deg	0.6deg	250.0deg	224.00klb	1300.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	240.0deg	5s	

Rig Support

Anchors	Tension (klb)
1	148.0
2	143.0
3	157.0
4	193.0
5	155.0
6	125.0
7	149.0
8	86.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status	Bulks
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby Bunkered 100m³ DW in Melbourne	

Item	Unit	Used	Quantity
Fuel	m³	16	603
Potable Water	m³	6	514
Drill Water	m³		725
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

0000 - 0810 Alongside melb
0810 - 2025 Transit to KT4
2025 - 2115 Cargo discharge
2115 - 2400 Running stby

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 14 Dec 2010	00:01 12 Dec 2010	Stand-by KT4

Item	Unit	Used	Quantity
Fuel	m³	8	223
Potable Water	m³	4	308
Drill Water	m³		118
Bentonite	Ton		0
Barite	Ton		0
'G' Cmt	Ton		0
Brine	bbl		930

0001-1400 Running stand-by
1400-1930 Under port crane back load deck cargo
1930-2250 Running stand-by
2250-2359 Under port crane loading deck cargo

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	16:06 / 16:22	4 / 12	

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Australian Drilling Associates Pty Ltd

17 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

DRILLING MORNING REPORT # 22
Silvereye-1

Silvereye-1

Date:	17 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	22	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$710,540
Rig	Kan Tan IV	Days from spud	15.00	Shoe MDBRT	1102.9m	Cumul. Cost	AU$16,606,875
Wtr Dpth (LAT)	54.0m	Days on well	21.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	411
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	POOH laying out excess 5" DP.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Pump and spot surface cement plug #3: 100m to 200m. Lay out excess tubulars from derrick. Recover wear bushing. Recover BOP to rig.		

Summary of Period 0000 to 2400 Hrs

Continued to pick up 2 7/8" cement stinger and RIH to 2174m. Precautionary washed in hole from 2174m to 2317m. Tagged bottom with 5klbs. Circulated bottoms up. Spaced out, made up cement head and spotted cement plug #1A from 2317m to 2170m. POOH to 2170m and circulated clean. Spaced out, made up cement head and spotted cement plug #1B from 2170m to 2020m. POOH to 2020m and circulated clean. Spaced out, made up cement head and spotted cement plug #1C from 2020m to 1920m. POOH to 1870m and circulated clean. POOH from 1870m to 1250m and spotted 55bbl hi vis pill. POOH to 1150m and spotted cement plug #2 across shoe from 1150m to 1000m. POOH to 950m and circulated clean. POOH and laid out DP while WOC.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	6 Days		
JSA	38	0 Days	Pre Job Safety Meetings	Morning pre-tour Man using an empty caustic soda drum in the worksite. No attempt was made to blank out the name of the chemical. Explained hazard and advised man to blank out label if he wished to continue use of the drum. Deluge pipe on stbd side accommodation about to fall off. Brackets had rusted through completely. Initiated working at heights permit and then removed and replaced brackets. After Maersk have advised their intentions for the crew, crew need to stay focused on the job at hand. It is easy to lose focus on the negative aspects as the project draws to a close. When doing BHA there was excellent TBT's conducted. When plan changed, job was stopped and a new TBT was held due to changing out tools. Good communication between all parties involved. Evening Pre-Tour Good work on the housekeeping throughout the rig. Great pre-job discussion and area inspection by the heli-deck crew prior to the arrival of the helicopter this afternoon. Floorman placed hands in an incorrect position whilst latching elevators. Stop the job was initiated and the potential for crushed fingers was explained to the worker.
Permit To Work	22	0 Days	Permits administered	
Pre Job Safety Meeting	31	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	14	0 Days	STOP Cards/ Bo Wan - MI-Swaco	1:-When unloading the four food containers it is good practise to have a JSA and a Tool Box Talk for all those involved prior to beginning the job. All catering crew and many third party crew assisted so it is important to ensure everyone knows what they are doing and to observe safe practice. Even though it's a simple job,

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Weekly Safety Meeting	0	4 Days		good safety practice is required.

Operations For Period 0000 Hrs to 2400 Hrs on 17 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G2	0000	0130	1.50	2317.0m	Continued to pick up and make up 2 7/8" cement stinger. Total of 20 joints picked up. Made up Top Drive and pumped through stinger to confirm clear.
P21	P	G8	0130	0430	3.00	2317.0m	RIH with cement stinger from 188m to 2184m.
P21	P	D7	0430	0600	1.50	2317.0m	Precautionary wash in hole from 2184m to 2317m.
P21	P	F4	0600	0630	0.50	2317.0m	Circulated bottoms up. 1000gpm, 2680psi.
P21	P	F3	0630	0800	1.50	2317.0m	Cement plug #1A: Rigged up surface lines and spaced out to 2317m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill waterthen mixed pumped and displaced 82.5bbl 15.8ppg G cement plug #1A. Cement plug interval 2317m to 2170m.
P21	P	G8	0800	0900	1.00	2317.0m	Rigged down cement head assembly and POOH slowly out of cement plug from 2317m to 2170m.
P21	P	F4	0900	1000	1.00	2317.0m	Circulated well clean. Diverted 40bbl of cmt contaminated mud at shakers. 800gpm, 1750psi.
P21	P	F3	1000	1100	1.00	2317.0m	Cement plug #1B: Rigged up surface lines and spaced out to 2170m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill water then mixed pumped and displaced 82.5bbl 15.8ppg G cement plug #1B. Cement plug interval 2170m to 2020m.
P21	P	G8	1100	1200	1.00	2317.0m	Rigged down cement head assembly and POOH slowly out of cement plug from 2170m to 2020m.
P21	P	F4	1200	1300	1.00	2317.0m	Circulated well clean. Diverted 20bbl of cement contaminated mud at shakers. 800gpm, 1700psi.
P21	P	F3	1300	1400	1.00	2317.0m	Cement plug #1C: Rigged up surface lines and spaced out to 2020m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls DW then mixed pumped and displaced 55bbl 15.8ppg G cement plug #1C. Cement plug interval 2020m to 1920m.
P21	P	G8	1400	1430	0.50	2317.0m	Rigged down cement head assembly and POOH slowly out of cement plug from 2020m to 1870m.
P21	P	F4	1430	1530	1.00	2317.0m	Installed wiper ball in pipe and circulated well clean. 800gpm, 1575psi.
P21	P	G8	1530	1630	1.00	2317.0m	Pumped slug and POOH from 1870m to 1250m.
P21	P	F3	1630	1700	0.50	2317.0m	Spotted 55bbl 12.5ppg hi vis pill at 1250m with rig pumps.
P21	P	G8	1700	1730	0.50	2317.0m	POOH from 1250m to 1150m.
P21	P	F3	1730	1830	1.00	2317.0m	Cement plug #2: Rigged up surface lines and spaced out to 1150m. Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbls drill water then mixed pumped and displaced 82.5bbl 15.8ppg G cement plug #2 across shoe. Cement plug interval 1150m to 1000m.
P21	P	G8	1830	1900	0.50	2317.0m	Rigged down cement head assembly and POOH slowly out of cement plug from 1150m to 950m.
P21	P	F4	1900	2000	1.00	2317.0m	Circulated well clean. Diverted 82bbl of cement contaminated mud at shakers. 1000gpm, 2600psi. Installed wiper ball in string and pumped 100bbls to clean pipe ID.
P21	P	G2	2000	2400	4.00	2317.0m	Pumped slug and POOH laying out DP to deck while WOC. (Laid out 78 joints of 5" DP and 10 joints of 2 7/8" tubing)

Operations For Period 0000 Hrs to 0600 Hrs on 18 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G2	0000	0230	2.50	2317.0m	RIH 14 stands 5" DP from derrick and laid out same to pipe deck.
P21	P	G8	0230	0400	1.50	2317.0m	RIH from 97m to 936m.
P21	P	G2	0400	0430	0.50	2317.0m	Washed down from 936m and tagged top of cement plug #2 at 961m with 5klbs.
P21	P	G2	0430	0600	1.50	2317.0m	Pumped slug and POOH from 961m to 300m laying out excess DP to pipe deck.

Operations For Period Hrs to Hrs on

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Phase Data to 2400hrs, 17 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	492.50	20.521	2317.0m
Suspend and Abandon(P21)	25	16 Dec 2010	17 Dec 2010	517.50	21.563	2317.0m

WBM Data

Cost Today US$ 9302

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%
Sample-From:	Pit#2	Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%
Time:	2200	HTHP-FL:	11.0cc/30min	Hard/Ca:	360mg/l	Oil(%):	0%
Weight:	10.10ppg	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5
Temp:				PM:	0.1	pH:	9
				PF:	0.05	PHPA:	2ppb

Viscosity	44sec/qt
PV	12cp
YP	26lb/100ft²
Gels 10s	9
Gels 10m	12
Fann 003	9
Fann 006	10
Fann 100	25
Fann 200	32
Fann 300	38
Fann 600	50

Comment: Treated active mud with OXYGON and ALDACIDE G before leaving in casing. Mixed Hi-Vis pills at 12.5ppg as per program for spotting under plugs.

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	13	0	507.0
Drill Water	m3	163	43	0	726.0
Pot Water	m3	24	29	0	246.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	84	0	80.0
Barite	MT	0	0	0	54.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1 (gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97					30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Maersk	35
OMS	25
Fugro ROV	6
Halliburton	3
Baroid	2
Dril-Quip	1

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Personnel On Board

GRN	1
Reach	1
Geoservices	2
Smith Red Barron	1
Other	1
Total	82

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	1185.0bbl	Losses	855.0bbl
Active		Downhole	713.0bbl
Mixing		Surf+ Equip	0.0bbl
Hole	1185.0bbl	Dumped	142.0bbl
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 17 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	23kn	270.0deg	998.0mbar	12C°	1.0m	270.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
6.0m	0.5deg	0.6deg	250.0deg	224.00klb	1420.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	260.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	147.0
2	144.0
3	158.0
4	197.0
5	155.0
6	124.0
7	137.0
8	78.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	12	591
Potable Water	m³	4	510
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

0000 - 0200 Running stby
0200 - 0420 Discharge cargo
0420 - 1923 Running stby
1923 - 2135 Discharge 150m³ Drill water to rig
2135 - 2400 Running stby

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 14 Dec 2010	01:00 17 Dec 2010	Melbourne

Item	Unit	Used	Quantity
Fuel	m³	17	599
Potable Water	m³	4	304
Drill Water	m³		318
Bentonite	Ton		0
Barite	Ton		10
'G' Cmt	Ton		84
Brine	bbl		930

0001-0100 Under port crane loading deck cargo
0100-0920 Depart steam to pilot station
0920-1320 Pilot onboard vessel on passage to South 28
1320-2359 Alongside South 28 load / discharge deck cargo
Load fuel oil 393m³ / barite 10t / cement 84t / water 200m³

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Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	09:03 / 09:12	10 / 12	
2	Bristow Helicopters	13:00 / 13:11	3 / 8	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 23
Silvereye-1

18 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	18 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	23	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$698,240
Rig	Kan Tan IV	Days from spud	16.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$17,305,115
Wtr Dpth (LAT)	54.0m	Days on well	22.46	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	412
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Pressure testing cement plug at shoe.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	POOH laying out excess drill pipe. Spot cement plug #3 below wellhead. Displace riser to seawater. POOH laying out excess tubular. Rig up and recover BOP.		

Summary of Period 0000 to 2400 Hrs

Laid out 14 stands DP from derrick. RIH and tagged cement plug #2 with 5klbs at 961m. POOH laying down DP to 97m. RIH from 97m to 300m. Attempted to pressure test to 1500 psi against cement plug. Test failed at 950 psi. RIH to tag TOC at 1116m. Circulated well clean. Rigged up and re-set plug #2 with 65 bbls cement plug across shoe. POOH to 760m and made up WBRT. RIH, jetted BOP and unseated wearbushing.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	7 Days		
JSA	18	0 Days	Pre Job Safety Meetings	Morning pre-tour Good work on the housekeeping throughout the rig. Great pre-job discussion and area inspection by the heli-deck crew prior to the arrival of the helicopter this afternoon. Floorman placed hands in an incorrect position whilst latching elevators. Stop the job was initiated and the potential for crushed fingers was explained to the worker. Evening Pre-Tour Sample catcher and roughneck suspected Hydrogen Sulfide gas at shakers. AD sourced gas detector immediately and geologist educated sample catcher on the hazards of H2S as he was unaware of the dangers. All rig crew should be made aware of the hazards of H2S, perhaps during pre-tour meetings would be beneficial. Information on the dangers of H2S were explained during the pre-tour meeting). Worker spotted fellow personnel on ladder, came over and held the ladder steady. Good example of watching out for each other. Worker noticed grounding safety strap for ROV was frayed, which may not provide a safe electrical ground. Worker cleaned the clamp and remade the electrical connection.
Permit To Work	15	0 Days	Permits administered	
Pre Job Safety Meeting	19	0 Days	Tool Box talks	
Safety Meeting	6	1 Day		
STOP Card	26	0 Days	STOP Cards/ Luke Bartlett - Derrickman / Hugh Preston - Floorman	1:-On arriving up in the derrick I noticed that both inertia reels had been left connected together and fully extended. This meant both lines were exposed to the elements. There are lines up there so they can be retracted so keep them in good condition. We need to use them! 2:- While working in the Shaker house I smelled what I thought was H2S. I spoke with the Geoservices Sample

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Weekly Safety Meeting	0	5 Days		Catcher who agreed that there was something not right. I alerted the Driller and together we checked with Geo-services operator to double check the two H2S sensors in the shaker house. As a double check the Asst Driller came down with a hand-held Gas Detector and ran a check. All sensors gave a zero reading. But it was good to be sure.

Operations For Period 0000 Hrs to 2400 Hrs on 18 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G2	0000	0230	2.50	2317.0m	RIH 14 stands 5" DP from derrick and laid out same to pipe deck.
P21	P	G8	0230	0400	1.50	2317.0m	RIH from 97m to 936m.
P21	P	G2	0400	0430	0.50	2317.0m	Washed down from 936m and tagged top of cement plug #2 at 961m with 5klbs.
P21	P	G2	0430	0600	1.50	2317.0m	Pumped slug and POOH from 961m to 300m laying out excess DP to pipe deck.
P21	P	G8	0830	0900	0.50	2317.0m	RIH from 97m to 300m.
P21	TP (WO)	P1	0900	1300	4.00	2317.0m	Rigged up surface lines and attempted to pressure test against cement plug to 1500psi. Test failed at 950psi. Tested surface equipment to confirm leak was downhole. Retested against cement plug #2. Test failed.
P21	TP (WO)	G1	1300	1330	0.50	2317.0m	Rigged down surface lines.
P21	TP (WO)	G2	1330	1530	2.00	2317.0m	RIH from 300m to 960m picking up extra required DP from pipe deck.
P21	TP (WO)	F1	1530	1800	2.50	2317.0m	Washed in hole from 960m to tag TOC at 1116m. 483gpm, 200psi.
P21	TP (WO)	F4	1800	1830	0.50	2317.0m	Circulated to clean open hole from 1116m to 1102m
P21	TP (WO)	F4	1830	2030	2.00	2317.0m	Circulated well clean. Prepared for pumping new shoe cement plug #2. Made up cement single and spaced out to 1116m
P21	TP (WO)	F3	2030	2130	1.00	2317.0m	Re-set cement plug #2: Cement unit pumped 5bbl drill water and pressure tested surface lines to 3000psi. Cement unit pumped 25bbl drill water spacer then mixed and pumped 65bbl 15.8ppg G cement plug. Displaced cement with 4bbl drill water and 49bbl 10.0ppg mud. Checked for back flow.
P21	TP (WO)	G8	2130	2200	0.50	2317.0m	Rigged down cement single to 1107m and POOH slowly from 1107m to 950m.
P21	TP (WO)	F4	2200	2230	0.50	2317.0m	Circulated annulus clean at 1000gpm, 1100psi. 31bbl of cement contaminated mud diverted at shakers.
P21	TP (WO)	G8	2230	2300	0.50	2317.0m	POOH from 950m to 760m.
P21	P	G8	2300	2330	0.50	2317.0m	Made up DrilQuip WBRT to string and RIH to 60m.
P21	P	G15	2330	2400	0.50	2317.0m	Jetted BOPs 1000gpm, 250psi for 15mins. Set WBRT into wear bushing with 20klbs down. Sheared wear bushing from 18 3/4" well head with 85klbs overpull.

Operations For Period 0000 Hrs to 0600 Hrs on 19 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G15	0000	0030	0.50	2317.0m	POOH with WBRT and wear bushing. Laid out wear bushing and WBRT.
P21	P	G2	0030	0230	2.00	2317.0m	Made up 2 stands of 8¼" DCs from derrick and laid out same to deck.
P21	TP (WO)	G8	0230	0300	0.50	2317.0m	RIH from 760m to 950m.
P21	TP (WO)	G11	0300	0330	0.50	2317.0m	Serviced Top Drive.
P21	TP (WO)	G8	0330	0430	1.00	2317.0m	Waited on cement samples to set.
P21	TP (WO)	F1	0430	0530	1.00	2317.0m	Washed in hole from 950m with 250gpm, 220psi and tagged TOC plug #2 at 1002m with 10klbs weight.
P21	TP (WO)	P1	0530	0600	0.50	2317.0m	Pulled back to 965m and rigged up surface lines and pressure tested same to 2000psi.

Operations For Period Hrs to Hrs on

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Phase Data to 2400hrs, 18 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
BOPs/Risers(P6)	19	08 Dec 2010	08 Dec 2010	295.00	12.292	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	492.50	20.521	2317.0m
Suspend and Abandon(P21)	46.5	16 Dec 2010	18 Dec 2010	539.00	22.458	2317.0m

WBM Data

Cost Today US$ 7875

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%
Sample-From:	Pit#2	Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%
Time:	2200	HTHP-FL:	11.0cc/30min	Hard/Ca:	800mg/l	Oil(%):	0%
Weight:	10.10ppg	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5
Temp:				PM:	0.1	pH:	9.5
				PF:	0.1	PHPA:	2ppb
Comment	Mixed Hi-vis pill to 12.5ppg for spotting under plugs as per program. Dumped and cleaned slug pit for plugs						

Viscosity	40sec/qt
PV	10cp
YP	28lb/100ft²
Gels 10s	9
Gels 10m	12
Fann 003	8
Fann 006	10
Fann 100	26
Fann 200	33
Fann 300	38
Fann 600	48

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	17	0	490.0
Drill Water	m3	0	45	0	681.0
Pot Water	m3	36	33	0	249.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	20	0	60.0
Barite	MT	0	8	0	46.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1 (gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97					30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Other	1
Maersk	37
OMS	27
Fugro ROV	6
Halliburton	3
Baroid	2

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Personnel On Board

Dril-Quip	1
GRN	1
Reach	1
Geoservices	2
Smith Red Barron	1
Other	1
Noble Denton	1
Fugro Survey	2
Total	90

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	0.0bbl	Losses	156.0bbl
Active		Downhole	125.0bbl
Mixing		Surf+ Equip	0.0bbl
Hole		Dumped	31.0bbl
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 18 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	17kn	320.0deg	998.0mbar	12C°	1.0m	320.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.7deg	0.6deg	250.0deg	224.00klb	1400.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
1.6m	240.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	151.0
2	147.0
3	158.0
4	198.0
5	157.0
6	129.0
7	141.0
8	85.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	8	583
Potable Water	m³	3	507
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

0000 - 2400 Running stby

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	07:00 14 Dec 2010	01:00 17 Dec 2010	Vessel on route to Kan Tan IV

Item	Unit	Used	Quantity
Fuel	m³	12	587
Potable Water	m³	4	394
Drill Water	m³		412
Bentonite	Ton		0
Barite	Ton		52
'G' Cmt	Ton		84
Brine	bbl		930

0001-1130 Alongside South 28 load barite 42t / drill water 94m³ / PW 94m³
1130-1530 Pilot onboard depart for Kan Tan IV
1530-2359 Vessel on route to Kan Tan IV

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment

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Helicopter Movement

1	Bristow Helicopters	10:07 / 10:18	8 / 0	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 24
Silvereye-1

19 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	19 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	24	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$702,030
Rig	Kan Tan IV	Days from spud	17.00	Shoe MDBRT	1102.9m	Cumul. Cost	AU$18,007,145
Wtr Dpth (LAT)	54.0m	Days on well	23.46	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	413
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Making up 20" casing spear and casing cuttting assembly.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	RIH, cut and retrieve 18 3/4" wellhead and PGB. Lay out remaining tubulars in derrick. Complete sea fastening of rig. Ballast rig to transit draft. Commence anchor recovery.		

Summary of Period 0000 to 2400 Hrs

Recovered wear bushing and laid out. Made up 2 stands of 8¼" DCs and laid out same. RIH from 960m to 935m and serviced rig. WOC. Washed in hole from 935m and tagged TOC of plug #2 at 1002m. Pulled back to 964m and pressure tested against cement plug to 1500psi. Good test.
POOH laying out DP from 964m to 300m. Spotted hi vis pill and POOH to 200m. Rigged up and spotted surface cement plug #3 from 200m to 100m. POOH to 100m and circulated with SW. POOH and laid out 2 7/8" cement stinger. Rigged up to pull BOP. Unlatched BOP and removed MRT lines and K&C lines from slip joint. Laid out slip joint and recovered BOP to Surface. Removed riser double and moved BOP to aft moonpool on transporter.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	8 Days		
JSA	26	0 Days	Pre Job Safety Meetings	Morning pre-tour Sample catcher and roughneck suspected Hydrogen Sulfide gas at shakers. AD sourced gas detector immediately and geologist educated sample catcher on the hazards of H2S as he was unaware of the dangers. All rig crew should be made aware of the hazards of H2S, perhaps during pre-tour meetings would be beneficial. (Information on the dangers of H2S were explained during the pre-tour meeting). Worker spotted fellow personnel on ladder, came over and held the ladder steady. Good example of watching out for each other. Worker noticed grounding safety strap for ROV was frayed, which may not provide a safe electrical ground. Worker cleaned the clamp and remade the electrical connection. Evening Pre-Tour Excellent effort by motorman in P2 with general housekeeping - equipment staked correctly and great paint job. Area with hot works not entirely barriered off from all entry points. Stopped the job, informed workers who immediately placed caution tape in remaining entry point. 2 gas cylinders found laying down on deck secured to the ROV HPU. Placed in cylinder cage and secured in the correct storage area upright. Blue hose nozzle had been cut off (Pump room). Advised crew that if equipment is required i.e. nozzle attachments, they should speak to the supervisor prior to altering equipment.
Permit To Work	23	0 Days	Permits administered	
Pre Job Safety Meeting	27	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	29	0 Days	STOP Cards / Kevin Philip -	1:-Observed a Floorman using poor hand placement while

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HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010		Driller	latching the elevators. Stopped the job and explained the potential for crushed fingers and potential of amputation. Must only use the horns or hand-holds provided. These are painted green to indicate a hand-hold. 2:- Observed a floorman doing his daily checks when he noticed the dog-collar dies were broken. I commended him on a good spot as he changed them out for new parts. This is why we do daily checks on the gear.
Weekly Safety Meeting	2	0 Days	General Safety Meetings	

Operations For Period 0000 Hrs to 2400 Hrs on 19 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G15	0000	0030	0.50	2317.0m	POOH with WBRT and wear bushing. Laid out wear bushing and WBRT.
P21	P	G2	0030	0230	2.00	2317.0m	Made up 2 stands of 8¼" DCs from derrick and laid out same to deck.
P21	TP (WO)	G8	0230	0300	0.50	2317.0m	RIH from 760m to 950m.
P21	TP (WO)	G11	0300	0330	0.50	2317.0m	Serviced Top Drive.
P21	TP (WO)	G8	0330	0430	1.00	2317.0m	Waited on cement samples to set.
P21	TP (WO)	F1	0430	0530	1.00	2317.0m	Washed in hole from 950m with 250gpm, 220psi and tagged TOC plug #2 at 1002m with 10klbs weight.
P21	TP (WO)	P1	0530	0600	0.50	2317.0m	Pulled back to 965m and rigged up surface lines and pressure tested same to 2000psi.
P21	TP (WO)	P1	0600	0630	0.50	2317.0m	Pressure tested cmt plug against upper annular to 1500psi 10mins. Good test. Rigged down cement single.
P21	TP (WO)	G2	0630	0930	3.00	2317.0m	POOH laying out DP from 964m to 300m.
P21	P	F3	0930	1000	0.50	2317.0m	Spotted a 64bbl 12.5ppg hi vis pill at 300m.
P21	P	G8	1000	1030	0.50	2317.0m	POOH from 300m to 200m and installed cement single.
P21	P	F3	1030	1100	0.50	2317.0m	Surface cement plug #3: Cement unit pumped 5bbl drill water and pressure test surface lines to 3000psi. Cement unit pumped 25bbl drill water spacer followed by 54bbl 15.8ppg G cement plug. Cement plug was displaced with 1bbl DW and 3bbl 10.0ppg mud.
P21	P	G8	1100	1130	0.50	2317.0m	Rigged down cement single and POOH slowly from 200m to 100m.
P21	P	F4	1130	1200	0.50	2317.0m	Displaced top of well and riser to seawater while jetting BOPs. Flushed kill and choke lines with seawater.
P21	P	G2	1200	1330	1.50	2317.0m	POOH laying out 2 7/8" cement stinger.
P6	P	G1	1330	1500	1.50	2317.0m	Rigged up riser handling equipment on drill floor.
P6	P	G13	1500	1600	1.00	2317.0m	Laid out diverter to pipe deck.
P6	P	G13	1600	1700	1.00	2317.0m	Made up landing joint, collapsed slip joint and prepared to unlatch BOP.
P6	P	M2	1700	1730	0.50	2317.0m	Unlatched BOP and skidded rig clear of well.
P6	P	G13	1730	1930	2.00	2317.0m	Removed kill and choke hoses from slip joint. Removed MRT lines from slip joint and removed storm saddles from umbilical lines.
P6	P	G13	1930	2100	1.50	2317.0m	Laid out landing joint, slip joint and riser pup joint.
P6	P	G13	2100	2200	1.00	2317.0m	Pulled BOPs into moonpool on riser double and landed out on BOP transporter.
P6	P	G13	2200	2400	2.00	2317.0m	Removed guide lines, pod line clamps and disconnected riser double from BOPs. Moved BOPs to aft moonpool on transporter.

Operations For Period 0000 Hrs to 0600 Hrs on 20 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P6	P	G13	0000	0100	1.00	2317.0m	Laid out riser double.
P6	P	G1	0100	0200	1.00	2317.0m	Rigged down riser handling equipment on DF
P21	P	G6	0200	0330	1.50	2317.0m	Picked up 18 3/4" WH grapple and casing cut assembly. Made up to std of 8¼" DCs and secured to guide lines with rope. RIH to 63m
P21	TP (TP)	G12	0330	0430	1.00	2317.0m	Entered wellhead with ROV assistance and attempted several times to engage wellhead with the latch grapple. Applied left hand rotation, set down maxium 25klbs on tool. Unable to obtain an overpull.
P21	TP (TP)	G8	0430	0500	0.50	2317.0m	POOH with latch grapple assembly to drill floor.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	TP (TP)	G7	0500	0600	1.00	2317.0m	Inspected tool for indications to explain failure. No obvious reason found for failure. Decision made to configure tool with 20" casing grapple.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 19 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	473.50	19.729	2317.0m
BOPs/Risers(P6)	29.5	08 Dec 2010	19 Dec 2010	503.00	20.958	2317.0m
Suspend and Abandon(P21)	60	16 Dec 2010	19 Dec 2010	563.00	23.458	2317.0m

WBM Data

Cost Today US$ 5267

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%
Sample-From:	Pit#2	Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%
Time:	2200	HTHP-FL:	11.0cc/30min	Hard/Ca:	360mg/l	Oil(%):	0%
Weight:	10.10ppg	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5
Temp:				PM:	0.1	pH:	9
				PF:	0.05	PHPA:	2ppb

Viscosity	44sec/qt
PV	12cp
YP	26lb/100ft²
Gels 10s	9
Gels 10m	12
Fann 003	9
Fann 006	10
Fann 100	25
Fann 200	32
Fann 300	38
Fann 600	50

Comment: Pumped 64bbl of 12.5 ppg Hi-vis pill to spot under cement plug #3.
Dumped and cleaned all remaining Pits in preparation for rig move.

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	21	0	469.0
Drill Water	m3	0	43	0	638.0
Pot Water	m3	43	31	0	261.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	60.0
Barite	MT	0	0	0	46.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97					30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Other	1

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Personnel On Board

Maersk	37
OMS	27
Fugro ROV	6
Halliburton	3
Baroid	2
Dril-Quip	1
GRN	1
Reach	1
Geoservices	2
Smith Red Barron	1
Other	1
Noble Denton	1
Fugro Survey	2
Total	90

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	0.0bbl	Losses	1129.0bbl
Active		Downhole	
Mixing		Surf+ Equip	0.0bbl
Hole		Dumped	1129.0bbl
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 19 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	27kn	210.0deg	998.0mbar	11C°	1.0m	210.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
0.8m	0.7deg	0.6deg	250.0deg	224.00klb	1400.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.0m	240.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	152.0
2	101.0
3	130.0
4	164.0
5	187.0
6	83.0
7	68.0
8	117.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	7	576
Potable Water	m³	3	504
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

0000 - 2400 Running stby

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	00:01 19 Dec 2010	01:00 17 Dec 2010	0000 - 2400 Close stby

Item	Unit	Used	Quantity
Fuel	m³	14	573
Potable Water	m³	4	390
Drill Water	m³		412
Bentonite	Ton		0
Barite	Ton		52
'G' Cmt	Ton		84
Brine	bbl		930

0001-0300 Arrive on location move in under port crane for deck cargo discharge
0300-0930 Cargo complete move to running stand-by
0930-2359 Vessel moves in for close stand-by. Master and cadet transfer to Kan Tan IV
For rig shift meeting

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Australian Drilling Associates Pty Ltd

20 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

DRILLING MORNING REPORT # 25
Silvereye-1

Silvereye-1

Date:	20 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	25	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$695,531
Rig	Kan Tan IV	Days from spud	18.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$18,702,676
Wtr Dpth (LAT)	54.0m	Days on well	24.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	414
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Cutting 20" x 30" casing.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Recover 18 3/4" wellhead to moonpool. Lay out Smith fishing assembly. Lay out DrilQuip 18 3/4" well head. Lay out remaining tubulars in derrick. Complete sea fastening. Ballast rig to transit draft and recover anchors.		

Summary of Period 0000 to 2400 Hrs

Laid out riser double and rigged down handling equipment. Made up 20" x 30" casing cutting and well head retrieval assembly and RIH. Attempted to engage wellhead profile with 18 3/4" grapple. Unsuccessful. POOH and changed out grapple for 20" spear type. RIH and engaged wellhead. Cut casing. Casing not free. POOH and changed cutter blades. RIH and engaged wellhead with grapple. Cut casing.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	9 Days		
JSA	34	0 Days	Pre Job Safety Meetings	Morning pre-tour Excellent effort by motorman in P2 with general housekeeping - equipment staked correctly and great paint job. Area with hot works not entirely barriered off from all entry points. Stopped the job, informed workers who immediately placed caution tape in remaining entry point. 2 gas cylinders found laying down on deck secured to the ROV HPU. Placed in cylinder cage and secured in the correct storage area upright. Blue hose nozzle had been cut off (Pump room). Advised crew that if equipment is required i.e. nozzle attachments, they should speak to the supervisor prior to altering equipment. Evening Pre-Tour Reminder on pinch points and hand/finger safety - hand placed between elevators and bottom offset on lifting rubbers. Welding rods used as split pins - reminded to use correct tools for the job and that are specific for certain equipment. Job well done on the sanitary systems.
Permit To Work	25	0 Days	Permits administered	
Pre Job Safety Meeting	26	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	19	0 Days	STOP Cards / No winner today	
Weekly Safety Meeting	0	1 Day	General Safety Meetings	

Operations For Period 0000 Hrs to 2400 Hrs on 20 Dec 2010

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P6	P	G13	0000	0100	1.00	2317.0m	Laid out riser double.
P6	P	G1	0100	0200	1.00	2317.0m	Rigged down riser handling equipment on drill floor.
P21	P	G6	0200	0330	1.50	2317.0m	Picked up 18 3/4" WH grapple and casing cutting assembly. Made up to stand of 8¼" DCs and secured to guide lines with rope. RIH to 63m.
P21	TP (TP)	G12	0330	0430	1.00	2317.0m	Entered wellhead with ROV assistance and attempted several times to engage wellhead with the latch grapple. Applied left hand rotation, set down maxium 25klbs on tool. Unable to obtain an overpull.
P21	TP (TP)	G8	0430	0500	0.50	2317.0m	POOH with latch grapple assembly to drill floor.
P21	TP (TP)	G7	0500	0600	1.00	2317.0m	Inspected tool for indications to explain failure. No obvious reason found for failure. Decision made to configure tool with 20" casing grapple.
P21	TP (TP)	G7	0600	0800	2.00	2317.0m	Changed out 18 3/4" latch grapple for 20" spear grapple and adjusted space out to cutters.
P21	TP (TP)	G7	0800	0930	1.50	2317.0m	Installed guide ropes to BHA and RIH. Entered well head with ROV assistance and engaged well head profile. Confirmed latch with 50klbs overpull.
P21	P	G17	0930	1600	6.50	2317.0m	Cut 20" and 30" casing at 82m. 110rpm, 280gpm, 600psi. 5/15kftlbs torq.
P21	P	G8	1600	1630	0.50	2317.0m	POOH to replace cutting knives.
P21	P	G7	1630	1730	1.00	2317.0m	Replaced 44" knives for new on casing cutter. Removed broken brass wear bushing on casing cutter.
P21	P	G8	1730	1800	0.50	2317.0m	Installed guide ropes to BHA and RIH. Entered well head with ROV assistance and engaged well head profile with grapple. Confirmed latch with 50klbs overpull.
P21	P	G17	1800	2400	6.00	2317.0m	Cut 20" and 30" casing at 82m. 80rpm, 320gpm, 925psi. 5/15kftlbs torq with 20klbs overpull on spear. Cutting with 5/8klbs torque initially building to 7/15kftlbs from 22:00hrs.

Operations For Period 0000 Hrs to 0600 Hrs on 21 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G17	0000	0030	0.50	2317.0m	Picked up to 350klbs overpull on wellhead. Casing not free.
P21	P	G15	0030	0100	0.50	2317.0m	Disengaged spear and picked up to inspect cutters with ROV. Wear observed along 80% of knive length and positive deployment of knives observed when pumping.
P21	P	G8	0100	0130	0.50	2317.0m	POOH to drill floor.
P21	P	G7	0130	0430	3.00	2317.0m	Inspected knives. Wear on the knives indicated that the 30" had been successfully cut. Pumped through cutter at surface. Knives extended fully under pressure and retracted with pumps off. Changed out knives for new 44" knives. Re-spaced out knives to make cut at 80.5m. (0.5m below seabed). Inspected piston seal.
P21	P	G8	0430	0530	1.00	2317.0m	Attached ropes to BHA and guide lines. RIH and entered well with ROV assistance. Engaged spear grapple in well head.
P21	P	G17	0530	0600	0.50	2317.0m	Overpulled 220klbs on wellhead. No movement observed. Reduced overpull to 15klbs. Established pump and rotating parameters.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 20 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Mob/Demob(P1)	151	26 Nov 2010	02 Dec 2010	151.00	6.292	0.0m
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	171.00	7.125	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	191.50	7.979	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	239.00	9.958	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	276.00	11.500	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	473.50	19.729	2317.0m
BOPs/Risers(P6)	31.5	08 Dec 2010	20 Dec 2010	505.00	21.042	2317.0m
Suspend and Abandon(P21)	84.5	16 Dec 2010	20 Dec 2010	589.50	24.563	2317.0m

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Australian Drilling Associates Pty Ltd

WBM Data — Cost Today US$ 0

Mud Type:	KCL/PHPA/CLAYSEAL PLUS	API FL:	5.0cc/30min	Cl:	41000mg/l	Solids(%vol):	8%	Viscosity	44sec/qt
Sample-From:	Pit#2	Filter-Cake:	1/32nd"	K+C*1000:	8%	H2O:	89%	PV	12cp
Time:	2200	HTHP-FL:	11.0cc/30min	Hard/Ca:	360mg/l	Oil(%):	0%	YP	26lb/100ft²
Weight:	10.10ppg	HTHP-cake:	2/32nd"	MBT:	15	Sand:	.5	Gels 10s	9
Temp:				PM:	0.1	pH:	9	Gels 10m	12
				PF:	0.05	PHPA:	2ppb	Fann 003	9
								Fann 006	10
								Fann 100	25
								Fann 200	32
								Fann 300	38
								Fann 600	50

Comment

Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	9	0	460.0
Drill Water	m3	0	10	0	628.0
Pot Water	m3	0	35	0	226.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	60.0
Barite	MT	0	0	0	46.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	275	200	50	360	250
2	Continental Emsco	6.50	1.21	97				2220.0	30	225	150	40	280	200	50	380	250
3	Continental Emsco	6.50	1.21	97					30		150	40		200	50		250

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Other	1
Maersk	38
OMS	25
Fugro ROV	6
Halliburton	3
Baroid	2
Dril-Quip	1
GRN	1
Other Contractor	1
Core Tech	1
ABS	1
Smith Red Barron	1
Other	1
Noble Denton	1
Fugro Survey	2
Total	89

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Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	0.0bbl	Losses	1129.0bbl
Active Mixing		Downhole Surf+ Equip	0.0bbl
Hole		Dumped	1129.0bbl
Slug		De-Gasser	
Reserve Kill		De-Sander De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 20 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	35kn	220.0deg	1003.0mbar	11C°	1.6m	220.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
2.0m	1.0deg	1.5deg	250.0deg	0.00klb	1480.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.0m	240.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	167.0
2	179.0
3	176.0
4	211.0
5	134.0
6	127.0
7	167.0
8	80.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby

0000 - 1710 Running stby
1710 - 2400 Close stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	9	567
Potable Water	m³	4	500
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	00:01 19 Dec 2010	01:00 17 Dec 2010	0000 - 2400 Close stby

0001-1030 Close stand-by
1030-2359 Running stand-by

Bulks

Item	Unit	Used	Quantity
Fuel	m³	12	561
Potable Water	m³	4	386
Drill Water	m³		412
Bentonite	Ton		0
Barite	Ton		52
'G' Cmt	Ton		84
Brine	bbl		930

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	09:27 / 09:44	9 / 10	

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 26
Silvereye-1

21 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	21 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	26	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$779,389
Rig	Kan Tan IV	Days from spud	19.00	Shoe MDBRT	1102.8m	Cumul. Cost	AU$19,482,065
Wtr Dpth (LAT)	54.0m	Days on well	25.56	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	415
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600	Recovering anchors.		
Datum		Last BOP Test	03 Dec 2010	Planned Op	Complete anchor recovery and begin tight tow to Craigow-1.		

