TXU

WELL COMPLETION REPORT

Iona-6

PPL2
ONSHORE OTWAY BASIN, VICTORIA

VOLUME 1 OF 2
TEXT, TABLES, FIGURES, APPENDICES & ENCLOSURES 1-3

September 2004

Copy 1 of 6

908148 002

TXU

WELL COMPLETION REPORT

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TXU Gas Storage Pty Ltd

PPL 2
ONSHORE OTWAY BASIN, VICTORIA

WELL COMPLETION REPORT

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October 2004

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2.0 WELL HISTORY

2.1 LOCATION DATA

Basin:	Otway, onshore western Victoria
Lease:	PPL-2
Surface Coordinates:	5 728 761.684 metres north 677 185.619 metres east
Surface Elevation:	Ground Level (GL): 104.5 metres AHD Kelly Bushing (KB): 110.5 metres AHD (Datum) (All depths relative to KB unless otherwise stated)
Bottom Hole Coordinates:	5 729 138.0 metres north 676 669.9 metres east
Coordinate system	Australian Map Grid 66, Zone 54 Central Meridian: 141 East

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Insert figure 1.1 here

Figure 1.1 Locality Diagram Iona Field

908148 011

Insert figure 1.2 here

Figure 1.2 Locality Diagram Iona 6

2.2 GENERAL DATA

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Well Name:	Iona 6
Classification:	Plugged and Suspended
Operator:	TXU Gas Storage Pty Ltd
Property Owner:	TXU Gas Storage Pty Ltd
Nearest Town:	The coastal township of Port Campbell, approximately 7 km south of the Gas Field.
Nearest Well:	Iona Obs 2 located approx. 25m E from surface location.
Final Total Depth:	Driller: 1686 m MDKB (1411m TVDKB, 1300.5m TVDSS) Logger: 1683.2 m MDKB(1409.1m TVDKB,1298.6m TVDSS)
Spud date:	21:30 hrs on 20 May 2004.
TD reached:	13:40 hrs on 3 June 2004.
Days to Drill:	12.7 days
Rig Released:	2400 hrs, 6 June 2004
Well Status:	Plugged and Suspended

2.3 WELL SUMMARY

908148 013

Table 2.1 Well Summary

WELL NAME	Iona 6		
DESIGNATION	Plugged and Suspended		
BASIN	Onshore Otway		
OPERATIONS BASE	Upstream Petroleum, Como House, corner Toorak Rd. and Chapel Street, Melbourne		
FIELD OPERATIONS BASE	On site @ Iona , Waarre Rd, Port Campbell, Vic.		
DRILLING CONTRACTOR	Century		
RIG	Rig 18		
KB to GL	6.0 m		
GL to MSL	104.5 m		
TOTAL DEPTH (M DKB)	1686.0 m MDKB (driller depth)		
RIG MOBILISED	6 May 2004		
SPUD DATE	20 May 2004 @ 21:30 hrs		
17 ½" HOLE SECTION TD Depth/Time	664 m @ 0330 hrs 23 May 2004		
12 1/4" HOLE SECTION TD Depth/Time	1686 m @ 13:40 hrs 3 June 2004		
SPUD TO TOTAL DEPTH TIME	12 Days 16.17 hrs		
SPUD TO WELL SUSPENDED	17 Days 2.5 hrs		
CASING STRINGS	20 "	Conductor	17 m
	13 3/8 "	Surface Casing	664 m
FINAL WELL STATUS	Plugged & Suspended		

2.4 CONTRACTORS

Table 2.2 Contractors

PROJECT MANAGERS	Upstream Petroleum Pty Ltd
DRILLING	Century
LOCATION SURVEY	Worley
SITE CONSTRUCTION	Timboon Earthmoving
WATER SUPPLY	Onsite water well and dam
FUEL SUPPLY	K&S Agencies
CEMENTING	Halliburton
MUD SYSTEM - Drilling Fluids - Solids Control	 Baroid DFE
MUD LOGGING	Geoservices
ELECTRIC LOGGING	Schlumberger
DRILLING TOOLS	Weatherford
DIRECTIONAL DRILLING	Sperry/Halliburton
GYRO SERVICES	Gyrodata via Halliburton
CASING & TUBING	Marubeni/Sumitomo
WELLHEADS - Drilling Spools - Xmas Trees - Miscellaneous Flanges/cross-overs	 - Wood Group - Wood Group - Deer Park Engineering

3.0 DRILLING DATA

3.1 OPERATIONAL SUMMARY

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3.1.1 Logistics and Planning

Upstream Petroleum Pty Ltd managed the drilling of the Iona-6 well on behalf of TXU Gas Storage Pty Ltd as part of the project to enhance reservoir production and injection rates.

Materials and logistics were managed out of the Upstream Melbourne office with the input of the rig site team. Periodic visits to the well site by the materials and logistics coordinator ensured that inventory and service records were managed properly.

Halliburton supplied mud and cement chemicals, from their Cheltenham facility. Directional drilling surveying and Measurement While Drilling ("MWD") equipment was provided by Halliburton from a number of locations, mainly from Perth and Darwin.

The Iona gas field site is set in a rural part of South West Victoria, approximately seven kilometers north of the township of Port Campbell. Two wells, Iona 1 and Iona 2, had commenced production at the site in 1992 and 1994 respectively. Subsequently Iona-3, Iona-4 and Iona-5 were drilled and commenced production/injection in 1999. Iona Obs-1 and Iona Obs-2 were also drilled in 1999 and used as observation wells. The surface locations of the existing wells and the Iona-6 well lie within the security fence of the existing TXU gas plant, which was built in 1999. The overall site area for the TXU gas plant is approximately 0.5 km x 0.6 km.

3.1.2 Site Preparation

Site construction for Iona-6 commenced in early April 2004. The lease area was on a sloping paddock immediately to the south-west of the Iona Obs-2 drilling pad. A construction contractor was appointed to cut and fill the site with access roads to the east and south of the site. The site sloped away onto the adjoining farmer's property to the northwest meaning there was some risk of waste drilling fluids leaking and causing some environmental impact on the adjoining property. This was addressed through the design of a closed loop mud system where the mud was processed, the solids and contaminants removed and the mud reused. In addition the outside area of the pad and the area surrounding the drilling rig contained drains which collected any liquids from the pad which was stored in a nearby pit. The pad also was constructed with a slight slope to the east so no liquids were spilt onto the adjoining property. Site construction included the installation of a 1.8m x 1.8m x 1.8m deep cellar and 5m of 13 3/8" conductor pipe cemented in place.

Water from a nearby dam was pumped and used in the drilling operation and replenished with a water bore, which is located in the Iona Gas Plant's grounds. Located to the south of the pad was the flare pit, measuring 10m x 3m x 3m. An earthen embankment was constructed around the flare pit.

Rig crew accommodation facilities were provided remote from the site at the Twelve Apostles Motel, approximately 11 kilometers SSW of Iona-6 by road.

A schematic of the overall site showing the location of Iona 6 within the site boundary is shown on Figure 1.2.

3.1.3 Mobilisation

Century Rig 18 was mobilised from western Queensland on May 6, 2004 where it had been used to drill a well for Samson

Rig 18 is a National 610-M rig with 2 Caterpillar 3406 TA diesel engines powering the draw-works and Rotary Table through a National URC compound drive group four 600 kW generators powered by four CAT 3412 PCTA diesel engines. The generators were replaced with quiet generators for the duration of the project to meet noise guidelines provided in the environmental management plan.

The rig is a triple rig with a Rudd and Hodgson cantilever type mast and a nominal capacity of 550,000 lbs. The mud pumps consist of two National 8-P-80 Triplex – 8 ½" pumps.

Iona-6 was drilled during May/June 2004.

3.1.4 Pre Spud

The Iona-6 pre-spud meeting was held at the Port Campbell Surf Lifesaving Club on May 17, 2004. All key drilling and subsurface personnel were in attendance at the rig site meeting, which focused on lessons learned from Iona Obs-2 and other wells.

3.1.5 17 ½" Hole Section

After a full safety briefing with the rig crews, Iona 6 was spudded at 21:30 hrs on May 20, 2004. A 17- ½" hole was drilled using a KCL/PHPA/Polymer fresh water mud system. The PHPA was used to inhibit the reactive clays present within the Tertiary and Late Cretaceous claystones, i.e. in the Gellibrand marl, Pember mudstone and Paaratte Formation.

Drilling proceeded without incident to 664 m. The 13-3/8" casing was run and cemented with a lead slurry of 630 sx class "A" cement (12.5 ppg), followed by a tail slurry of 159 sx class "A" neat at 15.8 ppg, back to surface. The casing head was welded to the casing and the blow out preventers ("BOP's") were rigged up and tested to 2000 psi.

3.1.6 12 1/4" Hole section

A Formation Integrity Test ("FIT") was performed 5m below the shoe resulting in a leak off of 10.5 ppg. The kick off assembly was run from the shoe with a tri-cone bit. The 12-1/4" hole was drilled to 976 m building hole angle to 45.3 deg. At this stage the string was pulled and the bit was replaced with a PDC bit for the tangent section of the hole. The hole was drilled to 1008m however the hole angle was dropping to

an extent that the target could have been missed so the string was pulled and a tri-cone bit replaced the PDC bit. The hole was drilled to 1515m where the string began torquing up. A PDC bit was run and the remainder of the section was drilled in rotary mode to TD. Open hole logs were run at TD.

3.1.7 Plugging and Suspension

The well was plugged and suspended with balanced cement plugs set across the Waarre C1 and C2 formation (1645-1475 m) with 427 sxs of class "G" cement, the Skull Creek top (1102-1000 m) with 250 sxs class "G" cement and across the casing shoe (714-604 m) with 275 sxs class "G" cement.

The rig was put on standby at 2400 hrs on June 6, 2004. Pending a go/no-go side track decision.

3.2 DAILY OPERATIONS

3.2.1 Daily Drilling Reports

The details of the daily activities during rig up and drilling operations for the Iona 6 well are presented in the Daily Drilling Reports in Appendix 1.

3.2.2 Time Depth curve

The time-depth curve can be found in figure 3.4.

3.2.3 Directional Drilling End of Well Report

A gyro was run from surface to 630m and the MWD from 630m to total depth. In addition, a gyro was run at total depth as a check on the MWD results. The results are presented in Appendix 2.

3.2.4 Directional Drilling

Iona-6 encountered no angle problems in the vertical 17 ½" section of the well.

The well was kicked-off in the 12-1/4" hole outside the shoe and built to target inclination. The build assembly was very effective with easy slides and good response. This assembly was pulled early in the hope that the following PDC bit would offer higher ROP however it was un-steerable and was pulled after 2 slides. The original build assembly was re-run and drilled through the target before being pulled at 1515m. The motor and the MWD were layed out and the remainder of the hole was drilled with a rotary hold assembly.

3.2.5 Iona 6 Time Performance

Iona 6 was spudded at 21:30 hrs on May 20, 2004, with Century Rig 18. The rig was put on standby at 2400 hrs on June6, 2004.

Table 3.1 and Figure 3.4 illustrates the time performance.

3.2.6 Time Analysis

908148 018

Table 3.1 Time Summary

ACTIVITY	HOURS	DAYS
Drilling	169	7.04
Rig Repairs	9	0.38
Surveys	6.5	0.27
Circulate & Condition	15	0.63
Tripping	49	2.04
Casing & Cementing	55.5	2.31
Reaming	6.5	0.27
Wellhead & BOPs	28.5	1.19
Test BOP	12	0.5
Change BHA	17.5	0.73
Slip & Cut Line	1.5	0.06
Logging	18.5	0.77
Laying Down Pipe	7	0.29
Miscellaneous	15	0.63
TOTAL	**410.5**	**17.10**

Insert figure 3.4 here

FIGURE 3.4 – TIME DEPTH CURVE

3.3 Bottom Hole Assembly SUMMARY

The BHA's and bit records are detailed in the Directional Drilling report in Appendix 2.

3.4 CASING AND CEMENTING REPORT

908148 021

3.4.1 17 1/2" Hole Section : 13 3/8" Surface Casing (Surface to 664 m RT)

Table 3.2 13 3/8" Surface Casing Tally

WELL NAME :	Iona 6		DATE RUN :		24/04/2004
ELEVATIONS :	KB : 6.0 m		M.S.L. : 110.5 m	T.D. :	664 m
STRING TYPE :	13 3/8" Surface K55		RKB TO TOP OF LAST SPOOL :		6.0 m

SURFACE CASING & EQUIPMENT RECORD AS RUN FROM TOP TO BOTTOM

Size O.D. (ins)	Weight (lb/ft)	No. of Joints	Thread Type	Length (m)	From (m)	To (m)	Remarks
13-3/8"	54.5	57	BTC R3				

CASING SPOOL TYPE :	WG	SIZE :	13-3/8" SOW x 13-5/8" 3000 psi		

Table 3.3 13 3/8" Surface Casing cement details

DRILLING FLUID PRIOR TO CEMENTING :	KCL/PHPA
PREFLUSH, SPACER DETAILS :	40 bbls fresh water

CLASS	No. SX	ADDITIVE	FUNCTION	QUANTITY OF ADDITIVE (lbs / gal)	%	HOW ADDED BLEND OR MIX WATER	REMARKS
'A'	630	Econolite NF-6		1.46 0.03			Lead Slurry
'A'	159	Calcium Chloride NF-6		0.30 0.03			Tail Slurry

THEORETICAL TOP OF CEMENT (m) :	Surface		AVERAGE SLURRY WEIGHT (ppg) :	Lead Tail	12.50 ppg 15.60 ppg
DISPLACEMENT FLUID :	KCL/PHPA		DISPLACEMENT RATE (bbl/min) :	5-10	
PLUG BUMPED WITH (psi) :	Did not bump		DISPLACEMENT VOLUME (bbl) :	335	
REMARKS :	Did not pump plug, Returns 25 bbls of water contaminated cement				
ELEVATIONS :	KB : 6.0 m		M.S.L. : 110.5 m	T.D. :	664 m
STRING TYPE :	13-3/8" Surface		RKB TO TOP OF LAST SPOOL :		6.0m

3.4.2 12-1/4" Hole Section : Plug and Suspension Program

The 9-5/8" casing was not run as planned because formation tops were not as expected. Instead, a Plug & Suspension program was carried out. Three cement plugs were set at the following depths:

- Plug 1: 1645-1475 m MDKB
- Plug 2: 1100-1000 m MDKB
- Plug 3: 700-600 m MDKB

Plugs 1 and 2 were mixed at 15.6 ppg with Halad-413L at 10 gal/10 bbl Mix Fluid to control fluid losses. HR-6L was also used at a concentration of 3.0 gal/10 bbl Mix Fluid to prevent cement setting on the drill pipe when pulling out of the hole. Plug 3 was mixed at 15.8 ppg with Halad-413L at 10 gal/10 bbl Mix Fluid to control fluid losses. Plugs 1 and 2 were set inside 12-1/4 inch open hole and plug 3 was set inside 12-1/4 inch OH x 13-3/8inch Casing. All plugs were displaced with rig mud by the Halliburton unit.