Summary of Period 0000 to 2400 Hrs

Picked up to 350klbs overpull on wellhead. Disengaged spear and picked up to inspect knives with ROV. POOH and inspected cutting tool. Changed out knives and repositioned same to cut 0.5m below seabed. RIH and engaged wellhead with spear. Pulled 220klbs overpull. Reduced overpull and cut casing at 80.5m. POOH with cut casing, 18 3/4" wellhead and PGB and set on moonpool cart. Racked cutting assembly in derrick. Laid out remaining tubulars from derrick. Made up WHRT and removed 18 3/4" wellhead and casing cuts from PGB. Laid out same. Laid out Smith cut and retrieval BHA. Completed sea fastening. Commenced deballasting rig from drilling draft to transit draft.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	1	0 Days	Pre rig move muster	7 minutes to complete muster at aft life boats.
First Aid Case	1	0 Days	Superficial Laceration to 5th finger (L) hand.	The IP was stacking away the life vests into the stowage locker following an Abandon Rig Drill, when he caught the small finger of his left hand on a steel sprag protruding from a shelf in the locker. The IP was wearing heavy cloth gloves (with the rubber dots) at the time. The finger of the glove was torn by the sprag allowing the sprag to contact the IP's little finger.
JSA	22	0 Days	Pre Job Safety Meetings	Morning pre-tour Reminder on pinch points and hand/finger safety - hand placed between elevators and bottom offset on lifting rubbers. Welding rods used as split pins - reminded to use correct tools for the job and that are specific for certain equipment. Job well done on the sanitary systems. Evening Pre-Tour Hygiene practices - Encourage workers with colds/flu's to cover mouths when coughing/sneezing, ensure they understand correct hygiene practices to minimize the spread of any colds and flu's. Reiterate the importance of hand and finger safety. Remind personnel to carry/use tools and equipment correctly. Departments helping each other out, great team work.
Permit To Work	19	0 Days	Permits administered	
Pre Job Safety Meeting	20	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	39	0 Days	STOP Cards / No winner today	
Weekly Safety Meeting	0	2 Days	General Safety Meetings	

Operations For Period 0000 Hrs to 2400 Hrs on 21 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G17	0000	0030	0.50	2317.0m	Picked up to 350klbs overpull on wellhead. Casing not free.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P21	P	G15	0030	0100	0.50	2317.0m	Disengaged spear and picked up to inspect cutters with ROV. Wear observed along 80% of knive length and positive deployment of knives observed when pumping.
P21	P	G8	0100	0130	0.50	2317.0m	POOH to drill floor.
P21	P	G7	0130	0430	3.00	2317.0m	Inspected knives. Wear on the knives indicated that the 30" had been successfully cut. Pumped through cutter at surface. Knives extended fully under pressure and retracted with pumps off. Changed out knives for new 44" knives. Re-spaced out knives to make cut at 80.5m (0.5m below seabed). Inspected piston seal.
P21	P	G8	0430	0530	1.00	2317.0m	Attached ropes to BHA and guide lines. RIH and entered well with ROV assistance. Engaged spear grapple in well head.
P21	P	G17	0530	0600	0.50	2317.0m	Overpulled 220klbs on wellhead. No movement observed. Reduced overpull to 15klbs. Established pump and rotating parameters.
P21	P	G17	0600	0900	3.00	2317.0m	Cut 20" and 30" casing. 90rpm, 5/10kftlbs, 265gpm, 570psi with 15-25klbs overpull on wellhead.
P21	P	G8	0900	1100	2.00	2317.0m	Picked up and pulled 18 3/4" wellhead and PGB clear of seabed. Continued to POOH and set PGB and wellhead on moonpool cart. Released 20" spear and racked back in derrick.
P21	P	G2	1100	1230	1.50	2317.0m	Laid out 4 stands of DP and 4 stands of HWDP from derrick
P21	P	G15	1230	1430	2.00	2317.0m	Made up WHRT on drill floor. Ran in same and engaged 18 3/4" wellhead. Released wellhead from PGB and laid out wellhead/casing stub assembly. Laid out WHRT.
P21	P	G2	1430	1530	1.00	2317.0m	Laid out Smith casing cutting and wellhead retrieval assembly.
P21	P	G2	1530	1730	2.00	2317.0m	Laid out remaining tubulars from derrick
P1	P	M6	1730	1900	1.50	2317.0m	Completed seafastening of rig.
P1	P	M3	1900	2200	3.00	2317.0m	De-ballasted rig from 65ft drilling draft.
P1	TP (RE)	M3	2200	2300	1.00	2317.0m	Portside #2 ballast pump lost suction and was out of service. Unable to ballast on port side.
P1	P	M3	2300	2400	1.00	2317.0m	Continued to de-ballast rig to 46ft draft.

Operations For Period 0000 Hrs to 0600 Hrs on 22 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0430	4.50	2317.0m	Continued de-ballasting rig from 46ft draft to transit draft at 30.5ft.
P1	P	M4	0430	0600	1.50	2317.0m	Recovered Anchors. 04:30:- #4 PCP passed to Far Fosna 04:49:- #8 PCP passed to Far Scimitar 05:04:- #4 Anchor off bottom 05:15:- #8 Anchor off bottom

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 21 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	20.00	0.833	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	40.50	1.688	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	88.00	3.667	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	125.00	5.208	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	322.50	13.438	2317.0m
BOPs/Risers(P6)	31.5	08 Dec 2010	20 Dec 2010	354.00	14.750	2317.0m
Mob/Demob(P1)	157.5	26 Nov 2010	21 Dec 2010	511.50	21.313	2317.0m
Suspend and Abandon(P21)	102	16 Dec 2010	21 Dec 2010	613.50	25.563	2317.0m

WBM Data

Cost Today US$ 3080

Mud Type:	API FL:	Cl:	Solids(%vol):	Viscosity	
Sample-From:	Filter-Cake:	K+C*1000:	H2O:	PV	
Time:	HTHP-FL:	Hard/Ca:	Oil(%):	YP	
Weight:	HTHP-cake:	MBT:	Sand:	Gels 10s	
Temp:		PM:	pH:	Gels 10m	
		PF:	PHPA:	Fann 003	
				Fann 006	
				Fann 100	
				Fann 200	
Comment	No treatments today			Fann 300	
				Fann 600	

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	12	0	448.0
Drill Water	m3	0	5	0	623.0
Pot Water	m3	35	30	0	231.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	60.0
Barite	MT	0	0	0	46.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50		97													
2	Continental Emsco	6.50		97				2220.0									
3	Continental Emsco	6.50		97													

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
Other	1
Maersk	38
OMS	25
Fugro ROV	6
Halliburton	3
Baroid	2
Dril-Quip	1
GRN	1
Other Contractor	1
Core Tech	1
ABS	1
Smith Red Barron	1
Other	1
Noble Denton	1
Fugro Survey	2
Total	89

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	0.0bbl	Losses	0.0bbl
Active Mixing		Downhole Surf+ Equip	0.0bbl
Hole Slug		Dumped De-Gasser	
Reserve Kill		De-Sander De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

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Marine

Weather on 21 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	25kn	200.0deg	1015.0mbar	10C°	1.0m	220.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
2.4m	2.2deg	2.1deg	250.0deg	0.00klb	950.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.0m	240.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	190.0
2	215.0
3	186.0
4	239.0
5	195.0
6	159.0
7	210.0
8	108.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	Running stby

0000 - 1720 Close stby
1720 - 2400 Running stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	13	554
Potable Water	m³	3	497
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		66
Brine	Ton		0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	00:01 19 Dec 2010	01:00 17 Dec 2010	0000 - 2400 Close stby

Bulks

Item	Unit	Used	Quantity
Fuel	m³	11	550
Potable Water	m³	4	382
Drill Water	m³		412
Bentonite	Ton		0
Barite	Ton		52
'G' Cmt	Ton		84
Brine	bbl		930

0001-2359 Running stand-by

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Australian Drilling Associates Pty Ltd

DRILLING MORNING REPORT # 27
Silvereye-1

22 Dec 2010

From: Paul Jenkins/ Kevin Monkhouse
To: Bob Miller

Silvereye-1

Date:	22 Dec 2010	**Well Site Representative:**	Paul Jenkins	**OIM:**	Brian Meechan
Report Number:	27	**Night Representative:**	Kevin Monkhouse	**Drilling Company:**	Maersk
Latitude (South):	39 ° 54 ' 19.8504 "	**Longitude (East):**	145 ° 3 ' 32.5701 "	**Geologist:**	

Well Data

Country	Australia	MDBRT	2317.0m	Cur. Hole Size	12.250in	AFE Cost	AU$21,965,578
Field	Silvereye	TVDBRT	2272.0m	Last Casing OD	13.375in	AFE No.	
Drill Co.	Maersk	Progress	0.0m	Shoe TVDBRT	1102.7m	Daily Cost	AU$394,425
Rig	Kan Tan IV	Days from spud	19.58	Shoe MDBRT	1102.8m	Cumul. Cost	AU$19,876,490
Wtr Dpth (LAT)	54.0m	Days on well	26.15	FIT/LOT:	15.95ppg /	Last LTI Date	01 Nov 2009
RT-ASL(LAT)	26.0m	Planned TD MD	2391.0m			Days Since Last LTI	416
RT-ML	80.0m	Planned TD TVDRT	2343.0m	Current Op @ 0600			
Datum		Last BOP Test	03 Dec 2010	Planned Op			

Summary of Period 0000 to 2400 Hrs

Completed de-ballasting rig. Recovered anchors.

*** END of Silvereye-1 @ 14:00 hrs, 22nd December 2010, with rig under tight tow***
Rig off contract to Origin Energy.

HSE Summary

Events	Num. Events	Days Since	Descr.	Remarks
Last BOP Test	03 Dec 2010			
Fire / Abandonment Drill	0	1 Day		
First Aid Case	1	1 Day	Superficial Laceration to 5th finger (L) hand.	The IP was stacking away the life vests into the stowage locker following an Abandon Rig Drill, when he caught the small finger of his left hand on a steel sprag protruding from a shelf in the locker. The IP was wearing heavy cloth gloves (with the rubber dots) at the time. The finger of the glove was torn by the sprag allowing the sprag to contact the IP's little finger.
JSA	15	0 Days	Pre Job Safety Meetings	Morning pre-tour Hygiene practices - Encourage workers with colds/flu's to cover mouths when coughing/sneezing, ensure they understand correct hygiene practices to minimize the spread of any colds and flu's. Reiterate the importance of hand and finger safety. Remind personnel to carry/use tools and equipment correctly. Departments helping each other out, great team work. Evening Pre-Tour Active cards - numbers are dropping. Keep them up - it's a tool used for their safety benefit. Be extra vigilant in terms of safety especially during the rig tow. Some TBT's are not being filled in correctly. Personnel responsibilities must be designated prior to the commencement of each job.
Permit To Work	12	0 Days	Permits administered	
Pre Job Safety Meeting	16	0 Days	Tool Box talks	
Safety Meeting	6	0 Days		
STOP Card	19	1 Day	STOP Cards / No winner today	
Weekly Safety Meeting	0	3 Days	General Safety Meetings	

Operations For Period 0000 Hrs to 2400 Hrs on 22 Dec 2010

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
P1	P	M3	0000	0430	4.50	2317.0m	Continued de-ballasting rig from 46ft draft to transit draft at 30.5ft.
P1	P	M4	0430	1400	9.50	2317.0m	Recovered Anchors.

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Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							04:30:- #4 PCP passed to Far Fosna 04:49:- #8 PCP passed to Far Scimitar 05:04:- #4 Anchor off bottom 05:15:- #8 Anchor off bottom 06:03:- #8 Anchor bolstered 06:14:- #4 Anchor bolstered 06:25:- #8 PCP passed back to rig 06:28:- #4 PCP passed back to rig 06:35:- #1 PCP passed to Far Scimitar 06:36:- #5 PCP passed to Far Fosna 07:05:- #5 Anchor off bottom 07:06:- #1 Anchor off bottom 07:50:- #5 Anchor bolstered 08:02:- #5 PCP passed back to rig 08:08:- #1 Anchor bolstered 08:13:- #3 PCP passed to Far Fosna 08:26:- #1 PCP passed back to rig 08:51:- #3 Anchor off bottom 09:37:- Far Scimitar connected to tow bridle and payed out to 300m 09:48:- #3 Anchor bolstered 10:01:- #3 PCP passed back to rig 10:18:- #7 PCP passed to Far Fosna 10:43:- #7 Anchor off bottom 11:29:- #7 Anchor bolstered 11:40:- #7 PCP passed back to rig 11:54:- #2 PCP passed to Far Fosna 12:12:- #2 Anchor off bottom 12:51:- #2 Anchor bolstered 13:25:- #2 PCP passed back to rig 12:20:- #6 PCP passed to Far Fosna. Commenced heaving in on #6 chain to bring rig over anchor 13:42:- #6 Anchor off bottom 13:58:- #6 Anchor left hanging at 60ft. Unable to bolster 14:00:- #6 PCP passed back to rig *** END of Silvereye-1 @ 14:00 hrs, 22nd December 2010, with rig under tight tow*** Rig off contract to Origin Energy.

Operations For Period Hrs to Hrs on

Phase Data to 2400hrs, 22 Dec 2010

Phase	Phase Hrs	Start On	Finish On	Cumul. Hrs	Cumul. Days	Max Depth
Conductor Hole(P2)	20	02 Dec 2010	03 Dec 2010	20.00	0.833	141.0m
Conductor Casing(P3)	20.5	03 Dec 2010	04 Dec 2010	40.50	1.688	141.0m
Intermediate Hole (1)(P7)	47.5	04 Dec 2010	06 Dec 2010	88.00	3.667	1112.0m
Intermediate Casing (1)(P9)	37	06 Dec 2010	07 Dec 2010	125.00	5.208	1112.0m
Production Hole (1)(P11)	197.5	07 Dec 2010	16 Dec 2010	322.50	13.438	2317.0m
BOPs/Risers(P6)	31.5	08 Dec 2010	20 Dec 2010	354.00	14.750	2317.0m
Suspend and Abandon(P21)	102	16 Dec 2010	21 Dec 2010	456.00	19.000	2317.0m
Mob/Demob(P1)	171.5	26 Nov 2010	22 Dec 2010	627.50	26.146	2317.0m

WBM Data — Cost Today US$ 1540

Mud Type:	API FL:	Cl:	Solids(%vol):	Viscosity	
Sample-From:	Filter-Cake:	K+C*1000:	H2O:	PV	
Time:	HTHP-FL:	Hard/Ca:	Oil(%):	YP	
Weight:	HTHP-cake:	MBT:	Sand:	Gels 10s	
Temp:		PM:	pH:	Gels 10m	
		PF:	PHPA:	Fann 003	
Comment	Split engineering cost			Fann 006	
				Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	

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Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Rig Fuel	m3	0	2	0	446.0
Drill Water	m3	0	0	0	623.0
Pot Water	m3	0	8	0	223.0
Brine	m3	0	0	0	0.0
Cement class \'G\'	MT	0	0	0	60.0
Barite	MT	0	0	0	46.0
Bentonite	MT	0	0	0	55.0
Shaker Screen 84	Screens	0	0	0	12.0

Pumps

Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Type	Liner (in)	MW (sg)	Eff (%)	SPM (SPM)	SPP (psi)	Flow (gpm)	Depth (m)	SPM1 (SPM)	SPP1 (psi)	Flow1(gpm)	SPM2 (SPM)	SPP2 (psi)	Flow2 (gpm)	SPM3 (SPM)	SPP3 (psi)	Flow3 (gpm)
1	Continental Emsco	6.50		97													
2	Continental Emsco	6.50		97													
3	Continental Emsco	6.50		97													

Casing

OD	LOT / FIT	Csg Shoe (MD/TVD)	Cementing
30 "	/	137.40m / 137.40m	280bbl 15.8ppg G cement pumped. Used 50MT G cement; 200bbl mix fluid; Yield: 1.18ft3/sk; Fluid mix 5.18gal/sk Confirmed hard cement at the seabed.
13.38	/ 15.95ppg	1102.86m / 1102.70m	Lead:12.5ppg G cement. 228 bbls. Tail: 15.8 ppg G cement. 84bbls.

Personnel On Board

Company	Pax
ADA	4
ADA	4
Other	1
Other	1
Maersk	38
Maersk	37
OMS	25
OMS	26
Fugro ROV	6
Fugro ROV	6
Halliburton	3
Halliburton	2
Baroid	2
Baroid	2
Dril-Quip	1
Dril-Quip	1
GRN	1
GRN	1
Other Contractor	1
Geoservices	2
Core Tech	1
Core Tech	1
ABS	1
Smith Red Barron	1
Other	1
Other	1
Noble Denton	1
Noble Denton	1

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Personnel On Board

Fugro Survey	2
Fugro Survey	2
Total	176

Mud Volumes, Mud Losses and Shale Shaker Data

Engineer :

Available	0.0bbl	Losses	0.0bbl
Active		Downhole	
Mixing		Surf+ Equip	0.0bbl
Hole		Dumped	
Slug		De-Gasser	
Reserve		De-Sander	
Kill		De-Silter	
		Centrifuge	

Equipment	Description	Mesh Size	Comments
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	
Shaker 1	VSM-300	20 20 20 120 120 120 120	

Marine

Weather on 22 Dec 2010

Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period
10.0nm	25kn	200.0deg	1015.0mbar	10C°	1.0m	220.0deg	5s

Heave	Pitch	Roll	Rig Dir.	Ris. Tension	VDL	Weather Comments
2.4m	2.2deg	2.1deg	250.0deg	0.00klb	950.00klb	

Swell Height	Swell Dir.	Swell Period	Comments
2.0m	240.0deg	6s	

Rig Support

Anchors	Tension (klb)
1	190.0
2	215.0
3	186.0
4	239.0
5	195.0
6	159.0
7	210.0
8	108.0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Scimitar	20:25 16 Dec 2010	10:45 14 Dec 2010	On tow bridle

00:01 - 14:00 Anchor handling

Bulks

Item	Unit	Used	Quantity
Fuel	m³	11	543
Potable Water	m³	1	496
Drill Water	m³		575
Bentonite	Ton		0
Barite	Ton		64
Brine	Ton		0

Vessel Name	Arrived (Date/Time)	Departed (Date/Time)	Status
Far Fosna	00:01 19 Dec 2010	01:00 17 Dec 2010	

00:01 - 14:00 Anchor handling

Bulks

Item	Unit	Used	Quantity
Fuel	m³	8	542
Potable Water	m³	2	380
Drill Water	m³		412
Bentonite	Ton		0
Barite	Ton		52
'G' Cmt	Ton		84
Brine	bbl		930

Helicopter Movement

Flight #	Company	Arr/Dep. Time	Pax In/Out	Comment
1	Bristow Helicopters	05:58 / 09:16	9 / 12	Maersk crew change
1	Bristow Helicopters	09:27 / 09:44	9 / 10	
2	Bristow Helicopters	13:01 / 13:20	3 / 2	Third party movement

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APPENDIX 11: DAILY GEOLOGICAL REPORTS

Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 07 Dec 2010 | **Geology Report Number : 1** | (associated DDR # 12)

Well Details

Depth MDBRT:	1112.0m	Rig:	Kan Tan IV	Date:	07 Dec 2010
Depth TVDBRT:	1111.9m	Progress:	0.0m	Report Start:	0000
Depth TVDSS:	1085.9m	RTE agl:		Report End:	2400
Hole Size:	17.500in	GLE amsl:	0 (m)	Days On Location:	10.81
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	5.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.9m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	/		

Operations Summary

24hr Summary:	RIH and cement 13 3/8" casing. WOW. Laid out 17 1/2" BHA. Made up 12 1/4" BHA.
Forward Plan:	Run Riser & BOP's. Land out & latch BOP. Rig down riser running equipment. RIH 12 1/4" BHA.

General Comments

00:00 TO 24:00 Hrs ON 07 Dec 2010

Operational Comments	Full complement of geoscience people on board: 2x sample catcher; 2x mudloggers; 2x data engineers; 3x LWD engineers; 2x DD's; 2x WSG's.
Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 11.98 m; Gamma 15.01 m; Pressure 15.89 m; Density 23.90 m; Neutron 29.15 m; Sonic 34.40 m.

WBM Data

Mud Type:	Flowline Temp:	Cl:	Low Gravity Solids:	Viscosity	
Sample From:	MWD Circ Temp:	Hard/Ca:	High Gravity Solids:	PV	
Time:	Glycol CP Temp:	MBT:	Solids (corrected):	YP	
Weight:	Glycol:	PM:	H2O:	Gels 10s	
ECD TD:	Nitrates:	PF:	Oil:	Gels 10m	26
ECD Shoe:	Sulphites:	MF:	Sand: %	Fann 003	
ECD Cuttings:	API FL:	pH:	Barite:	Fann 006	
KCl Equiv:	API Cake:	PHPA Excess:		Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	

Shakers, Volumes and Losses Data

Engineer :

				Equip.	Descr.	Mesh Size	Hours
Available	**508.9bbl**	**Losses**	**0.0bbl**				
Active		Downhole					
Mixing		Surf+ Equip	0.0bbl				
Hole	508.9bbl	Dumped					
Slug		De-Gasser					
Reserve		De-Sander					
Kill		De-Silter					
		Centrifuge					

Comment

06:00 Hrs Update

Time:	06:00 Hrs on 08 Dec 2010
Depth:	1112.0 mMDRT / 1111.9 mTVDRT
Progress Since Midnight (m):	0
Status @ 0600hrs:	Rigging up to run BOPs.
Formation:	Angahook Formation
Lithology:	
ROP:	
Gas:	

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 08 Dec 2010 | **Geology Report Number : 2** | (associated DDR # 13)

Well Details

Depth MDBRT:	1112.0m	Rig:	Kan Tan IV	Date:	08 Dec 2010
Depth TVDBRT:	1111.9m	Progress:	0.0m	Report Start:	0000
Depth TVDSS:	1085.9m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	11.81
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	6.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.9m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	/		

Operations Summary

24hr Summary:	Continued to make up 12¼" BHA and racked back in derrick. Rigged up and ran BOPs. Installed Kill and Choke lines and pressure tested same. Installed MRTs and saddles. Landed BOP's on 18 3/4" wellhead, locked and confirmed with 50 klbs overpull. Pressure tested connector to 2500 psi. Laid out landing joint and installed diverter. Rigged down riser handling equipment. Made up Sperry tools and 12¼" bit.
Forward Plan:	RIH, tag cement and drill out shoe track. Displace well to 10 ppg KCL PHPA mud system. Drill 3m of new hole, circulate clean and perform LOT. Drill ahead 12¼" hole, collecting 5m samples as per the programme.

General Comments

00:00 TO 24:00 Hrs ON 08 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 11.98 m; Gamma 15.01 m; Pressure 15.89 m; Density 23.90 m; Neutron 29.15 m; Sonic 34.40 m.
Operational Comments	Shallow pulse test of Sperry tools at 138m tested good. All preparation completed and all systems for Geoservices/Sperry operational and ready for drilling.

WBM Data

Mud Type:	Flowline Temp:	Cl:	Low Gravity Solids:	Viscosity	
Sample From:	MWD Circ Temp:	Hard/Ca:	High Gravity Solids:	PV	
Time:	Glycol CP Temp:	MBT:	Solids (corrected):	YP	
Weight:	Glycol:	PM:	H2O:	Gels 10s	
ECD TD:	Nitrates:	PF:	Oil:	Gels 10m	26
ECD Shoe:	Sulphites:	MF:	Sand: %	Fann 003	
ECD Cuttings:	API FL:	pH:	Barite:	Fann 006	
KCl Equiv:	API Cake:	PHPA Excess:		Fann 100	
				Fann 200	
				Fann 300	
				Fann 600	

Shakers, Volumes and Losses Data

Engineer :

				Equip.	Descr.	Mesh Size	Hours
Available	**2168.9bbl**	**Losses**	**0.0bbl**				
Active		Downhole					
Mixing		Surf+ Equip	0.0bbl				
Hole	610.9bbl	Dumped					
Slug		De-Gasser					
Reserve		De-Sander					
Kill		De-Silter					
KCL/PHPA/CLAYSTAT	1558.0bbl	Centrifuge					

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	0.00	Seabed tag depth.
Angahook Formation	973.00	947.00			0.00	0.00	Not observed.

06:00 Hrs Update

Time:	06:00 Hrs on 09 Dec 2010

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Printed on 08 Dec 2010

06:00 Hrs Update	
Depth:	1112.0 mMDRT / 1111.9 mTVDRT
Progress Since Midnight (m):	0
Status @ 0600hrs:	RIH with 12¼" BHA picking up 5" DP from deck.
Formation:	Angahook Formation
Lithology:	
ROP:	
Gas:	

Wellsite Geologist(s)
(Days) - Nick Jackson (Nights) - Mel Bosman

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Silvereye-1

Date : 09 Dec 2010 | **Geology Report Number : 3** | (associated DDR # 14)

Well Details

Depth MDBRT:	1165.0m	Rig:	Kan Tan IV	Date:	09 Dec 2010
Depth TVDBRT:	1164.7m	Progress:	53.0m	Report Start:	0000
Depth TVDSS:	1138.7m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	12.81
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	7.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Made up Sperry Geopilot BHA and shallow tested same. RIH picking up 5" DP. Function tested BOPs. Continued to RIH picking up DP. Tagged TOC at 1087m. Drilled out shoe track. Drilled 12¼" hole from 1113m to 1117m while displacing well to 10ppg mud. Circulated and conditioned mud. Pulled into shoe and performed F.I.T. Recorded SCRs. Drilled 12¼" hole from 1117m to 1165m collecting 5m samples as per the programme.
Forward Plan:	Drill ahead 12¼" hole, collecting samples as per the programme. Perform wiper trip at 1900m.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	48000mg/l	Low Gravity Solids:	
		MWD Circ Temp:		Hard/Ca:	600mg/l	High Gravity Solids:	
Sample From:	Pit#2	Glycol CP Temp:		MBT:	2.5	Solids (corrected):	
Time:	2200	Glycol:		PM:	1	H2O:	90%
Weight:	10.00ppg	Nitrates:		PF:	1.5	Oil:	0%
ECD TD:		Sulphites:		MF:	3.5	Sand:	%
ECD Shoe:		API FL:	5.1cc/30min	pH:	9.7	Barite:	
ECD Cuttings:		API Cake:	2/32nd"	PHPA Excess:			
KCl Equiv:	8%						

Viscosity	63sec/qt
PV	12cp
YP	23lb/100ft²
Gels 10s	9
Gels 10m	10
Fann 003	7
Fann 006	8
Fann 100	21
Fann 200	28
Fann 300	35
Fann 600	47

Shakers, Volumes and Losses Data

Engineer :

Available	**1706.6bbl**	**Losses**	**146.7bbl**
Active	776.0bbl	Downhole	
Mixing		Surf+ Equip	146.7bbl
Hole	619.6bbl	Dumped	
Slug		De-Gasser	
Reserve	311.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 80 80 80 80	9
Shaker 1	VSM-300	20 20 20 80 80 80 80	9
Shaker 1	VSM-300	20 20 20 80 80 80 80	9
Shaker 1	VSM-300	20 20 20 80 80 80 80	9

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	28.00	80.00	28.00	0.00	892.00	Seabed tag depth.
Angahook Formation	972.00	921.00	972.00	921.00	0.00	0.00	Not observed.

Lithology Summary

Interval MDBRT (m) From	To	ROP (m/hr)	Lithology
1112.00	1165.00	Min:2 Avg:50 Max:182	DOMINANTLY CLAYSTONE GRADING CALCAREOUS CLAYSTONE; MINOR INTERBEDDED SILTSTONE; TRACE SANDSTONE, LIMESTONE STRINGERS: CLAYSTONE (70-100%): 70% medium grey to brownish grey, olive grey in parts, subblocky to rarely blocky, slightly to moderately calcareous, 5-10% silt, trace very fine sand, locally rare pyrite, trace foraminifera, trace shell fragments. Dominantly occurs as PDC cuttings 1.5cm x 2.5 cm (avg). 30% medium light grey to light olive grey, dominantly very soft to soft, rarely hard and calcite cemented, subblocky to rarely blocky, highly calcareous, slightly silty, rarely locally arenaceous, trace to minor dark green glauconite.

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Lithology Summary

		Grades to marl. SILTSTONE (0-25%): olive grey, firm to hard, subblocky, subfissile in parts, moderately calcareous, minor dark green glauconite pellets in part, rare skeletal fragments. SANDSTONE (0-5%): translucent to dark yellowish orange, moderately hard to hard silicic sandstone, very fine lower to fine upper, well sorted, rounded, quartz, trace medium green glauconite, non calcareous, poor visible porosity. NO SHOW. LIMESTONE (0-5%): yellow, hard, blocky, common shell fragments, rare to minor loose forams.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
1112.00 - 1165.00	Drilled	0.131	0.1294	0.0009	0.0004	0.0000	0.0000	0.0000	2.715

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1125.20	3.84	63.79	1125.09	4.20	2.8	4.2	-1.5	Sperry HOC tool
1153.95	6.12	72.77	1153.73	5.08	8.4	5.1	0.8	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 10 Dec 2010
Depth:	1250.55 mMDRT / 1248.92 mTVDRT
Progress Since Midnight (m):	85
Status @ 0600hrs:	Repair rig. Breaking over torqued TDS connection
Formation:	Angahook Formation
Lithology:	Claystone with minor Siltstone.
ROP:	Avg 58.5 m/hr (3.0 - 129.6 m/hr)
Gas:	TG 0.2043%; C1 0.1963%; C2 0.0017%; C3 0.0007%; C4 - C5 zero; CO2 1.4175%

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 10 Dec 2010 | **Geology Report Number : 4** | (associated DDR # 15)

Well Details

Depth MDBRT:	1570.0m	Rig:	Kan Tan IV	Date:	10 Dec 2010
Depth TVDBRT:	1556.6m	Progress:	405.0m	Report Start:	0000
Depth TVDSS:	1530.6m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	13.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	0.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Drilled 12¼" hole from 1158m to 1251m. Unable to break TDS connection. Broke out saver sub with single and POOH to shoe. Continued repairs to TDS. RIH and drill 12¼" hole from 1251m to 1570m.
Forward Plan:	Drill ahead 12¼" hole. Perform wiper trip to shoe. Continue to drill ahead 12¼" hole.

General Comments

00:00 TO 24:00 Hrs ON 10 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 11.98 m; Gamma 15.01 m; Pressure 15.89 m; Density 23.90 m; Neutron 29.15 m; Sonic 34.40 m.
Operational Comments	Collecting 3m samples from 1515m.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	36000mg/l	Low Gravity Solids:	
		MWD Circ Temp:		Hard/Ca:	540mg/l	High Gravity Solids:	
Sample From:	Pit#2	Glycol CP Temp:		MBT:	5	Solids (corrected):	
Time:	2130	Glycol:		PM:	0.5	H2O:	91%
Weight:	10.00ppg	Nitrates:		PF:	0.05	Oil:	0%
ECD TD:		Sulphites:		MF:	2.2	Sand:	%
ECD Shoe:		API FL:	5.8cc/30min	pH:	9	Barite:	
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:			
KCl Equiv:	8%						

Viscosity	48sec/qt
PV	9cp
YP	20lb/100ft²
Gels 10s	8
Gels 10m	11
Fann 003	7
Fann 006	9
Fann 100	19
Fann 200	25
Fann 300	29
Fann 600	38

Shakers, Volumes and Losses Data

Engineer :

Available	**2792.5bbl**	**Losses**	**111.6bbl**
Active	1604.0bbl	Downhole	
Mixing		Surf+ Equip	111.6bbl
Hole	788.5bbl	Dumped	
Slug		De-Gasser	
Reserve	400.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 80 80 80 80	18
Shaker 1	VSM-300	20 20 20 80 80 80 80	18
Shaker 1	VSM-300	20 20 20 80 80 80 80	18
Shaker 1	VSM-300	20 20 20 80 80 80 80	18

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	95.00	Baseline resistivity shift.
Eastern View Coal Measures	1554.00	1516.00	1490.00	1453.50	-62.50	0.00	Baseline resistivity shift, sand in cuttings.

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Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1165.00 - 1180.00	Min:3 Avg:54 Max:92	CLAYSTONE WITH MINOR INTERBEDDED CALCARENITE: CLAYSTONE (95-100%): as above, rarely grading CALCAREOUS CLAYSTONE. CALCARENITE (0-5%): very light grey, hard, blocky, highly calcareous, 20% clay, 20% silt, very fine to fine quartz, well sorted, subangular to subrounded, minor to common dark green glauconite, grading sandy LST.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
1180.00 - 1395.00	Min:8 Avg:60 Max:122	CLAYSTONE WITH MINOR INTERBEDDED SILTSTONE: CLAYSTONE (80-95%): brownish grey to olive grey, soft to firm, subblocky, slightly to moderately calcareous, becoming less calcareous with depth, 5-20% silt, rare foraminifera, trace shell fragments, trace disseminated pyrite, trace siderite. From 1235m: as above, plus trace to 10% CALCAREOUS CLAYSTONE: dominantly light olive grey to light brownish grey, rarely very light grey, trace yellowish brown, very soft, subblocky, highly calcareous, slightly silty, slightly sandy in parts, trace glauconite, grading to marl; trace blocky, hard dolomite. From 1255m: as above plus trace to 10% light grey to white CLAYSTONE: very soft to soft, amorphous to subblocky, non-calcareous, trace medium green glauconite and trace black carbonaceous streaks, trace hard foram moulds, trace benthic forams. In 1385m sample: trace CALCILUTITE: very soft to soft, amorphous to subblocky in part, black carbonaceous streaks within, highly calcareous. SILTSTONE (5-20%): medium grey to light brownish grey, soft to firm, subblocky, moderately to highly calcareous, becoming dominantly moderately calcareous with depth, argillaceous, trace to locally abundant disseminated pyrite, rare pyrite nodules, minor mica, trace foraminfera, trace pyrite, trace medium to coarse lower well rounded dark green glauconite, grading to trace CALCARENITE. In 1280m sample: trace SILTSTONE: greyish orange, very hard, subfissile to fissile, non-calcareous, minor very fine lower to very fine upper, subrounded translucent to orange yellow, quartz and feldspar. In 1320m sample: trace SILTSTONE: dark olive brown to black, very hard, fissile, arenaceous in part, non-calcareous.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
1395.00 - 1490.00	Min:17 Avg:52 Max:111	CLAYSTONE INTERVAL: CLAYSTONE (100%): olive black, soft to firm, subblocky to blocky, argillaceous, highly carbonaceous, non calcareous, rare very fine sand throughout, moderately sandy in parts. From 1445m rarely grading to SILTSTONE: moderately hard to hard, subfissile to fissile, arenaceous in part, non to slightly calcareous, trace medium green glauconite pellets, trace mica, trace disseminated pyrite. DOLOMITE (trace): yellowish grey to very pale orange, very hard, black and dark red to orange lithic fragments, moderately to highly calcareous in part.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
1490.00 - 1528.00	Min:17 Avg:60 Max:118	INTERBEDDED CLAYSTONE AND SANDSTONE: CLAYSTONE (5-100%): Light grey, very soft to soft, amorphous, homogenous, slightly calcareous, grading SILTSTONE in parts. From 1515m: greenish grey, very soft to soft, amorphous, arenaceous in part, minor glauconite, minor lithic fragments. SANDSTONE (0-95%): dark yellowish brown, friable, fine upper to medium upper, subangular to subrounded quartz and, feldspar and lithic fragments, weak calcite cement in parts, weak siliceous cement in parts, trace microcrystalline pyrite, trace medium lower muscovite and biotite, fair visible porosity. NO SHOW.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
1528.00 - 1570.00	Min:12 Avg:52 Max:95	INTERBEDDED SANDSTONE, SILTSTONE AND CLAYSTONE: SANDSTONE (20-100%): loose, transparent to translucent quartz sand, very fine to granular, dominantly coarse to granular, individual samples contain trace to 50% well rounded granules to 5mm, poorly to moderately well sorted, subangular to well rounded, dominantly subrounded to rounded, rare medium grey well rounded lithics, trace muscovite, trace to minor pyrite, rare dark brown oil staining on quartz grains; trace brownish grey aggregates: hard, brownish clay and silty matrix, commonly silica cemented, rarely pyrite cemented, poor visible porosity in aggregates. NO SHOW. SILTSTONE (0-40%): olive grey to olive black, brownish grey in parts, becoming more dominantly brownish grey with depth, soft to firm, becoming firm to moderately hard, blocky, subfissile in parts, non calcareous, minor to locally common disseminated pyrite, trace carbonaceous flecks, trace mica. CLAYSTONE (0-40%): light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, noncalcareous, slightly silty, rare dispersed very fine sand, trace carbonaceous specks, slightly sticky in parts.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
1165.00 - 1180.00	Drilled	0.156	0.1472	0.0011	0.0004	0.0000	0.0000	0.0000	1.123
1180.00 - 1395.00	Drilled	0.111	0.1054	0.0014	0.0006	0.0002	0.0000	0.0000	0.610

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Gas Data									
1395.00 - 1490.00	Drilled	0.131	0.1069	0.0029	0.0019	0.0007	0.0000	0.0000	0.460
1490.00 - 1528.00	Drilled	0.108	0.0803	0.0019	0.0014	0.0007	0.0004	0.0004	0.460
1528.00 - 1570.00	Drilled	0.055	0.0278	0.0009	0.0008	0.0005	0.0003	0.0003	0.410

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1182.32	8.29	78.88	1181.88	5.92	8.1	5.9	4.3	Sperry HOC tool
1209.91	10.13	80.17	1209.11	6.72	6.7	6.7	8.6	Sperry HOC tool
1241.51	12.76	79.14	1240.08	7.85	8.3	7.9	14.8	Sperry HOC tool
1267.50	13.03	77.50	1265.41	9.03	1.8	9.0	20.5	Sperry HOC tool
1296.88	15.07	76.43	1293.91	10.64	7.0	10.6	27.4	Sperry HOC tool
1325.19	15.96	75.50	1321.19	12.48	3.3	12.5	34.8	Sperry HOC tool
1354.45	16.30	74.55	1349.30	14.58	1.5	14.6	42.6	Sperry HOC tool
1383.62	15.73	73.69	1377.34	16.78	2.1	16.8	50.4	Sperry HOC tool
1412.81	16.05	74.58	1405.41	18.97	1.4	19.0	58.0	Sperry HOC tool
1442.05	16.23	74.71	1433.50	21.12	0.6	21.1	65.9	Sperry HOC tool
1470.78	16.47	76.71	1461.07	23.11	2.1	23.1	73.7	Sperry HOC tool
1501.94	16.25	78.21	1490.97	25.02	1.5	25.0	82.3	Sperry HOC tool
1531.25	16.25	78.78	1519.11	26.66	0.5	26.7	90.3	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 11 Dec 2010
Depth:	1657 mMDRT / 1639.9 mTVDRT
Progress Since Midnight (m):	87
Status @ 0600hrs:	Drilling 12¼" hole.
Formation:	Upper EVCM
Lithology:	Interbedded Sandstone, Siltstone and Claystone.
ROP:	Avg 48.9 m/hr (9.5 - 99.7 m/hr)
Gas:	TG 0.0324%; C1 0.0277%; C2 0.0012%; C3 0.0012%; iC4 0.0008; nC4 0.0006; C5 0.0008; CO2 0.43%

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 11 Dec 2010 | **Geology Report Number : 5** | (associated DDR # 16)

Well Details

Depth MDBRT:	1812.0m	Rig:	Kan Tan IV	Date:	11 Dec 2010
Depth TVDBRT:	1790.5m	Progress:	242.0m	Report Start:	0000
Depth TVDSS:	1764.5m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	14.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	9.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Drilled 12¼" hole from 1570m to 1812m. Sperry downhole tool failure. POOH from 1812m to 1544m. Pumped out of hole from 1544m to 1515m. POOH from 1515m to 1341m. Pumped out of hole from 1341m to 1081m. Circulated shakers clean. Flow checked, pumped slug and POOH. Removed radioactive sources and commenced downloading LWD data.
Forward Plan:	Change out Sperry MWD/LWD tools and Geopilot. Make up BHA, RIH and drill ahead 12¼" hole.

General Comments

00:00 TO 24:00 Hrs ON 11 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 11.98 m; Gamma 15.01 m; Pressure 15.89 m; Density 23.90 m; Neutron 29.15 m; Sonic 34.40 m.
Operational Comments	Collecting 3m samples as per programme.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	44000mg/l	Low Gravity Solids:		Viscosity	53sec/qt
		MWD Circ Temp:		Hard/Ca:	360mg/l	High Gravity Solids:		PV	14cp
Sample From:	Pit#2	Glycol CP Temp:		MBT:	7.5	Solids (corrected):		YP	30lb/100ft²
Time:	2200	Glycol:		PM:	0.5	H2O:	89%	Gels 10s	14
Weight:	10.10ppg	Nitrates:		PF:	0.05	Oil:	0%	Gels 10m	18
ECD TD:		Sulphites:		MF:	1.5	Sand:	%	Fann 003	11
ECD Shoe:		API FL:	5.7cc/30min	pH:	9	Barite:		Fann 006	12
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:				Fann 100	28
KCl Equiv:	9%							Fann 200	37
								Fann 300	44
								Fann 600	58

Shakers, Volumes and Losses Data

Engineer :

Available	**2336.7bbl**	**Losses**	**121.2bbl**
Active	798.0bbl	Downhole	
Mixing		Surf+ Equip	121.2bbl
Hole	842.7bbl	Dumped	
Slug		De-Gasser	
Reserve	696.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 100 100 100 100	22
Shaker 1	VSM-300	20 20 20 100 100 100 100	22
Shaker 1	VSM-300	20 20 20 80 80 80 80	22
Shaker 1	VSM-300	20 20 20 100 100 100 100	22

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.
Eastern View Coal	1554.00	1516.00	1486.00	1449.70	-66.30	0.00	Baseline resistivity shift, sand in cuttings.

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Formation Tops

Measures							

Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1570.00 - 1602.00	Min:15 Avg:52 Max:100	CLAYSTONE WITH MINOR INTERBEDDED SILTSTONE: CLAYSTONE (40-70%): light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non calcareous, 5-20% silt, rare dispersed very fine sand, trace to minor dark brown carbonaceous specks. SILTSTONE (20-50%): olive grey to olive black, brownish grey in parts, firm to moderately hard, blocky, subfissile in parts, non calcareous, minor to locally common disseminated pyrite, carbonaceous, trace carbonaceous flecks, trace mica. SANDSTONE (5-10%): as above; inferred uphole contamination.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1602.00 - 1765.00	Min:20 Avg:46 Max:96	DOMINANTLY SANDSTONE WITH INTERBEDDED SILTSTONE, CLAYSTONE AND TRACE COAL: SANDSTONE (20-100%): loose, transparent to translucent quartz, very fine lower to granular (5mm diameter maximum observed grainsize), dominantly coarse to granular, subangular to well rounded, dominantly subrounded to rounded, variably poorly to moderately well sorted, trace medium grey well rounded lithics, trace reddish brown well rounded lithics, trace white well rounded lithics, trace to common nodular pyrite, trace muscovite, variably nil visible aggregates to common pyrite and silica cemented aggregates, nil to common light grey to brownish grey matrix; variably clay and silt texture, poor visible porosity in aggregates, nil to 10% light grey non calcareous clay (inferred rockflour) in individual samples, nil to minor dark brown oil staining on individual grains. NO SHOW. SILTSTONE (0-50%): brownish grey to greyish brown, firm to moderately hard, blocky, subfissile to fissile in parts, non calcareous, argillaceous, carbonaceous, rare to locally abundant very fine sand in parts, minor disseminated pyrite, trace to minor mica. CLAYSTONE (0-60%): light brownish grey to brownish grey, very soft to soft, amorphous to subblocky, dispersive, commonly sticky, non to rarely slightly calcareous, 5-20% silt, rare carbonaceous specks. COAL (0-10%): between 1635 and 1662m: trace black, dull to moderately bright, firm to moderately hard, blocky, splintery, grading CARBONACEOUS MUDSTONE.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1765.00 - 1777.00	Min:23 Avg:40 Max:65	SILTSTONE WITH MINOR INTERBEDDED SANDSTONE: SILTSTONE (50-95%): brownish grey to greyish brown, olive grey in parts, firm to moderately hard, blocky, subfissile in parts, argillaceous, rare very fine sand, non calcareous, carbonaceous, trace to minor carbonaceous flecks, minor disseminated pyrite, minor mica. SANDSTONE (5-50%): loose, transparent to translucent quartz, very fine lower to granular, dominantly medium to coarse, becoming more dominantly fine to medium with depth, poorly to moderately sorted, subangular to rounded, trace mica, trace well rounded lithics, nil to 20% hard pyrite and silica cemented aggregates, poor visible porosity in aggregates. NO SHOW.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1777.00 - 1812.00	Min:27 Avg:49 Max:100	INTERBEDDED SANDSTONE AND SILTSTONE: SANDSTONE (5-70%): loose, transparent to translucent quartz, very fine to medium and moderately sorted, from 1790m very fine to granular and poorly sorted, subangular to rounded, trace black quartz inclusions, trace mica, trace medium grey well rounded lithics, trace nodular pyrite, trace light yellowish grey silica and pyrite cemented aggregates, poor visible porosity in aggregates, nil to 40% clay (inferred rockflour) in individual samples, trace oil staining. NO SHOW. SILTSTONE (30-95%): brownish grey to olive grey, olive black in part, firm to moderately hard, blocky, subfissile to fissile in parts, non calcareous, argillaceous, carbonaceous, trace carbonaceous flecks, rare dispersed very fine sand, minor disseminated pyrite, trace to common mica.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
1570.00 - 1602.00	Drilled	0.048	0.0392	0.0015	0.0015	0.0009	0.0006	0.0006	0.460
1602.00 - 1764.00	Drilled	0.027	0.0171	0.0011	0.0011	0.0007	0.0005	0.0006	0.420
1764.00 - 1780.00	Drilled	0.040	0.0195	0.0020	0.0019	0.0010	0.0006	0.0006	0.420
1780.00 - 1812.00	Drilled	0.029	0.0154	0.0013	0.0011	0.0005	0.0003	0.0003	0.470

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1561.83	16.31	77.89	1548.46	28.39	0.8	28.4	98.7	Sperry HOC tool

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Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1586.46	16.24	77.71	1572.10	29.85	0.4	29.8	105.5	Sperry HOC tool
1616.48	16.06	78.20	1600.94	31.59	0.8	31.6	113.6	Sperry HOC tool
1642.31	16.17	78.50	1625.75	33.04	0.5	33.0	120.7	Sperry HOC tool
1673.72	17.17	76.35	1655.84	35.00	3.7	35.0	129.4	Sperry HOC tool
1702.70	15.87	77.15	1683.63	36.90	4.6	36.9	137.5	Sperry HOC tool
1731.61	16.05	79.02	1711.42	38.54	1.9	38.5	145.2	Sperry HOC tool
1760.22	15.85	80.22	1738.93	39.95	1.3	40.0	153.0	Sperry HOC tool
1789.99	15.85	81.83	1767.57	41.22	1.5	41.2	161.0	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 12 Dec 2010
Depth:	1812.0 mMDRT / 1790.5 mTVDRT
Progress Since Midnight (m):	0
Status @ 0600hrs:	WOW
Formation:	Upper EVCM
Lithology:	No new lithology drilled.
ROP:	
Gas:	

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 12 Dec 2010 | **Geology Report Number : 6** | (associated DDR # 17)

Well Details

Depth MDBRT:	1860.0m	Rig:	Kan Tan IV	Date:	12 Dec 2010
Depth TVDBRT:	1824.9m	Progress:	48.0m	Report Start:	0000
Depth TVDSS:	1798.9m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	15.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	10.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Completed downloading LWD data. Racked Sperry tool stand back in derrick and broke off bit. WOW. Laid out Sperry MWD/LWD tools and Geopilot. Made up new BHA and shallow tested same. RIH to 1500m. Take weight. Wash/ream in hole from 1500m to 1812m. Drilled 12¼" hole from 1812m to 1860m.
Forward Plan:	Drill ahead 12¼" hole to TD.

General Comments

00:00 TO 24:00 Hrs ON 12 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 12.03 m; Pressure 14.55 m; Gamma 16.42 m; Density 23.98 m; Neutron 29.23 m; Sonic 34.40 m.
Operational Comments	Collecting 3m samples as per programme.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	40000mg/l	Low Gravity Solids:		Viscosity	48sec/qt
		MWD Circ Temp:		Hard/Ca:	400mg/l	High Gravity Solids:		PV	11cp
Sample From:	Pit#2	Glycol CP Temp:		MBT:	10	Solids (corrected):		YP	25lb/100ft²
Time:	2300	Glycol:		PM:	0.5	H2O:	90%	Gels 10s	11
Weight:	10.05ppg	Nitrates:		PF:	0.05	Oil:	0%	Gels 10m	15
ECD TD:		Sulphites:		MF:	1.1	Sand:	%	Fann 003	9
ECD Shoe:		API FL:	5.5cc/30min	pH:	9	Barite:		Fann 006	10
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:				Fann 100	23
KCl Equiv:	9%							Fann 200	30
								Fann 300	36
								Fann 600	47

Shakers, Volumes and Losses Data

Engineer :

Available	**3369.0bbl**	**Losses**	**30.6bbl**
Active	1740.0bbl	Downhole	
Mixing		Surf+ Equip	30.6bbl
Hole	925.0bbl	Dumped	
Slug		De-Gasser	
Reserve	704.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 100 100 100 100	16
Shaker 1	VSM-300	20 20 20 100 100 100 100	16
Shaker 1	VSM-300	20 20 20 100 100 100 100	16
Shaker 1	VSM-300	20 20 20 100 100 100 100	16

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.
Eastern View Coal Measures	1554.00	1516.00	1486.00	1449.70	-66.30	0.00	Baseline resistivity shift, sand in cuttings.

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Lithology Summary

Interval MDBRT (m) From	To	ROP (m/hr)	Lithology
1812.00 - 1860.00		Min:11 Avg:32 Max:67	INTERBEDDED SANDSTONE, SILTSTONE AND CLAYSTONE: SANDSTONE (10-75%): transparent to translucent quartz, light bluish grey, brownish grey aggregates, loose to hard, friable in part, very fine to granular, dominantly fine to medium in aggregates, poorly sorted, subangular to well rounded, dominantly subrounded to rounded, rarely more dominantly angular to subangular and very coarse (grains fractured by bit action?), trace medium grey lithics, trace to minor mica, trace nodular pyrite, nil to trace coal, trace to abundant silica and pyrite cemented aggregates, minor brownish grey silt and clay matrix, trace to up to 50% in individual samples light grey rockflour with clay texture, poor visible porosity in aggregates, trace oil staining on individual grains. NO SHOW. SILTSTONE (20-75%): brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite. CLAYSTONE (0-50%): light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, non calcareous, 5-20% silt, minor black carboaceous specks throughout.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
1812.00 - 1860.00	Drilled	0.034	0.0209	0.0012	0.0009	0.0005	0.0003	0.0003	1.240

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1820.02	15.95	79.90	1796.45	42.53	1.8	42.5	169.1	Sperry HOC tool
1847.06	16.55	76.98	1822.41	44.05	3.7	44.0	176.5	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 13 Dec 2010
Depth:	1965 mMDRT / 1935.9 mTVDRT
Progress Since Midnight (m):	105
Status @ 0600hrs:	Drilling 12¼' hole.
Formation:	Upper EVCM
Lithology:	Siltstone
ROP:	Avg 26.0 m/hr (4.8 - 88.8 m/hr)
Gas:	TG 0.0798%; C1 0.0576%; C2 0.0047%; C3 0.0017%; iC4 0.0005%; nC4 0.0004%; C5 0.0002%; CO2 1.06%

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 13 Dec 2010 | **Geology Report Number : 7** | (associated DDR # 18)

Well Details

Depth MDBRT:	2193.0m	Rig:	Kan Tan IV	Date:	13 Dec 2010
Depth TVDBRT:	2154.8m	Progress:	333.0m	Report Start:	0000
Depth TVDSS:	2128.8m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	16.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	11.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Drilled 12¼" hole from 1860m to 2193m, collecting 3m samples.
Forward Plan:	Drill ahead 12¼" hole to TD.

General Comments

00:00 TO 24:00 Hrs ON 13 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 8.35 m; Resistivity 12.03 m; Pressure 14.55 m; Gamma 16.42 m; Density 23.98 m; Neutron 29.23 m; Sonic 34.40 m.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	40000mg/l	Low Gravity Solids:		Viscosity	51sec/qt
		MWD Circ Temp:		Hard/Ca:	400mg/l	High Gravity Solids:		PV	12cp
Sample From:	Pit#2	Glycol CP Temp:		MBT:	10	Solids (corrected):		YP	26lb/100ft²
Time:	2100	Glycol:		PM:	0.1	H2O:	89%	Gels 10s	9
Weight:	10.15ppg	Nitrates:		PF:	0.05	Oil:	0%	Gels 10m	12
ECD TD:		Sulphites:		MF:	0.9	Sand:	.5 %	Fann 003	9
ECD Shoe:		API FL:	5.0cc/30min	pH:	9	Barite:		Fann 006	10
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:				Fann 100	25
KCl Equiv:	8%							Fann 200	32
								Fann 300	38
								Fann 600	50

Shakers, Volumes and Losses Data

Engineer :

Available	**3711.0bbl**	**Losses**	**175.1bbl**
Active	1872.5bbl	Downhole	
Mixing		Surf+ Equip	35.1bbl
Hole	1082.5bbl	Dumped	140.0bbl
Slug		De-Gasser	
Reserve	756.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 120 120 120 120	24
Shaker 1	VSM-300	20 20 20 120 120 120 120	24
Shaker 1	VSM-300	20 20 20 120 120 120 120	24
Shaker 1	VSM-300	20 20 20 120 120 120 120	24

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.
Eastern View Coal Measures	1554.00	1516.00	1486.00	1449.70	-66.30	492.00	Baseline resistivity shift, sand in cuttings.
2973 Seismic Marker	1982.00	1926.00	1978.00	1922.20	-3.80	0.00	Baseline resistivity shift.

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Printed on 13 Dec 2010

Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1860.00 - 1875.00	Min:12 Avg:30 Max:59	INTERBEDDED SANDSTONE, SILTSTONE AND CLAYSTONE: SANDSTONE (10-79%): loose, transparent to translucent quartz, very fine to granular, dominantly coarse to very coarse, moderately sorted, angular (broken by bit action) to well rounded, dominantly subangular to rounded, trace to common mica, minor pyrite, trace coal, nil to 10% light brownish grey hard silica cemented aggregates with abundant clay/silt matrix, aggregates grade to SANDY SILTSTONE in part, 10% light grey non calcareous clay - inferred rockflour. NO SHOW. SILTSTONE (20-50%): brownish grey to olive grey, rarely olive black, firm to hard, subblocky to blocky, rarely subfissile, non calcareous, argillaceous, minor dispersed very fine sand, carbonaceous in part, rare black carbonaceous flecks, rare mica, rare disseminated pyrite. CLAYSTONE (10-70%): light brownish grey to brownish grey, very soft to rarely soft, amorphous to rarely subblocky, non calcareous, 5-20% silt, minor black carbonaceous specks throughout.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1875.00 - 1899.00	Min:10 Avg:29 Max:89	DOMINANTLY SANDSTONE WITH MINOR INTERBEDDED SILTSTONE: SANDSTONE (20-70%): loose, transparent to translucent quartz, very fine to granular, poorly sorted, possibly bimodal, angular to rounded, dominantly subrounded, accessories as above plus trace reddish brown well rounded lithics, trace light brownish grey hard silica cemented aggregates with abundant clay/silt matrix, aggregates grade to SANDY SILTSTONE in part, trace fine friable weakly silica cemented aggregates with fair porosity, 10-30% light grey non calcareous clay - inferred rockflour. NO SHOW. From 1885m becoming finer grained, more dominantly fine to medium, moderately sorted, subangular to subrounded, dominantly loose with rare silica and pyrite cemented fine to medium aggregates. NO SHOW. SILTSTONE (20-70%): brownish grey to olive grey, rarely olive black, firm to moderately hard, blocky, rarely subfissile, non calcareous, argillaceous, carbonaceous in part, minor disseminated pyrite, trace nodular pyrite, rare mica, rare black carbonaceous flecks. CLAYSTONE (10%): as above, inferred uphole contamination.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1899.00 - 1919.00	Min:19 Avg:24 Max:53	SILTSTONE INTERVAL: SILTSTONE (100%): brownish grey to olive grey, rarely olive black, firm to moderately hard, subblocky to blocky, subfissile in parts, non calcareous, highly argillaceous, trace dispersed very fine sand, minor black carbonaceous flecks, rare to locally common mica, minor disseminated pyrite, trace pyrite nodules, grading SILTY CLAYSTONE in parts.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1919.00 - 1938.00	Min:11 Avg:24 Max:46	SANDSTONE INTERVAL: SANDSTONE (15-60%): transparent to translucent, loose to hard, dominantly loose quartz, very fine to very coarse, dominantly fine to medium, trace very coarse to granular, moderately to moderately well sorted, angular to well rounded, dominantly subangular to rounded, common to abundant pyrite, rare mica, trace well rounded lithics, abundant hard pyrite cemented aggregates, rare friable silica cemented aggregates, poor to fair visible porosity. NO SHOW. NB: Sand inferred from gamma to be under-represented in sample. SILTSTONE (10-50%): as above, inferred uphole contamination. CLAYSTONE (5-60%): as above, inferred uphole contamination.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1938.00 - 1974.00	Min:12 Avg:26 Max:50	SILTSTONE INTERVAL: SILSTONE (100%): brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, minor mica, trace to locally common disseminated pyrite, rare dispersed very fine sand in parts.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
1974.00 - 2123.00	Min:5 Avg:26 Max:73	DOMINANTLY SANDSTONE WITH MINOR INTERBEDDED SILTSTONE AND CLAYSTONE: SANDSTONE (10-100%): transparent to translucent, light grey to light brownish grey in aggregates, dominantly loose quartz, rarely friable to hard aggregates, very fine to very coarse, variably dominantly fine to medium or coarse to granular, possibly bimodal in parts, poorly to moderately sorted, angular to rounded, dominantly angular to subangular, rare pyrite, rare mica, trace shell fragments, trace coal, trace medium grey, black and pale reddish brown lithics below 2007m. Trace friable silica and hard pyrite cemented aggregates, poor to fair porosity in aggregates, trace oil staining, 0-10% rockflour. INTERMITTENT VERY WEAK SHOWS. SILTSTONE (0-50%): brownish grey to rarely brownish black, firm to rarely moderately hard, subblocky to blocky, rarely subfissile, non calcareous, highly argillaceous, minor black carbonaceous flecks, trace carbonaceous laminae, minor mica, trace to locally common disseminated pyrite, locally abundant pyrite nodules, rare dispersed very fine sand in parts. CLAYSTONE (0-50%): light brownish grey, very soft to rarely soft, amorphous to subblocky, non calcareous,

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Lithology Summary

Interval MDBRT (m) From	To	ROP (m/hr)	Lithology
			5-10% silt, minor black carbonaceous flecks, trace black carbonaceous laminae, rare mica.
2123.00	2193.00	Min:5 Avg:24 Max:73	SANDSTONE WITH MINOR INTERBEDDED SILTSTONE AND CLAYSTONE: SANDSTONE (60-90%): loose, transparent to translucent quartz, very fine to granular, dominantly very coarse to granular, poorly to moderately sorted, angular to rounded, larger grains are dominantly angular and broken, fine to medium dominantly subangular to subrounded, minor lithics: pale reddish brown, light to dark grey, greenish black, black and vitreous, rare to 20% mica, trace pyrite, nil to minor hard silica cemented aggregates, poor visible porosity in aggregates, individual samples consist of 10-40% light grey non calcareous clay - inferred rockflour. NO SHOW. SILTSTONE (5-30%): as above. CLAYSTONE (0-20%): as above.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
1860.00 - 1875.00	Drilled	0.044	0.0322	0.0009	0.0009	0.0003	0.0003	0.0002	1.190
1875.00 - 1899.00	Drilled	0.041	0.0308	0.0019	0.0005	0.0002	0.0003	0.0001	1.090
1899.00 - 1919.00	Drilled	0.069	0.0420	0.0080	0.0013	0.0004	0.0004	0.0002	1.060
1919.00 - 1938.00	Drilled	0.104	0.0755	0.0057	0.0021	0.0007	0.0005	0.0003	1.030
1938.00 - 1974.00	Drilled	0.136	0.1028	0.0066	0.0037	0.0011	0.0007	0.0006	0.990
1974.00 - 2123.00	Drilled	0.072	0.0537	0.0024	0.0016	0.0007	0.0006	0.0006	0.700
2123.00 - 2193.00	Drilled	0.018	0.0124	0.0006	0.0004	0.0003	0.0003	0.0005	0.840

Hydrocarbon Shows

From (m)	To (m)	Formation	Lithology	Percentage	White Light			UV Light			Rating
					Stain	Cut	Residue	Fluor.	Cut Fluor.	Residue	
1980.00	1983.00	Eastern View Coal Measures	Sandstone	0-1	nil	nil	nil	brt yel gn	v slw strmg dl blu wh	thk dl yel wh	VERY WEAK SHOW
Shows Description:			trace bright yellow green direct fluorescence, very slow streaming dull bluish white cut, thick dull yellowish white residual ring.								
1992.00	2001.00	Eastern View Coal Measures	Sandstone	0-1	nil	nil	nil	dl - brt yel gn	slw dif - strmg pl blu wh	thn brt yel wh	VERY WEAK SHOW
Shows Description:			trace dull to bright yellowish green direct fluorescence, slow diffuse to streaming pale bluish white diffuse cut, thin bright yellowish white residual ring.								
2001.00	2017.00	Eastern View Coal Measures	Sandstone	0-2	nil	nil	nil				VERY WEAK SHOW
Shows Description:			trace to 2% bright yellowish green direct fluorescence, nil to very slow streaming pale bluish white cut, nil to thin dull yellowish white residual ring.								
2049.00	2052.00	Eastern View Coal Measures	Sandstone	0-1	nil	nil	nil	Dull bri yel	v slow strmg pal bl/wh cut	patchy dull bri yel res ring	VERY WEAK SHOW
Shows Description:			trace dull bright yellow direct fluorescence, very slow streaming dull bluish white cut, patchy dull bright yellowish white residual ring.								
2106.00	2109.00	Eastern View Coal Measures	Sandstone	0-1	nil	nil	nil	Dull bri yel gn	v slow strmg pal bl/wh cut	patchy dull bri yel/wh res ring	VERY WEAK SHOW
Shows Description:			trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut, patchy dull bright yellowish white residual ring.								
2112.00	2115.00	Eastern View Coal Measures	Sandstone	0-1	nil	nil	nil	Dull bri yel gn	v slow strmg pal bl/wh cut	patchy dull bri yel/wh res ring	VERY WEAK SHOW
Shows Description:			trace dull bright yellow green direct fluorescence, very slow streaming dull bluish white cut,thin dull bright yellowish white residual ring.								

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1875.84	16.40	74.79	1850.01	46.04	2.2	46.0	184.5	Sperry HOC tool
1903.76	15.96	73.72	1876.82	48.15	1.9	48.1	191.9	Sperry HOC tool
1932.30	16.14	74.60	1904.25	50.30	1.1	50.3	199.5	Sperry HOC tool
1960.96	15.78	74.71	1931.81	52.38	1.3	52.4	207.1	Sperry HOC tool
1991.07	16.57	74.52	1960.72	54.61	2.6	54.6	215.2	Sperry HOC tool

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Survey								
MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
2020.60	16.44	73.87	1989.04	56.90	0.8	56.9	223.3	Sperry HOC tool
2048.98	15.67	72.94	2016.31	59.14	2.9	59.1	230.8	Sperry HOC tool
2077.36	16.14	73.20	2043.60	61.40	1.7	61.4	238.3	Sperry HOC tool
2138.28	16.09	74.79	2102.13	66.06	0.7	66.1	254.5	Sperry HOC tool
2168.53	15.61	74.35	2131.23	68.26	1.6	68.3	262.5	Sperry HOC tool

06:00 Hrs Update	
Time:	06:00 Hrs on 14 Dec 2010
Depth:	2211 mMDRT / 2172 mTVDRT
Progress Since Midnight (m):	18
Status @ 0600hrs:	Drilling 12¼" hole
Formation:	Lower EVCM
Lithology:	Altered Volcanics
ROP:	Avg 4.1 m/hr (2.0 - 9.1 m/hr)
Gas:	TG 0.0209%; C1 0.0145%; C2 0.0015%; C3 0.0006%; iC4 0.0003%; nC4 0.0006%; C5 0.0009%; CO2 0.85%

Wellsite Geologist(s)	
(Days) - Nick Jackson	(Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 14 Dec 2010 | **Geology Report Number : 8** | (associated DDR # 19)

Well Details

Depth MDBRT:	2215.0m	Rig:	Kan Tan IV	Date:	14 Dec 2010
Depth TVDBRT:	2176.5m	Progress:	22.0m	Report Start:	0000
Depth TVDSS:	2150.5m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	17.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	12.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Drilled 12¼" hole from 2193m to 2215m. Decision made to POOH due to low ROP. Flow checked well. POOH from 2215m to 1920m. Pumped out of hole from 1920m to 1399m. POOH from 1399m to 1081m. Circulated bottoms up. Slipped and cut drilling line. POOH and racked back BHA. Commenced making up new BHA.
Forward Plan:	Drill ahead to TD.

General Comments

00:00 TO 24:00 Hrs ON 14 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances to 2215m, prior to POOH: Survey 8.35 m; Resistivity 12.03 m; Pressure 14.55 m; Gamma 16.42 m; Density 23.98 m; Neutron 29.23 m; Sonic 34.40 m.
Operational Comments	Sperry LWD bit to sensor distances from 2215m, after laying out Geopilot: Survey 3.36 m; Resistivity 6.89 m; Gamma 10.01 m; Pressure 11.60 m; Density 18.77 m; Neutron 24.03 m; Sonic 29.27 m.
Operational Comments	Collecting 3m samples as per programme.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	41000mg/l	Low Gravity Solids:		Viscosity	48sec/qt
		MWD Circ Temp:		Hard/Ca:	400mg/l	High Gravity Solids:		PV	12cp
Sample From:	Pit#2	Glycol CP Temp:		MBT:	10	Solids (corrected):		YP	26lb/100ft²
Time:	2200	Glycol:		PM:	0.1	H2O:	89%	Gels 10s	9
Weight:	10.10ppg	Nitrates:		PF:	0.05	Oil:	0%	Gels 10m	12
ECD TD:		Sulphites:		MF:	1	Sand:	.5 %	Fann 003	9
ECD Shoe:		API FL:	5.0cc/30min	pH:	9	Barite:		Fann 006	10
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:				Fann 100	25
KCl Equiv:	8%							Fann 200	32
								Fann 300	38
								Fann 600	50

Shakers, Volumes and Losses Data

Engineer :

Available	**2625.0bbl**	**Losses**	**39.7bbl**
Active	759.0bbl	Downhole	
Mixing		Surf+ Equip	9.7bbl
Hole	1134.0bbl	Dumped	30.0bbl
Slug		De-Gasser	
Reserve	732.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 120 120 120 120	16
Shaker 1	VSM-300	20 20 20 120 120 120 120	16
Shaker 1	VSM-300	20 20 20 120 120 120 120	16
Shaker 1	VSM-300	20 20 20 120 120 120 120	16

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.

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Printed on 14 Dec 2010

Formation Tops

Eastern View Coal Measures	1554.00	1516.00	1486.00	1449.70	-66.30	488.00	Baseline resistivity shift, sand in cuttings.
2973 Seismic Marker	1982.00	1926.00	1974.00	1918.30	-7.70	112.00	Neutron, density, gamma.
Top Cretaceous	2081.00	2020.00	2086.00	2025.90	+5.90	0.00	Resistivity, neutron, density, sonic.

Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
2193.00 - 2200.00	Min:2 Avg:4 Max:8	VOLCANICS: VOLCANICS (10-80%): medium light grey, firm to hard, blocky, homogeneous, splintery in parts, non calcareous. SANDSTONE (10-70%) & SILTSTONE (10-20%): as above and inferred uphole contamination.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
2200.00 - 2215.00	Min:1 Avg:4 Max:9	DOMINANTLY VOLCANICS WITH MINOR THERMALLY ALTERED CLAYSTONE, SILTSTONE AND SANDSTONE: ALTERED VOLCANICS/CLAYSTONE (60-100%): greyish black, moderately hard to hard, blocky, minor disseminated pyrite, trace nodular pyrite, locally abundant disseminated pyrite, commonly (but not always) black streak on porcelain, trace clear to white crystalline fragments from 2213m. Inferred to consist partially of intrusives (dolerite?) and thermally altered carbonaceous claystone. SANDSTONE (10-40%): dominantly occurs from 2207-2208m: loose, transparent to translucent, medium to granular, dominantly very coarse to granular, moderately sorted, angular to rounded, dominantly angular to subangular and fractured, with visible quartz overgrowths, trace biotite mica, trace pyrite, trace light grey, dark grey, pale reddish brown, greenish black lithics, inferred hard siliceous cement, poor inferred porosity. NO SHOW. SILTSTONE (0-40%): dominantly occurs from 2214-2215m: brownish grey to olive grey, soft to firm, subblocky to blocky, non to slightly calcareous, argillaceous, slightly sandy in parts.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
2193.00 - 2200.00	Drilled	0.028	0.0205	0.0022	0.0008	0.0003	0.0007	0.0010	0.790
2200.00 - 2215.00	Drilled	0.017	0.0105	0.0011	0.0005	0.0003	0.0007	0.0010	0.890

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
2193.23	16.26	78.01	2154.98	69.87	4.8	69.9	269.1	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 15 Dec 2010
Depth:	2215 mMDRT / 2176.5 mTVDRT
Progress Since Midnight (m):	0
Status @ 0600hrs:	RIH with 12¼" rotary BHA.
Formation:	Lower EVCM
Lithology:	No new lithology drilled.
ROP:	
Gas:	

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 15 Dec 2010 | **Geology Report Number : 9** | (associated DDR # 20)

Well Details

Depth MDBRT:	2282.0m	Rig:	Kan Tan IV	Date:	15 Dec 2010
Depth TVDBRT:	2239.3m	Progress:	67.0m	Report Start:	0000
Depth TVDSS:	2213.3m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	18.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	13.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Changed out faulty RLL tool. Made up new 12¼" rotary BHA. Shallow tested MWD/LWD and RIH to shoe. Serviced rig. RIH from 1094m to 2145m. Washed in hole from 2145m to 2193m. Relogged from 2193m to 2215m. Drilled 12¼" hole from 2215m to 2282m.
Forward Plan:	Drill ahead to TD. Pack and manifest samples for backloading to Geoservices base.

General Comments

00:00 TO 24:00 Hrs ON 15 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 3.36 m; Resistivity 6.89 m; Gamma 10.01 m; Pressure 11.60 m; Density 18.77 m; Neutron 24.03 m; Sonic 29.27 m.
Operational Comments	Collecting 3m samples as per programme.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	37000mg/l	Low Gravity Solids:	
Sample From:	Pit#2	MWD Circ Temp:		Hard/Ca:	520mg/l	High Gravity Solids:	
Time:	2000	Glycol CP Temp:		MBT:	15	Solids (corrected):	
Weight:	10.05ppg	Glycol:		PM:	0.1	H2O:	89%
ECD TD:		Nitrates:		PF:	0.05	Oil:	0%
ECD Shoe:		Sulphites:		MF:	0.7	Sand:	.5 %
ECD Cuttings:		API FL:	5.0cc/30min	pH:	9	Barite:	
KCl Equiv:	8%	API Cake:	1/32nd"	PHPA Excess:			

Viscosity	42sec/qt
PV	10cp
YP	28lb/100ft²
Gels 10s	9
Gels 10m	13
Fann 003	8
Fann 006	10
Fann 100	26
Fann 200	33
Fann 300	38
Fann 600	48

Shakers, Volumes and Losses Data

Engineer :

Available	**2699.9bbl**	**Losses**	**27.9bbl**
Active	746.0bbl	Downhole	
Mixing		Surf+ Equip	27.9bbl
Hole	1124.9bbl	Dumped	
Slug		De-Gasser	
Reserve	829.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 120 120 120 120	18
Shaker 1	VSM-300	20 20 20 120 120 120 120	18
Shaker 1	VSM-300	20 20 20 120 120 120 120	18
Shaker 1	VSM-300	20 20 20 120 120 120 120	18

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff Formation	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.
Eastern View Coal Measures	1554.00	1516.00	1486.00	1449.70	-66.30	488.00	Baseline resistivity shift, sand in cuttings.

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Formation Tops

2973 Seismic Marker	1982.00	1926.00	1974.00	1918.30	-7.70	112.00	Baseline resistivity shift
Top Cretaceous	2081.00	2020.00	2086.00	2025.90	+5.90	0.00	Resistivity, neutron, density, sonic

Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
2215.00 - 2231.00	Min:1 Avg:7 Max:11	VOLCANICS / THERMALLY ALTERED CLAYSTONE WITH MINOR SILTSTONE AND SANDSTONE: VOLCANICS/ALTERED CLAYSTONE (30-100%): dominantly black to olive black, minor greyish black, brownish yellow, moderately hard to hard, blocky, trace to abundant disseminated pyrite, trace nodular pyrite, trace quartz and calcite veining. Inferred dominantly thermally altered carbonaceous claystone, trace volcanics (dolerite?) with locally abundant phenocrysts. Trace angular granular crystalline fragments: black with translucent to light grey laminations. SILTSTONE (0-60%): dominantly brownish grey to olive grey, soft to firm, subblocky to blocky, non to slightly calcareous, argillaceous, slightly sandy in parts, trace benthic foraminifera in part. From 2226-2229: pale yellowish brown, moderately hard to hard, subblocky, slightly to moderately calcareous, trace to minor black lithics and carbonaceous streaks, trace foraminifera in part, commonly sandy, grading to fine SANDSTONE in part. SANDSTONE (0-10%): transparent to translucent, trace light grey, dark grey, loose quartz, medium upper to coarse upper, subangular to subrounded in part, moderately sorted, trace sandstone aggregates with sucrosic texture, aggregates are commonly pyrite cemented, rarely silica cemented, poor to fair visible porosity. NO SHOW.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
2231.00 - 2268.00	Min:3 Avg:7 Max:20	VOLCANICS / THERMALLY ALTERED CLAYSTONE (100%): dominantly greyish black, olive black, greyish black, minor locally abundant very fine upper phenocrysts, trace calcite veining, trace quartz veining.
Interval MDBRT (m) From To	ROP (m/hr)	Lithology
2268.00 - 2282.00	Min:7 Avg:4 Max:17	QUARTZITE: QUARTZITE (15-40%): dominant milky white to translucent, trace reddish pink (@ 2268m) recrystallised quartz, granular up to 5mm, angular; trace disseminated pyrite. VOLCANICS / ALTERED CLAYSTONE (60-85%): as above, inferred uphole contamination.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
2215.00 - 2231.00	Drilled	0.021	0.0138	0.0006	0.0004	0.0003	0.0007	0.0008	1.830
2231.00 - 2268.00	Drilled	0.024	0.0129	0.0009	0.0004	0.0003	0.0008	0.0005	2.010
2268.00 - 2282.00	Drilled	0.025	0.0134	0.0011	0.0002	0.0003	0.0010	0.0006	1.240

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
2241.21	18.18	93.36	2200.83	70.83	10.2	70.8	283.1	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 16 Dec 2010
Depth:	2308 mMDRT / 2263.7 mTVDRT
Progress Since Midnight (m):	26
Status @ 0600hrs:	Drilling 12¼" hole
Formation:	Basement
Lithology:	Metamorphosed Claystone.
ROP:	Avg 14.4 m/hr (1.9 - 14.4 m/hr)
Gas:	TG 0.0234%; C1 0.0124%; C2 0.0009%; C3 0.0003%; iC4 0.0003%; nC4 0.0009%; C5 0.0006%; CO2 0.96%

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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Australian Drilling Associates Pty Ltd

Silvereye-1

Date : 16 Dec 2010 | **Geology Report Number : 10** | (associated DDR # 21)

Well Details

Depth MDBRT:	2317.0m	Rig:	Kan Tan IV	Date:	16 Dec 2010
Depth TVDBRT:	2272.0m	Progress:	35.0m	Report Start:	0000
Depth TVDSS:	2246.0m	RTE agl:		Report End:	2400
Hole Size:	12.250in	GLE amsl:	0 (m)	Days On Location:	19.83
Hole Size Carbide:		Last Csg Size:	13.375in	Days since Spud:	14.00
Water Depth (LAT)	54.0m	Last Csg Shoe:	1102.8m		
RT-ASL(LAT)	26.0m	F.I.T. / L.O.T.:	15.95ppg /		

Operations Summary

24hr Summary:	Drilled 12¼" hole from 2282m to 2317m. Circulated bottoms up. Flow checked well and POOH from 2317m to BHA, pumping out through tight sections. Pulled BHA. Laid out jars and 2 x DCs. Laid out LWD/MWD tools. Commenced picking up 2 7/8" cement stinger from deck.
Forward Plan:	QC logs, complete reporting, pack and manifest samples/unused isotubes for backloading to Geoservices base.

General Comments

00:00 TO 24:00 Hrs ON 16 Dec 2010

Operational Comments	Sperry LWD bit to sensor distances: Survey 3.36 m; Resistivity 6.89 m; Gamma 10.01 m; Pressure 11.60 m; Density 18.77 m; Neutron 24.03 m; Sonic 29.27 m.
Operational Comments	Samples for Silvereye-1 will be backloaded to Geoservices base for drying / splitting prior to final submission to Origin / Mineral Resources / Geoscience Australia. Unused isotubes and isojars will be backloaded as part of the same consignment for forwarding to Origin, Brisbane.
Operational Comments	Wellsite geologists demobilised off Kan Tan IV today. This is the final DGR for Silvereye-1.

WBM Data

Mud Type:	KCL/PHPA/CLAYSEAL PL	Flowline Temp:		Cl:	41000mg/l	Low Gravity Solids:	
		MWD Circ Temp:		Hard/Ca:	360mg/l	High Gravity Solids:	
Sample From:	Pit#2	Glycol CP Temp:		MBT:	15	Solids (corrected):	
Time:	2200	Glycol:		PM:	0.1	H2O:	89%
Weight:	10.10ppg	Nitrates:		PF:	0.05	Oil:	0%
ECD TD:		Sulphites:		MF:	0.7	Sand:	.5 %
ECD Shoe:		API FL:	5.0cc/30min	pH:	9	Barite:	
ECD Cuttings:		API Cake:	1/32nd"	PHPA Excess:			
KCl Equiv:	8%						

Viscosity	44sec/qt
PV	12cp
YP	26lb/100ft²
Gels 10s	9
Gels 10m	12
Fann 003	9
Fann 006	10
Fann 100	25
Fann 200	32
Fann 300	38
Fann 600	50

Shakers, Volumes and Losses Data

Engineer :

Available	**2221.0bbl**	**Losses**	**567.6bbl**
Active	745.0bbl	Downhole	
Mixing		Surf+ Equip	22.6bbl
Hole	1185.0bbl	Dumped	545.0bbl
Slug		De-Gasser	
Reserve	291.0bbl	De-Sander	
Kill		De-Silter	
		Centrifuge	

Equip.	Descr.	Mesh Size	Hours
Shaker 1	VSM-300	20 20 20 120 120 120 120	15
Shaker 1	VSM-300	20 20 20 120 120 120 120	15
Shaker 1	VSM-300	20 20 20 120 120 120 120	15
Shaker 1	VSM-300	20 20 20 120 120 120 120	155

Comment

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	80.00	54.00	80.00	54.00	0.00	893.00	Seabed tag depth.
Angahook Formation	973.00	947.00	973.00	947.00	0.00	422.00	Not observed.
Demons Bluff	1384.00	1353.00	1395.00	1362.30	+9.30	91.00	Baseline resistivity shift.

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Formation Tops

Formation							
Eastern View Coal Measures	1554.00	1516.00	1486.00	1449.70	-66.30	488.00	Baseline resistivity shift, sand in cuttings.
2973 Seismic Marker	1982.00	1926.00	1974.00	1918.30	-7.70	112.00	Baseline resistivity shift.
Top Cretaceous	2081.00	2020.00	2086.00	2025.90	+5.90	98.00	Resistivity, neutron, density, sonic.
Upper Cretaceous Unconformity	2268.00	2199.00	2184.00	2120.50	-78.50	84.00	Gamma, resistivity.
Basement	2338.00	2267.00	2268.00	2201.00	-66.00	0.00	Cuttings.