3.6 DRILLING FLUID RECAP

The drilling fluid details are found in the drilling fluids recap in Appendix 3.

4.0 FORMATION SAMPLING AND TESTING

4.1 CUTTINGS

Cuttings were collected at 10m intervals from 70m to 664m and then at 3m intervals from 669m to total depth. Detailed cuttings descriptions for 669m to total depth are presented in Appendix 4.

4.2 CORES

4.2.1 Conventional Core

No conventional cores were cut in Iona-6.

4.2.2 Sidewall Cores

No sidewall cores were acquired in Iona 6.

4.3 TESTING

No drill stem tests or wireline formation tests were carried out in Iona 6.

4.4 SAMPLE ANALYSIS

No palynological, petrography or geochemical analyses were carried out on samples from Iona 6.

4.5 LOGGING AND SURVEYS

4.5.1 Mud Logging

A standard Geoservices skid mounted unit for continuous recording of depth, penetration rate, mud gas, pump rate, and mud volume data as well as mud chromatographic analysis was operated from surface to total depth. Rate of penetration, total gas and chromatography were recorded and plotted on the Formation Evaluation Log (Mud Log) and are presented in Enclosure 1.

4.6 WIRELINE LOGGING

Wireline logging was carried out at TD by Schlumberger Seaco using a standard truck mounted MAXIS unit. The logging suite consisted of one logging run and a velocity check shot survey as follows.

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Table 4.1 Wireline Logging Enclosure Numbers

LOG	Interval (m MDKB)	Enclosure No.
Run-1 HALS-DSI-PEX 1:200 and 1:500	1681.2 - 665	xx
Run-2 Velocity Survey	Surface to TD	xx

Details of the log depth intervals for each log run are as follows:

Table 4.2 Details of Wireline Logs run

LOG	Logging/ Processing Date	Depth Logger (m MDKB)	Depth Driller (m MDKB)	Top Log Interval	Bottom Log Interval	Max Temp Deg. C
Resistivity Curves HLLD, HLLS, RXOZ, SP, GR, HCAL: 1:200 & 1:500	4/6/2004 4/6/2004	1683.2	1686	665	1681.2	132
Dipole SONIC, Shear (DSTM), Compressional (DTCO): 1:200 & 1:500	4/6/2004 4/6/2004	1683.2	1686	665	1681.2	132
NUCLEAR CURVES Neutron (TNPH), Density (RHOZ), Pe (PEFZ): 1:200 & 1:500	4/6/2004 4/6/2004	1683.2	1686	665	1681.2	132
OFFSET VELOCITY SURVEY	4/6/2004 4/6/2004	1683.2	1686	surface	TD	132

908148 027

Insert figure 5.1 here

FIGURE 5.1 – PREDICTED WELL TRAJECTORY AND FORMATION TOPS

6.0 VELOCITY SURVEY

6.1 SEISMIC CALIBRATION AND RESULTS

An offset bore-hole seismic survey (check-shot) was recorded in one run in the Iona-6 deviated well bore. The maximum well deviation was 49.5 degrees. The survey was undertaken by Schlumberger as part of the open hole-logging program using a single Combinable Seismic Acquisition Tool (CSAT-B) downhole air gun source deployed in a pit at 524m offset. This water filled purposely excavated pit was located vertically above the down-hole intersection of the well track of the key reservoir Top Waarre Formation at 1513.5 meters MDKB

The survey was undertaken on June 4th, 2004 and eleven check-shot levels were acquired from 1619 meter MDKB to 109.2 meter MDKB. A minimum of three good shots was acquired at each level and the three most consistent first arrivals were stacked for data processing.

Shear wave data was recorded as part of the survey but was not further processed.

A report entitled *"IONA-6 Well Seismic Processing Report, Checkshot / Geogram"* by Schlumberger is included herein as Appendix 6. This report includes full details of processing including data editing, datum corrections applied, sonic calibration and synthetic seismogram (Geogram) processing. Additionally the text includes a comprehensive and useful set of figures and plots.

6.2 RESULTS

Selected first arrival data were judged to be of excellent quality and totally fit for the ongoing processing sequence.

The derived synthetic seismogram appears to match the seismic data reasonably well at the Iona-6 top reservoir and bottom hole location. Matches at shallower levels are expected to be less satisfactory owing to the deviated nature of the bore-hole and because frequency content of the synthetic has not been optimized to match the shallower horizons

Table 6.1 lists the expected average velocity to key formation units encountered within the Iona-6 bore-hole derived from the processed check-shot velocity data. Additionally the expected seismic two-way-times based on the bore-hole depths to these units and the computed interval velocities are also included in this Table.

The pre-drill estimates were based on a very rigorous and comprehensive Pre Stack Depth Migration ("PSDM") processing stream undertaken by WesternGeco in Perth WA.

The PSDM process follows a very sophisticated iterative modeling procedure based on layers or cells and interval velocities with a correspondingly rigorous QC process. The initial output, which was used to select the pre-drill location for Iona-6, consisted of a preliminary 3D-depth cube. The predrill location was chosen following conventional seismic interpretation of the cube. The interpretation predicted the Top of Waarre depth to be at or very near to 1141 metres subsea in Iona-6.

A "raw" seismic TWT to the mapped Top of Waarre event of 0.9840 seconds was computed by reversing the PSDM velocity field out of the depth cube. This appeared quite reasonable based on previous conventional migrated seismic time interpretation.

Inspection of Table 6.1 shows that the "true" seismic TWT resulting from the check-shot data, is co incidentally also at 0.9840 seconds!

A comparison of the average velocities to the Top Waarre from the check-shots with the output from the PSDM pre-drill processing indicates the check-shot velocities to be 2408 m/s compared to 2319 m/s from the PSDM. The check-shot processed interpreted velocity (2408 m/s) is more in line with Top Waarre average velocity nearby within Iona.
The figure suggested by the PSDM procedure (3.7% slower) is incorrect and the direct cause of most of the 43.7 meters (shallow) error in the PSDM. This is the cause of the error in the pre-drill prognosis.

7.0 PETROPHYSICS

The petrophysics are found in the petrophysics report in Appendix 7.

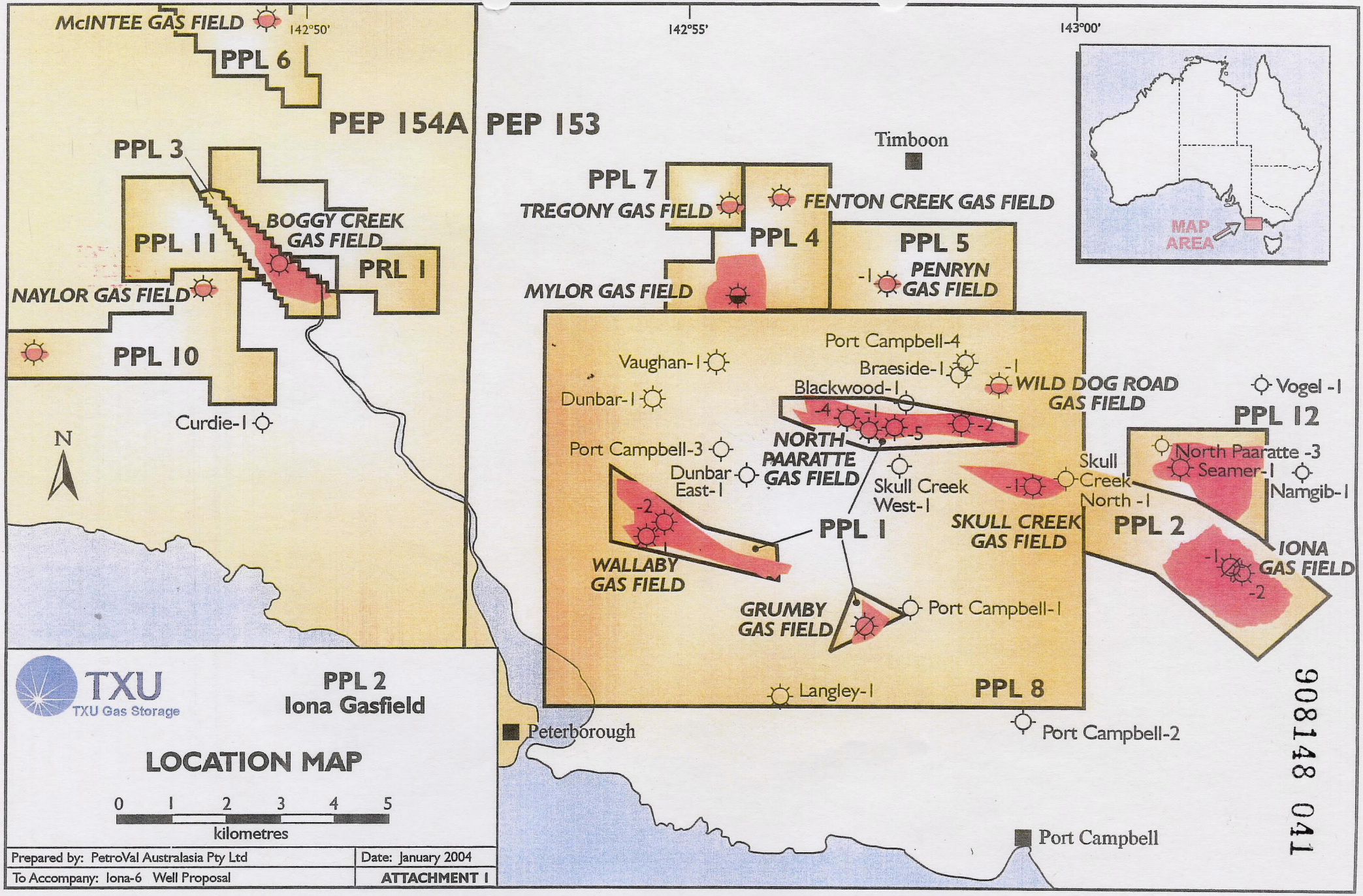
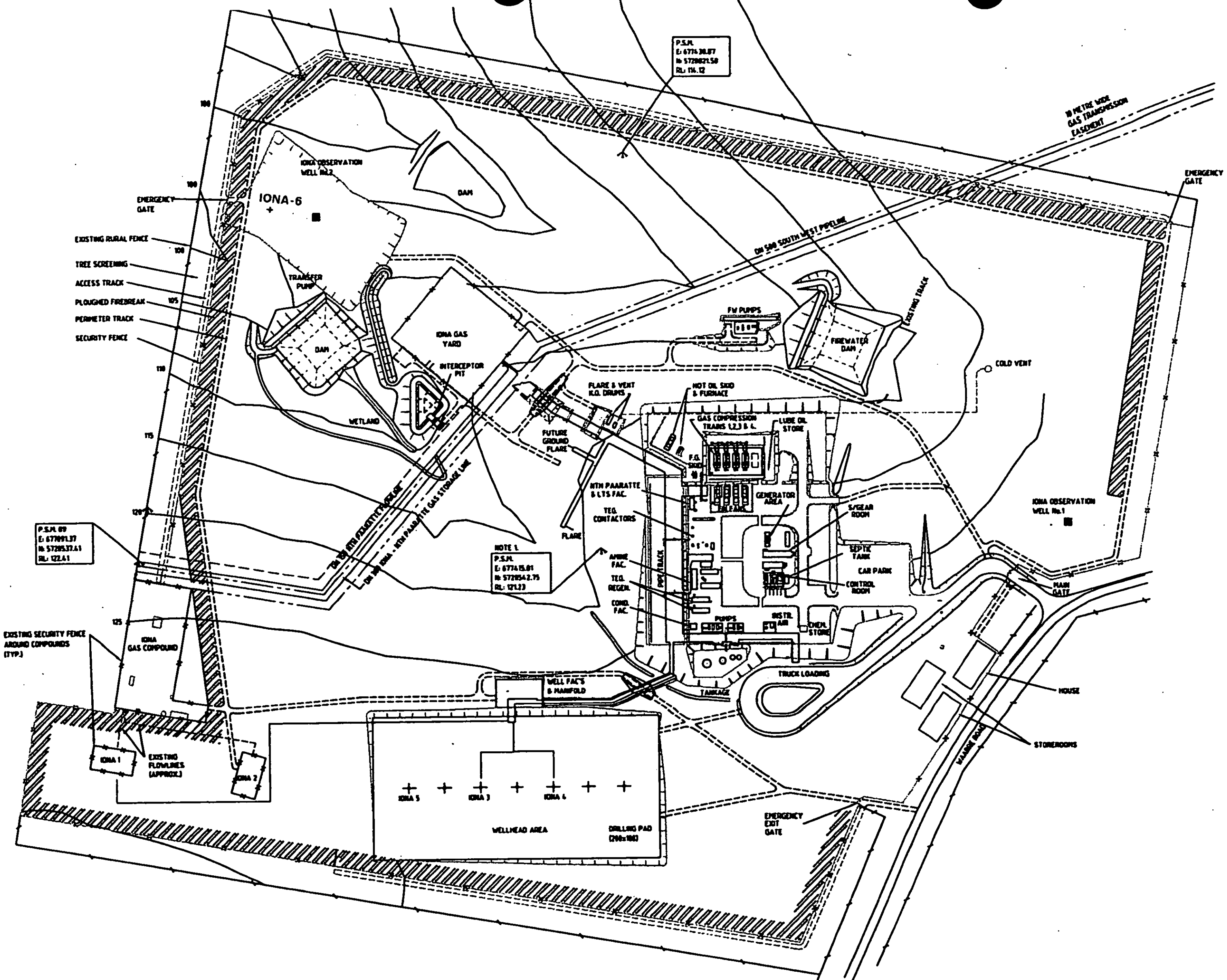

McINTEE GAS FIELD
142°50'
142°55'
143°00'
PPL 6
PEP 154A
PEP 153
PPL 3
BOGGY CREEK GAS FIELD
PPL 11
PRL 1
NAYLOR GAS FIELD
PPL 10
Curdie-1
N
Timboon
PPL 7
TREGONY GAS FIELD
FENTON CREEK GAS FIELD
PPL 4
PPL 5
-1
PENRYN GAS FIELD
MYLOR GAS FIELD
MAP AREA
Port Campbell-4
Vaughan-1
Braeside-1
-1
WILD DOG ROAD GAS FIELD
Blackwood-1
Dunbar-1
Vogel -1
PPL 12
-4
-1
-5
-2
NORTH PAARATTE GAS FIELD
Port Campbell-3
Dunbar East-1
Skull Creek West-1
Skull Creek North -1
North Paaratte -3
Seamer-1
Namgib-1
-1
SKULL CREEK GAS FIELD
PPL 2
PPL 1
-2
WALLABY GAS FIELD
IONA GAS FIELD
-1
-2
GRUMBY GAS FIELD
Port Campbell-1
Langley-1
PPL 8
Peterborough
Port Campbell-2
Port Campbell
TXU
TXU Gas Storage
PPL 2
Iona Gasfield
LOCATION MAP
0 1 2 3 4 5
kilometres
Prepared by: PetroVal Australasia Pty Ltd
Date: January 2004
To Accompany: Iona-6 Well Proposal
ATTACHMENT 1
9081148 041

FIGURE 1.1

IONA GAS PLANT MAP

PLANT / AMG NORTH.