Lithology Summary

Interval MDBRT (m) From To	ROP (m/hr)	Lithology
2282.00 - 2295.00	Min:3 Avg:8 Max:12	QUARTZITE: QUARTZITE (15 increasing to 85%): translucent, milky white, trace clear, recrystallised quartz, angular, granular fragments, trace hard coarsely crystalline fragments, non calcareous, pyrite is the only visible accessory, trace white, highly calcareous rockflour. VOLCANICS / ALTERED CLAYSTONE (85 decreasing to 15%): as above, inferred uphole contamination.
Interval MDBRT (m) From To	**ROP (m/hr)**	**Lithology**
2295.00 - 2317.00	Min:2 Avg:5 Max:14	ALTERED VOLCANICS / THERMALLY ALTERED CLAYSTONE (60 increasing to 100%): greyish black to olive black, moderately hard to hard, blocky, splintery in parts. non calcareous, trace to abundant disseminated pyrite, trace cubic pyrite, trace nodular pyrite, locally abundant biotite, trace quartz veining. Dry sample appears variably finely crystalline (volcanic?) with rare acicular black phenocrysts; sucrosic and glassy in parts (altered claystone). Inferred dominantly thermally altered claystone. Trace hard volcanics as above, rarely coarsely crystalline, inferred uphole contamination. QUARTZITE (40 decreasing to 0%): as above, inferred uphole contamination.

Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
2282.00 - 2317.00	Drilled	0.024	0.0117	0.0010	0.0003	0.0003	0.0009	0.0008	1.000

Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
2283.36	20.17	100.27	2240.65	69.15	7.2	69.2	296.8	Sperry HOC tool

06:00 Hrs Update

Time:	06:00 Hrs on 17 Dec 2010
Depth:	2317 mMDRT / 2272.0 mTVDRT
Progress Since Midnight (m):	0
Status @ 0600hrs:	Circulating bottoms up
Formation:	Basement
Lithology:	No new lithology data.
ROP:	
Gas:	

Wellsite Geologist(s)

(Days) - Nick Jackson (Nights) - Mel Bosman

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APPENDIX 12: MUD ENGINEERS REPORTS

HALLIBURTON

BAROID

BAROID FLUID SERVICES RECAP

ADA / ORIGIN ENERGY RESOURCES LTD
KanTan IV
BASS BASIN, TASMANIA, AUSTRALIA

Silvereye-1

Prepared by: Steve Welch
Amit Godara
James Munford

Date: 23 Dec, 2010

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9. DAILY MUD REPORTS

1. WELL SUMMARY

1.1 Well Data

Well Name	:	Silvereye-1
Operator	:	ADA / Origin Energy Resources Ltd
Well Type	:	Offshore Development
Bottom Hole Temperature	:	88 °C
Maximum Inclination	:	20.17 deg
Location	:	Bass Basin
Contractor/Rig	:	KanTan IV
Rig On Location	:	26/11/2010
Baroid On Location	:	26/11/2010
Drill Out Date (Spud)	:	03/12/2010
RT to Mud line	:	80 m
Total Depth	:	2317 m (2272 TVDRT)
Date TD Reached	:	16/12/2010
Total Days Actual Drilling	:	12 Days
Date Released	:	22/12/2010
Total Days on Well	:	26.15 Days
Drilling Cuttings Volume	:	1,776 bbl

Formation Tops

Formation	MDRT (m)	TVDSS (m)	Actual (m MDRT)	Actual (m TVDSS)
Torquay Group	80	54	80	54
Angahook	973	947	973	947
Demons Bluff Fm	1384	1353	1395	1362.3
Top EVCM	1554	1516	1486	1449.7
Top Cretaceous	2081	2020	2086	2025.9
Basement	2338	2267	2184	2120.1
TD	2400	2343	2317	2272

1.3 Casing Program

30”	Conductor	@	137.4 m MD / 137.4 m TVD
13 ⅜”	Intermediate Casing	@	1102.9 m MD / 1102.7 m TVD
12 ¼”	Open Hole	@	2317 m MD / 2272 m TVD

1.4 Personnel

Drilling Supervisors	:	Paul Jenkins	Paul Leathem
Baroid Field Service Reps.	:	Stephen Welch	James Munford
	:	Amit Godara	

2. COST SUMMARY

2.1 Drilling Fluid Costs

	Drilling Fluid	Hole Size	MD From	MD To	Cost AUD $
1.	Seawater / Hi-Vis Gel Sweeps - Pad Mud / Kill Mud	36"	80 m	141 m	19,594.16
2.	Seawater / Hi-Vis Gel Sweeps - Pad Mud / Kill Mud	17 ½"	141 m	1112 m	56,223.66
3.	KCl / PHPA / CLAYSEAL PLUS	12 ¼"	1112 m	2317 m	279,638.44
Total Mud Materials used for Drilling				AUD $	355,456.26
Mud Materials used for Cementing				AUD $	3,615.36
Contingency Chemicals i.e. spotting fluids				AUD $	0.00
Cost of Shaker Screens				AUD $	24,179.76
Mud Materials used for Completion				AUD $	0.00
Mud Materials lost or damaged				AUD $	2,186.91
				Total Mud Materials Cost AUD $	385,438.29

2.2 Engineering Costs

Service Representatives	From (date)	To (date)	Days
Stephen Welch	03/12/2010	22/12/2010	19.5 ●
James Munford	10/12/2010	22/12/2010	13.5 ●
Amit Godara	26/11/2010	09/12/2010	14
Total Days:			47
Service Cost @ AUD $1,540/day		AUD $	72,380.00
		Total Actual Cost of Materials & Engineering AUD $:	457,818.29
		Predicted Cost of Materials & Engineering AUD $:	432,624.48
		Variance :	5.5 % (higher)

● Note: Rig Move to Craigow-1 occurred on 22/12/2010 around midday therefore engineers charges for that day were divided evenly between Silvereye-1 and Craigow-1.

3. PERFORMANCE SUMMARY

3.1 Comments

Silvereye-1 is a deviated subsea exploration well and was drilled with Maersk semi-submersible rig Kan Tan IV.

3.2 Performance Indicators

Interval 1. (80 m – 141 m) – 36" Interval	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	60	61	Yes
• Volume Built, bbl	710	2411	No
• Mud Cost / bbl, AUD$	33.34	8.13	No
• Interval Mud Cost, AUD$	23,670.10	19,594.16	Yes

Interval 2. (141 m – 1112 m) – 17 ½" Interval	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	960	971	Yes
• Volume Built, bbl	6305	5231	No
• Mud Cost / bbl, AUD$	6.41	10.75	No
• Interval Mud Cost, AUD$	40,407.03	56,223.66	No

Interval 3. (1112 m – 2317 m) – 12 ¼" Interval	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	1,300	1205	Yes
• Volume Built, bbl	3,214	2475	No
• Dilution Rate, bbl/m	0.5	0.43	Yes
• Consumption Rate, bbl/m	1.9	1.9	Yes
• Mud Cost / bbl, AUD$	72.31	112.98	No
• Mud Cost / m, AUD$	178.79	232.06	No
• Interval Mud Cost, AUD$	232,435.31*	279,638.44*	No

*** Cost of shaker screens not included**

3.3 Explanation of Non-Conformance

- **Interval 1**

In interval 1 the cost was slightly lower than expected. This was due to a large portion of the drilling fluid from Interval 1 being carried over to Interval 2.

- **Interval 2**

The volume built in Interval 2 was much less than anticipated for the drilling of that interval. For this interval the 500 bbl of 11ppg Kill Mud had to be rebuilt as it was utilized in Interval 1 as a Pad Mud.

- **Interval 3**

The volume built for this interval was almost 23% less than programmed. This was due to the efficiency of the shaker screen management and solids control. Products depleted in the mud while drilling as expected and were replenished as required. Due to lower volume built this lead to a larger cost per barrel but a lower number of barrels required to drill the interval.
33 barrels of 21% KCL brine were dumped during pit cleaning due to spatial constraints on the rig at the time.

4. INTERVAL - 1

4.1 SUMMARY

36" Hole From 80 m To 141.0 m In 1 Drilling Day

Drilling Fluid Seawater and Bentonite Viscous Sweeps
Formations Torquay Group

The 36" interval was drilled riser-less, using seawater and unweighted hi-vis flocculated spud mud sweeps. The spud mud used for sweeps was built from pre-hydrated bentonite at 30-35 ppb. While drilling 50 barrel sweeps were pumped mid stand and 75 barrel PHB sweeps pumped around the BHA before connections.

All mud returns were to the seabed. As a precaution against potential shallow gas, 450 barrels of 11.0 ppg Kill Mud was prepared and kept on standby.

During a connection a stand of drillpipe was cross threaded leaving the bit without movement for several hours. Finally the problem was resolved however the BHA had become stuck at 123 mMDRT. The bit was worked free and a trip was made back to seabed.
At the interval TD of 141 m, the hole was swept with 200 barrels of PHB then the 11 ppg Kill Mud was spotted in the hole as a Pad Mud prior to pulling out of hole to run 30" casing.

The 30" conductor was landed at 137.4 m with no problems. It was then cemented as per program while the ROV monitored cement returns at seabed.

Properties	**Programmed**		**Actual (Typical Drilling)**		
	Min	**Max**	**Min**	**Max**	**Conformance**
Mud Weight, sg	8.6	8.8	8.7	8.7	Yes
Viscosity, sec/qt	100		200	300	Yes
pH	9	10	9.4	9.6	Yes

Explanation of Non-Conformance

- All properties conformed to programme requirements.

Maintenance

- The Bentonite used was prehydrated in drill water at a concentration of 30-35 ppb after pretreatment using soda ash. Sweeps were prepared by cutting back PHB to 25 ppb Bentonite and flocculating with caustic soda. The Kill Mud was prepared using PHB at 25 ppb Bentonite, followed by weighting up using Barite to 11 ppg. PAD mud was mixed by blending PHB Seawater and 11 ppg Kill Mud, the Kill mud was remixed after section TD.

INTERVAL - 2

5.0 SUMMARY

17 ½" Hole From 141 m To 1112 m In 2 Drilling Days

Drilling Fluid Seawater and Viscous Bentonite sweeps
Formations Torquay Group

A 17 ½" bit and BHA were run in and tagged the top of cement 131 m. The cement and shoe track were drilled out using seawater and a 150 barrel PHB sweep was pumped before drilling ahead riser-less with returns going to the seabed. The spud mud used for sweeps was built from pre-hydrated Bentonite at 35 ppb.

While drilling 50 barrel Guar Gum Hi-Vis sweeps were pumped every half stand and 50 barrel Hi-Vis sweeps were spotted around BHA before connections. As a precaution against potential shallow gas, 450 barrels of 11.0 ppg Kill Mud was prepared and kept on standby.

At TD prior to POOH, 200 barrels of PHB was swept around followed by spotting 1200 barrels of 9.5 ppg PAD Mud at 1112 m. The trip was then made out of the hole for 13 ⅜" Casing.

The 13 ⅜" casing shoe was run to 1102.9 m and cemented as per program.

Properties	Programmed		Actual		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg	8.6	8.8	8.5	8.8	Yes
Viscosity, sec/qt	100		200	300	Yes
pH	9	10	9.5	9.5	Yes

Explanation of Non-Conformance

- All properties conformed to programme requirements.

Maintenance

- The Bentonite used was prehydrated in drill water at a concentration of 30 - 35 ppb after pretreatment using soda ash. The Prehydrated gel was used for sweeping the hole as required along with the Guar Gum Hi-Vis Sweeps. Kill Mud was prepared using PHB at 25 ppb Bentonite, followed by weighting up using Barite to 11.0 ppg. PAD mud was mixed by blending PHB Seawater and 11.0 ppg Kill Mud to make 9.5 ppg PAD Mud.

5.1 EVALUATION

Comments

The 36" and 17 ½" intervals were drilled and cased off without incident or issues. Availability of drillwater was good. Ample time was available which ensured optimum yield of the prehydrated Bentonite.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem There was no evidence of any hole problems for both 36" and 17 ½" intervals
   Cause No Problems
   Action No Problems

Drilling Fluid

1) Problem No Problems
   Cause No Problems
   Action No Problems

Solids Control and Mud Mixing Equipment

1) Problem No Problems
   Cause No Problems
   Action No Problems

2) Problem No Problems
   Cause No Problems
   Action No Problems

5.2 RECOMMENDATIONS FOR IMPROVEMENT

Drilling Fluid

- No changes are required or recommended to the programme for drilling top hole.

Solids Control and Mud Mixing Equipment

- None

Other issues

- None.

INTERVAL - 3

6.0 SUMMARY

12 ¼" Hole From 1112 m To 2317 m In 8 Days

Drilling Fluid KCl/ PHPA/Polymer/CLAYSEAL PLUS
Formations Angahook / Demons Bluff / Basement

At 1116 m the hole was displaced to 10.0 ppg 8 % KCl/Polymer mud. This mud was pre-treated with 0.2 ppb of Sodium Bicarbonate and 0.1 ppb of Citric Acid to treat out the cement contamination. Once the pH was below 9.5, additions of EZ-MUD along with additions of CLAYSEAL-PLUS to the required concentration of 3% were commenced.

While drilling ahead, additions of DEXTRID-LTE and PAC-L were required to stay within the HTHP and API fluid-loss requirements specified in the mud programme. As the mud heated up, more additions of drill water were needed to mitigate dehydration and help control the mud weight. They yield point was monitored and controlled with BARAZAN-D PLUS.

At 1250 m, 10 ppb of BARACARB 150 was added to the active system in anticipation of the Top EVCM formation at 1555 m, this was to mitigate any seepage losses that were anticipated in the sandy intervals.

An MWD failure occurred at 1812 m. The hole was circulated clean and a trip out initiated. Tight spots were seen during the trip and back reaming was necessary. The tool was changed out and run back to bottom with no problems and continued to drill ahead with no mud issues to 2215m, where the penetration rate dramatically reduced.

The hole was again circulated clean prior to commencing a trip out. When at surface it was observed that the PDC bit was worn down and was changed out with a tri-cone bit. The Trip back to bottom was trouble free and drilling continued through to a final TD of 2317 m. The hole was circulated clean, before pumping a slug and POOH.

Thereafter the well was logged and the rig prepared for P&A. In all, three (3) cement plugs were placed in the hole. The shoe plug had to be re-set as when the pipe was run in the hole to tag the plug it was found to be significantly lower than expected. As a result of this future 'cement support' Hi-Vis pills will have a yield point (YP) of a least 70, be at least the same volume as that of the cement with an excess of approximately 30%.

Mud Property Specifications

Properties	Programmed		Actual (Typical Drilling)		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg	9.5	10.0	10	10.15	YES
Tau-0, lb/100 ft^2	5	8	3.3	6.4	YES
API Filtrate, ml/30 min		6	4.1	6	YES
HPHT Filtrate @ 250 ^{o}F, ml		12	9.2	12	YES
KCl Content, % by wt soln	6	8	7.5	8	YES
PHPA Content, ppb	1	1.5	1.5	1.5	YES
pH	8.5	9.5	8.5	9.7	YES
Low Gravity Solids, % by vol.		5	2.55	6.45	YES
CLAYSEAL PLUS, % by vol.	2	3	3.5	3.5	YES

Explanation of Non-Conformance

Only one Non-Conformance occurred, however this was requested by the Company Man. In the mud program the 12 ¼" interval was supposed to be initiated with a 9.5 ppg KCL/Polymer fluid, however it was requested that the mud weight be 10.0 ppg at the time of drill-out.

Maintenance

- An initial volume of 1,558 barrels of new KCl/Polymer mud was mixed and weighted up with Barite to 10.0 ppg.
- The hole was displaced to new KCl/Polymer mud at 1,116 mMDRT. The system was also pretreated with 0.2 ppb of Sodium Bicarbonate and 0.1 Citric Acid.
- Cement was drilled from 1108 m to 1117 m. At 1117 m a PIT test was performed to 16.0 ppg EMW.
- Once the pH was under control and lower than a 10, additions of EZ MUD to the system at a concentration of 1.5 ppb were carried out.
- The CLAYSEAL PLUS was added directly to the active system at a concentration of 3 % by volume. CLAYSEAL PLUS provides additional shale inhibition, filtrate reduction (through the formation of micro-emulsions) and lubricity.
- As the primary indicator of hole cleaning, the 6 rpm reading was closely monitored and maintained in the 10-15 lb/100ft^2 range with additions of BARAZAN D PLUS.

Solids Control Equipment

The cost of the shakers screens for Silvereye-1 was AUD 24,179.76 compared with the AUD 59,051.20 estimated in the drilling fluid program. This is due to the durability of the XTRAFLOW screens with TECHMESH leading to longer screen life overall.

- The four shale shakers were initially both dressed with used 20 mesh scalper screens and 80 mesh for the bottom screens.
- At 1,117 m the required active concentration of PHPA was achieved allowing finer shaker screens to be used as the product sheared.
- With the initial aggressive drill rate the solids slowly increased the mud weight and the mesh size was increased to API 120 mesh by the time TD of 2317 mMDRT was realized.

6.1 EVALUATION

Comments

- The hole section was successfully drilled from 80 m to 2317 m without any mud related problems, however some tight spots were observed while pulling out of the hole to change the MWD.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem Observed tight spots while pulling out of the hole
   Cause Not enough circulating time to clean hole.
   Action Pumping and back reaming out of the hole was required.

Drilling Fluid

1) Problem None.
   Cause
   Action

Solids Control and Mud Mixing Equipment

1) Problem None.
   Cause
   Action

6.2 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- The hole was in good condition, but did have a few tight spots while pulling out to change the MWD tool.

Drilling Fluid

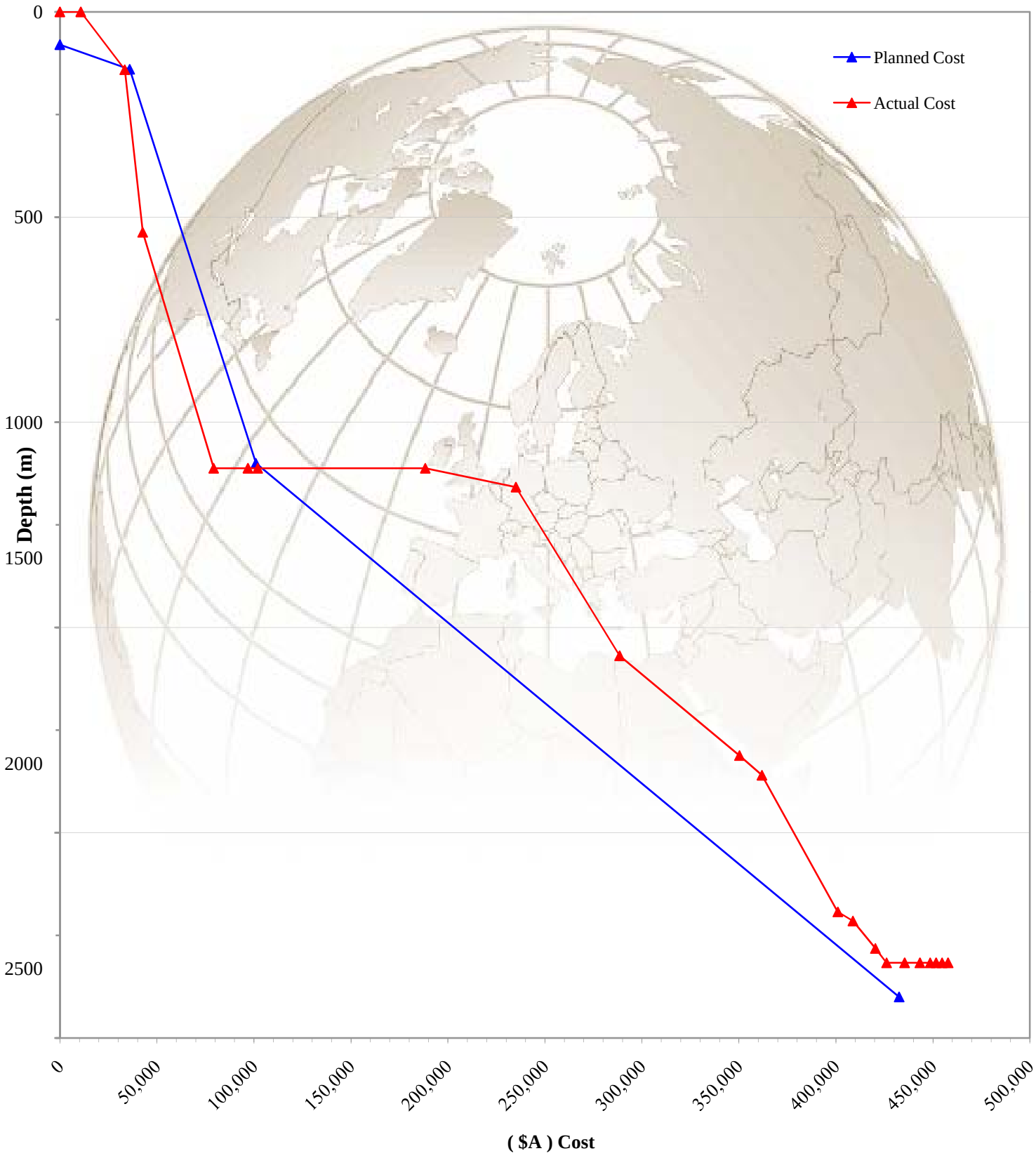
- There is a possibility that raising the KCL percentage to 9 or 10% may help reduce the tight hole seen on while tripping out. Some cuttings were also observed while back reaming.

Solids Control and Mud Mixing Equipment

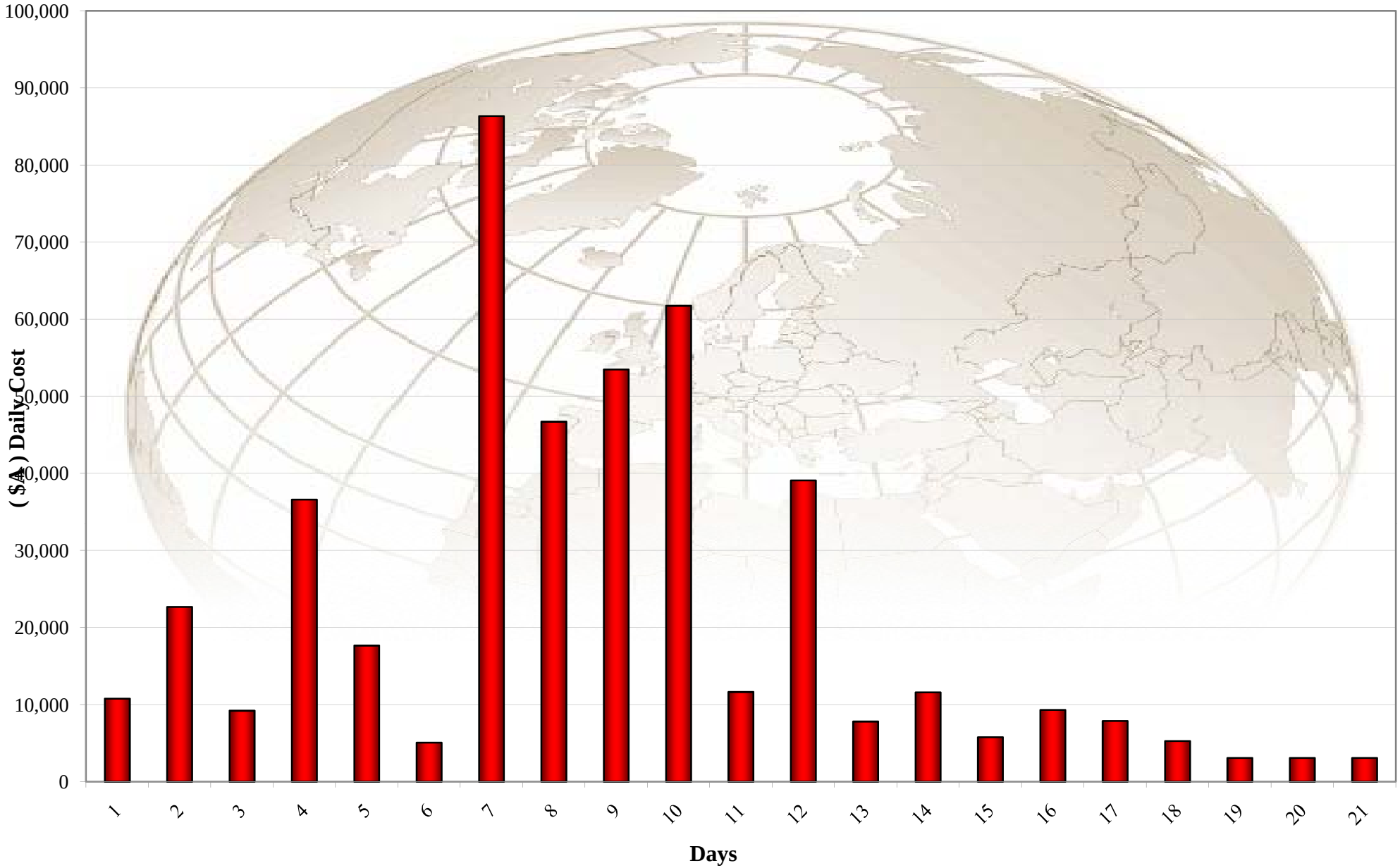
- None.

GRAPHS

Depth vs Cost



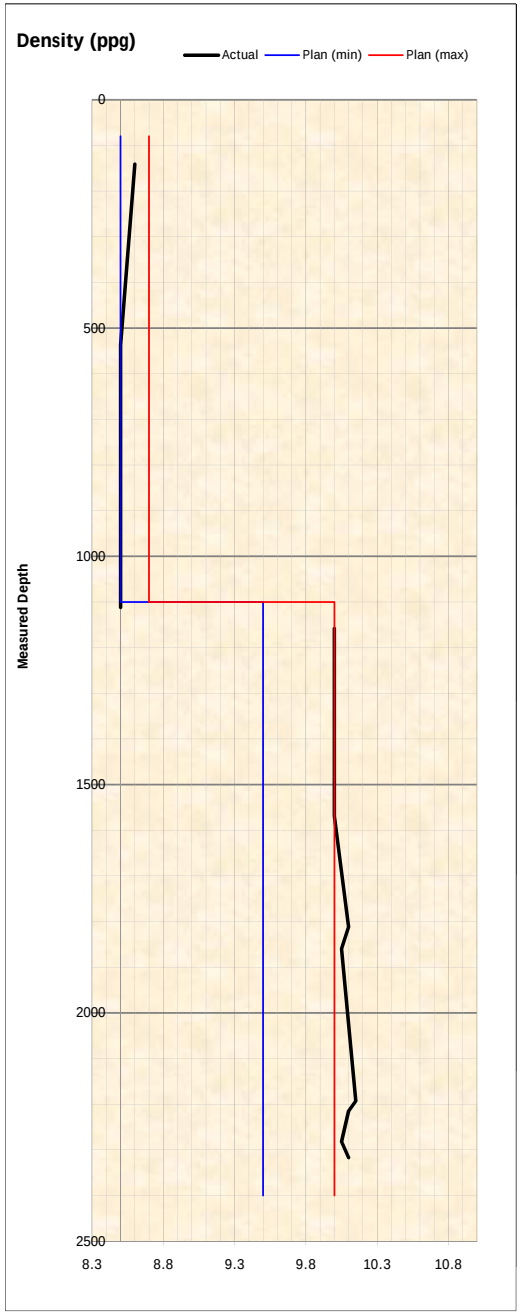
Operator Origin Energy Resources Ltd
Well Name Silvereye-1

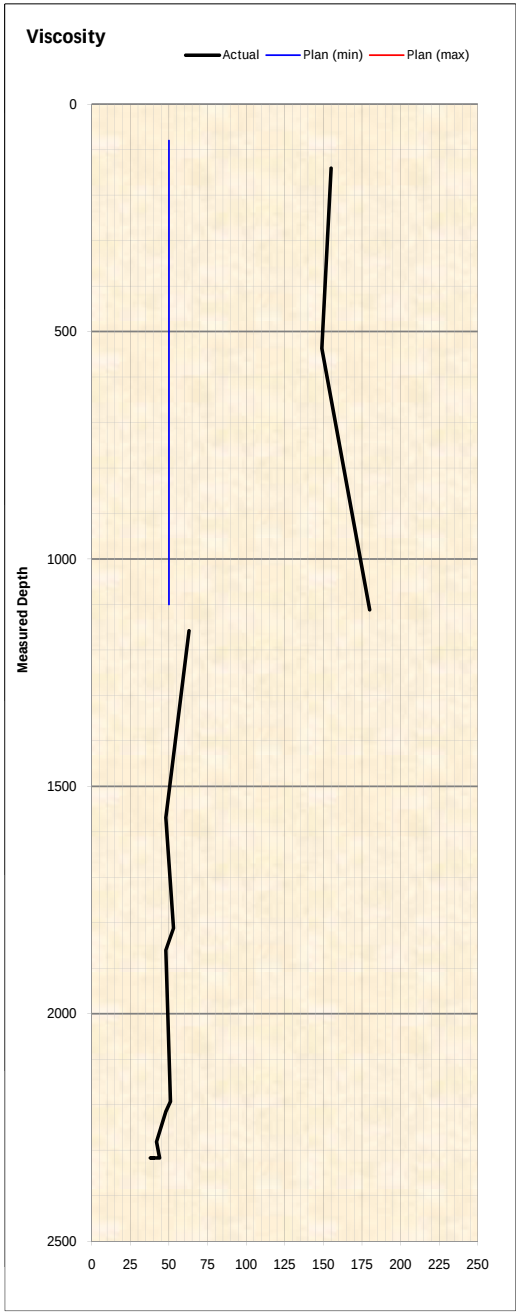


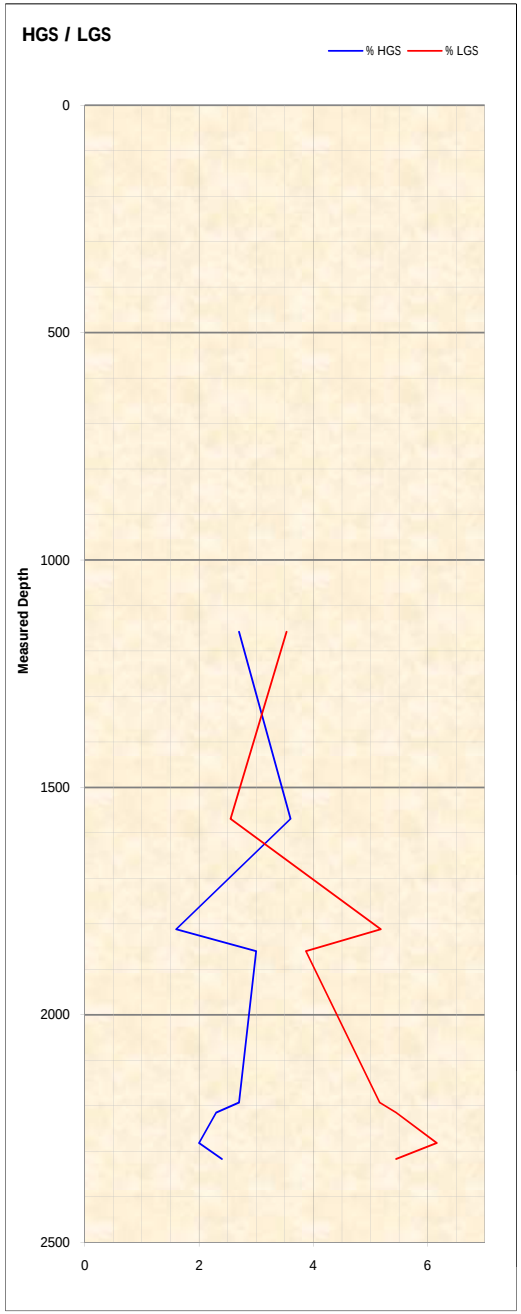
Origin Energy Resources Ltd

Silvereye-1

39o 54' 19.8504"S Lat X 145o 3' 32.5701"E Long







HALLIBURTON
Fluid Systems

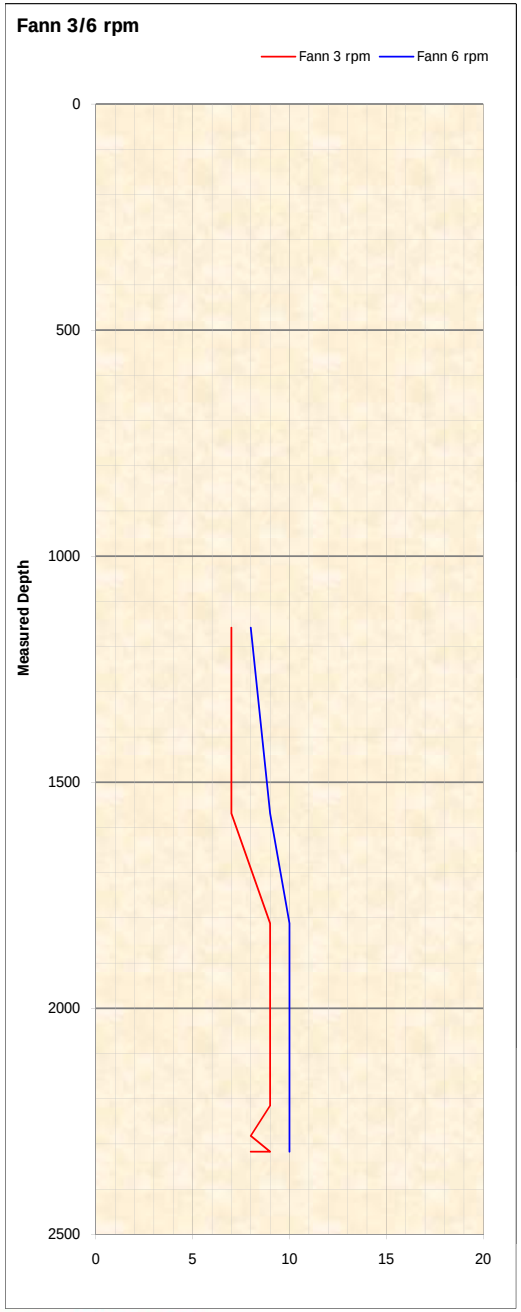
Physical Properties

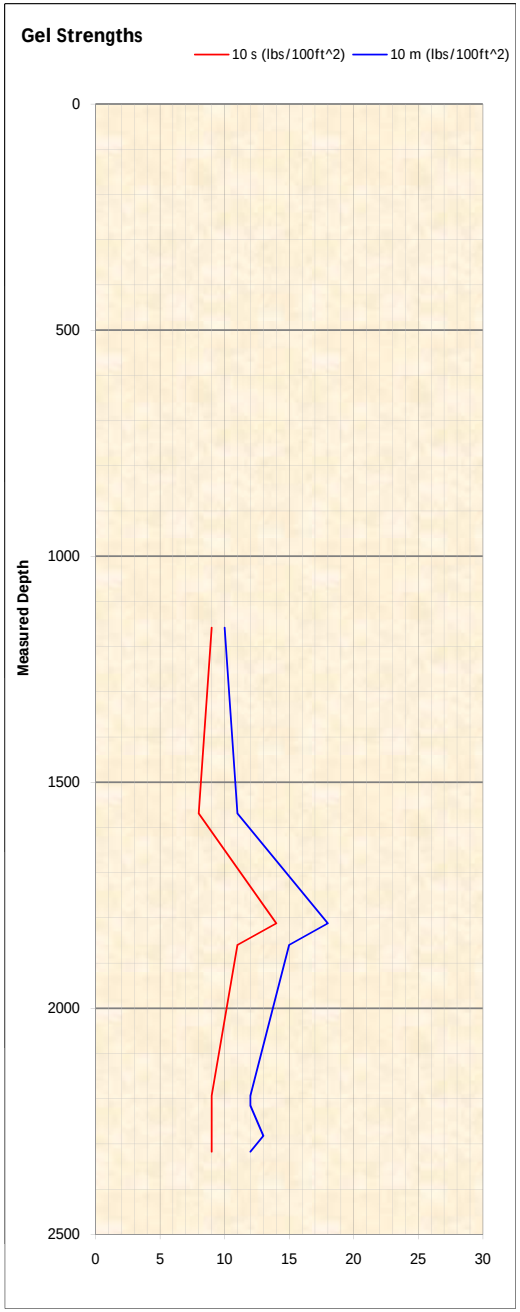
Baroid Fluid Services

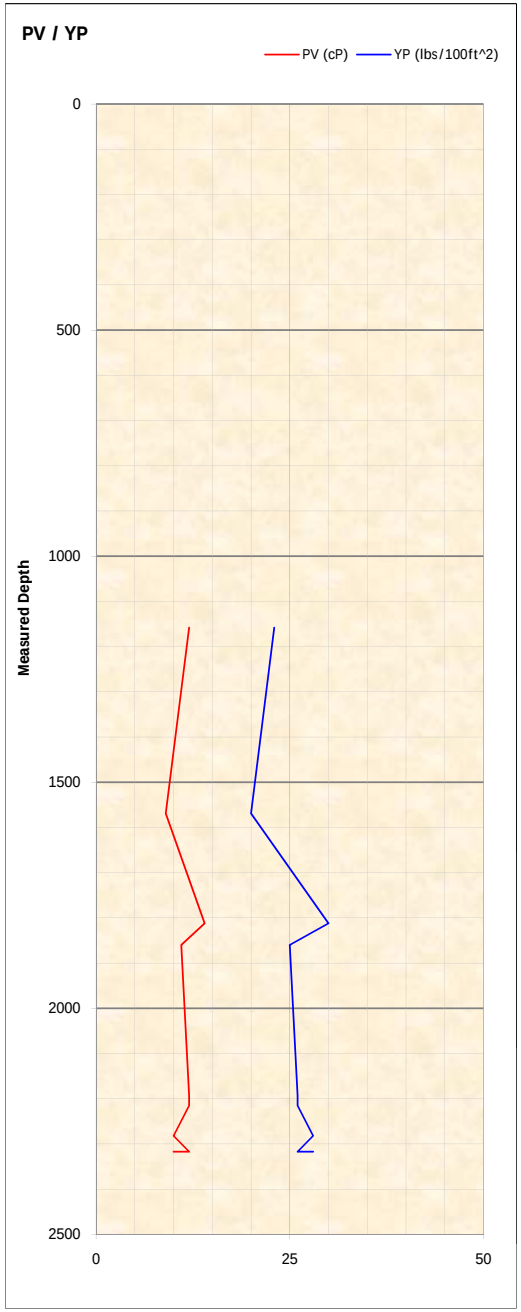
Origin Energy Resources Ltd

Silvereye-1

39o 54' 19.8504"S Lat X 145o 3' 32.5701"E Long







HALLIBURTON
Fluid Systems

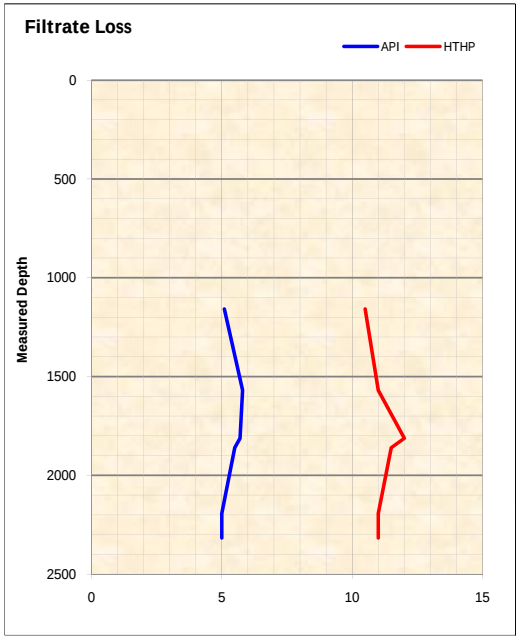
Physical Properties

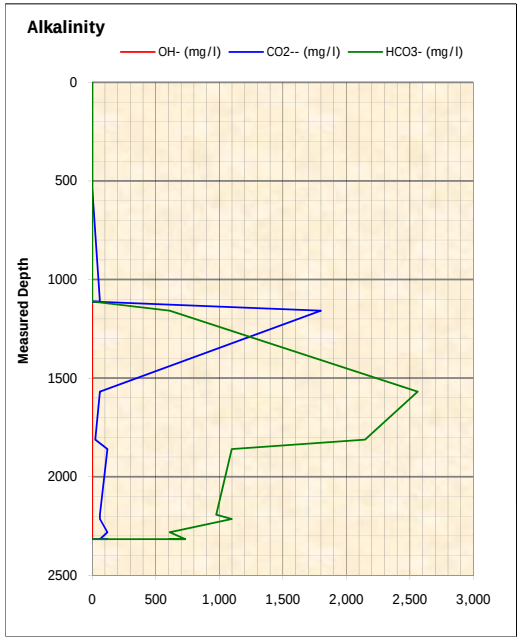
Baroid Fluid Services

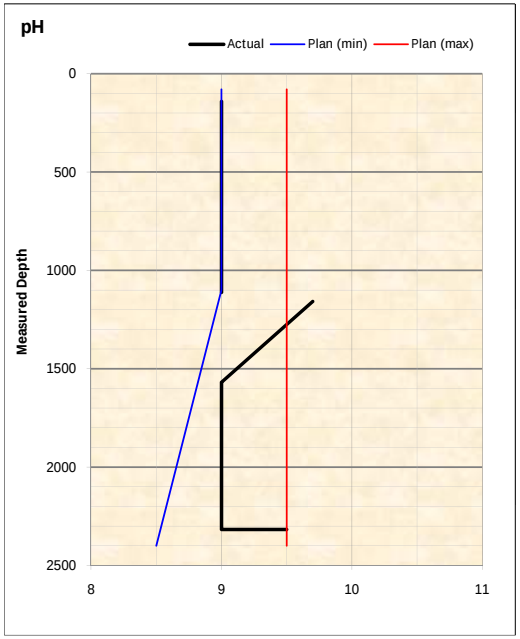
Origin Energy Resources Ltd

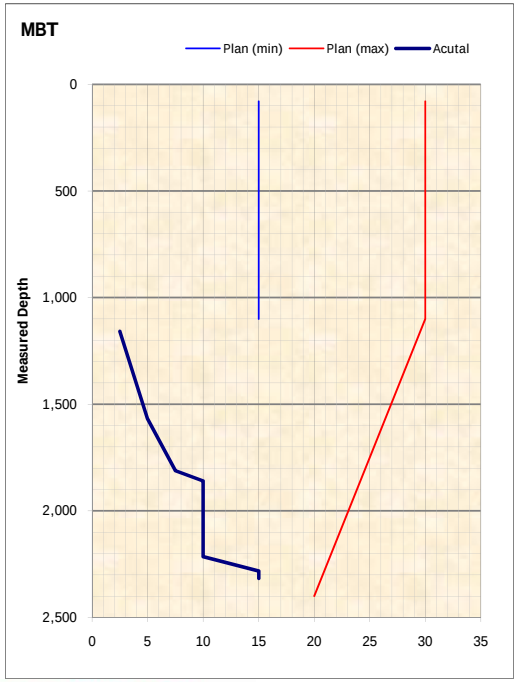
Silvereye-1

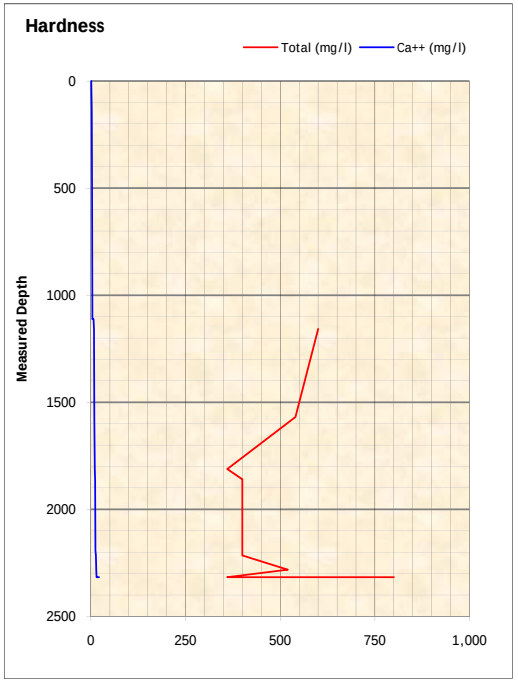
39o 54' 19.8504"S Lat X 145o 3' 32.5701"E Long

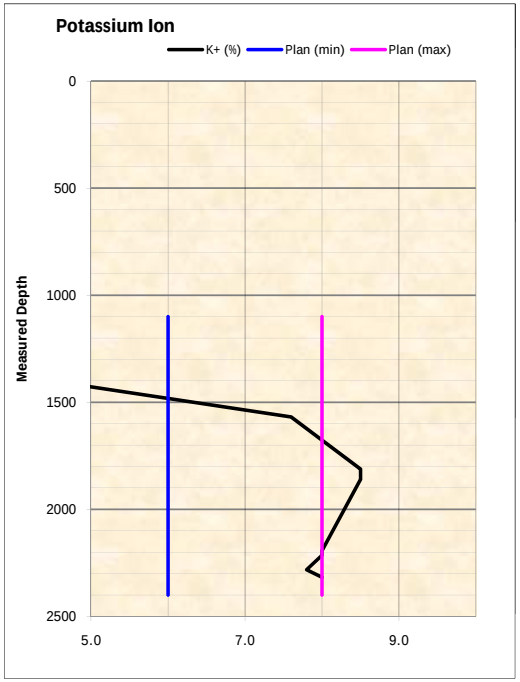












HALLIBURTON
Fluid Systems

WBM Properties

Baroid Fluid Services

POSTWELL AUDIT

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Well Summary Report

Well Data

Spud Date		29/11/2010	Fluids/Products: Drilling Cost	$A	355,456.26
TD Date		16/12/2010	Fluids/Products: Completion Cost	$A	0.00
Project		1001	Solids Control/Waste Management Cost	$A	24,179.76
Days on Well		21	Fluids/Products: Cementing Cost	$A	3,615.36
From Date		02/12/2010	Prod Lost/Damaged Cost	$A	2,186.91
To Date		22/12/2010	Engineer Services Cost	$A	72,380.00
Drilling Days		12	Equipment Cost	$A	0.00
Rotating / Drilling Hours		132.0/120.5	Transport/Packaging	$A	0.00
Average ROP	ft/hr	60.9	Other Cost	$A	0.00
Maximum Density	ppg	10.15	Total Well Cost	$A	457,818.29
Total Measured Depth	m	2,317	Planned Cost	$A	425,579.56
True Vertical Depth	m	2,272	Fluid Cost Per Fluid Volume	$A/bbl	31.71
Distance Drilled	m	2,237	Fluid Cost Per Length Drilled	$A/m	158.90
Maximum Deviation	deg	20.17	Fluid Cost/Vol of Hole Drilled	$A/bbl	200.14
Max. Horz. Displacement	m	0	Total Additions/Hole Drilled	bbl/bbl	6.311
Bottom Hole Temp	Deg C	88	Total Additions/Length Drilled	bbl/m	5.011

Casing Design

Description	Set Date & Time	Top MD m	Top TVD m	End MD m	End TVD m	CSG OD in	CSG ID in	Max. Hole Size in	Hole MD m	Hole TVD m
30 X-52 312.0	03/12/2010 18:30	80	80	138	138	30.000	28.000	36.000	138	138
13.375 k55 68.0	07/12/2010 5:00	80	80	1,108	1,108	13.375	12.415	17.500	1,112	1,112

Fluid Program

Int #	Fluid Type	Interval Days	BHT Deg C	Max. Dens ppg	Whole fluid + Mix products	Other material charges	Other charges	Total Interval Cost $A		
								Plan	Actual	Variance
1		2		8.60			13,860.00	35,990.00	13,860.00	-22,130.00
2	Seawater PHG Kill Mud 9.5 ppg PAD MUD	4		9.50	75,817.82		12,320.00	58,063.05	88,137.82	30,074.77
3	Seawater KCL/PHPA/CLAYSEAL	15	88	10.15	279,638.44	29,982.03	46,200.00	331,526.51	355,820.47	24,293.96

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Well Summary Report

Brine									
Total Well Cost $A				**355,456.26**	**29,982.03**	**72,380.00**	**425,579.56**	**457,818.29**	**32,238.73**

Well	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Net Well Cost Breakdown

Cost Breakdown I $A	Interval 01	Interval 02	Interval 03	Total
Fluid/Product: Drilling	19,594.16	56,223.66	279,638.44	355,456.26
Fluid/Product: Comp/Filtration				
Solids Control/Waste Management Cost			24,179.76	24,179.76
Fluids/Products: Cementing Cost			3,615.36	3,615.36
Engineering Services	13,860.00	12,320.00	46,200.00	72,380.00
Fluid/Product: Lost Damage			2,186.91	2,186.91
Other Cost				
Equipment Cost				
Transport/Packaging Cost				
Total Cost	33,454.16	68,543.66	355,820.47	457,818.29

Cost Breakdown II $A	Interval 01	Interval 02	Interval 03	Total
Total Products Cost	19,594.16	56,223.66	309,620.47	385,438.29
Total Fluids Cost				
Total Charges Cost	13,860.00	12,320.00	46,200.00	72,380.00
Allocated To / From Other Interval	0.00			
Total Cost	33,454.16	68,543.66	355,820.47	457,818.29
Planned Cost	35,990.00	58,063.05	331,526.51	425,579.56
Variance	-2,535.84	10,480.61	24,293.96	32,238.73

Volume Breakdown bbl	Interval 01	Interval 02	Interval 03	Total
Total Base Fluids Addition				
Total Chemical Addition	54.6	62.4	173.1	290.1
Total Barite Addition	28.5	67.4	154.4	250.3
Total Water Addition	2,328.1	5,101.2	2,147.8	9,577.1
Total Fluid Built	2,411.1	5,231.1	2,475.2	10,117.4
Total Fluid Received			1,091.3	1,091.3
Total Influx Addition				
Not Used In Interval	-1,430.0			
Total Fluid Volume	981.1	6,661.1	4,135.4	11,208.7

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Summary

Interval #	**1**	**Max Bit Size: 36.000 in**	**Hole Size Avg/Max**	**36.000 / 36.000 in**

Interval Start Date		02/12/2010	Planned Cost	$A	35,990.00
Interval End Date		03/12/2010	Total Interval Cost	$A	13,860.00
Interval TD Date		03/12/2010	Program Variance	$A	-22,130.00
Drilling Days		2.00	Other material charges		
Rotating/Hours		7.00 / 7.00	Total Fluids Cost		
Interval Top MD/TVD	m	80.0 / 80.0	Total Charges Cost	$A	13,860.00
Interval End MD/TVD	m	141.0 / 141.0	Total Cementing Cost	$A	0.00
Footage	m	61.0	Fluid Cost Per Vol Unit	$A/bbl	0.00
Average ROP	ft/hr	29	Fluid Cost/Hole Drilled	$A/m	0.00
Max Hole Angle	degrees	0.00	Fluid Cost/Vol Drilled	$A/bbl	0.00
Casing Size	in	30.000	Fluid Built	bbl	2,411.1
Casing Shoe MD	m	138.0	Total Additions/Vol Drilled	bbl/bbl	3.89
Casing Length	m	58.0	Total Additions/Hole Drilled	bbl/m	16.08
Bottom Hole Temp			Fluid Loss/Vol Drilled	bbl/bbl	0.00
Max Fluid Density	ppg	8.60	Fluid Loss/Hole Drilled	bbl/m	0.00

Interval Product and Base Fluids Usage and Cost

Product Function / Name	**Drilling Fluid**	**Packaging**	**Quantity Used**	**Product Cost**
Weighting Material				
calcium chloride	No Fluid	25 kg bag	48.000	0.00
			Total	**$A 0.00**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Summary

Interval #	**2**	**Max Bit Size: 17.500 in**	**Hole Size Avg/Max**	**17.500 / 17.500 in**

Interval Start Date		04/12/2010	Planned Cost	$A	58,063.05
Interval End Date		07/12/2010	Total Interval Cost	$A	88,137.82
Interval TD Date		05/12/2010	Program Variance	$A	30,074.77
Drilling Days		2.00	Other material charges		
Rotating/Hours		22.00 / 22.00	Total Fluids Cost	$A	75,817.82
Interval Top MD/TVD	m	141.0 / 141.0	Total Charges Cost	$A	12,320.00
Interval End MD/TVD	m	1,112.0 / 1,112.0	Total Cementing Cost	$A	0.00
Footage	m	971.0	Fluid Cost Per Vol Unit	$A/bbl	11.38
Average ROP	ft/hr	145	Fluid Cost/Hole Drilled	$A/m	78.08
Max Hole Angle	degrees	0.00	Fluid Cost/Vol Drilled	$A/bbl	80.00
Casing Size	in	13.375	Fluid Built	bbl	5,231.1
Casing Shoe MD	m	1,108.0	Total Additions/Vol Drilled	bbl/bbl	7.03
Casing Length	m	1,028.0	Total Additions/Hole Drilled	bbl/m	6.86
Bottom Hole Temp			Fluid Loss/Vol Drilled	bbl/bbl	6.43
Max Fluid Density	ppg	9.50	Fluid Loss/Hole Drilled	bbl/m	6.27

Interval Product and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Packaging	Quantity Used	Product Cost
Weighting Material				
barite	Fresh Water	1 tons bulk	19.000	8,586.48
barite	Seawater	1 tons bulk	45.000	20,336.40
			Total	**$A 28,922.88**
Viscosifier/Suspension Agent				
BARAZAN D PLUS	Fresh Water	25 kg bag	6.000	1,292.04
BARAZAN D PLUS	Seawater	25 kg bag	68.000	14,643.12
BARAZAN D PLUS	Water	25 kg bag	14.000	3,014.76
bentonite	Fresh Water	1000 kg bulk	5.000	2,188.70
bentonite	Water	1000 kg bulk	33.000	14,445.42
guar gum	Seawater	25 kg bag	112.000	9,940.00
			Total	**$A 45,524.04**
Alkalinity Control				
caustic soda	Fresh Water	25 kg can	2.000	108.56
caustic soda	Seawater	25 kg can	4.000	217.12
caustic soda	Water	25 kg can	11.000	597.08
lime	Seawater	25 kg bag	5.000	83.10
soda ash	Fresh Water	25 kg bag	3.000	91.26
soda ash	Water	25 kg bag	9.000	273.78
			Total	**$A 1,370.90**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Summary

Interval #	**3**	**Max Bit Size: 12.25 in**	**Hole Size Avg/Max**	**12.250 / 12.25 in**

Interval Start Date		08/12/2010	Planned Cost	$A	331,526.51
Interval End Date		22/12/2010	Total Interval Cost	$A	355,820.47
Interval TD Date		16/12/2010	Program Variance	$A	24,293.96
Drilling Days		8.00	Other material charges	$A	29,982.03
Rotating/Hours		103.00 / 91.50	Total Fluids Cost	$A	279,638.44
Interval Top MD/TVD	m	1,112.0 / 1,112.0	Total Charges Cost	$A	46,200.00
Interval End MD/TVD	m	2,317.0 / 2,272.2	Total Cementing Cost	$A	3,615.36
Footage	m	1,205.0	Fluid Cost Per Vol Unit	$A/bbl	67.62
Average ROP	ft/hr	43	Fluid Cost/Hole Drilled	$A/m	232.07
Max Hole Angle	degrees	20.17	Fluid Cost/Vol Drilled	$A/bbl	485.22
Casing Size	in	13.375	Fluid Built	bbl	2,475.2
Casing Shoe MD	m	1,108.0	Total Additions/Vol Drilled	bbl/bbl	7.18
Casing Length	m	1,028.0	Total Additions/Hole Drilled	bbl/m	3.43
Bottom Hole Temp	Deg C	88	Fluid Loss/Vol Drilled	bbl/bbl	4.16
Max Fluid Density	ppg	10.15	Fluid Loss/Hole Drilled	bbl/m	1.99

Interval Product and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Packaging	Quantity Used	Product Cost
Bactericides				
ALDACIDE G	CLAYSEAL	25 kg can	8.000	1,384.72
			Total	**$A 1,384.72**
Defoamer				
BARA-DEFOAM W300	CLAYSEAL	25 l can	9.000	1,132.38
			Total	**$A 1,132.38**
Weighting Material				
barite	CLAYSEAL	1 tons bulk	103.000	46,547.76
barite	No Fluid	1 tons bulk	8.000	3,615.36
			Total	**$A 50,163.12**
Viscosifier/Suspension Agent				
BARAZAN D PLUS	CLAYSEAL	25 kg bag	126.000	27,132.84
guar gum	Seawater	25 kg bag	16.000	1,420.00
			Total	**$A 28,552.84**
Corrosion Inhibitor				
OXYGON	CLAYSEAL	50 lb can	8.000	4,576.24
			Total	**$A 4,576.24**
Alkalinity Control				
citric acid	CLAYSEAL	25 kg bag	28.000	2,133.60
potassium hydroxide	CLAYSEAL	20 kg pail	12.000	1,585.32
soda ash	CLAYSEAL	25 kg bag	46.000	1,399.32
sodium bicarbonate	CLAYSEAL	25 kg bag	16.000	452.00
			Total	**$A 5,570.24**
Shale Control				
EZ-MUD	CLAYSEAL	25 kg pail	101.000	9,593.99
X FLOW (API 120)	No Fluid	1 each box	14.000	8,195.60
CLAYSEAL PLUS	CLAYSEAL	55 gal drum	44.000	66,421.08
			Total	**$A 84,210.67**

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Interval Summary

Lost Circulation/Bridging Agent					
BARACARB 150	CLAYSEAL	25 kg sack	528.000		8,432.16
			Total	**$A**	**8,432.16**
Filtration Control					
DEXTRID LTE	CLAYSEAL	25 kg sack	294.000		15,576.12
PAC-L	CLAYSEAL	25 kg bag	136.000		21,803.52
			Total	**$A**	**37,379.64**
Solids Control Equipment					
X FLOW (API 20)	No Fluid	1 each box	12.000		7,024.80
X FLOW (API 80)	No Fluid	1 each box	16.000		8,959.36
			Total	**$A**	**15,984.16**
Scale Inhibitor					
Brine 21% KCL	CLAYSEAL	1 each bbl	1,057.000		70,047.39
Brine 21% KCL	No Fluid	1 each bbl	33.000		2,186.91
			Total	**$A**	**72,234.30**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Cost Breakdown

Interval # 01		**From Date**	**02/12/2010**	**Top of Interval**	**80.0 m**
Max. Hole Size / Bit Size	**36.000 / 36.000 in**	**To Date**	**03/12/2010**	**Bottom of Interval**	**141.0 m**

Material	**Unit Size**	**Quantity**		**Total Cost**
Engineering/Services				
Drilling Fluids Engineer	day(s)	8.00		12320.00
Drilling Fluids Engineer 2	day(s)	1.00		1540.00
		SubTotal	**$A**	**13,860.00**
Fluids/Products: Cementing Cost				
calcium chloride	25 kg bag	48.00		
		SubTotal	**$A**	**0.00**
Fluids/Products: Drilling Cost				
BARAZAN D PLUS	25 kg bag	5.00		1076.70
barite	1 tons bulk	19.000		8586.48
bentonite	1000 kg bulk	21.000		9192.54
caustic soda	25 kg can	8.00		434.24
soda ash	25 kg bag	10.00		304.20
		SubTotal	**$A**	**19,594.16**
		Interval Total Cost	**$A**	**33,454.16**
	Charged To/From Other Interval		**$A**	**-19,594.16**
	Net Description Total Cost		**$A**	**13,860.00**
	Programmed Cost		**$A**	**35,990.00**
	Program Variance		**$A**	**-22,130.00**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Cost Breakdown

Interval # 02		**From Date**	**04/12/2010**	**Top of Interval**	**141.0 m**
Max. Hole Size / Bit Size	**17.500 / 17.500 in**	**To Date**	**07/12/2010**	**Bottom of Interval**	**1,112.0 m**

Material	**Unit Size**	**Quantity**		**Total Cost**
Engineering/Services				
Drilling Fluids Engineer	day(s)	4.00		6160.00
Drilling Fluids Engineer 2	day(s)	4.00		6160.00
		SubTotal	**$A**	**12,320.00**
Fluids/Products: Drilling Cost				
BARAZAN D PLUS	25 kg bag	83.00		17873.22
barite	1 tons bulk	45.000		20336.40
bentonite	1000 kg bulk	17.000		7441.58
caustic soda	25 kg can	9.00		488.52
guar gum	25 kg bag	112.00		9940.00
lime	25 kg bag	5.00		83.10
soda ash	25 kg bag	2.00		60.84
		SubTotal	**$A**	**56,223.66**
		Interval Total Cost	**$A**	**68,543.66**
	Charged To/From Other Interval		**$A**	**19,594.16**
	Net Description Total Cost		**$A**	**88,137.82**
	Programmed Cost		**$A**	**58,063.05**
	Program Variance		**$A**	**30,074.77**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Cost Breakdown

Interval # 03		**From Date**	**08/12/2010**	**Top of Interval**	**1,112.0 m**
Max. Hole Size / Bit Size	**12.25 / 12.25 in**	**To Date**	**22/12/2010**	**Bottom of Interval**	**2,317.0 m**

Material	**Unit Size**	**Quantity**		**Total Cost**
Engineering/Services				
Drilling Fluids Engineer	day(s)	15.00		23100.00
Drilling Fluids Engineer 2	day(s)	15.00		23100.00
		SubTotal	**$A**	**46,200.00**
Fluids/Products: Cementing Cost				
barite	1 tons bulk	8.000		3615.36
		SubTotal	**$A**	**3,615.36**
Fluid/Product: Lost Damage				
Brine 21% KCL	1 each bbl	33.00		2186.91
		SubTotal	**$A**	**2,186.91**
Solids Control/Waste Management Cost				
X FLOW (API 120)	1 each box	14.00		8195.60
X FLOW (API 20)	1 each box	12.00		7024.80
X FLOW (API 80)	1 each box	16.00		8959.36
		SubTotal	**$A**	**24,179.76**
Fluids/Products: Drilling Cost				
ALDACIDE G	25 kg can	8.00		1384.72
BARACARB 150	25 kg sack	528.00		8432.16
BARA-DEFOAM W300	25 l can	9.00		1132.38
BARAZAN D PLUS	25 kg bag	126.00		27132.84
barite	1 tons bulk	103.000		46547.76
Brine 21% KCL	1 each bbl	1,057.00		70047.39
citric acid	25 kg bag	28.00		2133.60
CLAYSEAL PLUS	55 gal drum	44.00		66421.08
DEXTRID LTE	25 kg sack	294.00		15576.12
EZ-MUD	25 kg pail	101.00		9593.99
guar gum	25 kg bag	16.00		1420.00
OXYGON	50 lb can	8.00		4576.24
PAC-L	25 kg bag	136.00		21803.52
potassium hydroxide	20 kg pail	12.00		1585.32
soda ash	25 kg bag	46.00		1399.32
sodium bicarbonate	25 kg bag	16.00		452.00
		SubTotal	**$A**	**279,638.44**
		Interval Total Cost	**$A**	**355,820.47**
	Charged To/From Other Interval		**$A**	**0.00**
	Net Description Total Cost		**$A**	**355,820.47**
	Programmed Cost		**$A**	**331,526.51**
	Program Variance		**$A**	**24,293.96**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Maersk Drilling**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Inventory Report

Interval # 01		**From Date**	**02/12/2010**	**Top of Interval**		**80.0 m**	
Max. Hole Size / Bit Size	**36.000 / 36.000 in**	**To Date**	**03/12/2010**	**Bottom of Interval**		**141.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**
Amodrill 1235	1 bbl bulk		2.000			2.000	548.54
BARAZAN D PLUS	25 kg bag		70.0	5.0		65.0	3,582.51
barite	1 tons bulk		119.000	19.000		100.000	220,462.25
bentonite	1000 kg bulk		53.000	21.000		32.000	70,547.92
calcium chloride	25 kg bag		80.0	48.0		32.0	1,763.70
caustic soda	25 kg can		64.0	8.0		56.0	3,086.47
CON DET	5 gal can		32.0			32.0	1,367.76
DEXTRID LTE	25 kg sack		72.0			72.0	3,968.32
EZ-MUD	25 kg pail		96.0			96.0	5,291.09
guar gum	25 kg bag		128.0			128.0	7,054.79
lime	25 kg bag		40.0			40.0	2,204.62
mica	25 kg bag		27.0			27.0	1,488.12
PAC-L	25 kg bag		80.0			80.0	4,409.25
soda ash	25 kg bag		80.0	10.0		70.0	3,858.09
				Total Weight of Products in Stock lb			**329,633.44**
				Total Weight of Products in Stock, Metric Tons			**149.52**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Maersk Drilling**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Inventory Report

Interval # 02	**From Date**	**04/12/2010**	**Top of Interval**	**141.0 m**
Max. Hole Size / Bit Size 36.000 / 36.000 in	**To Date**	**07/12/2010**	**Bottom of Interval**	**1,112.0 m**

Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**
ALDACIDE G	25 kg can		32.0			32.0	1,763.70
Amodrill 1235	1 bbl bulk	2.000				2.000	548.54
BARACARB 150	25 kg sack		144.0			144.0	7,936.64
BARA-DEFOAM W300	25 l can		12.0			12.0	580.32
BARAZAN D PLUS	25 kg bag	65.0	70.0	83.0		52.0	2,866.01
barite	1 tons bulk	100.000	47.000	45.000		102.000	224,871.50
BARO-SEAL FINE	40 lb bag		32.0			32.0	1,280.00
bentonite	1000 kg bulk	32.000		17.000		15.000	33,069.34
calcium chloride	25 kg bag	32.0				32.0	1,763.70
caustic soda	25 kg can	56.0		9.0		47.0	2,590.43
citric acid	25 kg bag		40.0			40.0	2,204.62
CLAYSEAL PLUS	55 gal drum		28.0			28.0	13,357.34
CON DET	5 gal can	32.0				32.0	1,367.76
DEXTRID LTE	25 kg sack	72.0	108.0			180.0	9,920.80
EZ SPOT	55 gal drum		4.0			4.0	4,220.04
EZ-MUD	25 kg pail	96.0	96.0			192.0	10,582.19
guar gum	25 kg bag	128.0		112.0		16.0	881.85
lime	25 kg bag	40.0		5.0		35.0	1,929.04
mica	25 kg bag	27.0				27.0	1,488.12
OXYGON	50 lb can		32.0			32.0	1,600.00
PAC-L	25 kg bag	80.0				80.0	4,409.25
soda ash	25 kg bag	70.0		2.0		68.0	3,747.86
sodium bicarbonate	25 kg bag		40.0			40.0	2,204.62
STEELSEAL 400	50 lb sack		80.0			80.0	4,000.00
X FLOW (API 100)	1 each box		30.0			30.0	
X FLOW (API 120)	1 each box		18.0			18.0	
X FLOW (API 20)	1 each box		12.0			12.0	
X FLOW (API 40)	1 each box		12.0			12.0	
X FLOW (API 80)	1 each box		16.0			16.0	
				Total Weight of Products in Stock lb			**339,183.66**
				Total Weight of Products in Stock, Metric Tons			**153.85**

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Maersk Drilling**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Inventory Report

Interval # 03	**From Date**	**08/12/2010**		**Top of Interval**		**1,112.0 m**	
Max. Hole Size / Bit Size 12.25 / 12.25 in	**To Date**	**22/12/2010**		**Bottom of Interval**		**2,317.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**
ALDACIDE G	25 kg can	32.0		8.0	24.0		
Amodrill 1235	1 bbl bulk	2.000			2.000		
BARACARB 150	25 kg sack	144.0	672.0	528.0	288.0		
BARA-DEFOAM W300	25 l can	12.0	7.0	9.0	10.0		
BARAZAN D PLUS	25 kg bag	52.0	110.0	126.0	36.0		
barite	1 tons bulk	102.000	55.000	111.000	46.000		
BARO-SEAL FINE	40 lb bag	32.0			32.0		
bentonite	1000 kg bulk	15.000	41.000		56.000		
Brine 21% KCL	1 each bbl		2,032.0	1,090.0	942.0		
calcium chloride	25 kg bag	32.0			32.0		
caustic soda	25 kg can	47.0	32.0		79.0		
citric acid	25 kg bag	40.0	40.0	28.0	52.0		
CLAYSEAL PLUS	55 gal drum	28.0	16.0	44.0			
CON DET	5 gal can	32.0			32.0		
DEXTRID LTE	25 kg sack	180.0	216.0	294.0	102.0		
EZ SPOT	55 gal drum	4.0			4.0		
EZ-MUD	25 kg pail	192.0		101.0	91.0		
guar gum	25 kg bag	16.0	122.0	16.0	122.0		
lime	25 kg bag	35.0			35.0		
mica	25 kg bag	27.0			27.0		
OXYGON	50 lb can	32.0		8.0	24.0		
PAC-L	25 kg bag	80.0	240.0	136.0	184.0		
potassium hydroxide	20 kg pail		31.0	12.0	19.0		
soda ash	25 kg bag	68.0	47.0	46.0	69.0		
sodium bicarbonate	25 kg bag	40.0		16.0	24.0		
STEELSEAL 400	50 lb sack	80.0			80.0		
X FLOW (API 100)	1 each box	30.0			30.0		
X FLOW (API 120)	1 each box	18.0		14.0	4.0		
X FLOW (API 20)	1 each box	12.0		12.0			
X FLOW (API 40)	1 each box	12.0			12.0		
X FLOW (API 80)	1 each box	16.0		16.0			

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	ADA Drilling

Total Cost Breakdown

	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	day(s)	27.00		41,580.00
Drilling Fluids Engineer 2	day(s)	20.00		30,800.00
		SubTotal	**$A**	**72,380.00**
Fluids/Products: Cementing Cost				
barite	1 tons bulk	8.000		3,615.36
calcium chloride	25 kg bag	48.00		
		SubTotal	**$A**	**3,615.36**
Fluid/Product: Lost Damage				
Brine 21% KCL	1 each bbl	33.00		2,186.91
		SubTotal	**$A**	**2,186.91**
Solids Control/Waste Management Cost				
X FLOW (API 120)	1 each box	14.00		8,195.60
X FLOW (API 20)	1 each box	12.00		7,024.80
X FLOW (API 80)	1 each box	16.00		8,959.36
		SubTotal	**$A**	**24,179.76**
Fluids/Products: Drilling Cost				
ALDACIDE G	25 kg can	8.00		1,384.72
BARACARB 150	25 kg sack	528.00		8,432.16
BARA-DEFOAM W300	25 l can	9.00		1,132.38
BARAZAN D PLUS	25 kg bag	214.00		46,082.76
barite	1 tons bulk	167.000		75,470.64
bentonite	1000 kg bulk	38.000		16,634.12
Brine 21% KCL	1 each bbl	1,057.00		70,047.39
caustic soda	25 kg can	17.00		922.76
citric acid	25 kg bag	28.00		2,133.60
CLAYSEAL PLUS	55 gal drum	44.00		66,421.08
DEXTRID LTE	25 kg sack	294.00		15,576.12
EZ-MUD	25 kg pail	101.00		9,593.99
guar gum	25 kg bag	128.00		11,360.00
lime	25 kg bag	5.00		83.10
OXYGON	50 lb can	8.00		4,576.24
PAC-L	25 kg bag	136.00		21,803.52
potassium hydroxide	20 kg pail	12.00		1,585.32
soda ash	25 kg bag	58.00		1,764.36
sodium bicarbonate	25 kg bag	16.00		452.00
		SubTotal	**$A**	**355,456.26**
		Total Well Cost:	**$A**	**457,818.29**

Baroid Fluid Services

Company	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Volume Record Report

			Additions								Losses						Volumes			
Report No	Date	Initial Volume bbl	Received bbl	Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Mixed bbl	Returned bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 01																				
Fluid Name: Seawater																				
002	3/12/2010					60.0				60.0									60.0	60.0
Cumulative Volume						60.0				60.0										
Fluid Name: PHG																				
002	3/12/2010					1,620.0		41.1		1,661.1			681.1			681.1			980.0	980.0
Cumulative Volume						1,620.0		41.1		1,661.1			681.1			681.1				
Fluid Name: Kill Mud																				
002	3/12/2010					648.1	28.5	13.4		690.0			300.0			300.0			390.0	390.0
Cumulative Volume						648.1	28.5	13.4		690.0			300.0			300.0				

Baroid Fluid Services

Company	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Volume Record Report

			Additions								Losses						Volumes			
Report No	Date	Initial Volume bbl	Received bbl	Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Mixed bbl	Returned bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 02																				
Fluid Name: Seawater																				
006	7/12/2010	60.0				508.9				508.9							508.9		60.0	568.9
Cumulative Volume						508.9				508.9										
Fluid Name: PHG																				
003	4/12/2010	980.0				230.0		12.8		242.8			589.8			589.8			633.0	633.0
004	5/12/2010	633.0				1,144.2		31.9		1,176.1			1,025.0	634.1		1,659.1			150.0	150.0
005	6/12/2010	150.0											150.0			150.0				
Cumulative Volume						1,374.2		44.7		1,418.9			1,764.8	634.1		2,398.9				
Fluid Name: Guar Gum																				
003	4/12/2010					440.0		3.8		443.8			298.8			298.8			145.0	145.0
004	5/12/2010	145.0				960.0		6.9		966.9			1,111.9			1,111.9				
Cumulative Volume						1,400.0		10.7		1,410.7			1,410.7			1,410.7				
Fluid Name: Kill Mud																				
003	4/12/2010	390.0						0.1		0.1									390.1	390.1
004	5/12/2010	390.1												390.1		390.1				
Cumulative Volume								0.1		0.1				390.1		390.1				
Fluid Name: 9.5 ppg PAD MUD																				
004	5/12/2010			1,024.2		1,068.1	30.0	4.4		2,126.7							1,026.8		1,100.0	2,126.8
005	6/12/2010	2,126.8				450.0	37.5	1.6		489.1			1,400.2			1,400.2	1,095.6		120.0	1,215.6
006	7/12/2010	1,215.6				300.0		1.0		301.0			1,516.6			1,516.6				
Cumulative Volume				1,024.2		1,818.1	67.5	7.0		2,916.8			2,916.8			2,916.8				

Baroid Fluid Services

Company	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Volume Record Report

			Additions								Losses						Volumes			
Report No	Date	Initial Volume bbl	Received bbl	Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Mixed bbl	Returned bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 03																				
Fluid Name: Seawater																				
007	8/12/2010	568.9				101.9				101.9							610.9		60.0	670.9
008	9/12/2010	670.9											610.8			610.8			60.0	60.0
009	10/12/2010	60.0											60.0			60.0				
Cumulative Volume						101.9				101.9			670.8			670.8				
Fluid Name: Guar Gum																				
008	9/12/2010							1.5		1.5			1.5			1.5				
Cumulative Volume								1.5		1.5			1.5			1.5				
Fluid Name: KCL/PHPA/CLAYSEAL																				
007	8/12/2010					946.9	56.9	29.2	525.0	1,558.0									1,558.0	1,558.0
008	9/12/2010	1,558.0				150.0	37.5	12.8	95.0	295.3	40.1		106.6			146.7	619.6	776.0	311.0	1,706.6
009	10/12/2010	1,706.6	160.0			210.0		41.5		411.5	89.6		22.0			111.6	788.4	818.0	400.0	2,006.4
010	11/12/2010	2,006.4		5.0		280.0	28.5	34.9	204.0	552.4	121.2					121.2	943.7	798.0	696.0	2,437.7
011	12/12/2010	2,437.7				15.0		8.5	14.0	37.5	30.6					30.6	925.6	815.0	704.0	2,444.6
012	13/12/2010	2,444.6		45.0		200.0	3.0	26.7	87.3	362.0	35.1		143.0			178.1	1,082.5	790.0	756.0	2,628.5
013	14/12/2010	2,628.5				30.0	6.0	2.6		38.6	9.7		30.0			39.7	1,134.0	759.0	732.0	2,625.0
014	15/12/2010	2,625.0		47.0		40.0	9.0	6.3		102.3	27.9					27.9	1,124.5	746.0	829.0	2,699.5
015	16/12/2010	2,699.5		83.0				6.4		89.4	22.6		545.0			567.6	1,185.7	745.0	291.0	2,221.7
016	17/12/2010	2,221.7					13.5	1.5		15.0	142.0		810.7			952.7		914.0	370.0	1,284.0
017	18/12/2010	1,284.0						0.8		0.8			155.8			155.8		682.0	447.0	1,129.0
018	19/12/2010	1,129.0											1,129.0			1,129.0				
Cumulative Volume			160.0	180.0		1,871.9	154.4	171.2	925.3	3,462.8	518.8		2,942.1			3,460.9				
Fluid Name: Brine																				

Baroid Fluid Services

Company	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Volume Record Report

			Additions								Losses						Volumes			
Report No	Date	Initial Volume bbl	Received bbl	Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Mixed bbl	Returned bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
009	10/12/2010					174.0				174.0									174.0	174.0
010	11/12/2010	174.0												5.0		5.0			169.0	169.0
011	12/12/2010	169.0							6.0	6.0									175.0	175.0
012	13/12/2010	175.0												45.0		45.0			130.0	130.0
014	15/12/2010	130.0												47.0		47.0			83.0	83.0
015	16/12/2010	83.0												83.0		83.0				
Cumulative Volume						174.0			6.0	180.0				180.0		180.0				

Baroid Fluid Services

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Interval Chemical Concentration

Interval # 01		From Report Date	02/12/2010	Top of Interval	80.0 m
Max. Hole Size / Bit Size	36.000 / 36.000 in	To Report Date	03/12/2010	Bottom of Interval	141.0 m

Fluid Name: PHG

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	21.24	21.24	21.24
caustic soda	0.20	0.20	0.20
soda ash	0.23	0.23	0.23

Fluid Name: Kill Mud

Material	Average ppb	Minimum ppb	Maximum ppb
BARAZAN D PLUS	0.40	0.40	0.40
barite	60.71	60.71	60.71
bentonite	15.98	15.98	15.98
caustic soda	0.16	0.16	0.16
soda ash	0.24	0.24	0.24

Baroid Fluid Services

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Interval Chemical Concentration

Interval # 02		From Report Date	04/12/2010	Top of Interval	141.0 m
Max. Hole Size / Bit Size	17.500 / 17.500 in	To Report Date	07/12/2010	Bottom of Interval	1,112.0 m

Fluid Name: PHG

Material	Average ppb	Minimum ppb	Maximum ppb
BARAZAN D PLUS	0.43	0.43	0.43
bentonite	24.50	23.73	26.03
caustic soda	0.20	0.18	0.25
soda ash	0.15	0.11	0.23

Fluid Name: Guar Gum

Material	Average ppb	Minimum ppb	Maximum ppb
guar gum	4.59	4.22	4.97
lime	0.21	0.18	0.25

Fluid Name: Kill Mud

Material	Average ppb	Minimum ppb	Maximum ppb
BARAZAN D PLUS	0.54	0.54	0.54
barite	60.69	60.69	60.69
bentonite	15.97	15.97	15.97
caustic soda	0.16	0.16	0.16
soda ash	0.24	0.24	0.24

Fluid Name: 9.5 ppg PAD MUD

Material	Average ppb	Minimum ppb	Maximum ppb
BARAZAN D PLUS	1.42	1.37	1.47
barite	38.83	31.86	46.98
bentonite	8.22	6.52	10.01
caustic soda	0.14	0.13	0.14
soda ash	0.06	0.05	0.08

Baroid Fluid Services

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval Chemical Concentration

Interval # 03		**From Report Date**	**08/12/2010**	**Top of Interval**	**1,112.0 m**
Max. Hole Size / Bit Size	**12.25 / 12.25 in**	**To Report Date**	**22/12/2010**	**Bottom of Interval**	**2,317.0 m**

Fluid Name: KCL/PHPA/CLAYSEAL

Material	Average ppb	Minimum ppb	Maximum ppb
ALDACIDE G	0.12	0.09	0.15
BARACARB 150	6.89	1.56	8.91
BARA-DEFOAM W300	0.09	0.02	0.14
BARAZAN D PLUS	1.74	1.31	2.20
barite	62.48	53.77	74.94
Brine 21% KCL	0.00		
citric acid	0.40	0.30	0.47
CLAYSEAL PLUS	5.59	1.22	7.51
DEXTRID LTE	4.34	3.25	5.06
EZ-MUD	1.31	0.42	1.84
OXYGON	0.11	0.08	0.13
PAC-L	1.98	1.29	2.59
potassium hydroxide	0.18	0.15	0.24
soda ash	0.56	0.27	0.80
sodium bicarbonate	0.29	0.24	0.48