LEGEND

- ACCESS TRACK
- PLANT ROAD
- SECURITY FENCE
- RURAL FENCE
- PLOUGHED FIREBREAK

NOTE

1. P.S.M. TO BE USED AS LOCAL PLANT DATUM.
   E: 500 000 (IN mm)
   N: 500 000 (IN mm)
   RL: 121 230 (IN M)

25 0 25 50 75 100 125
SCALE OF METRES 1:1500

908148 042

8407853-UGS-MA-0005	EXISTING COMPOUND - PLOT PLAN				
8407853-UGS-MA-0004	DRILLING PAD AREA - PLOT PLAN	2	13/12/99	AS BUILT	JKR
8407853-UGS-MA-0003	OFF PLANT AREA - PLOT PLAN	1	29/9/99	REISSUED FOR CONSTRUCTION - HOLDS REMOVED	DK
8407853-UGS-MA-0002	MAIN PLANT AREA - PLOT PLAN	0	21/6/99	ISSUED FOR CONSTRUCTION	TDD
DRAWING No.	REFERENCE DRAWINGS	No.	DATE	REVISION	ORIGINATOR

DESIGN CHECKED / ENGINEER CHECKED / PROJECT APPROVED / CLIENT APPROVED
SIGNATURE:
DATE:

Worley
[CAD] A1
JOB DIRECTORY 08407853
FILE NAME MA0001-2

TUAUSTRALIA

FIGURE 1.2

SCALE: 1:1500
DRG.NO. 8407853-UGS-MA-0001
REV. 2

APPENDIX 1

Daily Drilling Reports by Upstream Petroleum Pty. Ltd.

908148 046

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	1

General Data

Date	Rig	Spud date	DSS	Last LTA	
20-May-04	Century 18	20-May-04	1	140	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
32	32	4.5	Heytsbury	2k		

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.6	37	5/11	4	5	0.5	3/4	8.5	1.08	0

% Sand	FL	HPHT	PHPA ppb	Chlorides	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.1	20		0.5	21000	0.1	50	50	50	50		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
1	115	17 1/2"	Security	XT1SC	753075	3x16,1x18	32	2.5	12.8

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3	130	785	1700		25	8.6
2	6"	3	130					

BHA

BHA #	1	BHA Length	188.84	BHA Weight		Wt below Jars	

Bit,Bit sub w/ float,2 x 8"DCs, 17 1/2" stabiliser

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS

Casing

Last Casing Size	20	Last Liner Size		Next Liner Size	
Shoe Depth (m)	17	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	94	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$1,077,704	$1,077,704	$6,902	$6,902

From	To	Hrs	Operations (00:00 - 24:00)
21[illegible]	2400	2.50	Drilled 17 1/2" hole to 32m.
			Accepted rig after checking equipment and systems. Spudded well at 21:30hrs. Commenced with low pump
			and rotary until stabiliser below conductor. All cuttings being processed over shakers into 'D' tank.

06:00 Activity	Drilling 17 1/2" hole at 77m.
24 hr Forecast	Drill 17 1/2" hole

Fuel Usage (litres)

	Rig	Camp
Used		n/a
Stock	21,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 047

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	2

General Data

Date	Rig	Spud date	DSS	Last LTA	
21-May-04	Century 18	20-May-04	2	141	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
367	335	22.00	Dilwyn	70	72	67

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
9.05	43	43/11	9	11	11	8.0/10.0	8.5	3.00	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.5	16.2		0.4	3.50%	0.1	84	84	84	84		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
1	115	17 1/2"	Security	XT1SC	753075	3x16,1x18	367.00	24.50	15.0

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
	2-5	70											

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	755	900	20.0	23.3	8.6
2	6"	3.03	125					

BHA

BHA #	1	BHA Length	199.34	BHA Weight	40klbs	Wt below Jars	25klbs

Bit,Bit sub w/ float,2 x 8"DCs, 17 1/2" stabiliser, 6 x 8" DC's, 8" jars, 14 x 5" HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
354m	0.25						

Casing

Last Casing Size	20	Last Liner Size		Next Liner Size	
Shoe Depth (m)	17	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	94	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$83,578	$1,161,282	$3,639	$10,541

From	To	Hrs	Operations (00:00 - 24:00)
0	0030	0.50	Repaired rig fuel system (line closed)
0030	0930	9.00	Drilled 17 1/2" hole from 32m to 108m
0930	1000	0.50	Circulated hole. Ran WLS @ 96m - 1/2 deg
1000	1530	5.50	Drilled from 108m to 210m
1530	1600	0.50	Circulated hole. Ran WLS @ 199m - 3/4 deg
1600	2330	7.50	Drilled from 210m to 367m
2330	2400	0.50	Circulated hole clean. Ran WLS @ 354m - 1/4 deg

06:00 Activity	RIH after wiper trip
24 hr Forecast	Drill 17 1/2" hole to casing point

Fuel Usage (litres)

	Rig	Camp
Used	20,000	n/a
Stock	21,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS	W 19792	22.0	24.5
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 048

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	3

General Data

Date	Rig	Spud date	DSS	Last LTA	
22-May-04	Century 18	20-May-04	3	142	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
636	269	20.00	Pebble Point	90	95	87

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
9.75	47	12/22	10	14	17.5	7.0/9.0	8.5	7.60	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.6	12.8		0.4	4.30%	0.1	84	84	84	84		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
1	115	17 1/2"	Security	XT1SC	753075	3x16,1x18	636.00	44.50	14.3

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading
	5-20	120				

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	755	900	20.0	23.3	9.8
2	6"	3.03	125					

BHA

BHA #	1	BHA Length	199.34	BHA Weight	40klbs	Wt below Jars	25klbs

Bit,Bit sub w/ float,2 x 8"DCs, 17 1/2" stabiliser, 6 x 8" DC's, 8" jars, 14 x 5" HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
511m	0.75						

Casing

Last Casing Size	20	Last Liner Size		Next Liner Size	
Shoe Depth (m)	17	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	94	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$69,000	$1,230,282	$6,111	$16,652

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	0330	3.50	Drilled 17 1/2" hole from 367m to 415m
0330	0400	0.50	Circulated hole clean
0400	0700	3.00	Made wiper trip to DC's. Hole good, some minor drag through Heytesbury Gp (280m)
0700	1430	7.50	Drilled from 415m to 521m
1430	1500	0.50	Circulated hole. WLS @ 511m - 3/4 deg
1500	2400	9.00	Drilled from 521m to 636m

06:00 Activity	POOH on wiper trip @ 200m
24 hr Forecast	POH and run 13 3/8" casing

Fuel Usage (litres)

	Rig	Camp
Used	14,600	n/a
Stock	21,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS	W 19792	24.0	48.5
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 049

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	4

General Data

Date	Rig	Spud date	DSS	Last LTA	
23-May-04	Century 18	20-May-04	4	143	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
664	28	3.50	Paaratte			

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses
9.8	48	13/22	10 15	18	7.0/9.0	8.5	8.40	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
1.5	17.5		0.4	3.80%	0.1	84	84	84	84		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
1	115	17 1/2"	Security	XT1SC	753075	3x16,1x18	664.00	48.00	13.8

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
664	2-5	70				2	1	WT	A	E	0	NO	TD

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	755	950	20.0	23.3	8.6
2	6"	3.03	125					

BHA

BHA #	1	BHA Length	199.34	BHA Weight	40klbs	Wt below Jars	25klbs

Bit,Bit sub w/ float,2 x 8"DCs, 17 1/2" stabiliser, 6 x 8" DC's, 8" jars, 14 x 5" HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
654	0.41						

Casing

Last Casing Size	20	Last Liner Size		Next Liner Size	
Shoe Depth (m)	17	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	94	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$53,242	$1,283,524	$303	$16,955

From	To	Hrs	Operations (00:00 - 24:00)
0[redacted]	0330	3.50	Drilled 17 1/2" hole from 636m to 664m (hole section TD)
0330	0400	0.50	Circulated hole clean - mud cleaned up quickly after bottoms up indicating hole is in gauge
0400	0730	3.50	POH for wiper trip. Wiped tight hole @ 527m (max 50k o/pull). Pulled from 482m to 300m (w/ 20 to 30k o/pull)
0730	0900	1.50	Cleaned up badly stabiliser and RIH. Tight hole at 344m
0900	0930	0.50	Reamed tight section from 344m to 376m
0930	1030	1.00	Continued RIH to 664m. Hole condition good.
1030	1400	3.50	Circulated hole clean. Prepared casing running equipment and shoe track.
1400	1430	0.50	Pumped down gyro survey tool at low pump rate
1430	1730	3.00	POH. Recovered gyro (0.41 degrees @ 654m)
1730	1800	0.50	Cleaned rig floor in preparation for running casing.
1800	2130	3.50	Rigged up to run casing
2130	2230	1.00	Repaired casing running equipment
2230	2300	0.50	Held safety meeting before running casing
2300	2400	1.00	Made up 13 3/8" casing shoe track, and checked that floats were functioning correctly.

06:00 Activity	Running 13 3/8" casing
24 hr Forecast	Cement casing and install wellhead 'A' Section

Fuel Usage (litres)

	Rig	Camp
Used		n/a
Stock		n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS	W 19792	14.0	62.5
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 050

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	5

General Data

Date	Rig	Spud date	DSS	Last LTA	
24-May-04	Century 18	20-May-04	5	144	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
664	0	0.00	Paaratte			

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses
9.8	49	13/23	10 15	17.5	7.0/9.0	8.3	8.30	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
1.7	17.4		0.3	3.80%	0.05	84	84	84	84		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03						
2	6"	3.03						

BHA

BHA #	1	BHA Length	199.34	BHA Weight	40klbs	Wt below Jars	25klbs
BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
654	0.41						

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills	Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$157,209	$1,440,733	$70	$17,025

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	1100	11.00	Ran 57 joints 13 3/8" 54.5# K55 BTC R3 casing to 664m.
1100	1300	2.00	Installed Halliburton cement head. Reciprocated while circulating at 8.7bbl/min.
1300	1330	0.50	Held cement job safety meeting. Pumped 40bbl water preflush and tested cementing lines.
1330	1530	2.00	Mixed and pumped 234bbl 12.5ppg lead slurry (630sx)
			Mixed and pumped 34bbl 15.6ppg tail slurry (159sx)
			Displaced with 20bbl water, 290bbl mud and 25bbl water. Did not bump plug. Approx 25bbl water
			contaminated cement returns.
1530	2130	6.00	Waited on cement. Cut conductor, prepared BOP's.
21.30	2400	2.50	Cut and removed conductor from cellar, removed cement head and crossover. Released tension from
			casing, made rough cut on 13 3/8" casing, removed conductor and flow line from under rig floor, removed
			landing joint.

06:00 Activity	Installing wellhead "A' section
24 hr Forecast	Install and test BOPs

Fuel Usage (litres)	Rig	Camp
Used	1,000	n/a
Stock	8,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 051

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	6

General Data

Date	Rig	Spud date	DSS	Last LTA
25-May-04	Century 18	20-May-04	6	145

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
664	0	0.00	Paaratte			

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size	C_1	Total Gas

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC.AV	ECD
1	6"	3.03						
2	6"	3.03						

BHA

BHA #	1	BHA Length	199.34	BHA Weight	40klbs	Wt below Jars	25klbs
BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
654	0.41						

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$74,039	$1,514,772	$0	$17,025

From	To	Hrs	Operations (00:00 - 24:00)
0	0930	9.50	Welded casing head. Prepared BOP's.
0930	1000	0.50	Tested casing head weld. Minor internal leak.
1000	1200	2.00	Rewelded casing head.
1200	1230	0.50	Tested casing head to 1000psi.
1230	1330	1.00	Installed DSA, spacer spool and mud cross.
1330	2200	8.50	Nippled up BOPs
2200	2330	1.50	Attempted to run Gyro inside 13 3/8" casing. Tool hung up at 150m.
2330	2400	0.50	Continued to nipple up BOPs
			Mixing new mud system in surface tanks.