Baroid Fluid Services

Operator	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	ppb Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
Interval # 01										**From Date**				**02/12/2010**						**Top of Interval**			**80.0**		**m**							
Max. Hole Size / Bit Size			**36.000 / 36.000 in**							**To Date**				**03/12/2010**						**Bottom of Interval**			**141.0**		**m**							
Interval # 02										**From Date**				**04/12/2010**						**Top of Interval**			**141.0**		**m**							
Max. Hole Size / Bit Size			**17.500 / 17.500 in**							**To Date**				**07/12/2010**						**Bottom of Interval**			**1,112.0**		**m**							
05/12/2010	1,112		9.50	180	16	36	22	26							9.00	0.50	0.05	0.10	18,500	600	20.0		4.97	2.446		94	68.0	52.0	47.0	39.0	22.0	20.0
Interval # 03										**From Date**				**08/12/2010**						**Top of Interval**			**1,112.0**		**m**							
Max. Hole Size / Bit Size			**12.25 / 12.25 in**							**To Date**				**22/12/2010**						**Bottom of Interval**			**2,317.0**		**m**							
09/12/2010	1,112		10.00	78	14	22	9	11	12	5.0	10.0		1	149	9.50	0.50	1.00	2.50	50,000	560			6.02	3.35		90	50.0	36.0	29.0	21.0	9.0	8.0
09/12/2010	1,119		10.00	63	12	23	9	10	12	5.1	10.5		2	149	9.70	1.00	1.50	3.50	48,000	600	2.5		6.19	3.532		90	47.0	35.0	28.0	21.0	8.0	7.0
10/12/2010	1,250	41	10.00	60	13	20	8	10	12	5.0	10.2		2	149	9.00	0.50	0.30	1.80	39,000	600	1.0		6.93	4.331		90	46.0	33.0	27.0	20.0	8.0	7.0
10/12/2010	1,360	30	10.00	50	13	23	9	10	11	6.0	12.0		2	149	8.50		0.05	0.10	39,000	400	2.0		6.93	4.331		90	49.0	36.0	30.0	23.0	10.0	9.0
10/12/2010	1,519	48	10.00	48	9	20	8	11	13	5.8	11.0	1	2	149	9.00	0.50	0.05	2.20	36,000	540	5.0		6.14	2.554		91	38.0	29.0	25.0	19.0	9.0	7.0
11/12/2010	1,608	49	10.10	45	11	21	8	11	12	5.5	11.0	1	2	149	9.50		0.05	2.00	44,000	520	7.5		6.52	3.143		90	43.0	32.0	27.0	21.0	8.0	7.0
11/12/2010	1,750	52	10.00	48	11	25	8	10	11	5.6	12.0	1	2	149	9.00		0.05	1.50	46,000	320	7.5		7.4	5.756		89	47.0	36.0	31.0	24.0	10.0	9.0
11/12/2010	1,812		10.10	53	14	30	14	18	22	5.7	12.0	1	2	149	9.00		0.02	1.80	44,000	360	7.5		7.56	5.184		89	58.0	44.0	37.0	28.0	12.0	11.0
12/12/2010	1,812		10.10	58	14	30	14	18	21	5.6	12.0	1	2	149	9.00		0.05	1.50	44,000	360	7.5		7.56	5.184		89	58.0	44.0	37.0	28.0	12.0	11.0
12/12/2010	1,812	45	10.05	46	9	23	9	13	17	5.5	11.5	1	2	149	9.00	0.10	0.05	0.75	39,500	440	10.0		6.89	3.913		90	41.0	32.0	27.0	21.0	9.0	8.0
12/12/2010	1,855	48	10.05	48	11	25	11	15	19	5.5	11.5	1	2	149	9.00	0.01	0.10	1.10	40,000	400	10.0		6.85	3.87		90	47.0	36.0	30.0	23.0	10.0	9.0
13/12/2010	1,916	52	10.10	52	13	29	11	16	22	4.1	11.0	1	2	149	9.00	0.10	0.05	1.10	41,000	440	10.0	0.25	6.77	3.408		90	55.0	42.0	35.0	27.0	11.0	10.0
13/12/2010	2,007	54	10.05	50	16	30	11	14	16	6.0	12.0	1	2	149	9.00		0.05	1.30	48,000	400	10.0	0.50	6.19	3.158		90	62.0	46.0	38.0	29.0	11.0	9.0
13/12/2010	2,106	55	10.10	47	15	29	9	13	14	5.0	9.2	1	2	149	9.00		0.05	1.30	44,000	400	10.0	0.50	7.56	5.184		89	59.0	44.0	37.0	28.0	10.0	8.0
13/12/2010	2,161	55	10.15	51	12	26	9	12	14	5.0	11.0	1	2	149	9.00	0.10	0.05	0.90	40,000	400	10.0	0.50	7.88	5.158		89	50.0	38.0	32.0	25.0	10.0	9.0
14/12/2010	2,215	56	10.10	48	12	27	9	13	15	5.0	11.0	1	2	149	9.00		0.05	1.00	40,000	400	10.0	0.50	7.88	5.532		89	51.0	39.0	33.0	26.0	10.0	9.0
14/12/2010	2,215		10.10	48	12	26	9	12	14	5.0	11.0	1	2	149	9.00		0.05	1.00	41,000	400	10.0	0.50	7.8	5.446		89	50.0	38.0	32.0	25.0	10.0	9.0
15/12/2010	2,215		10.10	49	12	26	9	12	14	5.0	10.6	1	2	149	9.00		0.05	1.00	41,000	400	10.0	0.50	7.8	5.446		89	50.0	38.0	32.0	25.0	10.0	9.0
15/12/2010	2,219	50	10.00	48	14	31	13	15	17	5.0	9.2	1	2	149	9.00		0.05	1.00	38,000	480	12.5	0.50	8.04	6.452		89	59.0	45.0	39.0	31.0	13.0	11.0
15/12/2010	2,266	60	10.05	42	10	28	9	13	14	5.0	11.0	1	2	149	9.00		0.10	0.70	37,000	520	15.0	0.50	8.12	6.163		89	48.0	38.0	33.0	26.0	10.0	8.0

Baroid Fluid Services

Operator	**Origin Energy Resources Ltd**
Well Name	**Silvereye-1**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	ppb Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
16/12/2010	2,292	60	10.10	42	11	25	9	11	14	5.0	11.0	1	2	121	9.00		0.10	0.70	39,000	400	15.0	0.50	7.96	5.618		89	47.0	36.0	32.0	25.0	9.0	7.0
16/12/2010	2,317		10.10	44	12	26	9	12	14	5.0	11.0	1	2	149	9.00		0.05	0.70	41,000	360	15.0	0.50	7.8	5.446		89	50.0	38.0	32.0	25.0	10.0	9.0

Company	Origin Energy Resources Ltd
Well Name	Silvereye-1
Contractor	Maersk Drilling
Rig Name	Kan Tan IV
Unit System	ADA Drilling

Fluid Program Exception Report

Report No	Date	Time	Depth m	Property Name	Unit System	Actual Value	Exception	Program Min	Program Max
004	05/12/2010	17:30	1,112	Density	ppg	9.50	High	8.50	8.70
008	09/12/2010	1:00	1,112	Density	ppg	10.00	High	8.50	8.70
008	09/12/2010	22:00	1,119	pH	-	9.70	High	8.50	9.50
008	09/12/2010	22:00	1,119	Yield Point	lbs/100 ft2	23	Low	25	30
009	10/12/2010	4:00	1,250	Yield Point	lbs/100 ft2	20	Low	25	30
009	10/12/2010	15:00	1,360	Yield Point	lbs/100 ft2	23	Low	25	30
009	10/12/2010	21:30	1,519	Yield Point	lbs/100 ft2	20	Low	25	30
010	11/12/2010	3:30	1,608	Density	ppg	10.10	High	10.00	10.00
010	11/12/2010	3:30	1,608	Yield Point	lbs/100 ft2	21	Low	25	30
010	11/12/2010	22:00	1,812	Density	ppg	10.10	High	10.00	10.00
011	12/12/2010	20:00	1,812	Density	ppg	10.05	High	10.00	10.00
011	12/12/2010	20:00	1,812	Yield Point	lbs/100 ft2	23	Low	25	30
011	12/12/2010	9:00	1,812	Density	ppg	10.10	High	10.00	10.00
011	12/12/2010	23:00	1,855	Density	ppg	10.05	High	10.00	10.00
012	13/12/2010	3:00	1,916	Density	ppg	10.10	High	10.00	10.00
012	13/12/2010	9:00	2,007	Density	ppg	10.05	High	10.00	10.00
012	13/12/2010	15:30	2,106	Density	ppg	10.10	High	10.00	10.00
012	13/12/2010	21:00	2,161	Density	ppg	10.15	High	10.00	10.00
013	14/12/2010	9:00	2,215	Density	ppg	10.10	High	10.00	10.00
013	14/12/2010	22:00	2,215	Density	ppg	10.10	High	10.00	10.00
014	15/12/2010	9:00	2,215	Density	ppg	10.10	High	10.00	10.00
014	15/12/2010	14:45	2,219	Yield Point	lbs/100 ft2	31	High	25	30
014	15/12/2010	20:00	2,266	Density	ppg	10.05	High	10.00	10.00
015	16/12/2010	2:00	2,292	Density	ppg	10.10	High	10.00	10.00
015	16/12/2010	22:00	2,317	Density	ppg	10.10	High	10.00	10.00
016	17/12/2010	2:00	2,317	Density	ppg	10.10	High	10.00	10.00
017	18/12/2010	22:00	2,317	Density	ppg	10.10	High	10.00	10.00

Operations Log Recap

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Interval	01	From Date	001	Top of Interval	80.0 m

For Report	# 001	On	02/12/2010	Operation at Depth	.0 m

For Report	# 007	On	08/12/2010	Operation at Depth	1,112.0 m

Rig Activity	Continue M/Up 12 1/4" MWD tools, test, dress nuclear source ports, build stand of HWDP and rack back in derrick. R/Up and run BOP's. Install guidelines & POD lines and transmitter. P/Up & M/Up slip joint. Install Choke & Kill hoses to slip joint. P/Up & M/Up diverter, lower into housing & function test. R/Down BOP handling equipment. Run 12 1/4" BHA from derrick.
Activity	Run 12 1/4" BHA from derrick
Fluid Treatment	Continue mixing KCl / PHPA / CLAYSEAL+ as per program. Filled sand traps with KCL/PHPA/CLAYSEAL+ mud. Dressed shakers with 12 x API 20 - top scalper screens and 16 x API 80 - bottom screens.

For Report	# 008	On	09/12/2010	Operation at Depth	1,158.0 m

Rig Activity	Downlink & install radioactive sources. RIH w/12.25" BHA to 157m. Shallow test MWD. Install diverter bag, function test BOP's on both PODs. Continue P/Up 5" DP and RIH to 677m. P/Up 5" DP & rack back in derrick. Drill out cement & shoe and rat hole to 1113m while displacing well to 10 ppg mud. Circulate & condition mud. R/Up & perform LOT. Flush choke & kill lines to 10 ppg mud. Commence drilling 12.25" hole fr/1117m - 1158m.
Activity	Drilling 12.25" interval
Fluid Treatment	Continue mixing KCl / PHPA / CLAYSEAL+ as per program. Displaced the hole to 10 ppg KCL/PHPA/CLAYSEAL+ mud. Treated out any cement contamination with citric acid in active system. Adding CLAYSEAL+ to bring up the concentration up to 2% v/v and EZ MUD as per program.

For Report	# 009	On	10/12/2010	Operation at Depth	1,569.0 m

Rig Activity	Drill 12 1/4" hole from 1158m to 1251m. POOH to shoe at 1091m whilst repair work done on lockbar and lines for topdrive. RIH from 1091m to 1225m. Wash from 1225 to 1251m with 4m fill on bottom. Cont. to drill ahead from 1251m to 1569m.
Activity	Drilling Ahead
Fluid Treatment	Continue adding CLAYSEAL PLUS to the active to bring the concentration up to 2% v/v and once the pH was below 9.5 we started making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Ordered more DEXTRID-LTE and PAC-L to come out on tomorrow's boat. Brought the BARACARB 150 ppb in the active system to 10 ppb.

For Report	# 010	On	11/12/2010	Operation at Depth	1,812.0 m

Rig Activity	Cont. to drill 12¼" hole from 1570m to 1812m. Sperry communication link to downhole tools failed. Circulated well clean. POOH on elevaters from 1812m to 1544m, encountered tight spots. Pump out of hole from 1544m to inside shoe at 1081m. Circ. hole clean. POOH to surface. TBT download radioactive sources & downline sperry tools.
Activity	Tripping
Fluid Treatment	Continue adding CLAYSEAL PLUS to the active to bring the concentration up to 2% v/v . Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Treated system with BARAZAN D+ prior to pulling out for improved hole cleaning. Changed shaker #1, 2, 3 to API 100 mesh screens.

Operations Log Recap

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval	**01**	**From Date**	**001**	**Top of Interval**	**80.0 m**

For Report	**# 001**	**On**	**02/12/2010**	**Operation at Depth**	**.0 m**
For Report	**# 011**	**On**	**12/12/2010**	**Operation at Depth**	**1,860.0 m**
Rig Activity				Cont. to download Sperry tools. Wait on weather due to high winds. Make up replacement Geopilot. Make up 12 1/4" BHA and RIH to 1500m. Take 40klbs weight, wash down from 1500m to 1812m. Drilled new 12 1/4" hole from 1812m to 1860m.	
Activity				Drilling	
Fluid Treatment				Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150. Changed shaker #4 to API 100 mesh screens.	
For Report	**# 012**	**On**	**13/12/2010**	**Operation at Depth**	**2,193.0 m**
Rig Activity				Cont. to drill and log 12 1/4" hole from 1860m to 2193m at controlled rate of 20m/hr, 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi.	
Activity				Drilling	
Fluid Treatment				Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150. Screened up across all shakers to API 120's to help lower the mud weight .	
For Report	**# 013**	**On**	**14/12/2010**	**Operation at Depth**	**2,215.0 m**
Rig Activity				Cont. to drill and log 12 1/4" hole from 2193m to 2215m. Flow check and POOH due to reduced rate of penetration from 2215m to 1920m. Pump out of hole from 1920m to 1399m. Cont. to POOH to surface. Change out bit.	
Activity				Tripping	
Fluid Treatment				Made additions of EZ-MUD, BARAZAN D+ and baracarb 150 to the system as per program to maintain concentrations. Maintained weight of the system with small additions water.	
For Report	**# 014**	**On**	**15/12/2010**	**Operation at Depth**	**2,282.0 m**
Rig Activity				Cont. to make up new BHA. RIH to 2145m. Wash down from 2145m to 2193m. Relog with Sperry tools from 2193m to 2215m. Cont. to drill 12 1/4" hole from 2215m to 2282m.	
Activity				Drilling Ahead	
Fluid Treatment				Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol. Maintain system with Baracarb 150.	
For Report	**# 015**	**On**	**16/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				Cont. to drill 12 1/4" hole 2282m to TD at 2317m. Circ. hole clean. Attempt to TD surveys, flow check and POOH to 2127m. Pump out of hole from 2127m to 2106m. POOH from 2106m to 1730m. Pump out of hole from 1730m. to 1643m. POOH 1643m to inside shoe at 1094m, flow check static, cont. to POOH to surface. Rack back BHA and rig up cement stinger.	
Activity				POOH	
Fluid Treatment				Cont. to making additions of EZ-MUD, DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to keep system as per program. Treating out calcium with Soda Ash, and maintaining concentration of Baracarb 150 in the active.	
For Report	**# 016**	**On**	**17/12/2010**	**Operation at Depth**	**2,317.0 m**

Operations Log Recap

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval	**01**	**From Date**	**001**	**Top of Interval**	**80.0 m**

For Report	**# 001**	**On**	**02/12/2010**	**Operation at Depth**	**.0 m**
Rig Activity				Make up cement stinger and RIH to 2184m. Wash down from 2184m to 2317m. Circ. bottoms up. Pump cement plug #1A, from 2317m to 2170m. POOH back to 2170m and circ. hole clean, divert 40bbl of cement contaminated mud at shakers. Pump plug #1B, from 2170m to 2020m. POOH back, circ and divert 40bbl. Pump plug #1C, from 2020m to 1920m. POOH to 1870m, insert wiper ball, circ. clean. Pump slug and POOH to 1250m. Spot 55bbl hi-vis 12.5ppg pill at 1250m as per program. POOH to 1150m and pump plug #2 across shoe from 1150m to 1000m. POOH to 950m and diverted 82bbl. Pump slug and POOH, laying out DP WOC.	
Activity				Wait on cement	
Fluid Treatment				Treated active mud with OXYGON and ALDACIDE G before leaving in casing. Mixed Hi-Vis pills at 12.5ppg as per program for spotting under plugs.	

For Report	**# 017**	**On**	**18/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				RIH to 936m, wash down and tag TOC at 961m. Rig to pressure test plug to 1500psi, failed at 950psi. RIH to 960m, wash & tag TOC at 1116m. Circ. hole clean and prepare for new shoe plug. Pumped 25bbl DW spacer followed by 65bbl 15.8ppg cement plug. Displaced cement with 4bbl DW followed by 49bbl mud. POOH from 1107m to 950m. Circ. annulus clean, 31bbl mud diverted. POOH to 760m. Made up Drillquip WBRT, jet BOPs, install wear bushing.	
Activity				Plug back	
Fluid Treatment				Mixed Hi-vis pill to 12.5ppg for spotting under plugs as per program. Dumped and cleaned slug pit for plugs	

For Report	**# 018**	**On**	**19/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				POOH w/WBRT and wear bushing. RIH to 950m, waiting on cement. Wash in from 950m to 1002m, tag TOC 10klb. Pressure test lines to 2000psi. Test plug against upper annular to 1500psi. POOH and layout DP from 964m to 300m. Spot 64bbl 12.5ppg hi-vis pill. POOH to 200m. Pump 25bbl DW spacer followed by 54bbl 15.8ppg cement plug. POOH to 100m, displace top of well and riser to seawater while jetting BOPs. Flush lines. Unlatch BOP and skid rig clear of well. Move BOP to aft moonpool on transporter.	
Activity				Rig up and rig down	
Fluid Treatment				Pumped 64bbl of 12.5 ppg Hi-vis pill to spot under cement plug #3. Dumped and cleaned all remaining Pits in preparation for rig move.	

For Report	**# 019**	**On**	**20/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				Layout double riser. Enter wellhead with ROV assistance and attempt to engage wellhead, troubleshoot. Change out 18 3/4" grapple for 20" spear grapple and adjust space out to cutters. Enter again w/ROV latch with 50klbs. Cut 20" and 30" casing at 82m. POOH to replace cutter knives. RIH and latch again with 50klbs. Cont. to cut casing.	
Activity				Cut casing	
Fluid Treatment				Dumped and cleaned all remaining Pits in preparation for rig move.	

For Report	**# 020**	**On**	**21/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				Cont. to attempt to pull casing. Disengaged spear and inspect cutters with ROV. Knives indicated that the 30" had been successfully cut. RIH and entered well with ROV assistance. Engaged spear grapple in well head. Overpulled 220klbs on wellhead. Picked up and pulled 18 3/4" wellhead and PGB clear of seabed. Made up WHRT on DF. Ran in same and engaged 18 3/4" wellhead. Released wellhead from PGB and laid out wellhead/casing stub assembly. Laid out WHRT. Completed seafastening of rig. Ballasted rig from 65ft draft to 46ft draft.	
Activity				Rig up and rig down	

Operations Log Recap

Well Name	**Silvereye-1**
Operator	**Origin Energy Resources Ltd**
Contractor	**Maersk Drilling**
Rig No	**Kan Tan IV**
Unit System	**ADA Drilling**

Interval	**01**	**From Date**	**001**	**Top of Interval**	**80.0 m**

For Report	**# 001**	**On**	**02/12/2010**	**Operation at Depth**	**.0 m**
Fluid Treatment				No Treatments today	
For Report	**# 021**	**On**	**22/12/2010**	**Operation at Depth**	**2,317.0 m**
Rig Activity				Under Tow	
Activity				Under Tow	
Fluid Treatment				NOTE: Split the Daily Engineering cost.	
For Report	**# 003**	**On**	**04/12/2010**	**Operation at Depth**	**537.0 m**
Rig Activity				Continue wait on cement. Release 30" RT, POOH & L/Out the same. L/Out 36" BHA and damaged 5" HWDP from derrick. P/Up pipe from deck & rack back in derrick. P/Up & M/Up 17.5" BHA and RIH w/same. Shallow test MWD @ 1000 gpm / 1510 psi - OK. Continue TIH w/17.5" BHA to 131m - TOC. Drill out cement shoe track. Conitnue drilling 17.5" hole fr/141m - 537m while pumping PHG / Guar Gum sweeps as required. Displace the hole to PHG and POOH to 396m.	
Activity				POOH	
Fluid Treatment				Continue building more Kill mud and PHG. Mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling. Note: Cost rectified.	
For Report	**# 004**	**On**	**05/12/2010**	**Operation at Depth**	**1,112.0 m**
Rig Activity				Continue POOH fr/396m -138m. Pump 40 bbl sweep & circulate annular volume w/sea water. RIH fr/138m - 537m. Drill 17.5" hole fr/537m - 1112m, TD. Pump 2 X 100 bbl Hi-Vis sweeps & circulate hole clean @ 200 spm / 2450 psi. Take surveys - MWD. Displace hole to 9.5 ppg @ 190 spm / 1950 psi. POOH fr/1112m - shoe. RIH fr/138m - 1112m. Pump 50 bbl sweeps & circulate hole clean w/1125 gpm / 2500 psi.	
Activity				Circulating hole clean	
Fluid Treatment				Continue mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling. Prepared ~1150 bbl of 9.5 ppg Pad mud, by blending the 11 ppg Kill Mud with the PHG and seawater. At TD, displaced the hole to 9.5 ppg Pad mud. Received 776 bbl of 9.5 ppg KCL brime ex FAR SCIMITAR. Mixing ~1000 bbl 9.5 ppg PAD mud and more Hi-Vis sweeps in aniticipation of wiper trip at time of report. Note: Fluid check shown is for PAD mud.	
For Report	**# 005**	**On**	**06/12/2010**	**Operation at Depth**	**1,112.0 m**
Rig Activity				Continue circulate hole clean and displace to 9.5 ppg PAD mud. POOH fr/1112m - 51m. P/Up HWDP, jet wellhead @ 700 gpm & 460 psi. POOH to surface. Wait on weather. P/Up & Install 18 3/4" wellhead, RT & plugs to D-Quip instructions. P/Up & M/Up weatherford cement head. R/Up and run 13 3/8" casing to 614m.	
Activity				Run 13 3/8" casing	
Fluid Treatment				Build more 9.5 ppg PAD mud and Hi-Vis sweeps. Circulate hole clean and displace hole to 9.5 ppg PAD mud.	
For Report	**# 006**	**On**	**07/12/2010**	**Operation at Depth**	**1,112.0 m**

Rig Activity	Continue run 13 3/8" casing. P/Up wellhead joint and RIH on landing string. M/Up cement stand, RIH & L/Out in 30" casing. Circulate prior to cement job @ 120 spm / 320 psi. Commence cement job, pump spacer, mix & pump 228 bbl of lead slurry followed by 84 bbl 15.8 ppg tail slurry. Release 18 3/4" RT, L/Down cement head. Pressure test standpipe manifold to 5000 psi. Wait on weather. Clear rig floor & catwalk of casing/cement job equipment. L/Out 17 1/2" BHA. M/Up 12 1/4" MWD tools.
Activity	M/Up 12 1/4" MWD tools
Fluid Treatment	Build more 9.5 ppg PAD mud. Cleaned all mud pits. Began mixing KCl / PHPA / CLAYSEAL-PLUS as per program. Will show the mud (pit) volumes and charge off all chemical used at later report.

Interval	**03**		**From Date**	**007**	**Top of Interval**	**1,112.0**	**m**
Max. Hole Size / Bit Size	**17.500 / 17.500**	**in**	**To Date**	**021**	**Bottom of Interval**	**2,317.0**	**m**

Rig Activity	Wait on drilling permit.
Activity	Mixing Spud mud
Fluid Treatment	Baroid Engineer on rig from 26/11/2010. Began mixing Spud and Kill mud at 1730 hrs. Note: All chemicals used will be charged off in later report.

For Report	**# 002**	**On**	**03/12/2010**	**Operation at Depth**	**141.0 m**

Rig Activity	Held pre Spud meeting, take survey and drill 36" hole fr/80m - 129m. During connection pipe started to jack out of hole causing thread to cross, breakout connection & rack back stand. Pipe stuck in hole - work free. POOH fr/129m - 84m. ROV inspect hole opener. Inspect Top Drive - OK. RIH and Drill 36" hole to 141m - TD. Pump 100 bbl sweep and displace open hole to kill mud & POOH to surface. R/Up and run 30" conductor casing. P/Up cement head, RIH untill wellhead is 2m above seabed. Proceed with cement job. Wait on cement.
Activity	Wait on cement
Fluid Treatment	Mixed 450 bbl 11ppg Kill mud in Pit#2 and continue mixing PHG for Hi-Vis sweeps while drilling 36" hole. Pumped ~ 50 bbl Hi-Vis sweeps into the annulus every half stand and around the BHA on connections. Spotted ~300 bbl of Kill mud in open hole and POOH. Building more Kill mud and PHG at report time.

Interval	**02**		**From Date**	**003**	**Top of Interval**	**141.0**	**m**
Max. Hole Size / Bit Size	**17.500 / 17.500**	**in**	**To Date**	**006**	**Bottom of Interval**	**1,112.0**	**m**

Max. Hole Size / Bit Size	**36.000 / 36.000**	**in**	**To Date**	**002**	**Bottom of Interval**	**141.0**	**m**

Well Name	Silvereye-1
Operator	Origin Energy Resources Ltd
Contractor	Maersk Drilling
Rig No	Kan Tan IV
Unit System	ADA Drilling

Deviation Actual

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displ. m
05/12/2010	169	169	0.34	207.4	
05/12/2010	487	487	0.18	317.5	
05/12/2010	748	748	0.45	313.3	
15/12/2010	979	979	0.37	339.0	
15/12/2010	1,268	1,265	13.03	77.5	
15/12/2010	1,562	1,549	16.31	77.9	
15/12/2010	1,703	1,684	15.87	77.2	
15/12/2010	2,193	2,155	16.26	78.0	
16/12/2010	2,283	2,241	20.17	100.2	

DAILY MUD REPORTS

Baroid Fluid Services

Report No 001

Daily Drilling Fluid Report

Date	02/12/2010	Depth	0.0 m
Spud Date	29/11/2010	Rig Activity	Mixing Spud mud

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m) OD	ID	Length	in Casing m OD	Set	MD	Circulation/Hydraulics Data			
Bit Size	in							Model			
Make/Type								Bore in			
Jets								Strokes in			
TFA	sq-in							Eff(%)			
Jets Velocity	ft/sec							bbl/strk			
Jet Impact Force	lbf							SPM			
Bit HHSI	hhp/in2							gpm|bbl/min			
Press Drop @ Bit	psi							Total GPM		AV, Riser	Circ Press psi
Bit Depth	m							Total Circ Time		AV min DP	Tot Pres Loss
ECD @ Csg Shoe	ppg							BU Time , min		AV max DC	Press Drop DP
ECD @ Bit	ppg							Total Strokes		BU Strokes	Press Drop An

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type

Baroid Engineer on rig from 26/11/2010.

Began mixing Spud and Kill mud at 1730 hrs.

Note: All chemicals used will be charged off in later report.

Rig Activity

Wait on drilling permit.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	day(s)			7		$A10,780.00
barite	1 tons bulk		119.000		119.000	
bentonite	1000 kg bulk		53.000		53.000	
calcium chloride	25 kg bag		80		80	
caustic soda	25 kg can		64		64	
CON DET	5 gal can		32		32	
guar gum	25 kg bag		128		128	
lime	25 kg bag		40		40	
mica	25 kg bag		27		27	
soda ash	25 kg bag		80		80	

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	3.5
Circulating	
Trips	5.5
Rig	
Surveys	
Fishing	
Run Casing	5.0
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	10.0
Total	24.0
Rotating	3.5
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol		Total		Total Losses	

Fluid Types	Vol bbl

Deviation Information	
Survey MD	m
Survey TVD	m
Angle	Deg
Direction	
Horiz Displ.	m

Daily Products Cost	$A0.00	Total Daily Cost	$A10,780.00
Cumulative Products Cost	$A0.00	Total Cumulative Cost	$A10,780.00

Baroid Representatives: Amit Godara

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

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Baroid Fluid Services

Report No 002

Daily Drilling Fluid Report

Date	03/12/2010	Depth	141.0 m
Spud Date	29/11/2010	Rig Activity	Wait on cement

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m) OD	ID	Length	in Casing m OD	Set	MD
Bit Size	in				30.000	@	138.0
Make/Type							
Jets							
TFA	sq-in						
Jets Velocity	ft/sec						
Jet Impact Force	lbf						
Bit HHSI	hhp/in2						
Press Drop @ Bit	psi						
Bit Depth	m	Open Hole 36.000		87.0			
ECD @ Csg Shoe	ppg						
ECD @ Bit	ppg						

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	0.000	0.000	0.000
Strokes in	12.000	12.000	12.000
Eff(%)	0	0	0
bbl/strk	0.000	0.000	0.000
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets	Program	
Source		Pit#3						
Time		1:30						
Depth	m	120						
FL Temp	Deg C							
Density @ Deg C	ppg	8.60 @ 25					8.50	8.70
FV @ Deg C	sec/qt	155 @ 25						
PV @ Deg C	cP							
YP	lbs/100 ft2							
GELS	lbs/100 ft2							
600/300								
200/100								
6/3								
API Filt	ml/30 min							
HTHP @ Deg C	ml/30 min							
Cake API/HTHP	32nd in							
Corr Solid	% by Vol							
NAP/Water	% by Vol	-/98.0						
Sand	% by vol							
MBT	ppb Eq.							
pH @ Deg C		9.00 @ 25					8.50	9.50
ALK Mud	Pm							
ALK Filt	Pf/Mf							
Chlorides	mg/l							
Tot. Hardness	mg/l							
LGS/HGS	% by Vol							
LGS/HGS	ppb							
ASG	SG							

Additional Properties

Fluid Treatments

Fluid Type

Mixed 450 bbl 11ppg Kill mud in Pit#2 and continue mixing PHG for Hi-Vis sweeps while drilling 36" hole. Pumped ~ 50 bbl Hi-Vis sweeps into the annulus every half stand and around the BHA on connections. Spotted ~300 bbl of Kill mud in open hole and POOH. Building more Kill mud and PHG at report time.

Rig Activity

Held pre Spud meeting, take survey and drill 36" hole fr/80m - 129m. During connection pipe started to jack out of hole causing thread to cross, breakout connection & rack back stand. Pipe stuck in hole - work free. POOH fr/129m - 84m. ROV inspect hole opener. Inspect Top Drive - OK. RIH and Drill 36" hole to 141m -TD. Pump 100 bbl sweep and displace open hole to kill mud & POOH to surface. R/Up and run 30" conductor casing. P/Up cement head, RIH untill wellhead is 2m above seabed. Proceed with cement job. Wait on cement.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
bentonite	1000 kg bulk	53.000		21.000	32.000	$A9,192.54
barite	1 tons bulk	119.000		19.000	100.000	$A8,586.48
BARAZAN D PLUS	25 kg bag		70	5	65	$A1,076.70
caustic soda	25 kg can	64		8	56	$A434.24
soda ash	25 kg bag	80		10	70	$A304.20
Amodrill 1235	1 bbl bulk		2.000		2.000	
calcium chloride	25 kg bag	80		48	32	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack		72		72	
EZ-MUD	25 kg pail		96		96	
guar gum	25 kg bag	128			128	
lime	25 kg bag	40			40	
mica	25 kg bag	27			27	
PAC-L	25 kg bag		80		80	

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time	
Drilling	3.5
Circulating	
Trips	5.5
Rig	
Surveys	
Fishing	
Run Casing	5.5
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	9.5
Total	24.0
Rotating	3.5
ROP	132.2
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol	1430.0	Total		Total Losses	

Fluid Types	Vol bbl
PHG	980.0
Kill Mud	390.0
Seawater	60.0

Deviation Information	
Survey MD	m
Survey TVD	m
Angle	Deg
Direction	
Horiz Displ.	m

Daily Products Cost	$A19,594.16	Total Daily Cost	$A22,674.16
Cumulative Products Cost	$A19,594.16	Total Cumulative Cost	$A33,454.16

Baroid Representatives: Amit Godara, Stephen Welch

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

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Baroid Fluid Services

Report No 003

Daily Drilling Fluid Report

Date	04/12/2010	Depth	537.0 m
Spud Date	29/11/2010	Rig Activity	POOH

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	17.500	in
Make/Type	SMITH/XR+ V	
Jets	3x16|3x12	
TFA	0.920	sq-in
Jets Velocity		ft/sec
Jet Impact Force		lbf
Bit HHSI		hhp/in2
Press Drop @ Bit		psi
Bit Depth	323.0	m
ECD @ Csg Shoe		ppg
ECD @ Bit		ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	3.000	216.7
Drill Collar	8.250	2.810	83.2
Drill Collar	9.000	2.500	13.0
Motor	9.625	0.000	10.1
Open Hole	17.500		457.0

in Casing m

OD	Set	MD
30.000	@	138.0

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			

Total GPM	AV, Riser	Circ Press psi
Total Circ Time	AV min DP	Tot Pres Loss
BU Time , min	AV max DC	Press Drop DP
Total Strokes	BU Strokes	Press Drop An

Properties

Properties		1	2	3	4	Targets		Program	
Source		Pit#3							
Time		21:30							
Depth	m	480							
FL Temp	Deg C								
Density @ Deg C	ppg	8.50 @ 25						8.50	8.70
FV @ Deg C	sec/qt	149 @ 25							
PV @ Deg C	cP								
YP	lbs/100 ft2								
GELS	lbs/100 ft2								
600/300									
200/100									
6/3									
API Filt	ml/30 min								
HTHP @ Deg C	ml/30 min								
Cake API/HTHP	32nd in								
Corr Solid	% by Vol								
NAP/Water	% by Vol	-/98.0							
Sand	% by vol								
MBT	ppb Eq.								
pH @ Deg C		9.00 @ 25						8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf								
Chlorides	mg/l								
Tot. Hardness	mg/l								
LGS/HGS	% by Vol								
LGS/HGS	ppb								
ASG	SG								

Additional Properties

Fluid Treatments

Fluid Type

Continue building more Kill mud and PHG. Mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling.

Note: Cost rectified.

Rig Activity

Continue wait on cement. Release 30" RT, POOH & L/Out the same. L/Out 36" BHA and damaged 5" HWDP from derrick. P/Up pipe from deck & rack back in derrick. P/Up & M/Up 17.5" BHA and RIH w/same. Shallow test MWD @ 1000 gpm / 1510 psi - OK. Continue TIH w/17.5" BHA to 131m - TOC. Drill out cement shoe track. Conitnue drilling 17.5" hole fr/141m - 537m while pumping PHG / Guar Gum sweeps as required. Displace the hole to PHG and POOH to 396m.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
guar gum	25 kg bag	128		40	88	$A3,550.00
bentonite	1000 kg bulk	32.000		5.000	27.000	$A2,188.70
BARAZAN D PLUS	25 kg bag	65	70	1	134	$A215.34
caustic soda	25 kg can	56		2	54	$A108.56
lime	25 kg bag	40		2	38	$A33.24
soda ash	25 kg bag	70		1	69	$A30.42
ALDACIDE G	25 kg can		32		32	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can		12		12	
barite	1 tons bulk	100.000			100.000	
BARO-SEAL FINE	40 lb bag		32		32	
calcium chloride	25 kg bag	32			32	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	72	108		180	
EZ SPOT	55 gal drum		4		4	
EZ-MUD	25 kg pail	96	96		192	
mica	25 kg bag	27			27	
OXYGON	50 lb can		32		32	
PAC-L	25 kg bag	80			80	
sodium bicarbonate	25 kg bag		40		40	
STEELSEAL 400	50 lb sack		80		80	

Daily Products Cost	$A6,126.26	Total Daily Cost	$A9,206.26
Cumulative Products Cost	$A25,720.42	Total Cumulative Cost	$A42,660.42

Baroid Representatives	Amit Godara	Stephen Welch	
Office	90 Talinga Rd Melbourne	Telephone	61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	Telephone	61-3-56-881-445

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	7.5
Circulating	
Trips	2.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	14.5
Total	24.0
Rotating	7.5
ROP	173.2
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol	1228.1	Total		Total Losses	

Fluid Types	Vol bbl
PHG	633.0
Kill Mud	390.1
Guar Gum	145.0
Seawater	60.0

Deviation Information

Survey MD	487.1	m
Survey TVD	487.1	m
Angle	0.18	Deg
Direction	318	
Horiz Displ.		m

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Baroid Fluid Services

Report No 004

Daily Drilling Fluid Report

Date	05/12/2010	Depth	1,112.0 m
Spud Date	29/11/2010	Rig Activity	Circulating hole clean

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	17.500	in
Make/Type	SMITH/XR+ V	
Jets	3x16|3x12	
TFA	0.920	sq-in
Jets Velocity	401	ft/sec
Jet Impact Force		lbf
Bit HHSI		hhp/in2
Press Drop @ Bit		psi
Bit Depth	1,112.0	m
ECD @ Csg Shoe		ppg
ECD @ Bit		ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	3.000	1,005.7
Drill Collar	8.250	2.810	83.2
Drill Collar	9.000	2.500	13.0
Motor	9.625	0.000	10.1
Open Hole	17.500		1,032.0

in Casing m

OD	Set	MD
30.000	@	138.0

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	79	72	79
gpm|bbl/min	396 | 9.44	361 | 8.60	396 | 9.44

Total GPM	1,154	AV, Riser		Circ Press psi	
Total Circ Time	37	AV min DP	37.3	Tot Pres Loss	
BU Time , min	36	AV max DC	125.5	Press Drop DP	
Total Strokes	8,597	BU Strokes	8,323	Press Drop An	

Properties

Properties		1	2	3	4	Targets	Program
Source		Pit#3					
Time		17:30					
Depth	m	1,112					
FL Temp	Deg C						
Density @ Deg C	ppg	9.50 @ 25					
FV @ Deg C	sec/qt	180 @ 25					
PV @ Deg C	cP	16 @ 49					
YP	lbs/100 ft2	36					
GELS	lbs/100 ft2	22/26/-					
600/300		68.0/52.0					
200/100		47.0/39.0					
6/3		22.0/20.0					
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol	5.0					
NAP/Water	% by Vol	-/94.0					
Sand	% by vol						
MBT	ppb Eq.	20.0					
pH @ Deg C		9.00 @ 25					
ALK Mud	Pm	0.50					
ALK Filt	Pf/Mf	0.05/0.10					
Chlorides	mg/l	18,500					
Tot. Hardness	mg/l	600					
LGS/HGS	% by Vol	2.4/2.5					
LGS/HGS	ppb	22.29/37.12					
ASG	SG	3.412					

Additional Properties

Fluid Treatments

Fluid Type 9.5 ppg PAD MUD

Continue mixing and pumping PHG / Guar Gum sweeps as needed to keep up with drilling. Prepared ~1150 bbl of 9.5 ppg Pad mud, by blending the 11 ppg Kill Mud with the PHG and seawater. At TD, displaced the hole to 9.5 ppg Pad mud. Received 776 bbl of 9.5 ppg KCL brime ex FAR SCIMITAR. Mixing ~1000 bbl 9.5 ppg PAD mud and more Hi-Vis sweeps in aniticipation of wiper trip at time of report.

Note: Fluid check shown is for PAD mud.