06:00 Activity	Pressure testing BOPs
24 hr Forecast	RIH to drill out casing

Fuel Usage (litres)

	Rig	Camp
Used	1,000	n/a
Stock	19,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 052

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	7

General Data

Date	Rig	Spud date	DSS	Last LTA	
26-May-04	Century 18	20-May-04	6	146	

Drilling Data

Depth (m)	Progress (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
664	0	0.00	Paaratte			

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.7	56	7/10	3	5	1	3/4	8.3	1.10	

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.1	10.1		0.25	4.70%	0.3	50	50	50	50		

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
2	417W	12.25	Sec	EBXS02SC	10615071	3x18,1x20			

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03						
2	6"	3.03						

BHA

BHA #	2	BHA Length		BHA Weight		Wt below Jars	

12 1/4" Bit, 8" motor,flt sub,11.75" stab,8" monel,8" h/off,8" monel,3 x 8" DCs,X/O,18xHWDP,6.5" jar,6xHWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
654	0.41						

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test		Last Pit Drill		Last Trip Drill	

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$88,188	$1,602,960	$8,849	$25,874

From	To	Hrs	Operations (00:00 - 24:00)
0	0230	2.50	Installed Koomey lines and function tested accumulator, flushed lines and filled BOP with water.
			Closed blind rams and pressure tested casing to 500/2000psi for 15 minutes against blind rams and HCR.
0230	0400	1.50	Picked up test plug and landed in wellhead. Connected test lines from Halliburton unit.
0400	0500	1.00	Flushed water through lines and choke manifold, pressure tested Halliburton test line, closed and
			attempted to pressure test pipe rams. Bonnet seal leaking at 200psi.
0500	0700	2.00	Rig repair - replaced bonnet seal and pressure tested
0700	0800	1.00	Tested manifold, HCR, kill valves against pipe rams and annular preventer.
0800	0900	1.00	Laid out test plug and installed wear bushing.
0900	1130	2.50	Tested circulating system to 500/2500psi. Tested kelly/standpipe/pump/stab/IBOP valves to 500/2000psi.
1130	1330	2.00	Installed flow line.
1330	1430	1.00	Laid out extra 8" DC's.
1430	1730	3.00	Picked up mud motor and directional BHA. Set 1.5 deg bend. Laid out 8" jars.
1730	1900	1.50	RIH w/8" DCs, L/O 8" jars and tested MWD/PDM.
1900	2300	4.00	RIH with HWDP scribing line on each stand, took weight @ 632m
2300	2400	1.00	Laid out 12 DP singles, RIH with remaining stands to 620m

06:00 Activity	After drilling to 669m and conducting FIT to 10.5ppg EMW running gyro survey
24 hr Forecast	Drilling 12 1/4" directional hole - build mode

Fuel Usage (litres)

	Rig	Camp
Used	700	n/a
Stock	18,900	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 053

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	8

General Data

Date	Rig	Spud date	DSS	Last LTA	
27-May-04	Century 18	20-May-04	8	147	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
816	812	152.00	17.5	Paaratte	95	115	80

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.75	40	7/14	4	8	3.5	4/5	9.5	5.85	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.6	8.8		0.75	4.60%	0.55	50	50	50	50		0-0.3

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
2	417W	12.25	Sec	EBXS02SC	10615071	3x18,1x20	152.00	17.50	8.7

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	124	750	1250	45.0	65.0	8.8
2	6"	3.03	124					

BHA

BHA #	2	BHA Length	283.9	BHA Weight	52k	Wt below Jars	46k

Bit,8" Motor,Flt sub,11 3/4" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
759.89	18.7	304.53	793.48	16.11	32.15	35.57	5.42

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill		Last Trip Drill	26-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$71,789	$1,674,749	$6,744	$32,618

From	To	Hrs	Operations (00:00 - 24:00)
0	0100	1.00	Picked up side entry sub and kelly cock, filled string and displaced well to new mud. Pumped mud from hole into waste tanker
0100	0200	1.00	Slipped and cut drill line
0200	0330	1.50	RIH and tagged top of cement at 632m. Drilled ratty cement until float collar @ 652m and shoe at 664m.
0330	0400	0.50	Aligned scribe mark and drilled 12 1/4" directional hole from 664 to 669m
0400	0430	0.50	Circulated hole clean
0430	0500	0.50	Closed rams and conducted Formation Integrity Test (FIT) to 10.5ppg EMW
0500	0700	2.00	Ran Gyro survey on slickline
0700	2400	17.00	Drilled 12 1/4" directional hole from 669m to 816m building angle from 0 to 25 degrees
			Drilling Summary
			In rotary mode - 1 hour / 18 m (AROP 18m/hr)
			In slide mode - 16.5 hours /134m (AROP 8.1m/hr)
			Angle built from 0 to 25 degrees

06:00 Activity	Drilling 12 1/4" hole at 855m
24 hr Forecast	Drill 12 1/4" hole building to tangent section, POH to change bit

Fuel Usage (litres)

	Rig	Camp
Used	4,600	n/a
Stock	14,300	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR		19.0	19.0
JARS		19.0	19.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 054

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	9

General Data

Date	Rig	Spud date	DSS	Last LTA	
28-May-04	Century 18	20-May-04	9	148	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
976		160.00	18	Paaratte	104	120	88

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.8	39	7/16	4	7	4	4/5	8.9	1.50	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.5	7.6		1	4.40%	0.05	84	50	50	50		0-0.3

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
2	417W	12.25	Sec	EBXS02SC	10615071	3x18,1x20	312.00	35.50	8.8

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
976	30	Sld		291,000	120	1	2	WT	A	E	I	NO	BHA

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	124	750	1400	45.0	65.0	8.9
2	6"	3.03	124					

BHA

BHA #	2	BHA Length	283.9	BHA Weight	52k	Wt below Jars	46k

Bit,8" Motor,Flt sub,11 3/4" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill		Last Trip Drill	26-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	10	Caterer		Others		TOTAL	34

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$78,007	$1,752,756	$3,975	$36,592

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	1800	18.00	Drill 12 1/4" hole from 816m to 976m. Build hole angle to 45.3 deg.
1800	1900	1.00	Circulate hivis sweep to clean hole.
1900	2230	3.50	POH. Hole condition good.
2230	2400	1.50	Attempt to retrieve wear bushing. Unable to pass thru bell nipple flange. Rig down flow line and repair.

06:00 Activity	RIH with bit#3
24 hr Forecast	RIH to 976m. Drill ahead in tangent section.

Fuel Usage (litres)

	Rig	Camp
Used	5,900	n/a
Stock	8,400	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR		37.0	19.0
JARS		37.0	19.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 055

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	10

General Data

Date	Rig	Spud date	DSS	Last LTA	
29-May-04	Century 18	20-May-04	10	149	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1008	963	34.00	7	Paaratte	115	115	95

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.8	41	7/16	4	7	4	4/5	9.0	0.90	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.25	7.4		1.1	4.20%	0.05	84	50	50	50		0-0.3

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
rr3	S223	12.25	Sec	FM2565	7970231	5x18	32.00	8.00	4.0

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
1008	30	Sld		64,800	120	1	1	WT	A	X	I	NO	BHA

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	124	750	1500	45.0	65.0	8.9
2	6"	3.03	124					

BHA

BHA #	3	BHA Length	292.76	BHA Weight	51k	Wt below Jars	46k

Bit,8" Motor,Flt sub,12" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #		BHA Length	292.76	BHA Weight	51klb	Wt below Jars	45klb

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
978.61	44.85	304.81	942.43	66.188	105.629	124.49	0.54

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill		Last Trip Drill	26-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	11	Caterer		Others		TOTAL	35

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$84,131	$1,836,887	$3,442	$40,034

From	To	Hrs	Operations (00:00 - 24:00)
0	0230	2.50	Repaired bell nipple. Removed wear bushing. Tested pipe rams to 500/2000psi. Installed wear bushing.
0230	0430	2.00	Picked up bit #3, changed out stabiliser, changed motor bend to 1.15. Checked motor and correlated MWD
0430	0600	1.50	RIH to bottom. Hole condition good.
0600	1230	6.50	Drilled 12 1/4" hole from 976 to 989m. BHA hanging up, unable to slide and build required final hole angle.
1230	1330	1.00	Repaired mud pump #2.
1330	1600	2.50	Drilled from 989m to 1008m. Hole angle dropping, BHA hanging up in hole.
1600	1700	1.00	Circulated hole clean. Pumped KCl pill.
1700	2030	3.50	POH to change BHA
2030	2230	2.00	Changed out stabiliser and correlate tool. RIH to shoe.
2230	2300	0.50	Slipped 22ft of drill line.
2300	2400	1.00	Repaired drawworks drum clutch.

06:00 Activity	Drilling ahead @ 1024m
24 hr Forecast	Drill ahead in tangent section.

Fuel Usage (litres)

	Rig	Camp
Used	3,500	n/a
Stock	26,900	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR		45.0	10.0
JARS		45.0	10.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 056

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	11

General Data

Date	Rig	Spud date	DSS	Last LTA	
30-May-04	Century 18	20-May-04	11	0	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1074	1010	66.00	13	Paaratte	106	115	95

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
8.9	41	9/17	5	6	4	4/6	8.9	1.50	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.5	7.2		1.1	5.30%	0.04	84	50	50	50	46ppm	1.0U

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
rr3rr	S223	12.25	Sec	FM2565	7970231	5x18	29.00	9.50	3.1
4	417M	12.25	Sec	EBXS02DSC	10615073	3x18, 1x20	37.00	3.50	10.6

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
1037	15	50		73,000	120	1	1	WT	A	X	I	NO	BHA

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	124	750	1500	45.0	65.0	8.9
2	6"	3.03	124					

BHA

BHA #	4	BHA Length	292.76	BHA Weight	51k	Wt below Jars	46k

Bit,8" Motor,Flt sub,11-3/4" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #	5	BHA Length	292.96	BHA Weight	51klb	Wt below Jars	45klb

Bit,8" Motor,Flt sub,11-31/2" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1066.11	47.95	306.15	1004.45	102.14N	155.77W	186.19	3.56

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill		Last Trip Drill	26-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1037	8.9						

Personnel

TXU	6	Rig	18	Service Co.	12	Caterer		Others		TOTAL	36

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$81,910	$1,918,797	$3,471	$43,505

From	To	Hrs	Operations (00:00 - 24:00)
0	0030	0.50	Repaired draworks drum clutch.
0030	0100	0.50	RIH to 710m.
0100	0130	0.50	Broke circulation. Tested motor and pulser unit.
0130	0200	0.50	RIH to 987m.
0200	0230	0.50	Washed from 987m to 1008m.
0230	1200	9.50	Drilled 12 1/4" hole from 1008m to 1037m. Unable to build hole angle.(Slide 20m - 9 hrs,rotate 9m - 0.5hr)
1200	1300	1.00	Circulated hole clean. Pumped KCl pill.
1300	1530	2.50	POH.
1530	1700	1.50	Changed out to 11 1/2" stabiliser, picked up new bit #4 and adjusted motor to 1.5 bend.
1700	1900	2.00	RIH to shoe.
1900	1930	0.50	Filled pipe, broke circulation and checked MWD.
1930	2030	1.00	RIH to 1006m picked up kelly and washed 3 DP singles to 1037m
2030	2400	3.50	Driled 12 1/4" directional hole from 1037 to 1074m (slide 14m - 2hrs, rotate 21m - 1.5hrs)

06:00 Activity	Drilling 12 1/4" hole at 1120m
24 hr Forecast	Drill ahead.

Fuel Usage (litres)

	Rig	Camp
Used	3,700	n/a
Stock	23,200	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR	8052	14.5	61.5
JARS		14.5	61.5
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 057

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	12

General Data

Date	Rig	Spud date	DSS	Last LTA	
31-May-04	Century 18	20-May-04	12	151	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1247	1125	173.00	24	Skull Creek	110	125	90

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
9.2	42	11/21	6	10	7	5/7	8.8	4.30	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.6	6.8		1.1	4.80%	0.05	84	50	50	50	3800ppm	19U

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
4	417M	12.25	Sec	EBXS02DSC	10615073	3x18, 1x20	210.00	27.50	7.6

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	120	727	1800	43.1	63.1	9.4
2	6"	3.03	120					

BHA

BHA #	5	BHA Length	292.96	BHA Weight	51klb	Wt below Jars	45klb

Bit,8" Motor (1.5B),Flt sub,11-1/2" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1231.16	49.37	305.03	1114.22	174.79N	255.32W	309.4	0.47

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	31-May-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1240	9.1	60	200	80	290		
2	1240	9.1	60	190	80	280		

Personnel

TXU	6	Rig	18	Service Co.	12	Caterer		Others		TOTAL	36

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$72,194	$1,990,991	$6,305	$49,810

From	To	Hrs	Operations (00:00 - 24:00)
0	2400	24.00	Drilled 12 1/4" hole from 1074m to 1247m.
			Sliding -22m - 9hrs - AROP 2.33m/hr
			Rotating - 151m - 15hrs - AROP 10.07m/hr

06:00 Activity	Drilling 12 1/4" hole at 1311m
24 hr Forecast	Drill ahead to 1550m(TD)

Fuel Usage (litres)

	Rig	Camp
Used	5,400	n/a
Stock	17,800	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR	8052	24.0	85.5
JARS		24.0	85.5
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 058

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	13

General Data

Date	Rig	Spud date	DSS	Last LTA	
1-Jun-04	Century 18	20-May-04	13	152	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1473	1272	226.00	23.5	Belfast	120	135	105

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
9.4	45	13/23	6	14	12	6/8	8.8	5.00	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.6	6.3		1.1	4.40%	0.04	110	110	84	50	5562	37U

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
4	417M	12.25	Sec	EBXS02DSC	10615073	3x18, 1x20	436.00	51.00	8.6

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	112	678	1900	40.5	63.1	9.6
2	6"	3.03	112					

BHA

BHA #	5	BHA Length	292.96	BHA Weight	51klb	Wt below Jars	45klb

Bit,8" Motor (1.5B),Flt sub,11-1/2" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1471.69	48.75	309.32	1271.61	284.14N	400.60W	491.12	0.42

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1460	9.3	60	240	100	420		
2	160	9.3	60	240	100	420		

Personnel

TXU	6	Rig	18	Service Co.	15	Caterer		Others		TOTAL	39

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$83,864	$2,074,855	$6,424	$56,235

From	To	Hrs	Operations (00:00 - 24:00)
0	2230	24.00	Drilled 12 1/4" hole from 1247 to 1463m.
2230	2300	0.50	Repair Mudpump presure relief valve
2300	2400	1.00	Drilled 12 1/4" hole from 1463 to 1473m.
			Daily Drilling
			Sliding - 0m - 0 hrs
			Rotating - 226m - 23.5hrs - AROP - 9.62m/hr

06:00 Activity	Drilling 12 1/4" hole at 1515m
24 hr Forecast	Drill ahead to TD

Fuel Usage (litres)

	Rig	Camp
Used	6,800	n/a
Stock	11,000	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR	8052	23.5	109.0
JARS		23.5	109.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 059

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	14

General Data

Date	Rig	Spud date	DSS	Last LTA	
2-Jun-04	Century 18	20-May-04	14	153	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1515	1302	42.00	6	Flaxmans	120	135	105

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m		MBT	R3 / R6	PH	% LGS	Mud Losses
9.45	45	13/21	6	15	14	5/7	9.0	5.50	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
0.5	6.2		1.1	4.60%	0.05	110	110	84	50	18695ppm	1515U

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
4	417M	12.25	Sec	EBXS02DSC	10615073	3x18, 1x20	478.00	57.00	8.4
rr3rr2	223	12.25	Sec	FM2565	7970231	5x18			

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
1515	30	50		410k	110	2	2	WT	A	F	1	NO	TQ

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	750	1500	44.8	65.2	9.4
2	6"	3.03	125					

BHA

BHA #	5	BHA Length	292.96	BHA Weight	51klb	Wt below Jars	45klb

Bit,8" Motor (1.5B),Flt sub,11-1/2" stab,8" Monel,DWD sub,8" monel,3x8" DCs,X/O,18 HWDP,Jars,6 HWDP

BHA #	6	BHA Length	267.6	BHA Weight	46klb	Wt below Jars	37klb

Bit, bitsub w/float, 12" stab, 1x8" DC, 11-1/2" stab, 2x8" DC, XO, 18x5" HWDP, jars, 6x5" HWDP