Rig Activity

Continue POOH fr/396m -138m. Pump 40 bbl sweep & circulate annular volume w/sea water. RIH fr/138m - 537m. Drill 17.5" hole fr/537m - 1112m, TD. Pump 2 X 100 bbl Hi-Vis sweeps & circulate hole clean @ 200 spm / 2450 psi. Take surveys - MWD. Displace hole to 9.5 ppg @ 190 spm / 1950 psi. POOH fr/1112m - shoe. RIH fr/138m - 1112m. Pump 50 bbl sweeps & circulate hole clean w/1125 gpm / 2500 psi.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
BARAZAN D PLUS	25 kg bag	134		58	76	$A12,489.72
barite	1 tons bulk	100.000	47.000	20.000	127.000	$A9,038.40
guar gum	25 kg bag	88		72	16	$A6,390.00
bentonite	1000 kg bulk	27.000		12.000	15.000	$A5,252.88
caustic soda	25 kg can	54		5	49	$A271.40
lime	25 kg bag	38		3	35	$A49.86
soda ash	25 kg bag	69		1	68	$A30.42
ALDACIDE G	25 kg can	32			32	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	12			12	
BARO-SEAL FINE	40 lb bag	32			32	
calcium chloride	25 kg bag	32			32	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	180			180	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	192			192	
mica	25 kg bag	27			27	
OXYGON	50 lb can	32			32	
PAC-L	25 kg bag	80			80	
sodium bicarbonate	25 kg bag	40			40	
STEELSEAL 400	50 lb sack	80			80	

Daily Products Cost	$A33,522.68	Total Daily Cost	$A36,602.68
Cumulative Products Cost	$A59,243.10	Total Cumulative Cost	$A79,263.10

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	14.5
Circulating	3.5
Trips	5.5
Rig	
Surveys	0.5
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.0
Rotating	14.5
ROP	130.1
Dil Rate	0.00

Fluid Volume Breakdown — 9.5 ppg PAD MUD

Active	bbl	Additions	bbl	Losses	bbl
Annulus	994.1	Base		Fluid Dumped	
Pipe Cap	32.7	Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole	1026.8	Sea Water	1068.1	Evaporation	
Total Circ	1026.8	Whole Mud	1024.2	Trips	
Reserve	1100.0	Barite	30.0	Other	
Prev Vol	1228.1	Chemicals	4.5	Total Surface	
Net Change	2126.7	Other		Downhole	
Total Vol	2126.8	Total	2126.7	Total Losses	

Fluid Types	Vol bbl
PHG	150.0
Seawater	60.0

Deviation Information

Survey MD	979.0	m
Survey TVD	979.0	m
Angle	0.37	Deg
Direction	339	
Horiz Displ.		m

Baroid Representatives: Amit Godara, Stephen Welch

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

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Baroid Fluid Services

Report No 005

Daily Drilling Fluid Report

Date	06/12/2010	Depth	1,112.0 m
Spud Date	29/11/2010	Rig Activity	Run 13 3/8" casing

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m) OD	ID	Length	in Casing m OD	Set	MD
Bit Size	in				30.000	@	138.0
Make/Type							
Jets							
TFA	sq-in						
Jets Velocity	ft/sec						
Jet Impact Force	lbf						
Bit HHSI	hhp/in2						
Press Drop @ Bit	psi						
Bit Depth	m	Open Hole	17.500	1,032.0			
ECD @ Csg Shoe	ppg						
ECD @ Bit	ppg						

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type 9.5 ppg PAD MUD

Build more 9.5 ppg PAD mud and Hi-Vis sweeps. Circulate hole clean and displace hole to 9.5 ppg PAD mud.

Rig Activity

Continue circulate hole clean and displace to 9.5 ppg PAD mud. POOH fr/1112m - 51m. P/Up HWDP, jet wellhead @ 700 gpm & 460 psi. POOH to surface. Wait on weather. P/Up & Install 18 3/4" wellhead, RT & plugs to D-Quip instructions. P/Up & M/Up weatherford cement head. R/Up and run 13 3/8" casing to 614m.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
barite	1 tons bulk	127.000		25.000	102.000	$A11,298.00
BARAZAN D PLUS	25 kg bag	76		15	61	$A3,230.10
caustic soda	25 kg can	49		1	48	$A54.28
ALDACIDE G	25 kg can	32			32	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	12			12	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	15.000			15.000	
calcium chloride	25 kg bag	32			32	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	180			180	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	192			192	
guar gum	25 kg bag	16			16	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	32			32	
PAC-L	25 kg bag	80			80	
soda ash	25 kg bag	68			68	
sodium bicarbonate	25 kg bag	40			40	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box		30		30	
X FLOW (API 120)	1 each box		18		18	
X FLOW (API 20)	1 each box		12		12	
X FLOW (API 40)	1 each box		12		12	
X FLOW (API 80)	1 each box		16		16	

Solids Control Equipment			
Shaker	Screens	Hrs	
VSM-300			
VSM-300			
VSM-300			
VSM-300			
Hydrocyclone	Cones	Screens	Hrs
Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time	
Drilling	
Circulating	1.5
Trips	5.0
Rig	
Surveys	
Fishing	
Run Casing	12.5
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	5.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown 9.5 ppg PAD MUD

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole	1095.6	Sea Water	450.0	Evaporation	
Total Circ		Whole Mud		Trips	
Reserve	120.0	Barite	37.5	Other	-1400.2
Prev Vol	2126.8	Chemicals	1.5	Total Surface	
Net Change	-911.2	Other		Downhole	
Total Vol	1215.6	Total	489.0	Total Losses	-1400.2

Fluid Types	Vol bbl
Seawater	60.0

Deviation Information		
Survey MD	979.0	m
Survey TVD	979.0	m
Angle	0.37	Deg
Direction	339	
Horiz Displ.		m

Daily Products Cost	$A14,582.38	Total Daily Cost	$A17,662.38
Cumulative Products Cost	$A73,825.48	Total Cumulative Cost	$A96,925.48

Baroid Representatives: Amit Godara, Stephen Welch

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

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Baroid Fluid Services

Report No 006

Daily Drilling Fluid Report

Date	07/12/2010	Depth	1,112.0 m
Spud Date	29/11/2010	Rig Activity	M/Up 12 1/4" MWD tools

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Paul Leathem	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information			Drill String (in) / (m) OD	ID	Length	in Casing m OD	Set	MD	Circulation/Hydraulics Data			
Bit Size		in				30.000	@	138.0	Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Make/Type						13.375	@	1,108.0	Bore in	6.500	6.500	6.500
Jets									Strokes in	12.000	12.000	12.000
TFA		sq-in							Eff(%)	97	97	97
Jets Velocity		ft/sec							bbl/strk	0.119	0.119	0.119
Jet Impact Force		lbf							SPM	0	0	0
Bit HHSI		hhp/in2							gpm|bbl/min			
Press Drop @ Bit		psi							Total GPM		AV, Riser	Circ Press psi
Bit Depth	1,112.0	m	Open Hole	17.500	4.0				Total Circ Time		AV min DP	Tot Pres Loss
ECD @ Csg Shoe		ppg							BU Time , min		AV max DC	Press Drop DP
ECD @ Bit		ppg							Total Strokes		BU Strokes	Press Drop An

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type Seawater

Build more 9.5 ppg PAD mud. Cleaned all mud pits.
Began mixing KCl / PHPA / CLAYSEAL-PLUS as per program.
Will show the mud (pit) volumes and charge off all chemical used at later report.

Rig Activity

Continue run 13 3/8" casing. P/Up wellhead joint and RIH on landing string. M/Up cement stand, RIH & L/Out in 30" casing. Circulate prior to cement job @ 120 spm / 320 psi. Commence cement job, pump spacer, mix & pump 228 bbl of lead slurry followed by 84 bbl 15.8 ppg tail slurry. Release 18 3/4" RT, L/Down cement head. Pressure test standpipe manifold to 5000 psi. Wait on weather. Clear rig floor & catwalk of casing/cement job equipment. L/Out 17 1/2" BHA. M/Up 12 1/4" MWD tools.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
BARAZAN D PLUS	25 kg bag	61		9	52	$A1,938.06
caustic soda	25 kg can	48		1	47	$A54.28
ALDACIDE G	25 kg can	32			32	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack		144		144	
BARA-DEFOAM W300	25 l can	12			12	
barite	1 tons bulk	102.000			102.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	15.000			15.000	
calcium chloride	25 kg bag	32			32	
citric acid	25 kg bag		40		40	
CLAYSEAL PLUS	55 gal drum		28		28	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	180			180	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	192			192	
guar gum	25 kg bag	16			16	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	32			32	
PAC-L	25 kg bag	80			80	
soda ash	25 kg bag	68			68	
sodium bicarbonate	25 kg bag	40			40	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	18			18	
X FLOW (API 20)	1 each box	12			12	

Solids Control Equipment				Time	
Shaker	Screens		Hrs	Drilling	
VSM-300				Circulating	1.0
VSM-300				Trips	
VSM-300				Rig	
VSM-300				Surveys	
				Fishing	
				Run Casing	5.0
				Coring	
				Reaming	
Hydrocyclone	Cones	Screens	Hrs	Testing	
				Logging	
				Dir Work	
				Repair	
				Other	18.0
Centrifuge	Speed	Feed Rate	Hrs	Total	24.0
HS 2000	3,500	300.00		Rotating	
HS 2000	3,500	300.00		ROP	
518	4,000	80.00		Dil Rate	0.00

Fluid Volume Breakdown Seawater

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole	508.9	Sea Water	508.9	Evaporation	
Total Circ		Whole Mud		Trips	
Reserve	60.0	Barite		Other	
Prev Vol	60.0	Chemicals		Total Surface	
Net Change	508.9	Other		Downhole	
Total Vol	568.9	Total	508.9	Total Losses	

Fluid Types	Vol bbl

Deviation Information		
Survey MD	979.0	m
Survey TVD	979.0	m
Angle	0.37	Deg
Direction	339	
Horiz Displ.		m

Daily Products Cost	$A1,992.34	Total Daily Cost	$A5,072.34
Cumulative Products Cost	$A75,817.82	Total Cumulative Cost	$A101,997.82

Baroid Representatives: Amit Godara, Stephen Welch
Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555
Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

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Baroid Fluid Services

Report No 007

Daily Drilling Fluid Report

Date	08/12/2010	Depth	1,112.0 m
Spud Date	29/11/2010	Rig Activity	Run 12 1/4" BHA from derrick

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size	in								
Make/Type							30.000	@	138.0
Jets							13.375	@	1,108.0
TFA	sq-in								
Jets Velocity	ft/sec								
Jet Impact Force	lbf								
Bit HHSI	hhp/in2								
Press Drop @ Bit	psi								
Bit Depth	m	Riser	20.000		80.0				
ECD @ Csg Shoe	ppg	Open Hole	17.500		4.0				
ECD @ Bit	ppg								

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type Seawater

Continue mixing KCl / PHPA / CLAYSEAL+ as per program. Filled sand traps with KCL/PHPA/CLAYSEAL+ mud. Dressed shakers with 12 x API 20 - top scalper screens and 16 x API 80 - bottom screens.

Rig Activity

Continue M/Up 12 1/4" MWD tools, test, dress nuclear source ports, build stand of HWDP and rack back in derrick. R/Up and run BOP's. Install guidelines & POD lines and transmitter. P/Up & M/Up slip joint. Install Choke & Kill hoses to slip joint. P/Up & M/Up diverter, lower into housing & function test. R/Down BOP handling equipment. Run 12 1/4" BHA from derrick.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
Brine 21% KCL	1 each bbl		1,090	525	565	$A34,791.75
barite	1 tons bulk	102.000		38.000	64.000	$A17,172.96
BARAZAN D PLUS	25 kg bag	52		39	13	$A8,398.26
CLAYSEAL PLUS	55 gal drum	28	16	4	40	$A6,038.28
PAC-L	25 kg bag	80		37	43	$A5,931.84
DEXTRID LTE	25 kg sack	180		110	70	$A5,827.80
OXYGON	50 lb can	32		4	28	$A2,288.12
potassium hydroxide	20 kg pail		31	8	23	$A1,056.88
BARACARB 150	25 kg sack	144		44	100	$A702.68
ALDACIDE G	25 kg can	32		4	28	$A692.36
soda ash	25 kg bag	68		8	60	$A243.36
BARA-DEFOAM W300	25 l can	12		1	11	$A125.82
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	15.000			15.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	47			47	
citric acid	25 kg bag	40			40	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	192			192	
guar gum	25 kg bag	16			16	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
sodium bicarbonate	25 kg bag	40			40	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	

Daily Products Cost	$A83,270.11	Total Daily Cost	$A86,350.11
Cumulative Products Cost	$A159,087.93	Total Cumulative Cost	$A188,347.93

Solids Control Equipment			
Shaker	Screens	Hrs	
VSM-300	20 20 20 80 80 80 80		
VSM-300	20 20 20 80 80 80 80		
VSM-300	20 20 20 80 80 80 80		
VSM-300	20 20 20 80 80 80 80		
Hydrocyclone	Cones	Screens	Hrs
Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time	
Drilling	
Circulating	
Trips	
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	2.0
Logging	
Dir Work	
Repair	
Other	22.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown Seawater

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole	610.9	Sea Water	101.9	Evaporation	
Total Circ		Whole Mud		Trips	
Reserve	60.0	Barite		Other	
Prev Vol	568.9	Chemicals		Total Surface	
Net Change	101.9	Other		Downhole	
Total Vol	670.9	Total	101.9	Total Losses	

Fluid Types	Vol bbl
KCL/PHPA/CLAYSEAL	1558.0

Deviation Information		
Survey MD	979.0	m
Survey TVD	979.0	m
Angle	0.37	Deg
Direction	339	
Horiz Displ.		m

Baroid Representatives: Amit Godara, Stephen Welch

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

Warehouse: c/o of Esso Australia Ltd — Telephone 61-3-56-881-445

HALLIBURTON | Fluid Systems

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Baroid Fluid Services

Report No 008

Daily Drilling Fluid Report

Date	09/12/2010	Depth	1,158.0 m
Spud Date	29/11/2010	Rig Activity	Drilling 12.25" interval

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Peter McParlin / Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity	245	ft/sec
Jet Impact Force	1146.3	lbf
Bit HHSI	2.40	hhp/in2
Press Drop @ Bit	537	psi
Bit Depth	1,158.0	m
ECD @ Csg Shoe	10.15	ppg
ECD @ Bit	10.15	ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.778	916.0
Drill Pipe	5.000	3.125	113.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	17.500		50.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	89	91	0
gpm|bbl/min	446 | 10.63	456 | 10.87	

Total GPM	903	AV, Riser	59.0	Circ Press psi	2100
Total Circ Time	65	AV min DP	171.4	Tot Pres Loss	1679
BU Time , min	25	AV max DC	245.5	Press Drop DP	701
Total Strokes	11,685	BU Strokes	4,580	Press Drop An	29

Properties

Properties		1	Hyd 2	3	4	Targets		Program	
Source		Pit#2	Pit#2						
Time		1:00	22:00						
Depth	m	1,112	1,119						
FL Temp	Deg C								
Density @ Deg C	ppg	10.00 @ 25	10.00 @ 30					10.00	10.00
FV @ Deg C	sec/qt	78 @ 25	63 @ 30						
PV @ Deg C	cP	14 @ 49	12 @ 49						
YP	lbs/100 ft2	22	23			X	X	25	30
GELS	lbs/100 ft2	9/11/12	9/10/12						
600/300		50.0/36.0	47.0/35.0						
200/100		29.0/21.0	28.0/21.0						
6/3		9.0/8.0	8.0/7.0						
API Filt	ml/30 min	5.0	5.1						6.0
HTHP @ Deg C	ml/30 min	10.0 @ 149	10.5 @ 149						
Cake API/HTHP	32nd in	-/1	-/2						
Corr Solid	% by Vol	6.0	6.2						
NAP/Water	% by Vol	-/90.0	-/90.0						
Sand	% by vol								
MBT	ppb Eq.		2.5						
pH @ Deg C		9.50 @ 25	9.70 @ 30				X	8.50	9.50
ALK Mud	Pm	0.50	1.00						
ALK Filt	Pf/Mf	1.00/2.50	1.50/3.50						
Chlorides	mg/l	50,000	48,000						
Tot. Hardness	mg/l	560	600						
LGS/HGS	% by Vol	3.3/2.7	3.5/2.7						
LGS/HGS	ppb	30.53/39.32	32.19/39.10						
ASG	SG	3.310	3.287						
Additional Properties									
Tau 0	lbs/100 ft2	6.00	3.88						

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Continue mixing KCl / PHPA / CLAYSEAL+ as per program. Displaced the hole to 10 ppg KCL/PHPA/CLAYSEAL+ mud. Treated out any cement contamination with citric acid in active system. Adding CLAYSEAL+ to bring up the concentration up to 2% v/v and EZ MUD as per program.

Rig Activity

Downlink & install radioactive sources. RIH w/12.25" BHA to 157m. Shallow test MWD. Install diverter bag, function test BOP's on both PODs. Continue P/Up 5" DP and RIH to 677m. P/Up 5" DP & rack back in derrick. Drill out cement & shoe and rat hole to 1113m while displacing well to 10 ppg mud. Circulate & condition mud. R/Up & perform LOT. Flush choke & kill lines to 10 ppg mud. Commence drilling 12.25" hole fr/1117m - 1158m.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
barite	1 tons bulk	64.000	55.000	25.000	94.000	$A11,298.00
X FLOW (API 80)	1 each box	16		16		$A8,959.36
X FLOW (API 20)	1 each box	12		12		$A7,024.80
Brine 21% KCL	1 each bbl	565		95	470	$A6,295.65
BARACARB 150	25 kg sack	100	672	100	672	$A1,597.00
CLAYSEAL PLUS	55 gal drum	40		1	39	$A1,509.57
quar gum	25 kg bag	16		16		$A1,420.00
BARAZAN D PLUS	25 kg bag	13	70	6	77	$A1,292.04
PAC-L	25 kg bag	43		8	35	$A1,282.56
DEXTRID LTE	25 kg sack	70		18	52	$A953.64
citric acid	25 kg bag	40		10	30	$A762.00
OXYGON	50 lb can	28		1	27	$A572.03
sodium bicarbonate	25 kg bag	40		16	24	$A452.00
ALDACIDE G	25 kg can	28		1	27	$A173.09
soda ash	25 kg bag	60	47	1	106	$A30.42
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	11			11	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	15.000	41.000		56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	47	32		79	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	192			192	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
potassium hydroxide	20 kg pail	23			23	

Daily Products Cost	$A43,622.16	Total Daily Cost	$A46,702.16
Cumulative Products Cost	$A202,710.09	Total Cumulative Cost	$A235,050.09

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 80 80 80 80	9.0
VSM-300	20 20 20 80 80 80 80	9.0
VSM-300	20 20 20 80 80 80 80	9.0
VSM-300	20 20 20 80 80 80 80	9.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	7.5
Circulating	1.5
Trips	3.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	3.0
Logging	
Dir Work	
Repair	
Other	9.0
Total	24.0
Rotating	7.5
ROP	20.1
Dil Rate	0.00

Fluid Volume Breakdown — KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus	547.1	Base		Fluid Dumped	
Pipe Cap	72.5	Drill Water	150.0	Transferred	
Active Pits	776.0	Dewatering		SCE	-40.1
Total Hole	619.6	Sea Water		Evaporation	
Total Circ	1395.6	Whole Mud		Trips	
Reserve	311.0	Barite	37.5	Other	-106.6
Prev Vol	1558.0	Chemicals	12.9	Total Surface	
Net Change	148.7	Other	95.0	Downhole	
Total Vol	1706.6	Total	295.4	Total Losses	-146.7

Fluid Types	Vol bbl
Seawater	60.0

Deviation Information

Survey MD	979.0	m
Survey TVD	979.0	m
Angle	0.37	Deg
Direction	339	
Horiz Displ.		m

Baroid Representatives: Amit Godara, Stephen Welch

Office: 90 Talinga Rd Melbourne — Telephone 61-03-9581-7555

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Baroid Fluid Services

Report No 009

Daily Drilling Fluid Report

Date	10/12/2010	Depth	1,569.0 m
Spud Date	29/11/2010	Rig Activity	Drilling Ahead

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity	237	ft/sec
Jet Impact Force	1071.2	lbf
Bit HHSI	2.17	hhp/in2
Press Drop @ Bit	502	psi
Bit Depth	1,569.0	m
ECD @ Csg Shoe	10.13	ppg
ECD @ Bit	10.15	ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.778	1,327.0
Drill Pipe	5.000	3.125	113.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	12.250		461.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0

Leak Off ppg 16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	71	60	43
gpm|bbl/min	356 | 8.48	301 | 7.17	216 | 5.14

Total GPM	873	AV, Riser	57.0	Circ Press psi	2312
Total Circ Time	77	AV min DP	165.7	Tot Pres Loss	1469
BU Time , min	33	AV max DC	248.6	Press Drop DP	675
Total Strokes	13,450	BU Strokes	5,744	Press Drop An	41

Properties

		1	2	Hyd 3	4	Targets				Program	
Source		Pit#2	Pit#2	Pit#2							
Time		4:00	15:00	21:30							
Depth	m	1,250	1,360	1,519							
FL Temp	Deg C	41	30	48							
Density @ Deg C	ppg	10.00 @ 32	10.00 @ 30	10.00 @ 46						10.00	10.00
FV @ Deg C	sec/qt	60 @ 30	50 @ 30	48 @ 46							
PV @ Deg C	cP	13 @ 49	13 @ 49	9 @ 49							
YP	lbs/100 ft2	20	23	20		X	X	X		25	30
GELS	lbs/100 ft2	8/10/12	9/10/11	8/11/13							
600/300		46.0/33.0	49.0/36.0	38.0/29.0							
200/100		27.0/20.0	30.0/23.0	25.0/19.0							
6/3		8.0/7.0	10.0/9.0	9.0/7.0							
API Filt	ml/30 min	5.0	6.0	5.8							6.0
HTHP @ Deg C	ml/30 min	10.2 @ 149	12.0 @ 149	11.0 @ 149							
Cake API/HTHP	32nd in	-/2	-/2	1/2							
Corr Solid	% by Vol	6.9	6.9	6.1							
NAP/Water	% by Vol	-/90.0	-/90.0	-/91.0							
Sand	% by vol										
MBT	ppb Eq.	1.0	2.0	5.0							
pH @ Deg C		9.00 @ 30	8.50 @ 30	9.00 @ 30						8.50	9.50
ALK Mud	Pm	0.50		0.50							
ALK Filt	Pf/Mf	0.30/1.80	0.05/0.10	0.05/2.20							
Chlorides	mg/l	39,000	39,000	36,000							
Tot. Hardness	mg/l	600	400	540							
LGS/HGS	% by Vol	4.3/2.6	4.3/2.6	2.6/3.6							
LGS/HGS	ppb	39.47/38.24	39.47/38.24	23.28/52.77							
ASG	SG	3.200	3.200	3.534							
Additional Properties											
Tau 0	lbs/100 ft2	4.91	6.38	4.67							
KCL %	% by vol	7.9	7.9	7.6							

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Continue adding CLAYSEAL PLUS to the active to bring the concentration up to 2% v/v and once the pH was below 9.5 we started making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH.

Ordered more DEXTRID-LTE and PAC-L to come out on tomorrow's boat.

Brought the BARACARB 150 ppb in the active system to 10 ppb.

Rig Activity

Drill 12 1/4" hole from 1158m to 1251m. POOH to shoe at 1091m whilst repair work done on lockbar and lines for topdrive. RIH from 1091m to 1225m. Wash from 1225 to 1251m with 4m fill on bottom. Cont. to drill ahead from 1251m to 1569m.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
CLAYSEAL PLUS	55 gal drum	39		20	19	$A30,191.40
Brine 21% KCL	1 each bbl	470		160	310	$A10,603.20
BARACARB 150	25 kg sack	672		141	531	$A2,251.77
BARAZAN D PLUS	25 kg bag	77		9	68	$A1,938.06
EZ-MUD	25 kg pail	192		16	176	$A1,519.84
PAC-L	25 kg bag	35		8	27	$A1,282.56
DEXTRID LTE	25 kg sack	52		16	36	$A847.68
OXYGON	50 lb can	27		1	26	$A572.03
potassium hydroxide	20 kg pail	23		4	19	$A528.44
citric acid	25 kg bag	30		4	26	$A304.80
soda ash	25 kg bag	106		6	100	$A182.52
ALDACIDE G	25 kg can	27		1	26	$A173.09
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	11			11	
barite	1 tons bulk	94.000			94.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	18			18	

Daily Products Cost	$A50,395.39	Total Daily Cost	$A53,475.39
Cumulative Products Cost	$A253,105.48	Total Cumulative Cost	$A288,525.48

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 80 80 80 80	18.0
VSM-300	20 20 20 80 80 80 80	18.0
VSM-300	20 20 20 80 80 80 80	18.0
VSM-300	20 20 20 80 80 80 80	18.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	14.0
Circulating	
Trips	1.5
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	0.5
Testing	
Logging	
Dir Work	
Repair	8.0
Other	
Total	24.0
Rotating	14.5
ROP	96.3
Dil Rate	0.00

Fluid Volume Breakdown KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus	686.0	Base		Fluid Dumped	
Pipe Cap	102.4	Drill Water	210.0	Transferred	
Active Pits	818.0	Dewatering		SCE	-89.6
Total Hole	788.4	Sea Water		Evaporation	-22.0
Total Circ	1606.4	Whole Mud	160.0	Trips	
Reserve	400.0	Barite		Other	
Prev Vol	1706.6	Chemicals	41.5	Total Surface	
Net Change	299.9	Other		Downhole	
Total Vol	2006.4	Total	411.5	Total Losses	-111.6

Fluid Types	Vol bbl
Brine	174.0

Deviation Information

Survey MD	1,561.8	m
Survey TVD	1,548.5	m
Angle	16.31	Deg
Direction	78	
Horiz Displ.		m

Baroid Representatives James Munford Stephen Welch

Office 90 Talinga Rd Melbourne Telephone 61-03-9581-7555

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Baroid Fluid Services

Report No 010

Daily Drilling Fluid Report

Date	11/12/2010	Depth	1,812.0 m
Spud Date	29/11/2010	Rig Activity	Tripping

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size	in								
Make/Type							30.000	@	138.0
Jets							13.375	@	1,108.0
TFA	sq-in								
Jets Velocity	ft/sec								
Jet Impact Force	lbf								
Bit HHSI	hhp/in2								
Press Drop @ Bit	psi								
Bit Depth	m	Riser	20.000		80.0				
ECD @ Csg Shoe	ppg	Open Hole	12.250		704.0				
ECD @ Bit	ppg					Leak Off ppg			16.00

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets		Program	
Source		Pit#2	Pit#2	Pit#2					
Time		3:30	9:00	22:00					
Depth	m	1,608	1,750	1,812					
FL Temp	Deg C	49	52						
Density @ Deg C	ppg	10.10 @ 49	10.00 @ 50	10.10 @ 35		X	X	10.00	10.00
FV @ Deg C	sec/qt	45 @ 46	48 @ 50	53 @ 35					
PV @ Deg C	cP	11 @ 49	11 @ 49	14 @ 49					
YP	lbs/100 ft2	21	25	30		X		25	30
GELS	lbs/100 ft2	8/11/12	8/10/11	14/18/22					
600/300		43.0/32.0	47.0/36.0	58.0/44.0					
200/100		27.0/21.0	31.0/24.0	37.0/28.0					
6/3		8.0/7.0	10.0/9.0	12.0/11.0					
API Filt	ml/30 min	5.5	5.6	5.7					6.0
HTHP @ Deg C	ml/30 min	11.0 @ 149	12.0 @ 149	12.0 @ 149					
Cake API/HTHP	32nd in	1/2	1/2	1/2					
Corr Solid	% by Vol	6.5	7.4	7.6					
NAP/Water	% by Vol	-/90.0	-/89.0	-/89.0					
Sand	% by vol								
MBT	ppb Eq.	7.5	7.5	7.5					
pH @ Deg C		9.50 @ 30	9.00 @ 50	9.00 @ 50				8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf	0.05/2.00	0.05/1.50	0.02/1.80					
Chlorides	mg/l	44,000	46,000	44,000					
Tot. Hardness	mg/l	520	320	360					
LGS/HGS	% by Vol	3.1/3.4	5.8/1.6	5.2/2.4					
LGS/HGS	ppb	28.64/49.71	52.46/24.12	47.25/34.95					
ASG	SG	3.429	2.955	3.103					
Additional Properties									
Tau 0	lbs/100 ft2	3.48	4.19	6.17					
KCL %	% by vol	8.5	8.5	8.5					

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Continue adding CLAYSEAL PLUS to the active to bring the concentration up to 2% v/v . Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Treated system with BARAZAN D+ prior to pulling out for improved hole cleaning. Changed shaker #1, 2, 3 to API 100 mesh screens.

Rig Activity

Cont. to drill 12¼" hole from 1570m to 1812m. Sperry communication link to downhole tools failed. Circulated well clean. POOH on elevaters from 1812m to 1544m, encountered tight spots. Pump out of hole from 1544m to inside shoe at 1081m. Circ. hole clean. POOH to surface. TBT download radioactive sources & downline sperry tools.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
CLAYSEAL PLUS	55 gal drum	19		17	2	$A25,662.69
Brine 21% KCL	1 each bbl	310		204	106	$A13,519.08
barite	1 tons bulk	94.000		19.000	75.000	$A8,586.48
BARAZAN D PLUS	25 kg bag	68		18	50	$A3,876.12
PAC-L	25 kg bag	27		14	13	$A2,244.48
EZ-MUD	25 kg pail	176		20	156	$A1,899.80
DEXTRID LTE	25 kg sack	36		24	12	$A1,271.52
BARACARB 150	25 kg sack	531		48	483	$A766.56
BARA-DEFOAM W300	25 l can	11		3	8	$A377.46
citric acid	25 kg bag	26		4	22	$A304.80
soda ash	25 kg bag	100		5	95	$A152.10
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
potassium hydroxide	20 kg pail	19			19	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	18			18	

Daily Products Cost	$A58,661.09	Total Daily Cost	$A61,741.09
Cumulative Products Cost	$A311,766.57	Total Cumulative Cost	$A350,266.57

Baroid Representatives	James Munford	Stephen Welch	
Office	90 Talinga Rd Melbourne	Telephone	61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	Telephone	61-3-56-881-445

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 100 100 100 100	22.0
VSM-300	20 20 20 100 100 100 100	22.0
VSM-300	20 20 20 100 100 100 100	22.0
VSM-300	20 20 20 80 80 80 80	22.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	11.0
Circulating	2.0
Trips	8.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	2.0
Other	1.0
Total	24.0
Rotating	11.0
ROP	72.5
Dil Rate	0.00

Fluid Volume Breakdown KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water	280.0	Transferred	
Active Pits	798.0	Dewatering		SCE	-121.2
Total Hole	943.7	Sea Water		Evaporation	
Total Circ	798.0	Whole Mud	5.0	Trips	
Reserve	696.0	Barite	28.5	Other	
Prev Vol	2006.4	Chemicals	34.9	Total Surface	
Net Change	431.2	Other	204.0	Downhole	
Total Vol	2437.7	Total	552.4	Total Losses	-121.2

Fluid Types	Vol bbl
Brine	169.0

Deviation Information		
Survey MD	1,702.7	m
Survey TVD	1,683.6	m
Angle	15.87	Deg
Direction	77	
Horiz Displ.		m

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Baroid Fluid Services

Report No 011

Daily Drilling Fluid Report

Date	12/12/2010	Depth	1,860.0 m
Spud Date	29/11/2010	Rig Activity	Drilling

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity	271	ft/sec
Jet Impact Force	1408.1	lbf
Bit HHSI	3.26	hhp/in2
Press Drop @ Bit	660	psi
Bit Depth	1,860.0	m
ECD @ Csg Shoe	10.21	ppg
ECD @ Bit	10.24	ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.778	1,618.0
Drill Pipe	5.000	3.125	113.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	12.250		752.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0
Leak Off ppg		16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600			
Bore in	6.500	6.500	6.500			
Strokes in	12.000	12.000	12.000			
Eff(%)	97	97	97			
bbl/strk	0.119	0.119	0.119			
SPM	80	63	56			
gpm|bbl/min	401	9.55	316	7.52	281	6.69
Total GPM	998	AV, Riser	65.2	Circ Press psi	3095	
Total Circ Time	73	AV min DP	189.5	Tot Pres Loss	2052	
BU Time , min	34	AV max DC	284.3	Press Drop DP	995	
Total Strokes	14,573	BU Strokes	6,715	Press Drop An	60	

Properties

Properties		1	2	Hyd 3	4	Targets			Program	
Source		Pit#2	Pit#2	Pit#2						
Time		9:00	20:00	23:00						
Depth	m	1,812	1,812	1,855						
FL Temp	Deg C		45	48						
Density @ Deg C	ppg	10.10 @ 28	10.05 @ 45	10.05 @ 48		X	X	X	10.00	10.00
FV @ Deg C	sec/qt	58 @ 28	46 @ 45	48 @ 48						
PV @ Deg C	cP	14 @ 49	9 @ 49	11 @ 49						
YP	lbs/100 ft2	30	23	25			X		25	30
GELS	lbs/100 ft2	14/18/21	9/13/17	11/15/19						
600/300		58.0/44.0	41.0/32.0	47.0/36.0						
200/100		37.0/28.0	27.0/21.0	30.0/23.0						
6/3		12.0/11.0	9.0/8.0	10.0/9.0						
API Filt	ml/30 min	5.6	5.5	5.5						6.0
HTHP @ Deg C	ml/30 min	12.0 @ 149	11.5 @ 149	11.5 @ 149						
Cake API/HTHP	32nd in	1/2	1/2	1/2						
Corr Solid	% by Vol	7.6	6.9	6.8						
NAP/Water	% by Vol	-/89.0	-/90.0	-/90.0						
Sand	% by vol									
MBT	ppb Eq.	7.5	10.0	10.0						
pH @ Deg C		9.00 @ 50	9.00 @ 50	9.00 @ 50					8.50	9.50
ALK Mud	Pm		0.10	0.01						
ALK Filt	Pf/Mf	0.05/1.50	0.05/0.75	0.10/1.10						
Chlorides	mg/l	44,000	39,500	40,000						
Tot. Hardness	mg/l	360	440	400						
LGS/HGS	% by Vol	5.2/2.4	3.9/3.0	3.9/3.0						
LGS/HGS	ppb	47.25/34.95	35.66/43.79	35.26/43.84						
ASG	SG	3.103	3.291	3.296						
Additional Properties										
Tau 0	lbs/100 ft2	6.17	3.72	5.18						
KCL %	% by vol	8.5	8.5	8.5						

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150.
Changed shaker #4 to API 100 mesh screens.

Rig Activity

Cont. to download Sperry tools. Wait on weather due to high winds. Make up replacement Geopilot. Make up 12 1/4" BHA and RIH to 1500m. Take 40klbs weight, wash down from 1500m to 1812m. Drilled new 12 1/4" hole from 1812m to 1860m.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
PAC-L	25 kg bag	13	240	18	235	$A2,885.76
DEXTRID LTE	25 kg sack	12	216	32	196	$A1,695.36
Brine 21% KCL	1 each bbl	106		20	86	$A1,325.40
BARAZAN D PLUS	25 kg bag	50		6	44	$A1,292.04
EZ-MUD	25 kg pail	156		8	148	$A759.92
BARACARB 150	25 kg sack	483		18	465	$A287.46
citric acid	25 kg bag	22		2	20	$A152.40
soda ash	25 kg bag	95		5	90	$A152.10
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	8			8	
barite	1 tons bulk	75.000			75.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
CLAYSEAL PLUS	55 gal drum	2			2	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
potassium hydroxide	20 kg pail	19			19	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	18			18	

Daily Products Cost	$A8,550.44	Total Daily Cost	$A11,630.44
Cumulative Products Cost	$A320,317.01	Total Cumulative Cost	$A361,897.01

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 100 100 100 100	16.0
VSM-300	20 20 20 100 100 100 100	16.0
VSM-300	20 20 20 100 100 100 100	16.0
VSM-300	20 20 20 100 100 100 100	16.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	2.5
Circulating	
Trips	8.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	4.5
Testing	
Logging	
Dir Work	
Repair	
Other	9.0
Total	24.0
Rotating	7.0
ROP	63.0
Dil Rate	0.00

Fluid Volume Breakdown — KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus	802.0	Base		Fluid Dumped	
Pipe Cap	123.6	Drill Water	15.0	Transferred	
Active Pits	815.0	Dewatering		SCE	-30.6
Total Hole	925.6	Sea Water		Evaporation	
Total Circ	1740.6	Whole Mud		Trips	
Reserve	704.0	Barite		Other	
Prev Vol	2437.7	Chemicals	8.5	Total Surface	
Net Change	6.9	Other	14.0	Downhole	
Total Vol	2444.6	Total	37.5	Total Losses	-30.6

Fluid Types	Vol bbl
Brine	175.0

Deviation Information

Survey MD	1,702.7	m
Survey TVD	1,683.6	m
Angle	15.87	Deg
Direction	77	
Horiz Displ.		m

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Baroid Fluid Services

Report No 012

Daily Drilling Fluid Report

Date	13/12/2010	Depth	2,193.0 m
Spud Date	29/11/2010	Rig Activity	Drilling

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity	245	ft/sec
Jet Impact Force	1163.5	lbf
Bit HHSI	2.44	hhp/in2
Press Drop @ Bit	545	psi
Bit Depth	2,193.0	m
ECD @ Csg Shoe	10.32	ppg
ECD @ Bit	10.34	ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.778	1,951.0
Drill Pipe	5.000	3.125	113.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	12.250		1,085.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0

Leak Off ppg 16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	84	96	0
gpm|bbl/min	421 | 10.03	482 | 11.47	

Total GPM	903	AV, Riser	59.0	Circ Press psi	2833
Total Circ Time	87	AV min DP	171.4	Tot Pres Loss	1840
BU Time , min	43	AV max DC	257.1	Press Drop DP	942
Total Strokes	15,678	BU Strokes	7,826	Press Drop An	71

Properties

		1	2	3	Hyd 4	Targets				Program	
Source		Pit#2	Pit#2	Pit#2	Pit#2						
Time		3:00	9:00	15:30	21:00						
Depth	m	1,916	2,007	2,106	2,161						
FL Temp	Deg C	52	54	55	55						
Density @ Deg C	ppg	10.10 @ 52	10.05 @ 54	10.10 @ 55	10.15 @ 55	X	X	X	X	10.00	10.00
FV @ Deg C	sec/qt	52 @ 52	50 @ 54	47 @ 55	51 @ 55						
PV @ Deg C	cP	13 @ 49	16 @ 49	15 @ 49	12 @ 49						
YP	lbs/100 ft2	29	30	29	26					25	30
GELS	lbs/100 ft2	11/16/22	11/14/16	9/13/14	9/12/14						
600/300		55.0/42.0	62.0/46.0	59.0/44.0	50.0/38.0						
200/100		35.0/27.0	38.0/29.0	37.0/28.0	32.0/25.0						
6/3		11.0/10.0	11.0/9.0	10.0/8.0	10.0/9.0						
API Filt	ml/30 min	4.1	6.0	5.0	5.0						6.0
HTHP @ Deg C	ml/30 min	11.0 @ 149	12.0 @ 149	9.2 @ 149	11.0 @ 149						
Cake API/HTHP	32nd in	1/2	1/2	1/2	1/2						
Corr Solid	% by Vol	6.8	6.2	7.6	7.9						
NAP/Water	% by Vol	-/90.0	-/90.0	-/89.0	-/89.0						
Sand	% by vol	0.25	0.50	0.50	0.50						
MBT	ppb Eq.	10.0	10.0	10.0	10.0						
pH @ Deg C		9.00 @ 50	9.00 @ 54	9.00 @ 54	9.00 @ 54					8.50	9.50
ALK Mud	Pm	0.10			0.10						
ALK Filt	Pf/Mf	0.05/1.10	0.05/1.30	0.05/1.30	0.05/0.90						
Chlorides	mg/l	41,000	48,000	44,000	40,000						
Tot. Hardness	mg/l	440	400	400	400						
LGS/HGS	% by Vol	3.4/3.4	3.2/3.0	5.2/2.4	5.2/2.7						
LGS/HGS	ppb	31.06/49.43	28.78/44.61	47.25/34.95	47.00/40.11						
ASG	SG	3.394	3.384	3.103	3.153						
Additional Properties											
Tau 0	lbs/100 ft2	4.86	4.78	2.97	4.25						
KCL %	% by vol	8.0	9.0	8.5	8.0						

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol, and Citric Acid to keep a low pH. Maintain system with Baracarb 150.