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1490.73	48.75	310.05	1284.17	293.28	411.61	505.39	0.86

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills	Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1460	9.3	60	240	100	420		
2	160	9.3	60	240	100	420		

Personnel	TXU	6	Rig	18	Service Co.	19	Caterer		Others		TOTAL	43

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$69,318	$2,144,173	$4,129	$60,364

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	0600	6.00	Drilled 12 1/4" hole from 1473m to 1515m. String torquing up.
0[illegible]	0700	1.00	Circulated and cleaned hole. Pumped KCl pill.
0700	1130	4.50	POH. Hole condition good.
1130	1330	2.00	Laid out MWD/motor.
1330	1530	2.00	Picked up bit#RR3. RIH.
1530	1830	3.00	RIH, broke circulation at shoe, continued RIH in stands
1830	2400	5.50	Worked new BHA through tight hole from 837m to 1336m

06:00 Activity	Drilling 12 1/4" hole at 15XXm
24 hr Forecast	Run wirelne logs

Fuel Usage (litres)

	Rig	Camp
Used	440	n/a
Stock	6,600	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR	8052	7.0	116.0
JARS		22.0	131.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 060

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	15

General Data

Date	Rig	Spud date	DSS	Last LTA
3-Jun-04	Century 18	20-May-04	15	154

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1686	1416	171.00	9	Eumeralla	125	130	110

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses
9.8	52	16/24	7 21	16	6/8	9.0	8.00	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size				C_1	Total Gas
1.1	5.8		1	4.50%	0.1	110	110	84	50	18695ppm	187u

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
rr3rr2	S223	12.25	Sec	FM2565	7970231	5x18	171.00	9.00	19.0

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading
1686	25	80				

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	750	1500	44.8	65.2	10.0
2	6"	3.03	125					

BHA

BHA #	6	BHA Length	267.6	BHA Weight	46klb	Wt below Jars	37klb

Bit, bitsub w/float, 12" stab, 1x8" DC, 11-1/2" stab, 2x8" DC, XO, 18x5" HWDP, jars, 6x5" HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1490.73	48.75	310.05	1284.17	293.28	411.61	505.39	0.86

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1460	9.3	60	240	100	420		
2	160	9.3	60	240	100	420		

Personnel

TXU	6	Rig	18	Service Co.	19	Caterer		Others		TOTAL	43

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$104,592	$2,248,765	$6,503	$66,867

From	To	Hrs	Operations (00:00 - 24:00)
0[redacted]	0300	3.00	RIH. Reaming from 1336m to 1515m.
03[redacted]	1030	6.50	Drilled 12 1/4" hole from 1515m to 1636m.
1030	1100	0.50	Repaired mud pump #1.
1100	1330	2.50	Drilled to 1686m TD.
1330	1530	2.00	Circulated hole clean. Pumped 50bbl Barolift sweep. Circulated out.
1530	1730	2.00	Made wiper trip to 1000m. Worked tight sections. RIH to bottom.
1730	1900	1.50	Circulated hole clean. Pumped 50bbl Barolift sweep. Circulated out.
1900	1930	0.50	Worked pipe through tight hole from 1540 to1650m
1930	2200	2.50	Picked up kelly, circulated, swept hole with 50bbl Baralift and circulated hole clean
2200	2400	2.00	Disable #1 mud pump.Drop gyro and pump slowly to bottom

06:00 Activity	Logging
24 hr Forecast	Run logs.

Fuel Usage (litres)

	Rig	Camp
Used	4,800	n/a
Stock	18,300	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS		9.0	140.0
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 061

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	16

General Data

Date	Rig	Spud date	DSS	Last LTA	
4-Jun-04	Century 18	20-May-04	16	155	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
1686	1416			Eumeralla	125	130	110

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses
9.8	53	16/24	7 / 21	16	6/8	9.0	8.00	0

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size	C_1	Total Gas
1.1	5.8		1	4.50%	0.1	110 110 84 50	18695	187

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP
rr3rr2	S223	12.25	Sec	FM2565	7970231	5x18	171.00	9.00	19.0

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading							
1686	25	80				2	2	WT	A	X	I	NO	TD

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03	125	750	1500	44.8	65.2	9.9
2	6"	3.03	125					

BHA

BHA #	6	BHA Length	267.6	BHA Weight	46klb	Wt below Jars	37klb

Bit, bitsub w/float, 12" stab, 1x8" DC, 11-1/2" stab, 2x8" DC, XO, 18x5" HWDP, jars, 6x5" HWDP

BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS
1490.73	48.75	310.05	1284.17	293.28	411.61	505.39	0.86

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure
1	1460	9.3	60	240	100	420		
2	160	9.3	60	240	100	420		

Personnel

TXU	6	Rig	18	Service Co.	14	Caterer		Others		TOTAL	38

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$133,739	$2,382,504	$800	$66,867

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	0500	5.00	Continued POH, Recovered Gyro at surfaceLaid out stabilisers and bit
0500	0530	0.50	Clear and clean rig floor
0530	0600	0.50	Held safety meeting and rigged up to log.
0600	1430	8.50	Ran Log #1 triple combo and logged
1430	2330	9.00	Ran Log #2 (VSP)
2330	2400	0.50	Rigged down Logging equipment

06:00 Activity	Circulating at 1645m
24 hr Forecast	Suspend well

Fuel Usage (litres)

	Rig	Camp
Used	2,800	n/a
Stock	15,500	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 062

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	17

General Data

Date	Rig	Spud date	DSS	Last LTA	
5-Jun-04	Century 18	20-May-04	17	156	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
604	604						

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size	C_1	Total Gas

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03						
2	6"	3.03						

BHA

BHA #		BHA Length		BHA Weight		Wt below Jars	
BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	11	Caterer		Others		TOTAL	35

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$66,739	$2,449,243		$66,867

From	To	Hrs	Operations (00:00 - 24:00)
00	0130	1.50	Laid out 3 x 8" DCs and rearranged HWDP in derrick
01	0500	3.50	Made up cementing stinger & RIH to 1645m
0500	0700	2.00	Installed circulating sub and cementing hose, circulated hole clean
0700	0730	0.50	Held safety meeting and pressure tested cement lines.
0730	0900	1.50	Set Cement plug #1 from 1645 to 1475m- Pumped 20bbls water preflush, mixed and pumped 95bbls
			1.8SG slurry (427 sxs 'G' cement) , tailed with 3 bbls water and displaced with 75 bbls mud. CIP 0830hrs
0900	0930	0.50	Pulled 8 stands to 1422m slowly
0930	1400	5.50	Circulated DP at high rates while waiting on cement.
1400	1430	0.50	RIH. Tagged cement plug at 1486m with 15klb.
1430	1700	2.50	Laid out 39 jts DP.
1700	1730	0.50	Set Cement plug #2 from 1102 to 1000m- Pumped 20bbls water preflush, mixed and pumped 53bbls
			1.8SG slurry (250 sxs 'G' cement) , tailed with 3 bbls water and displaced with 52 bbls mud. CIP 1720hrs
1730	1800	0.50	Pulled 5 stands to 956m slowly
1800	1900	1.00	Circulated DP at high rates.
1900	2030	1.50	Laid out 25 jts DP and 7 jts HWDP.
2030	2100	0.50	Rigged up circulating swage and circulate hole
2100	2230	1.50	Set Cement plug #3 from 714 to 604m- Pumped 20bbls water preflush, mixed and pumped 56bbls
			1.8SG slurry (275 sxs 'G' cement) , tailed with 3 bbls water and displaced with 29 bbls mud. CIP 21:45hrs
2230	2400	1.50	Pulled 5stds slowly to 558m & circulated DP at high rate. Racked back 6 stds DP & RIH 6 stds HWDP
06:00 Activity			Laying out drill pipe
24 hr Forecast			Prepare rig for standby

Fuel Usage (litres)

	Rig	Camp
Used	1,100	n/a
Stock	14,400	n/a

Water Usage	Water on hand
BBLS	BBLS

	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

908148 063

DAILY DRILLING REPORT - IONA 6

TXU

Report No.	18

General Data

Date	Rig	Spud date	DSS	Last LTA	
6-Jun-04	Century 18	20-May-04	18	157	

Drilling Data

Depth (m)	Depth TVD	Prog. (m)	Rot. Hours	Formation	Rot. Wt.	P. U. Wt	S. O. Wt
604	604						

Drilling Fluid

Density	Viscosity	PV / YP	Gels 10s/10m	MBT	R3 / R6	PH	% LGS	Mud Losses

% Sand	FL	HPHT	PHPA ppb	KCl	Alkalinity	Shaker Screen Size	C_1	Total Gas

Bit Data

Bit #	IADC	Size	Manuf	Type	Serial #	Nozzles	Cum. Mtrs	Cum. Hrs	ROP

Depth Out	WOB	RPM	TORQUE	Total Rev's	Motor RPM	IADC Dull Bit Grading

Hydraulics

Pump #	Liner	Gal / Stk	SPM	GPM	SPP	DP AV	DC AV	ECD
1	6"	3.03						
2	6"	3.03						

BHA

BHA #		BHA Length		BHA Weight		Wt below Jars	
BHA #		BHA Length		BHA Weight		Wt below Jars	

Surveys

Measured Depth	Angle	Azimuth	TVD	N/S (-)	E/W (-)	V. S.	DLS

Casing

Last Casing Size	13 3/8"	Last Liner Size		Next Liner Size	
Shoe Depth (m)	664	Shoe Depth(m)		Shoe Depth(m)	
Weight (ppf)	54.5	Weight (ppf)		Weight (ppf)	

Tests & Drills

Last BOP Test	26-May-04	Last Pit Drill	1-Jun-04	Last Trip Drill	30-May-04

Well Control

Pump #	Depth	Mud Wt.	SPM #1	Pressure	SPM #2	Pressure	SPM #3	Pressure

Personnel

TXU	6	Rig	18	Service Co.	6	Caterer		Others		TOTAL	30

Well Cost

Daily Drilling Cost	Cumulative Drilling Cost	Daily Mud Cost	Cumulative Mud Cost
$43,689	$2,492,932		$66,867

From	To	Hrs	Operations (00:00 - 24:00)
0[illegible]	0300	3.00	Waited on cement. Laid out 3 x 8" DCs and rearranged HWDP in derrick
03[illegible]	0400	1.00	RIH and tagged TOC with 15K lbs at 603m
0400	0800	4.00	POH laying out drill pipe
0800	0930	1.50	Laid out drillpipe from derrick. Clean and dope connections.
0930	10.00	0.50	Flushed kelly and standpipe using both pumps
10.00	10.30	0.50	Made up cup tester and pulled wear busing
10.30	11.00	0.50	Installed cup tester, closed Hydril, flushed choke / kill lines and degasser
11.00	11.30	0.50	Pulled cup tester and closed Blind rams. Tested cement plug to1000psi for 10 minutes.
11.30	24.00	12.50	Broke kelly and laid out. Cleaned mud pits,cleaned and stored handling equipment from rig floor.
			RIG ON STANDBY AT 2400 HOURS

06:00 Activity	Cotinuing to suspend operations.
24 hr Forecast	Rig on Standby

Fuel Usage (litres)

	Rig	Camp
Used	1,300	n/a
Stock	13,100	n/a

Water Usage	Water on hand
BBLS	BBLS

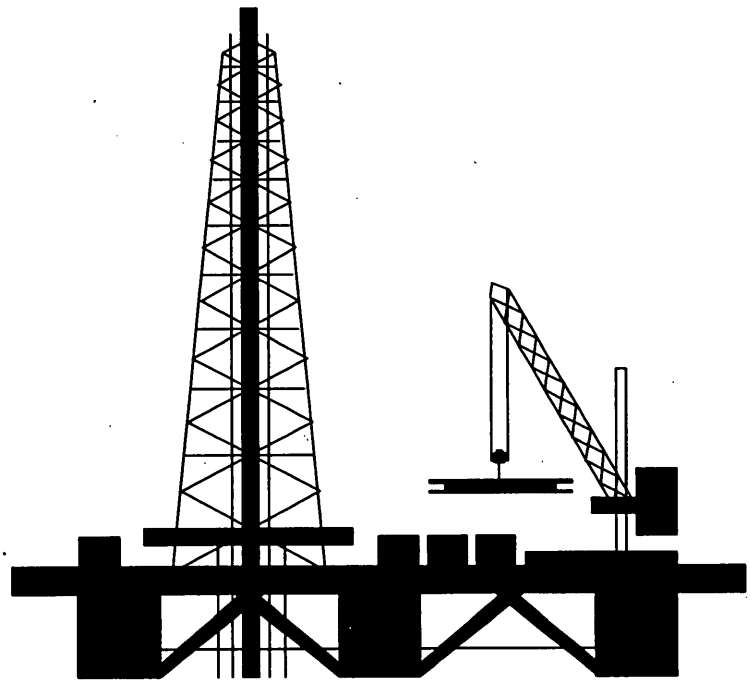
	Serial #	Hrs	Cum
MOTOR			
JARS			
S SUB			

Drilling Supervisors	Peter Dwyer/Andy Urdevics	Mud Engineer	Tun Aung

APPENDIX 2a

Definitive Survey by Halliburton/Sperry Sun

TXU Gas Storage Pty. Ltd.



Directional Drilling End of Well Report

Well : Iona #6

Date: May 2004

HALLIBURTON

908148 066

Table of Contents

Customer : **TXU Gas Storage Pty Ltd.**

908148 067

Well Name : **Iona #6**

Job Objectives:

The primary objective of the Iona #6 well is to test an anomaly in the north west perimeter of the lease for the production and/or storage of gas from the Warre reservoir.
The well has been planned to kick off from vertical below the 13 3/8" shoe and build at 5°/30m to a sail angle of 45 degrees on an azimuth of 305 degrees. A tangent section will then be drilled to intersect the target at 1250m TVD and continue to well TD at 1685m MD.

Summary of Results:

17½" Hole Section

The well was spudded 17m from the proposed location and surface hole drilled and 13 3/8" casing set 20m deeper than the proposed kick off point. With these new ammendments a new proposal was created to kick off ASAP below the shoe and build to 47° inclination along the new azmiuth of 306° degrees.

12 1/4" Hole Section.

The kick-off assembly was scribed in the hole and kicked off once outside the shoe on a heading of 304° azimuth and built at 5°/30m to target inclination. The pipe tally was found to be longer by 8 metres which caused the inclination to be built to 49 degrees for target centre. The build assembly was very effective with easy slides and good turn response. This assembly was pulled early on the hope the following PDC bit would offer higher ROP. This assembly was unsteerable and was pulled after the 2 slides in high side dropped.
The original build assembly was re-run and drilled through target before being pulled. There was a priority on target centre and this aim was achieved without excessive slided time. At 1515m this assembly was pulled and the motor and MWD layed out.The well was drilled to TD (1685m) with a rotary hold assembly.

Discussion:

BHA #	Bit #	Motor Run #	Hole Size (in)	MD In (m)	MD Out (m)	TVD In (m)	TVD Out (m)	Inc In (deg)	Inc Out (deg)	Azi In (deg)	Azi Out (deg)	Drlg hrs	Circ hrs
1	1		17.500	0	664	0	664	0.0	0.7	0	233	47	5
2	2	1	12.250	664	976	664	941	0.7	44.9	233	305	36	4
3	3rr1	2	12.250	976	1008	941	963	44.9	43.7	305	305	7	3
4	3rr2	3	12.250	1008	1037	963	984	43.7	44.5	305	307	10	2
5	4	5	12.250	1037	1515	984	1300	44.5	48.7	307	311	58	3
6	3rr3		12.250	1515	1515	1300	1300	48.7	48.7	311	311	0	6

Table 1 - BHA Summary

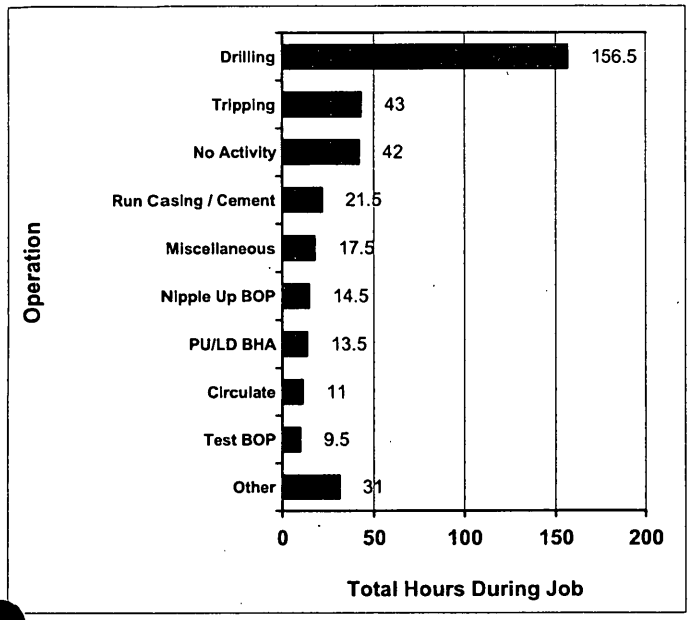
Motor Run #	Manufacturer	Type	Lobe	OD (in)	Gauge (in)	Bend (deg)	Adj	DLS (Ori) (°/30m)	ROP (Ori) (m/hr)	ROP (Rot) (m/hr)
1	SSDS	SperryDrill	6/7	8.000	12.125	1.50	Y		7	14
2	SSDS	SperryDrill	6/7	8.000	12.125	1.15	Y		1	6
3	SSDS	SperryDrill	6/7	8.000	12.125		Y		2	7
5	SSDS	SperryDrill	6/7	8.000	12.125	1.50	Y		6	9

Table 2 - Motor Run Summary

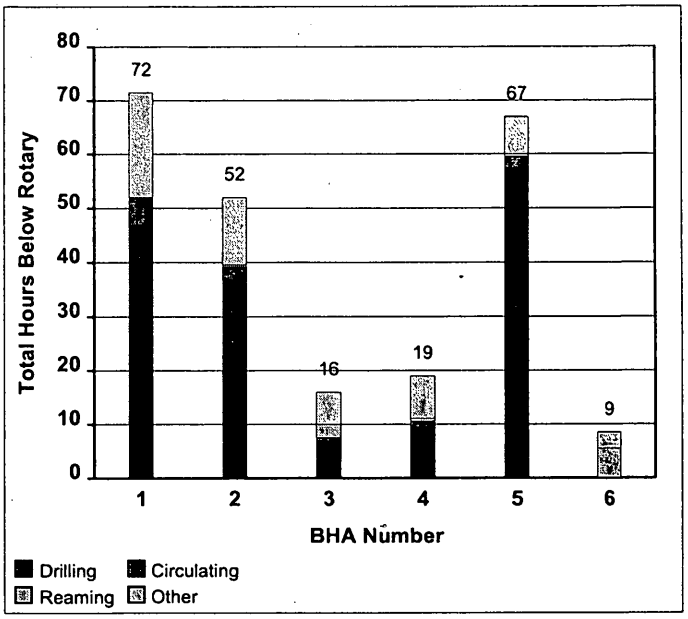
Bit #	Manufacturer	Style	OD (in)	Gge Len (in)	Nozzles (/32's)	TFA (in²)	Dull Grades I O D L B G O R	Ftge (m)	Drlg hrs	ROP (m/hr)
1	Security DBS	XT15C	17.500		3x16, 1x18	0.838	1-1-WT- A-E-I-NO-TD	664	47.00	14
2	Security DBS	EBXS02S	12.250		3x18, 1x20	1.052	1-2-WT- A-E-I-NO-BHA	312	35.50	9
3rr1	Security DBS	FM2565	12.250		5x18	1.243	1-1-WT- A-X-I-NO-BHA	32	7.00	5
3rr2	Security DBS	FM2565	12.250		5x18	1.243	1-1-WT- A-X-I-NO-BHA	29	9.50	3
4	Security DBS	EBXS02S	12.250		5x18	1.243		478	57.50	8
3rr3	Security DBS	FM2565	12.250		5x18	1.243		0	0.00	

Table 3 - Bit Run Summary

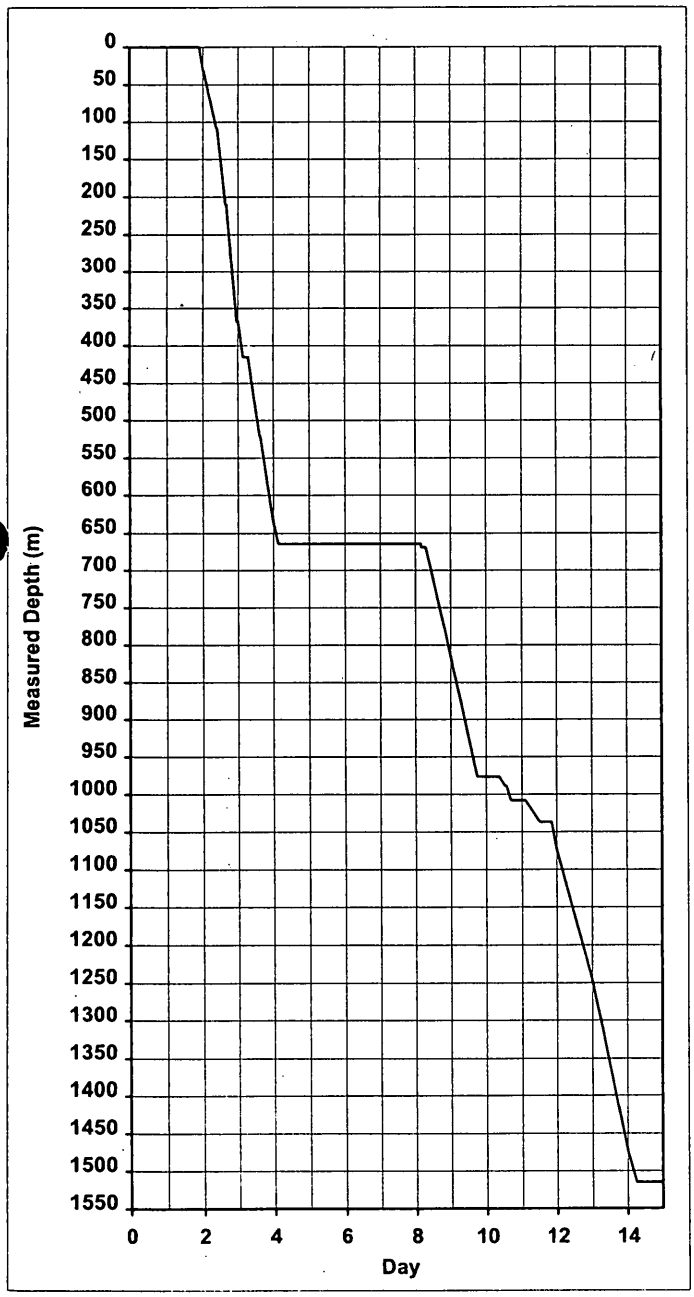
Hours by Operation Summary



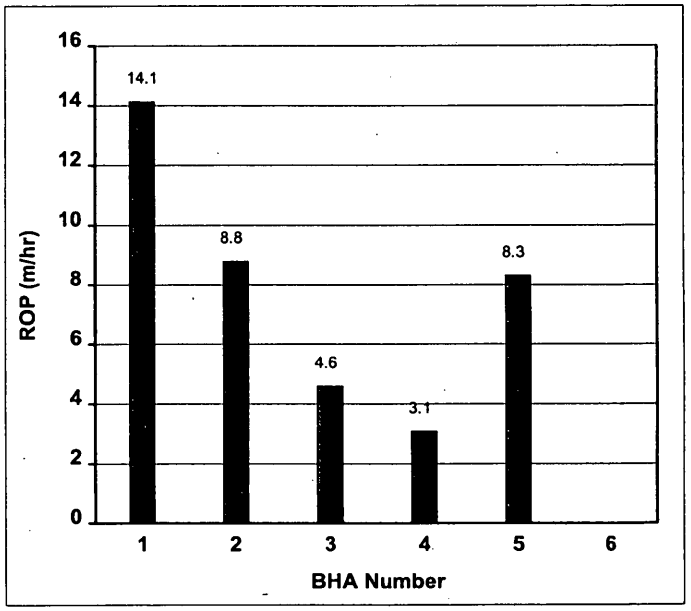
Hours per BHA Breakdown



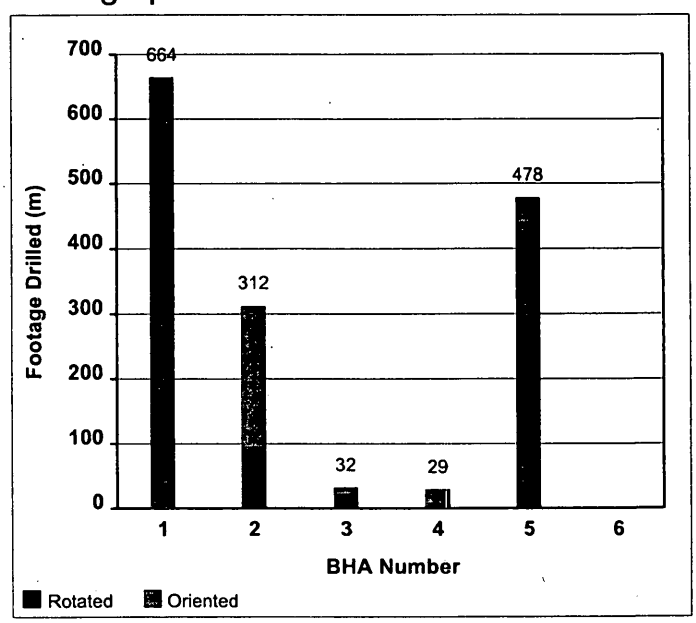
Days vs. Depth



Average Rate of Penetration per BHA



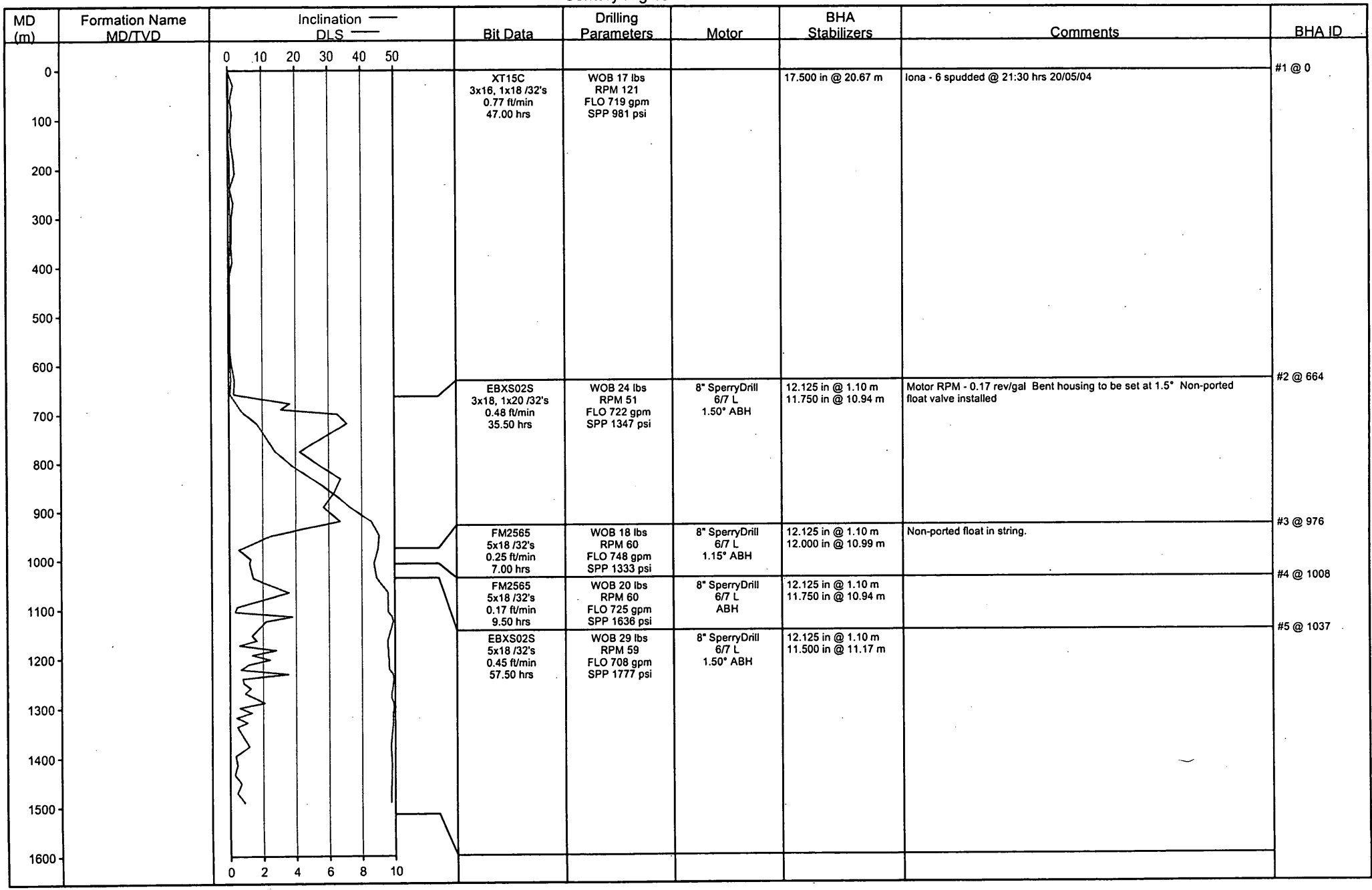
Footage per BHA



Sperry-Sun Drilling Services

TXU Gas Storage Pty Ltd.
Iona #6
Century Rig 18

Otway Basin
Iona
AU-DD-0002999700



9081148 069

908148 070

TXU Gas Storage Pty. Ltd.
Iona
Iona #6 - 12¼" Gyro / MWD Surveys

Sperry-Sun

Survey Report

27 June, 2004

Your Ref: Gyro from surface to 630m, MWD from 630m - TD
Surface Coordinates: 5728761.68 N, 677185.62 E (38° 34' 19.0150" S, 143° 02' 02.1251" E)
Grid Coordinate System: UTM Zone 54S - WGS84