Screened up across all shakers to API 120's to help lower the mud weight .

Rig Activity

Cont. to drill and log 12 1/4" hole from 1860m to 2193m at controlled rate of 20m/hr, 10/15klbs wob, 160rpm, 7/13kftlbs torq, 1000gpm, 2950psi.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
X FLOW (API 120)	1 each box	18		14	4	$A8,195.60
PAC-L	25 kg bag	235		40	195	$A6,412.80
BARAZAN D PLUS	25 kg bag	44		24	20	$A5,168.16
DEXTRID LTE	25 kg sack	196		84	112	$A4,450.32
Brine 21% KCL	1 each bbl	86		53	33	$A3,512.31
CLAYSEAL PLUS	55 gal drum	2		2		$A3,019.14
EZ-MUD	25 kg pail	148		27	121	$A2,564.73
BARACARB 150	25 kg sack	465		68	397	$A1,085.96
barite	1 tons bulk	75.000		2.000	73.000	$A903.84
BARA-DEFOAM W300	25 l can	8		2	6	$A251.64
citric acid	25 kg bag	20		3	17	$A228.60
soda ash	25 kg bag	90		7	83	$A212.94
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
potassium hydroxide	20 kg pail	19			19	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	

Daily Products Cost	$A36,006.04	Total Daily Cost	$A39,086.04
Cumulative Products Cost	$A356,323.05	Total Cumulative Cost	$A400,983.05

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 120 120 120 120	24.0
VSM-300	20 20 20 120 120 120 120	24.0
VSM-300	20 20 20 120 120 120 120	24.0
VSM-300	20 20 20 120 120 120 120	24.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	24.0
Circulating	
Trips	
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.0
Rotating	24.0
ROP	45.5
Dil Rate	0.00

Fluid Volume Breakdown — KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus	934.7	Base		Fluid Dumped	
Pipe Cap	147.8	Drill Water	200.0	Transferred	
Active Pits	790.0	Dewatering		SCE	-35.1
Total Hole	1082.5	Sea Water		Evaporation	
Total Circ	1872.5	Whole Mud	45.0	Trips	
Reserve	756.0	Barite	3.0	Other	-143.0
Prev Vol	2444.6	Chemicals	26.8	Total Surface	
Net Change	184.0	Other	87.3	Downhole	
Total Vol	2628.5	Total	362.1	Total Losses	-178.1

Fluid Types	Vol bbl
Brine	130.0

Deviation Information

Survey MD	1,702.7	m
Survey TVD	1,683.6	m
Angle	15.87	Deg
Direction	77	
Horiz Displ.		m

Baroid Representatives James Munford Stephen Welch

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Baroid Fluid Services

Report No 013

Daily Drilling Fluid Report

Date	14/12/2010	Depth	2,215.0 m
Spud Date	29/11/2010	Rig Activity	Tripping

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size	in								
Make/Type							30.000	@	138.0
Jets							13.375	@	1,108.0
TFA	sq-in								
Jets Velocity	ft/sec								
Jet Impact Force	lbf								
Bit HHSI	hhp/in2								
Press Drop @ Bit	psi								
Bit Depth	m	Riser	20.000		80.0				
ECD @ Csg Shoe	ppg	Open Hole	12.250		1,107.0				
ECD @ Bit	ppg					Leak Off ppg			16.00

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets		Program	
Source		Pit#2	Pit#2						
Time		9:00	22:00						
Depth	m	2,215	2,215						
FL Temp	Deg C	56							
Density @ Deg C	ppg	10.10 @ 56	10.10 @ 42			X	X	10.00	10.00
FV @ Deg C	sec/qt	48 @ 56	48 @ 42						
PV @ Deg C	cP	12 @ 49	12 @ 49						
YP	lbs/100 ft2	27	26					25	30
GELS	lbs/100 ft2	9/13/15	9/12/14						
600/300		51.0/39.0	50.0/38.0						
200/100		33.0/26.0	32.0/25.0						
6/3		10.0/9.0	10.0/9.0						
API Filt	ml/30 min	5.0	5.0						6.0
HTHP @ Deg C	ml/30 min	11.0 @ 149	11.0 @ 149						
Cake API/HTHP	32nd in	1/2	1/2						
Corr Solid	% by Vol	7.9	7.8						
NAP/Water	% by Vol	-/89.0	-/89.0						
Sand	% by vol	0.50	0.50						
MBT	ppb Eq.	10.0	10.0						
pH @ Deg C		9.00 @ 54	9.00 @ 54					8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf	0.05/1.00	0.05/1.00						
Chlorides	mg/l	40,000	41,000						
Tot. Hardness	mg/l	400	400						
LGS/HGS	% by Vol	5.5/2.3	5.4/2.4						
LGS/HGS	ppb	50.42/34.59	49.63/34.68						
ASG	SG	3.077	3.083						
Additional Properties									
Tau 0	lbs/100 ft2	3.30	4.25						
KCL %	% by vol	8.0	8.0						

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Made additions of EZ-MUD, BARAZAN D+ and baracarb 150 to the system as per program to maintain concentrations. Maintained weight of the system with small additions water.

Rig Activity

Cont. to drill and log 12 1/4" hole from 2193m to 2215m. Flow check and POOH due to reduced rate of penetration from 2215m to 1920m. Pump out of hole from 1920m to 1399m. Cont. to POOH to surface. Change out bit.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
BARAZAN D PLUS	25 kg bag	20		10	10	$A2,153.40
barite	1 tons bulk	73.000		4.000	69.000	$A1,807.68
EZ-MUD	25 kg pail	121		6	115	$A569.94
BARACARB 150	25 kg sack	397		12	385	$A191.64
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARA-DEFOAM W300	25 l can	6			6	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	33			33	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	17			17	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	112			112	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
PAC-L	25 kg bag	195			195	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	83			83	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	
X FLOW (API 40)	1 each box	12			12	

Daily Products Cost	$A4,722.66	Total Daily Cost	$A7,802.66
Cumulative Products Cost	$A361,045.71	Total Cumulative Cost	$A408,785.71

Solids Control Equipment			
Shaker	Screens	Hrs	
VSM-300	20 20 20 120 120 120 120	16.0	
VSM-300	20 20 20 120 120 120 120	16.0	
VSM-300	20 20 20 120 120 120 120	16.0	
VSM-300	20 20 20 120 120 120 120	16.0	
Hydrocyclone	Cones	Screens	Hrs
Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time	
Drilling	10.5
Circulating	0.5
Trips	6.0
Rig	
Surveys	2.0
Fishing	
Run Casing	
Coring	
Reaming	3.0
Testing	
Logging	
Dir Work	
Repair	
Other	2.0
Total	24.0
Rotating	13.5
ROP	6.9
Dil Rate	0.00

Fluid Volume Breakdown KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water	30.0	Transferred	
Active Pits	759.0	Dewatering		SCE	-9.7
Total Hole	1136.4	Sea Water		Evaporation	
Total Circ	759.0	Whole Mud		Trips	
Reserve	732.0	Barite	6.0	Other	-30.0
Prev Vol	2628.5	Chemicals	2.6	Total Surface	
Net Change	-1.1	Other		Downhole	
Total Vol	2627.4	Total	38.6	Total Losses	-39.7

Fluid Types	Vol bbl
Brine	130.0

Deviation Information		
Survey MD	2,193.2	m
Survey TVD	2,155.0	m
Angle	16.26	Deg
Direction	78	
Horiz Displ.		m

Baroid Representatives James Munford Stephen Welch

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Baroid Fluid Services

Report No 014

Daily Drilling Fluid Report

Date	15/12/2010	Depth	2,282.0 m
Spud Date	29/11/2010	Rig Activity	Drilling Ahead

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity	251	ft/sec
Jet Impact Force	1203.8	lbf
Bit HHSI	2.58	hhp/in2
Press Drop @ Bit	564	psi
Bit Depth	2,284.0	m
ECD @ Csg Shoe	10.23	ppg
ECD @ Bit	10.26	ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.778	2,042.0
Drill Pipe	5.000	3.125	113.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	12.250		1,174.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0

Leak Off ppg 16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	70	71	43
gpm|bbl/min	351 8.36	356 8.48	216 5.14

Total GPM	923	AV, Riser	60.3	Circ Press psi	3030
Total Circ Time	85	AV min DP	175.2	Tot Pres Loss	1710
BU Time , min	44	AV max DC	262.9	Press Drop DP	842
Total Strokes	15,664	BU Strokes	8,125	Press Drop An	79

Properties

		1	2	Hyd 3	4	Targets		Program	
Source		Pit#2	Pit#2	Pit#2					
Time		9:00	14:45	20:00					
Depth	m	2,215	2,219	2,266					
FL Temp	Deg C		50	60					
Density @ Deg C	ppg	10.10 @ 38	10.00 @ 50	10.05 @ 55		X	X	10.00	10.00
FV @ Deg C	sec/qt	49 @ 38	48 @ 50	42 @ 55					
PV @ Deg C	cP	12 @ 49	14 @ 49	10 @ 49					
YP	lbs/100 ft2	26	31	28		X		25	30
GELS	lbs/100 ft2	9/12/14	13/15/17	9/13/14					
600/300		50.0/38.0	59.0/45.0	48.0/38.0					
200/100		32.0/25.0	39.0/31.0	33.0/26.0					
6/3		10.0/9.0	13.0/11.0	10.0/8.0					
API Filt	ml/30 min	5.0	5.0	5.0					6.0
HTHP @ Deg C	ml/30 min	10.6 @ 149	9.2 @ 149	11.0 @ 149					
Cake API/HTHP	32nd in	1/2	1/2	1/2					
Corr Solid	% by Vol	7.8	8.0	8.1					
NAP/Water	% by Vol	-/89.0	-/89.0	-/89.0					
Sand	% by vol	0.50	0.50	0.50					
MBT	ppb Eq.	10.0	12.5	15.0					
pH @ Deg C		9.00 @ 54	9.00 @ 54	9.00 @ 54				8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf	0.05/1.00	0.05/1.00	0.10/0.70					
Chlorides	mg/l	41,000	38,000	37,000					
Tot. Hardness	mg/l	400	480	520					
LGS/HGS	% by Vol	5.4/2.4	6.5/1.6	6.2/2.0					
LGS/HGS	ppb	49.63/34.68	58.80/23.41	56.16/28.85					
ASG	SG	3.083	2.916	2.986					
Additional Properties									
Tau 0	lbs/100 ft2	4.25	5.48	0.09					
KCL %	% by vol	8.0	7.9	7.8					

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Making additions of EZ-MUD to the system as per program. Treating out calcium with Soda Ash, and maintaining the system with small additions of DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to maintain 8% by vol. Maintain system with Baracarb 150.

Rig Activity

Cont. to make up new BHA. RIH to 2145m. Wash down from 2145m to 2193m. Relog with Sperry tools from 2193m to 2215m. Cont. to drill 12 1/4" hole from 2215m to 2282m.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
barite	1 tons bulk	69.000		6.000	63.000	$A2,711.52
BARAZAN D PLUS	25 kg bag	10		10		$A2,153.40
PAC-L	25 kg bag	195		10	185	$A1,603.20
EZ-MUD	25 kg pail	115		8	107	$A759.92
BARACARB 150	25 kg sack	385		30	355	$A479.10
soda ash	25 kg bag	83		11	72	$A334.62
BARA-DEFOAM W300	25 l can	6		2	4	$A251.64
DEXTRID LTE	25 kg sack	112		4	108	$A211.92
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	33			33	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	17			17	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
potassium hydroxide	20 kg pail	19			19	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	
X FLOW (API 40)	1 each box	12			12	

Daily Products Cost	$A8,505.32	Total Daily Cost	$A11,585.32
Cumulative Products Cost	$A369,551.03	Total Cumulative Cost	$A420,371.03

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	12.0
Circulating	
Trips	7.5
Rig	0.5
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	2.0
Testing	
Logging	2.0
Dir Work	
Repair	
Other	
Total	24.0
Rotating	14.0
ROP	18.3
Dil Rate	0.00

Fluid Volume Breakdown — KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus	970.4	Base		Fluid Dumped	
Pipe Cap	154.4	Drill Water	40.0	Transferred	
Active Pits	746.0	Dewatering		SCE	-27.9
Total Hole	1124.9	Sea Water		Evaporation	
Total Circ	1870.9	Whole Mud	47.0	Trips	
Reserve	829.0	Barite	9.0	Other	
Prev Vol	2627.4	Chemicals	6.3	Total Surface	
Net Change	74.5	Other		Downhole	
Total Vol	2699.9	Total	102.3	Total Losses	-27.9

Fluid Types	Vol bbl
Brine	83.0

Deviation Information

Survey MD	2,193.2	m
Survey TVD	2,155.0	m
Angle	16.26	Deg
Direction	78	
Horiz Displ.		m

Baroid Representatives James Munford Stephen Welch

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Baroid Fluid Services

Report No 015

Daily Drilling Fluid Report

Date	16/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	POOH

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size	in								
Make/Type							30.000	@	138.0
Jets							13.375	@	1,108.0
TFA	sq-in								
Jets Velocity	ft/sec								
Jet Impact Force	lbf								
Bit HHSI	hhp/in2								
Press Drop @ Bit	psi								
Bit Depth	m	Riser	20.000		80.0				
ECD @ Csg Shoe	ppg	Open Hole	12.250		1,209.0				
ECD @ Bit	ppg					Leak Off ppg			16.00

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets		Program	
Source		Flow Line	Pit#2						
Time		2:00	22:00						
Depth	m	2,292	2,317						
FL Temp	Deg C	60							
Density @ Deg C	ppg	10.10 @ 55	10.10 @ 32			X	X	10.00	10.00
FV @ Deg C	sec/qt	42 @ 55	44 @ 32						
PV @ Deg C	cP	11 @ 49	12 @ 49						
YP	lbs/100 ft2	25	26					25	30
GELS	lbs/100 ft2	9/11/14	9/12/14						
600/300		47.0/36.0	50.0/38.0						
200/100		32.0/25.0	32.0/25.0						
6/3		9.0/7.0	10.0/9.0						
API Filt	ml/30 min	5.0	5.0						6.0
HTHP @ Deg C	ml/30 min	11.0 @ 121	11.0 @ 149						
Cake API/HTHP	32nd in	1/2	1/2						
Corr Solid	% by Vol	8.0	7.8						
NAP/Water	% by Vol	-/89.0	-/89.0						
Sand	% by vol	0.50	0.50						
MBT	ppb Eq.	15.0	15.0						
pH @ Deg C		9.00 @ 54	9.00 @ 34					8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf	0.10/0.70	0.05/0.70						
Chlorides	mg/l	39,000	41,000						
Tot. Hardness	mg/l	400	360						
LGS/HGS	% by Vol	5.6/2.3	5.4/2.4						
LGS/HGS	ppb	51.20/34.51	49.63/34.68						
ASG	SG	3.071	3.083						
Additional Properties									
Tau 0	lbs/100 ft2	0.18	4.25						
KCL %	% by vol	7.9	8.0						

Fluid Treatments

Fluid Type KCL/PHPA/CLAYSEAL

Cont. to making additions of EZ-MUD, DEXTRID-LTE, PAC-L, BARAZAN D+, KCL Brine to keep system as per program. Treating out calcium with Soda Ash, and maintaining concentration of Baracarb 150 in the active.

Rig Activity

Cont. to drill 12 1/4" hole 2282m to TD at 2317m. Circ. hole clean. Attempt to TD surveys, flow check and POOH to 2127m. Pump out of hole from 2127m to 2106m. POOH from 2106m to 1730m. Pump out of hole from 1730m. to 1643m. POOH 1643m to inside shoe at 1094m, flow check static, cont. to POOH to surface. Rack back BHA and rig up cement stinger.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
BARACARB 150	25 kg sack	355		67	288	$A1,069.99
EZ-MUD	25 kg pail	107		9	98	$A854.91
citric acid	25 kg bag	17		5	12	$A381.00
DEXTRID LTE	25 kg sack	108		3	105	$A158.94
BARA-DEFOAM W300	25 l can	4		1	3	$A125.82
soda ash	25 kg bag	72		3	69	$A91.26
ALDACIDE G	25 kg can	26			26	
Amodrill 1235	1 bbl bulk	2.000			2.000	
barite	1 tons bulk	63.000			63.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	33			33	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	26			26	
PAC-L	25 kg bag	185			185	
potassium hydroxide	20 kg pail	19			19	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	
X FLOW (API 40)	1 each box	12			12	

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 120 120 120 120	15.0
VSM-300	20 20 20 120 120 120 120	15.0
VSM-300	20 20 20 120 120 120 120	15.0
VSM-300	20 20 20 120 120 120 120	15.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	10.0
Circulating	1.5
Trips	10.0
Rig	
Surveys	0.5
Fishing	
Run Casing	
Coring	
Reaming	1.5
Testing	
Logging	
Dir Work	
Repair	
Other	0.5
Total	24.0
Rotating	11.5
ROP	11.5
Dil Rate	0.00

Fluid Volume Breakdown — KCL/PHPA/CLAYSEAL

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	-545.0
Pipe Cap		Drill Water		Transferred	
Active Pits	745.0	Dewatering		SCE	-22.6
Total Hole	1185.2	Sea Water		Evaporation	
Total Circ	745.0	Whole Mud	83.0	Trips	
Reserve	291.0	Barite		Other	
Prev Vol	2699.9	Chemicals	6.4	Total Surface	
Net Change	-478.2	Other		Downhole	
Total Vol	2221.2	Total	89.4	Total Losses	-567.6

Fluid Types	Vol bbl

Deviation Information		
Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

Daily Products Cost	$A2,681.92	Total Daily Cost	$A5,761.92
Cumulative Products Cost	$A372,232.95	Total Cumulative Cost	$A426,132.95

Baroid Representatives James Munford Stephen Welch

Office 90 Talinga Rd Melbourne Telephone 61-03-9581-7555

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Baroid Fluid Services

Report No 016

Daily Drilling Fluid Report

Date	17/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Wait on cement

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	12.250	in
Make/Type	DBS/FXG65	
Jets	6x16	
TFA	1.178	sq-in
Jets Velocity		ft/sec
Jet Impact Force		lbf
Bit HHSI		hhp/in2
Press Drop @ Bit		psi
Bit Depth	200.0	m
ECD @ Csg Shoe		ppg
ECD @ Bit		ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	3.125	71.0
Drill Collar	8.000	2.875	89.0
Other	8.000	0.000	40.0
Riser	20.000		80.0
Open Hole	12.250		1,209.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0

Leak Off ppg 16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			

Total GPM	AV, Riser	Circ Press psi
Total Circ Time	AV min DP	Tot Pres Loss
BU Time , min	AV max DC	Press Drop DP
Total Strokes	BU Strokes	Press Drop An

Properties

		1	2	3	4	Targets	Program	
Source		Pit#2						
Time		2:00						
Depth	m	2,317						
FL Temp	Deg C							
Density @ Deg C	ppg	10.10 @ 32				X	10.00	10.00
FV @ Deg C	sec/qt	38 @ 32						
PV @ Deg C	cP	12 @ 49						
YP	lbs/100 ft2	26					25	30
GELS	lbs/100 ft2	9/12/14						
600/300		50.0/38.0						
200/100		32.0/25.0						
6/3		10.0/9.0						
API Filt	ml/30 min	5.0						6.0
HTHP @ Deg C	ml/30 min	11.0 @ 149						
Cake API/HTHP	32nd in	1/2						
Corr Solid	% by Vol	7.8						
NAP/Water	% by Vol	-/89.0						
Sand	% by vol	0.50						
MBT	ppb Eq.	15.0						
pH @ Deg C		9.00 @ 34					8.50	9.50
ALK Mud	Pm							
ALK Filt	Pf/Mf	0.10/0.70						
Chlorides	mg/l	41,000						
Tot. Hardness	mg/l	360						
LGS/HGS	% by Vol	5.4/2.4						
LGS/HGS	ppb	49.63/34.68						
ASG	SG	3.083						

Additional Properties

Tau 0	lbs/100 ft2	4.25					
KCL %	% by vol	8.0					

Fluid Treatments

Fluid Type

Treated active mud with OXYGEN and ALDACIDE G before leaving in casing. Mixed Hi-Vis pills at 12.5ppg as per program for spotting under plugs.

Rig Activity

Make up cement stinger and RIH to 2184m. Wash down from 2184m to 2317m. Circ. bottoms up. Pump cement plug #1A, from 2317m to 2170m. POOH back to 2170m and circ. hole clean, divert 40bbl of cement contaminated mud at shakers. Pump plug #1B, from 2170m to 2020m. POOH back, circ and divert 40bbl. Pump plug #1C, from 2020m to 1920m. POOH to 1870m, insert wiper ball, circ. clean. Pump slug and POOH to 1250m. Spot 55bbl hi-vis 12.5ppg pill at 1250m as per program. POOH to 1150m and pump plug #2 across shoe from 1150m to 1000m. POOH to 950m and diverted 82bbl. Pump slug and POOH,

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
barite	1 tons bulk	63.000		9.000	54.000	$A4,067.28
OXYGON	50 lb can	26		2	24	$A1,144.06
EZ-MUD	25 kg pail	98		7	91	$A664.93
ALDACIDE G	25 kg can	26		2	24	$A346.18
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack	288			288	
BARA-DEFOAM W300	25 l can	3	7		10	
BARAZAN D PLUS	25 kg bag		40		40	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	33			33	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	12	40		52	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	105			105	
EZ SPOT	55 gal drum	4			4	
guar gum	25 kg bag		122		122	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
PAC-L	25 kg bag	185			185	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	69			69	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	

Daily Products Cost	$A6,222.45	Total Daily Cost	$A9,302.45
Cumulative Products Cost	$A378,455.40	Total Cumulative Cost	$A435,435.40

Baroid Representatives	James Munford	Stephen Welch	
Office	90 Talinga Rd Melbourne	Telephone	61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	Telephone	61-3-56-881-445

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 120 120 120 120	11.0
VSM-300	20 20 20 120 120 120 120	11.0
VSM-300	20 20 20 120 120 120 120	11.0
VSM-300	20 20 20 120 120 120 120	11.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	
Circulating	4.5
Trips	13.5
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	6.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol	1284.0	Total		Total Losses	

Fluid Types	Vol bbl
KCL/PHPA/CLAYSEAL	1284.0

Deviation Information

Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

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Baroid Fluid Services

Report No 017

Daily Drilling Fluid Report

Date	18/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Plug back

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information

Bit Size	4.500	in
Make/Type	VBM/Cement Stinger	
Jets	1x32	
TFA	0.785	sq-in
Jets Velocity		ft/sec
Jet Impact Force		lbf
Bit HHSI		hhp/in2
Press Drop @ Bit		psi
Bit Depth	760.0	m
ECD @ Csg Shoe		ppg
ECD @ Bit		ppg

Drill String (in) / (m)

	OD	ID	Length
Drill Pipe	5.000	4.276	760.0
Riser	20.000		80.0
Open Hole	12.250		1,209.0

in Casing m

OD	Set	MD
30.000	@	138.0
13.375	@	1,108.0
Leak Off ppg		16.00

Circulation/Hydraulics Data

Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			

Total GPM	AV, Riser	Circ Press psi
Total Circ Time	AV min DP	Tot Pres Loss
BU Time , min	AV max DC	Press Drop DP
Total Strokes	BU Strokes	Press Drop An

Properties

Properties		1	2	3	4	Targets		Program	
Source		Pit#2							
Time		22:00							
Depth	m	2,317							
FL Temp	Deg C								
Density @ Deg C	ppg	10.10 @ 32				X		10.00	10.00
FV @ Deg C	sec/qt	40 @ 32							
PV @ Deg C	cP	10 @ 49							
YP	lbs/100 ft2	28						25	30
GELS	lbs/100 ft2	9/12/14							
600/300		48.0/38.0							
200/100		33.0/26.0							
6/3		10.0/8.0							
API Filt	ml/30 min	5.0							6.0
HTHP @ Deg C	ml/30 min	11.0 @ 149							
Cake API/HTHP	32nd in	1/2							
Corr Solid	% by Vol	7.8							
NAP/Water	% by Vol	-/89.0							
Sand	% by vol	0.50							
MBT	ppb Eq.	15.0							
pH @ Deg C		9.50 @ 34						8.50	9.50
ALK Mud	Pm								
ALK Filt	Pf/Mf	0.10/0.80							
Chlorides	mg/l	41,000							
Tot. Hardness	mg/l	800							
LGS/HGS	% by Vol	5.4/2.4							
LGS/HGS	ppb	49.63/34.68							
ASG	SG	3.083							
Additional Properties									
Tau 0	lbs/100 ft2	0.09							
KCL %	% by vol	8.0							

Fluid Treatments

Fluid Type

Mixed Hi-vis pill to 12.5ppg for spotting under plugs as per program. Dumped and cleaned slug pit for plugs

Rig Activity

RIH to 936m, wash down and tag TOC at 961m. Rig to pressure test plug to 1500psi, failed at 950psi. RIH to 960m, wash & tag TOC at 1116m. Circ. hole clean and prepare for new shoe plug. Pumped 25bbl DW spacer followed by 65bbl 15.8ppg cement plug. Displaced cement with 4bbl DW followed by 49bbl mud. POOH from 1107m to 950m. Circ. annulus clean, 31bbl mud diverted. POOH to 760m. Made up Drillquip WBRT, jet BOPs, install wear bushing.

Product Name

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
barite	1 tons bulk	54.000		8.000	46.000	$A3,615.36
BARAZAN D PLUS	25 kg bag	40		4	36	$A861.36
PAC-L	25 kg bag	185		1	184	$A160.32
DEXTRID LTE	25 kg sack	105		3	102	$A158.94
ALDACIDE G	25 kg can	24			24	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack	288			288	
BARA-DEFOAM W300	25 l can	10			10	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	33			33	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	52			52	
CON DET	5 gal can	32			32	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	91			91	
guar gum	25 kg bag	122			122	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	24			24	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	69			69	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	

Daily Products Cost	$A4,795.98	Total Daily Cost	$A7,875.98
Cumulative Products Cost	$A383,251.38	Total Cumulative Cost	$A443,311.38

Baroid Representatives	James Munford	Stephen Welch	
Office	90 Talinga Rd Melbourne	Telephone	61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	Telephone	61-3-56-881-445

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0
VSM-300	20 20 20 120 120 120 120	18.0

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	
Circulating	4.0
Trips	10.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	10.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol	1129.0	Total		Total Losses	

Fluid Types	Vol bbl
KCL/PHPA/CLAYSEAL	1129.0

Deviation Information

Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

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Baroid Fluid Services

Report No 018

Daily Drilling Fluid Report

Date	19/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Rig up and rig down

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information		Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size	in								
Make/Type							30.000	@	138.0
Jets							13.375	@	1,108.0
TFA	sq-in								
Jets Velocity	ft/sec								
Jet Impact Force	lbf								
Bit HHSI	hhp/in2								
Press Drop @ Bit	psi								
Bit Depth	m	Riser	20.000		80.0				
ECD @ Csg Shoe	ppg	Open Hole	12.250		1,209.0				
ECD @ Bit	ppg					Leak Off ppg			16.00

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						

Additional Properties

Fluid Treatments

Fluid Type

Pumped 64bbl of 12.5 ppg Hi-vis pill to spot under cement plug #3.
Dumped and cleaned all remaining Pits in preparation for rig move.

Rig Activity

POOH w/WBRT and wear bushing. RIH to 950m, waiting on cement. Wash in from 950m to 1002m, tag TOC 10klb. Pressure test lines to 2000psi. Test plug against upper annular to 1500psi. POOH and layout DP from 964m to 300m. Spot 64bbl 12.5ppg hi-vis pill. POOH to 200m. Pump 25bbl DW spacer followed by 54bbl 15.8ppg cement plug. POOH to 100m, displace top of well and riser to seawater while jetting BOPs. Flush lines. Unlatch BOP and skid rig clear of well. Move BOP to aft moonpool on transporter.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
Brine 21% KCL	1 each bbl	33	942	33	942	$A2,186.91
ALDACIDE G	25 kg can	24			24	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack	288			288	
BARA-DEFOAM W300	25 l can	10			10	
BARAZAN D PLUS	25 kg bag	36			36	
barite	1 tons bulk	46.000			46.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	52			52	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	102			102	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	91			91	
guar gum	25 kg bag	122			122	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	24			24	
PAC-L	25 kg bag	184			184	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	69			69	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	

Solids Control Equipment			
Shaker	Screens	Hrs	
VSM-300			
VSM-300			
VSM-300			
VSM-300			
Hydrocyclone	Cones	Screens	Hrs
Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time	
Drilling	
Circulating	1.0
Trips	10.0
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	13.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol		Total		Total Losses	

Fluid Types	Vol bbl

Deviation Information		
Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

Daily Products Cost	$A2,186.91	Total Daily Cost	$A5,266.91
Cumulative Products Cost	$A385,438.29	Total Cumulative Cost	$A448,578.29

Baroid Representatives: James Munford, Stephen Welch
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Baroid Fluid Services

Report No 019

Daily Drilling Fluid Report

Date	20/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Cut casing

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information			Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD
Bit Size		in								
Make/Type								30.000	@	138.0
Jets								13.375	@	1,108.0
TFA		sq-in								
Jets Velocity		ft/sec								
Jet Impact Force		lbf								
Bit HHSI		hhp/in2								
Press Drop @ Bit		psi								
Bit Depth	2,317.0	m	Riser	20.000		80.0				
ECD @ Csg Shoe		ppg	Open Hole	12.250		1,209.0				
ECD @ Bit		ppg					Leak Off ppg			16.00

Circulation/Hydraulics Data			
Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Bore in	6.500	6.500	6.500
Strokes in	12.000	12.000	12.000
Eff(%)	97	97	97
bbl/strk	0.119	0.119	0.119
SPM	0	0	0
gpm|bbl/min			
Total GPM	AV, Riser	Circ Press psi	
Total Circ Time	AV min DP	Tot Pres Loss	
BU Time , min	AV max DC	Press Drop DP	
Total Strokes	BU Strokes	Press Drop An	

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type

Dumped and cleaned all remaining Pits in preparation for rig move.

Rig Activity

Layout double riser. Enter wellhead with ROV assistance and attempt to engage wellhead, troubleshoot. Change out 18 3/4" grapple for 20" spear grapple and adjust space out to cutters. Enter again w/ROV latch with 50klbs. Cut 20" and 30" casing at 82m. POOH to replace cutter knives. RIH and latch again with 50klbs. Cont. to cut casing.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
ALDACIDE G	25 kg can	24			24	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack	288			288	
BARA-DEFOAM W300	25 l can	10			10	
BARAZAN D PLUS	25 kg bag	36			36	
barite	1 tons bulk	46.000			46.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	942			942	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	52			52	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	102			102	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	91			91	
guar gum	25 kg bag	122			122	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	24			24	
PAC-L	25 kg bag	184			184	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	69			69	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	

Solids Control Equipment				Time	
Shaker	Screens		Hrs	Drilling	
VSM-300				Circulating	
VSM-300				Trips	
VSM-300				Rig	
VSM-300				Surveys	
				Fishing	
				Run Casing	
				Coring	
				Reaming	
Hydrocyclone	Cones	Screens	Hrs	Testing	
				Logging	
				Dir Work	
				Repair	
				Other	24.0
Centrifuge	Speed	Feed Rate	Hrs	Total	24.0
HS 2000	3,500	300.00		Rotating	
HS 2000	3,500	300.00		ROP	
518	4,000	80.00		Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol		Total		Total Losses	

Fluid Types	Vol bbl

Deviation Information		
Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

Daily Products Cost	$A0.00	Total Daily Cost	$A3,080.00
Cumulative Products Cost	$A385,438.29	Total Cumulative Cost	$A451,658.29

Baroid Representatives: James Munford, Stephen Welch

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Baroid Fluid Services

Report No 020

Daily Drilling Fluid Report

Date	21/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Rig up and rig down

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information			Drill String (in) / (m)			in Casing m			Circulation/Hydraulics Data			
Bit Size		in	OD	ID	Length	OD	Set	MD	Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Make/Type						30.000	@	138.0	Bore in	6.500	6.500	6.500
Jets						13.375	@	1,108.0	Strokes in	12.000	12.000	12.000
TFA		sq-in							Eff(%)	97	97	97
Jets Velocity		ft/sec							bbl/strk	0.119	0.119	0.119
Jet Impact Force		lbf							SPM	0	0	0
Bit HHSI		hhp/in2							gpm|bbl/min			
Press Drop @ Bit		psi							Total GPM		AV, Riser	Circ Press psi
Bit Depth	2,317.0	m	Riser	20.000	80.0				Total Circ Time		AV min DP	Tot Pres Loss
ECD @ Csg Shoe		ppg	Open Hole	12.250	1,209.0				BU Time , min		AV max DC	Press Drop DP
ECD @ Bit		ppg				Leak Off ppg		16.00	Total Strokes		BU Strokes	Press Drop An

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						

Additional Properties

Fluid Treatments

Fluid Type

No Treatments today

Rig Activity

Cont. to attempt to pull casing. Disengaged spear and inspect cutters with ROV. Knives indicated that the 30" had been successfully cut. RIH and entered well with ROV assistance. Engaged spear grapple in well head. Overpulled 220klbs on wellhead. Picked up and pulled 18 3/4" wellhead and PGB clear of seabed. Made up WHRT on DF. Ran in same and engaged 18 3/4" wellhead. Released wellhead from PGB and laid out wellhead/casing stub assembly. Laid out WHRT. Completed seafastening of rig. Ballasted rig from 65ft draft to 46ft draft.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
ALDACIDE G	25 kg can	24			24	
Amodrill 1235	1 bbl bulk	2.000			2.000	
BARACARB 150	25 kg sack	288			288	
BARA-DEFOAM W300	25 l can	10			10	
BARAZAN D PLUS	25 kg bag	36			36	
barite	1 tons bulk	46.000			46.000	
BARO-SEAL FINE	40 lb bag	32			32	
bentonite	1000 kg bulk	56.000			56.000	
Brine 21% KCL	1 each bbl	942			942	
calcium chloride	25 kg bag	32			32	
caustic soda	25 kg can	79			79	
citric acid	25 kg bag	52			52	
CON DET	5 gal can	32			32	
DEXTRID LTE	25 kg sack	102			102	
EZ SPOT	55 gal drum	4			4	
EZ-MUD	25 kg pail	91			91	
guar gum	25 kg bag	122			122	
lime	25 kg bag	35			35	
mica	25 kg bag	27			27	
OXYGON	50 lb can	24			24	
PAC-L	25 kg bag	184			184	
potassium hydroxide	20 kg pail	19			19	
soda ash	25 kg bag	69			69	
sodium bicarbonate	25 kg bag	24			24	
STEELSEAL 400	50 lb sack	80			80	
X FLOW (API 100)	1 each box	30			30	
X FLOW (API 120)	1 each box	4			4	

Daily Products Cost	$A0.00	Total Daily Cost	$A3,080.00
Cumulative Products Cost	$A385,438.29	Total Cumulative Cost	$A454,738.29

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	
Circulating	
Trips	
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	24.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol		Total		Total Losses	

Fluid Types Vol bbl

Deviation Information

Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

Baroid Representatives James Munford Stephen Welch

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Baroid Fluid Services

Report No 021

Daily Drilling Fluid Report

Date	22/12/2010	Depth	2,317.0 m
Spud Date	29/11/2010	Rig Activity	Under Tow

Operator: Origin Energy Resources Ltd	Report For: Paul Jenkins / Kevin Monkhouse	Well Name: Silvereye-1	
Contractor: Maersk Drilling	Report For: Brian Meechan/ Rob Smillie	Rig Name: Kan Tan IV	Unit System: ADA Drilling
Country: Australia	State/Province/Region: Tasmania	Geographic Area/County: Bass Basin	Field or Block: T 44P

Bit Information			Drill String (in) / (m)	OD	ID	Length	in Casing m	OD	Set	MD	Circulation/Hydraulics Data			
Bit Size		in									Model	Emsco FB 1600	Emsco FB 1600	Emsco FB 1600
Make/Type								30.000	@	138.0	Bore in	6.500	6.500	6.500
Jets								13.375	@	1,108.0	Strokes in	12.000	12.000	12.000
TFA		sq-in									Eff(%)	97	97	97
Jets Velocity		ft/sec									bbl/strk	0.119	0.119	0.119
Jet Impact Force		lbf									SPM	0	0	0
Bit HHSI		hhp/in2									gpm|bbl/min			
Press Drop @ Bit		psi									Total GPM		AV, Riser	Circ Press psi
Bit Depth	2,317.0	m	Riser	20.000		80.0					Total Circ Time		AV min DP	Tot Pres Loss
ECD @ Csg Shoe		ppg	Open Hole	12.250		1,209.0					BU Time , min		AV max DC	Press Drop DP
ECD @ Bit		ppg					Leak Off ppg			16.00	Total Strokes		BU Strokes	Press Drop An

Properties		1	2	3	4	Targets	Program
Source							
Time							
Depth	m						
FL Temp	Deg C						
Density @ Deg C	ppg						
FV @ Deg C	sec/qt						
PV @ Deg C	cP						
YP	lbs/100 ft2						
GELS	lbs/100 ft2						
600/300							
200/100							
6/3							
API Filt	ml/30 min						
HTHP @ Deg C	ml/30 min						
Cake API/HTHP	32nd in						
Corr Solid	% by Vol						
NAP/Water	% by Vol						
Sand	% by vol						
MBT	ppb Eq.						
pH @ Deg C							
ALK Mud	Pm						
ALK Filt	Pf/Mf						
Chlorides	mg/l						
Tot. Hardness	mg/l						
LGS/HGS	% by Vol						
LGS/HGS	ppb						
ASG	SG						
Additional Properties							

Fluid Treatments

Fluid Type

NOTE: Split the Daily Engineering cost.

Rig Activity

Under Tow

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer 2	day(s)			1		$A1,540.00
Drilling Fluids Engineer	day(s)			1		$A1,540.00
ALDACIDE G	25 kg can	24				
Amodrill 1235	1 bbl bulk	2.000				
BARACARB 150	25 kg sack	288				
BARA-DEFOAM W300	25 l can	10				
BARAZAN D PLUS	25 kg bag	36				
barite	1 tons bulk	46.000				
BARO-SEAL FINE	40 lb bag	32				
bentonite	1000 kg bulk	56.000				
Brine 21% KCL	1 each bbl	942				
calcium chloride	25 kg bag	32				
caustic soda	25 kg can	79				
citric acid	25 kg bag	52				
CON DET	5 gal can	32				
DEXTRID LTE	25 kg sack	102				
EZ SPOT	55 gal drum	4				
EZ-MUD	25 kg pail	91				
guar gum	25 kg bag	122				
lime	25 kg bag	35				
mica	25 kg bag	27				
OXYGON	50 lb can	24				
PAC-L	25 kg bag	184				
potassium hydroxide	20 kg pail	19				
soda ash	25 kg bag	69				
sodium bicarbonate	25 kg bag	24				
STEELSEAL 400	50 lb sack	80				
X FLOW (API 100)	1 each box	30				
X FLOW (API 120)	1 each box	4				

Solids Control Equipment

Shaker	Screens	Hrs
VSM-300		
VSM-300		
VSM-300		
VSM-300		

Hydrocyclone	Cones	Screens	Hrs

Centrifuge	Speed	Feed Rate	Hrs
HS 2000	3,500	300.00	
HS 2000	3,500	300.00	
518	4,000	80.00	

Time

Drilling	
Circulating	
Trips	
Rig	
Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	24.0
Total	24.0
Rotating	
ROP	
Dil Rate	0.00

Fluid Volume Breakdown

Active	bbl	Additions	bbl	Losses	bbl
Annulus		Base		Fluid Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SCE	
Total Hole		Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Change		Other		Downhole	
Total Vol		Total		Total Losses	

Fluid Types	Vol bbl

Deviation Information

Survey MD	2,283.3	m
Survey TVD	2,240.6	m
Angle	20.17	Deg
Direction	100	
Horiz Displ.		m

Daily Products Cost	$A0.00	Total Daily Cost	$A3,080.00
Cumulative Products Cost	$A385,438.29	Total Cumulative Cost	$A457,818.29

Baroid Representatives: James Munford, Stephen Welch

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