Kelly Bushing Elevation: 109.30m above Mean Sea Level

Survey Ref: svy6502

HALLIBURTON

Survey Report for Iona #6 - 12¼" Gyro / MWD Surveys
Your Ref: Gyro from surface to 630m, MWD from 630m - TD

Measured Depth (m)	Incl.	Grid Azim.	Sub-Sea Depth (m)	Vertical Depth (m)	Local Coordinates Northings (m)	Local Coordinates Eastings (m)	UTM Zone 54S - WGS84 Northings (m)	UTM Zone 54S - WGS84 Eastings (m)	Dogleg Rate (°/30m)	Vertical Section (m)
0.00	0.000	0.000	-109.30	0.00	0.00 N	0.00 E	5728761.68 N	677185.62 E		0.00
30.00	0.330	312.610	-79.30	30.00	0.06 N	0.06 W	5728761.74 N	677185.56 E	0.33	0.09
60.00	0.350	287.450	-49.30	60.00	0.14 N	0.21 W	5728761.82 N	677185.41 E	0.15	0.26
90.00	0.270	241.660	-19.30	90.00	0.14 N	0.36 W	5728761.82 N	677185.26 E	0.25	0.38
120.00	0.310	272.280	10.70	120.00	0.11 N	0.51 W	5728761.79 N	677185.11 E	0.16	0.48
150.00	0.290	232.600	40.70	150.00	0.07 N	0.65 W	5728761.75 N	677184.97 E	0.20	0.57
180.00	0.550	259.510	70.70	180.00	0.01 S	0.85 W	5728761.67 N	677184.77 E	0.32	0.69
210.00	0.540	301.850	100.70	210.00	0.04 N	1.11 W	5728761.72 N	677184.51 E	0.39	0.94
240.00	0.530	290.530	130.69	239.99	0.16 N	1.36 W	5728761.84 N	677184.26 E	0.11	1.21
270.00	0.450	325.770	160.69	269.99	0.31 N	1.56 W	5728761.99 N	677184.06 E	0.31	1.46
300.00	0.570	307.060	190.69	299.99	0.50 N	1.74 W	5728762.18 N	677183.88 E	0.20	1.71
330.00	0.630	325.790	220.69	329.99	0.72 N	1.96 W	5728762.40 N	677183.66 E	0.20	2.02
360.00	0.480	319.210	250.69	359.99	0.96 N	2.13 W	5728762.64 N	677183.49 E	0.16	2.29
390.00	0.420	289.870	280.69	389.99	1.09 N	2.32 W	5728762.77 N	677183.30 E	0.24	2.52
420.00	0.390	292.340	310.69	419.99	1.16 N	2.51 W	5728762.84 N	677183.11 E	0.03	2.73
450.00	0.440	296.640	340.69	449.99	1.25 N	2.71 W	5728762.93 N	677182.91 E	0.06	2.94
480.00	0.430	305.000	370.69	479.99	1.37 N	2.91 W	5728763.05 N	677182.71 E	0.06	3.17
510.00	0.480	304.490	400.69	509.99	1.51 N	3.10 W	5728763.19 N	677182.52 E	0.05	3.41
540.00	0.390	300.200	430.68	539.98	1.63 N	3.29 W	5728763.31 N	677182.33 E	0.10	3.63
570.00	0.380	312.730	460.68	569.98	1.75 N	3.46 W	5728763.43 N	677182.16 E	0.08	3.83
600.00	0.460	333.320	490.68	599.98	1.92 N	3.58 W	5728763.60 N	677182.04 E	0.17	4.04
630.00	0.690	306.890	520.68	629.98	2.14 N	3.78 W	5728763.82 N	677181.84 E	0.35	4.32
658.84	0.420	297.270	549.52	658.82	2.29 N	4.01 W	5728763.97 N	677181.61 E	0.30	4.60
677.88	2.280	207.050	568.55	677.85	1.99 N	4.25 W	5728763.67 N	677181.37 E	3.66	4.62
689.60	3.380	217.750	580.26	689.56	1.51 N	4.57 W	5728763.19 N	677181.05 E	3.11	4.60
699.33	4.610	242.920	589.97	699.27	1.10 N	5.09 W	5728762.78 N	677180.53 E	6.52	4.80
718.89	8.360	268.350	609.40	718.70	0.70 N	7.21 W	5728762.38 N	677178.41 E	7.11	6.31
747.43	11.120	296.270	637.54	746.84	1.86 N	11.76 W	5728763.54 N	677173.86 E	5.67	10.70
776.45	13.860	310.520	665.88	775.18	5.36 N	16.91 W	5728767.04 N	677168.71 E	4.24	16.93
804.75	18.700	304.530	693.04	802.34	10.14 N	23.23 W	5728771.82 N	677162.39 E	5.42	24.84
833.60	25.060	301.570	719.80	829.10	15.96 N	32.25 W	5728777.64 N	677153.37 E	6.71	35.58
862.41	31.080	303.110	745.21	854.51	23.23 N	43.69 W	5728784.91 N	677141.93 E	6.31	49.11
891.69	36.400	305.850	769.55	878.85	32.45 N	57.08 W	5728794.13 N	677128.54 E	5.67	65.37
920.84	42.860	304.720	791.99	901.29	43.17 N	72.25 W	5728804.85 N	677113.37 E	6.69	83.95
949.57	45.290	304.410	812.63	921.93	54.51 N	88.71 W	5728816.19 N	677096.91 E	2.55	103.93
978.61	44.850	304.810	833.14	942.44	66.19 N	105.63 W	5728827.87 N	677079.99 E	0.54	124.49
997.99	44.030	304.850	846.97	956.27	73.94 N	116.77 W	5728835.62 N	677068.85 E	1.27	138.06
1006.45	43.690	304.810	853.07	962.37	77.28 N	121.58 W	5728838.96 N	677064.04 E	1.21	143.92
1036.86	44.490	306.550	874.92	984.22	89.63 N	138.76 W	5728851.31 N	677046.86 E	1.43	165.08
1066.11	47.950	306.150	895.15	1004.45	102.14 N	155.77 W	5728863.82 N	677029.85 E	3.56	186.19
1095.26	47.920	305.600	914.68	1023.98	114.82 N	173.31 W	5728876.50 N	677012.31 E	0.42	207.82
1105.00	47.900	305.740	921.21	1030.51	119.04 N	179.18 W	5728880.72 N	677006.44 E	0.33	215.05
1114.68	49.120	305.730	927.62	1036.92	123.27 N	185.06 W	5728884.95 N	677000.56 E	3.78	222.30
1124.39	49.490	306.530	933.95	1043.25	127.61 N	191.01 W	5728889.29 N	676994.61 E	2.20	229.66
1153.42	48.300	307.150	953.04	1062.34	140.73 N	208.52 W	5728902.41 N	676977.10 E	1.32	251.52
1163.15	47.810	306.890	959.54	1068.84	145.08 N	214.29 W	5728906.76 N	676971.33 E	1.62	258.76
1172.90	47.770	307.130	966.09	1075.39	149.43 N	220.06 W	5728911.11 N	676965.56 E	0.56	265.97
1182.63	48.000	305.950	972.62	1081.92	153.73 N	225.86 W	5728915.41 N	676959.76 E	2.79	273.19
1192.33	48.010	306.530	979.11	1088.41	157.99 N	231.67 W	5728919.67 N	676953.95 E	1.33	280.40
1202.04	48.180	305.500	985.59	1094.89	162.24 N	237.52 W	5728923.92 N	676948.10 E	2.43	287.62
1211.82	48.210	305.020	992.11	1101.41	166.45 N	243.47 W	5728928.13 N	676942.15 E	1.10	294.91
1221.62	48.270	305.290	998.64	1107.94	170.66 N	249.45 W	5728932.34 N	676936.17 E	0.64	302.22
1231.16	49.370	305.030	1004.92	1114.22	174.79 N	255.32 W	5728936.47 N	676930.30 E	3.51	309.40
1240.71	49.610	305.020	1011.13	1120.43	178.96 N	261.27 W	5728940.64 N	676924.35 E	0.75	316.66
1250.50	49.420	305.270	1017.48	1126.78	183.24 N	267.35 W	5728944.92 N	676918.27 E	0.82	324.11
1260.23	49.280	305.770	1023.82	1133.12	187.53 N	273.36 W	5728949.21 N	676912.26 E	1.25	331.49
1269.83	48.990	305.790	1030.10	1139.40	191.78 N	279.25 W	5728953.46 N	676906.37 E	0.91	338.75
1279.60	49.000	305.140	1036.51	1145.81	196.06 N	285.26 W	5728957.74 N	676900.36 E	1.51	346.12
1289.38	49.580	305.620	1042.89	1152.19	200.35 N	291.30 W	5728962.03 N	676894.32 E	2.10	353.54
1298.99	49.670	305.410	1049.12	1158.42	204.60 N	297.26 W	5728966.28 N	676888.36 E	0.57	360.86
1308.77	49.420	305.870	1055.46	1164.76	208.94 N	303.31 W	5728970.62 N	676882.31 E	1.32	368.30
1318.44	49.420	306.030	1061.75	1171.05	213.25 N	309.25 W	5728974.93 N	676876.37 E	0.38	375.64
1328.16	49.440	306.480	1068.07	1177.37	217.62 N	315.21 W	5728979.30 N	676870.41 E	1.06	383.02
1337.81	49.310	306.410	1074.36	1183.66	221.97 N	321.10 W	5728983.65 N	676864.52 E	0.44	390.34
1356.88	48.970	306.890	1086.83	1196.13	230.58 N	332.67 W	5728992.26 N	676852.95 E	0.78	404.76
1376.21	48.710	307.820	1099.55	1208.85	239.41 N	344.24 W	5729001.09 N	676841.38 E	1.16	419.30
1395.47	48.910	307.910	1112.24	1221.54	248.30 N	355.68 W	5729009.98 N	676829.94 E	0.33	433.78
1414.75	49.010	308.250	1124.90	1234.20	257.27 N	367.13 W	5729018.95 N	676818.49 E	0.43	448.30
1433.90	48.980	308.480	1137.46	1246.76	266.24 N	378.46 W	5729027.92 N	676807.16 E	0.28	462.72
1452.41	48.890	309.010	1149.62	1258.92	274.98 N	389.34 W	5729036.66 N	676796.28 E	0.66	476.65

Survey Report for Iona #6 - 12¼" Gyro / MWD Surveys

908148 072

Your Ref: Gyro from surface to 630m, MWD from 630m - TD

Measured Depth (m)	Incl.	Grid Azim.	Sub-Sea Depth (m)	Vertical Depth (m)	Local Coordinates Northings (m)	Local Coordinates Eastings (m)	UTM Zone 54S - WGS84 Northings (m)	UTM Zone 54S - WGS84 Eastings (m)	Dogleg Rate (°/30m)	Vertical Section (m)
1471.69	48.760	309.320	1162.31	1271.61	284.14 N	400.60 W	5729045.82 N	676785.02 E	0.42	491.12
1490.73	48.750	310.050	1174.87	1284.17	293.28 N	411.61 W	5729054.96 N	676774.01 E	0.86	505.39

All data is in Metres unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RT. Northings and Eastings are relative to Well.
Global Northings and Eastings are relative to UTM Zone 54S - WGS84.

The Dogleg Severity is in Degrees per 30 metres.
Vertical Section is from Well and calculated along an Azimuth of 304.985° (Grid).

Coordinate System is UTM Zone 54S - WGS84.
Grid Convergence at Surface is -1.268°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 1490.73m.,
The Bottom Hole Displacement is 505.41m., in the Direction of 305.471° (Grid).

The survey penetrates target Iona #6 Target at a measured depth of 1438.02m at a distance of 6.45m from the target centre.

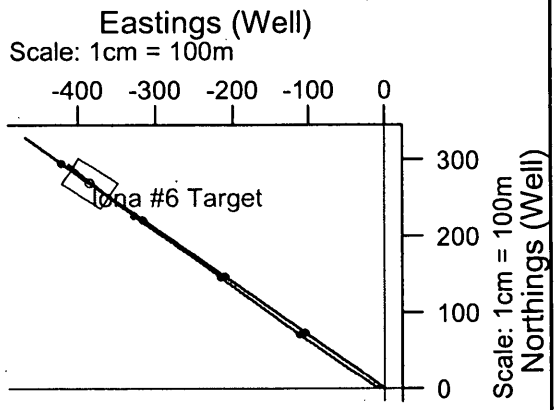
908148 073

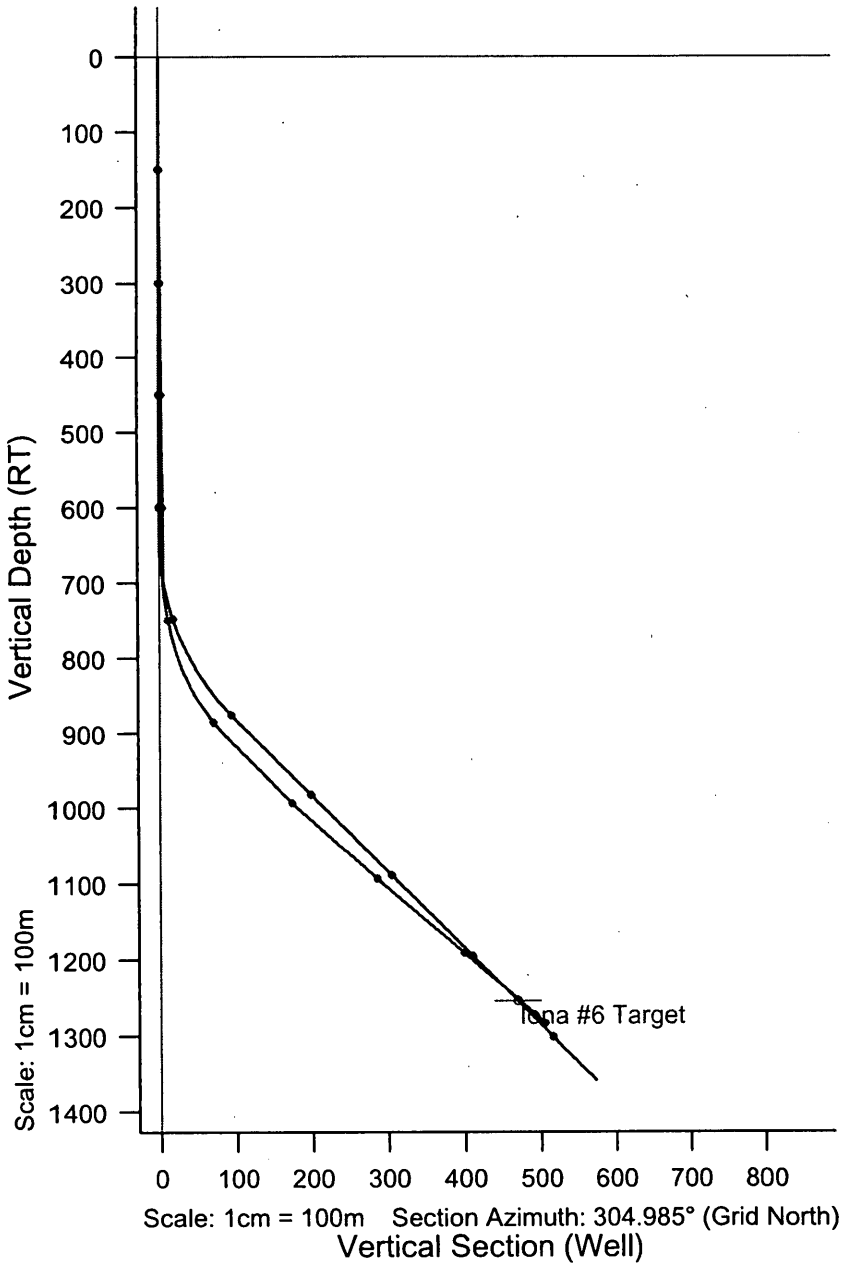
HALLIBURTON

TXU Gas Storage Pty. Ltd.

DrillQuest
Sperry-Sun

Field : Iona
Well : Iona #6





sperry-sun
DRILLING SERVICES

Survey and Drilling Parameters

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Rig : Century Rig 18

Field : Otway Basin
Slot : Iona
Job # : AU-DD-0002999700

North Ref : Grid **Declination :** ° **VS Dir :** 304.98° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	5	70	605	80				10	1	Tieon
30.00	0.33	312.61	30.0	0.1	0.1	-0.1	0.33	0.33	0.00	5	70	605	80				10	1	
60.00	0.35	287.45	60.0	0.3	0.1	-0.2	0.15	0.02	0.00	5	120	725	650				10	1	
90.00	0.27	241.66	90.0	0.4	0.1	-0.4	0.25	-0.08	0.00	5	120	725	650				10	1	
120.00	0.31	272.28	120.0	0.5	0.1	-0.5	0.16	0.04	0.00	5	120	725	650				10	1	
150.00	0.29	232.60	150.0	0.6	0.1	-0.6	0.20	-0.02	0.00	5	120	725	650				10	1	
180.00	0.55	259.51	180.0	0.7	0.0	-0.9	0.32	0.26	0.00	20	130	725	1000				20	1	
210.00	0.54	301.85	210.0	0.9	0.0	-1.1	0.39	-0.01	0.00	20	130	725	1000				20	1	
240.00	0.53	290.53	240.0	1.2	0.2	-1.4	0.11	-0.01	0.00	20	130	725	1000				20	1	
270.00	0.45	325.77	270.0	1.5	0.3	-1.6	0.31	-0.08	0.00	20	130	725	1000				20	1	
300.00	0.57	307.06	300.0	1.7	0.5	-1.7	0.20	0.12	0.00	20	130	725	1000				20	1	
330.00	0.63	325.79	330.0	2.0	0.7	-2.0	0.20	0.06	0.00	20	130	725	1000				20	1	
360.00	0.48	319.21	360.0	2.3	1.0	-2.1	0.16	-0.15	0.00	20	130	725	1000				20	1	
390.00	0.42	289.87	390.0	2.5	1.1	-2.3	0.24	-0.06	0.00	20	120	725	1200				20	1	
420.00	0.39	292.34	420.0	2.7	1.2	-2.5	0.03	-0.03	0.00	20	120	725	1200				20	1	
450.00	0.44	296.64	450.0	2.9	1.3	-2.7	0.06	0.05	0.00	20	120	725	1200				20	1	
480.00	0.43	305.00	480.0	3.2	1.4	-2.9	0.06	-0.01	0.00	20	120	725	1200				20	1	
510.00	0.48	304.49	510.0	3.4	1.5	-3.1	0.05	0.05	0.00	20	120	725	1200				20	1	
540.00	0.39	300.20	540.0	3.6	1.6	-3.3	0.10	-0.09	0.00	20	120	725	1200				20	1	
570.00	0.38	312.73	570.0	3.8	1.7	-3.5	0.08	-0.01	0.00	20	120	725	1200				20	1	
600.00	0.46	333.32	600.0	4.0	1.9	-3.6	0.17	0.08	0.00	20	120	725	1200				20	1	
630.00	0.69	306.89	630.0	4.3	2.1	-3.8	0.35	0.23	0.00	20	120	725	1200				20	1	
658.84	0.42	297.27	658.8	4.6	2.3	-4.0	0.30	-0.28	0.00	20	120	725	1200				20	1	
677.88	2.28	207.05	677.9	4.6	2.0	-4.2	3.66	2.93	0.00	15		600	1100	664	678	56L	8	2	
689.60	3.38	217.75	689.6	4.6	1.5	-4.6	3.11	2.82	27.39	15		600	1000	678	682	56L	12	2	
														682	690	50L		2	
699.33	4.61	242.92	699.3	4.8	1.1	-5.1	6.52	3.79	77.61	15		700	1300	690	692	50L	15	2	
														692	699	90R		2	
718.89	8.36	268.35	718.7	6.3	0.7	-7.2	7.11	5.75	39.00	15		700	1300	699	701	90R	20	2	
														701	719	70R		2	

sperry-sun
DRILLING SERVICES

Survey and Drilling Parameters

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Rig : Century Rig 18

Field : Otway Basin
Slot : Iona
Job # : AU-DD-0002999700

North Ref : Grid **Declination** : ° **VS Dir** : 304.98° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
747.43	11.12	296.27	746.8	10.7	1.9	-11.8	5.67	2.90	29.35	18		735	1350	719	721	70R	12	2	
														721	730	120R		2	
														730	740	90R		2	
														740	747	120R		2	
776.45	13.86	310.52	775.2	16.9	5.4	-16.9	4.24	2.83	14.73	25		735	1350	747	750	120R	18	2	
														750	769	HS		2	
														775	776	HS		2	
804.75	18.70	304.53	802.3	24.8	10.1	-23.2	5.42	5.13	-6.35	25	40	735	1300	776	799	HS	35	2	
833.60	25.06	301.57	829.1	35.6	16.0	-32.3	6.71	6.61	-3.08	25	40	735	1300	807	812	HS	25	2	
862.41	31.08	303.11	854.5	49.1	23.2	-43.7	6.31	6.27	1.60	30		735	1350	838	845	HS	10	2	
														845	862	HS		2	
891.69	36.40	305.85	878.8	65.4	32.5	-57.1	5.67	5.45	2.81	40		750	1400	862	868	HS	7	2	
														868	871	HS		2	
														874	892	HS		2	
920.84	42.86	304.72	901.3	84.0	43.2	-72.3	6.69	6.65	-1.16	40		740	1500	892	898	HS	10	2	
														903	921	HS		2	
949.57	45.29	304.41	921.9	103.9	54.5	-88.7	2.55	2.54	-0.32	15	60	740	1500	921	923	HS	20	2	
978.61	44.85	304.81	942.4	124.5	66.2	-105.6	0.54	-0.45	0.41	10	60	725	1200	961	967	30R	15	3	
997.99	44.03	304.85	956.3	138.1	73.9	-116.8	1.27	-1.27	0.06	20	60	750	1350	979	987	HS	20	3	
1006.45	43.69	304.81	962.4	143.9	77.3	-121.6	1.21	-1.21	-0.14	20	60	750	1350	999	1001	HS	20	3	
1036.86	44.49	306.55	984.2	165.1	89.6	-138.8	1.43	0.79	1.72	20	60	725	1600	1008	1025	HS	15	4	
														1028	1032	HS		4	
1066.11	47.95	306.15	1004.5	186.2	102.1	-155.8	3.56	3.55	-0.41	40	50	755	1750	1037	1052	HS	20	5	
1095.26	47.92	305.60	1024.0	207.8	114.8	-173.3	0.42	-0.03	-0.57	40	50	755	1750				20	5	
1105.00	47.90	305.74	1030.5	215.1	119.0	-179.2	0.33	-0.06	0.43	40	50	755	1750				20	5	
1114.68	49.12	305.73	1036.9	222.3	123.3	-185.1	3.78	3.78	-0.03	40		735	1750	1111	1115	HS	5	5	
1124.39	49.49	306.53	1043.3	229.7	127.6	-191.0	2.20	1.14	2.47	30	60	725	1750	1115	1116	HS	10	5	
1153.42	48.30	307.15	1062.3	251.5	140.7	-208.5	1.32	-1.23	0.64	30	60	725	1750				10	5	
1163.15	47.81	306.89	1068.8	258.8	145.1	-214.3	1.62	-1.51	-0.80	30	60	725	1750				10	5	
1172.90	47.77	307.13	1075.4	266.0	149.4	-220.1	0.56	-0.12	0.74	30	60	725	1750				10	5	
1182.63	48.00	305.95	1081.9	273.2	153.7	-225.9	2.79	0.71	-3.64	30	60	725	1750	1174	1180	45L	10	5	

sperry-sun
DRILLING SERVICES
Survey and Drilling Parameters

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Rig : Century Rig 18

Field : Otway Basin
Slot : Iona
Job # : AU-DD-0002999700

North Ref : Grid **Declination :** ° **VS Dir :** 304.98° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
1192.33	48.01	306.53	1088.4	280.4	158.0	-231.7	1.33	0.03	1.79	30	60	725	1750				10	5	
1202.04	48.18	305.50	1094.9	287.6	162.2	-237.5	2.43	0.53	-3.18	30	60	725	1750	1195	1199	30L	10	5	
1211.82	48.21	305.02	1101.4	294.9	166.4	-243.5	1.10	0.09	-1.47	30	60	725	1750				10	5	
1221.62	48.27	305.29	1107.9	302.2	170.7	-249.4	0.64	0.18	0.83	30	60	725	1750				10	5	
1231.16	49.37	305.03	1114.2	309.4	174.8	-255.3	3.51	3.46	-0.82	30	60	725	1750	1223	1230	10L	10	5	
1240.71	49.61	305.02	1120.4	316.7	179.0	-261.3	0.75	0.75	-0.03	30	60	725	1750				10	5	
1250.50	49.42	305.27	1126.8	324.1	183.2	-267.4	0.82	-0.58	0.77	25	60	725	2000				25	5	
1260.23	49.28	305.77	1133.1	331.5	187.5	-273.4	1.25	-0.43	1.54	25	60	725	2000				25	5	
1269.83	48.99	305.79	1139.4	338.8	191.8	-279.3	0.91	-0.91	0.06	25	60	725	2000				25	5	
1279.60	49.00	305.14	1145.8	346.1	196.1	-285.3	1.51	0.03	-2.00	25	60	725	2000				25	5	
1289.38	49.58	305.62	1152.2	353.5	200.3	-291.3	2.10	1.78	1.47	25	60	725	2000				25	5	
1298.99	49.67	305.41	1158.4	360.9	204.6	-297.3	0.57	0.28	-0.66	25	60	725	2000				25	5	
1308.77	49.42	305.87	1164.8	368.3	208.9	-303.3	1.32	-0.77	1.41	25	60	725	2000				25	5	
1318.44	49.42	306.03	1171.1	375.6	213.2	-309.3	0.38	0.00	0.50	25	60	725	2000				25	5	
1328.16	49.44	306.48	1177.4	383.0	217.6	-315.2	1.06	0.06	1.39	30	60	725	1800				30	5	
1337.81	49.31	306.41	1183.7	390.3	222.0	-321.1	0.44	-0.40	-0.22	30	60	725	1800				30	5	
1356.88	48.97	306.89	1196.1	404.8	230.6	-332.7	0.78	-0.53	0.76	30	60	725	1800				30	5	
1376.21	48.71	307.82	1208.9	419.3	239.4	-344.2	1.16	-0.40	1.44	30	60	725	1800				30	5	
1395.47	48.91	307.91	1221.5	433.8	248.3	-355.7	0.33	0.31	0.14	30	60	725	1800				30	5	
1414.45	49.01	308.25	1234.0	448.1	257.1	-366.9	0.44	0.16	0.54	25	60	635	1700				5	5	
1433.90	48.98	308.48	1246.8	462.7	266.2	-378.5	0.27	-0.05	0.35	25	60	635	1700				5	5	
1452.41	48.89	309.01	1258.9	476.6	275.0	-389.3	0.66	-0.15	0.86	25	60	635	1700				5	5	
1471.69	48.76	309.32	1271.6	491.1	284.1	-400.6	0.42	-0.20	0.48	25	60	635	1700				5	5	
1490.73	48.75	310.05	1284.2	505.4	293.3	-411.6	0.86	-0.02	1.15	25	60	635	1700				5	5	

sperry-sun
DRILLING SERVICES

BHA Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 077

BHA# 1

BHA# 1 : Date In 20/05/200 MD In (m) : 0 TVD In (m) : 0 Date Out 23/05/2004 MD Out (m): 664 TVD Out (m): 664

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
1	17.500	Security DBS	XT15C	1039131	3x16, 1x18	0.838	1-1-WT- A-E-I-NO-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	17½" Milled Tooth Bit	1039131	17.500	3.000	17.500	795.63	B 7-5/8" Reg	0.40	
2	Bit Sub		9.500	3.000		217.48	B 6-5/8" Reg	0.76	
3	2 x 8" Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	18.65	
4	17½" String Stabiliser	700179	6.000	3.000	17.500	72.27	B 6-5/8" Reg	1.72	20.67
5	3 x 8"Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	27.69	
6	Jar	W019792	8.000	3.000		147.22	B 6-5/8" Reg	8.62	
7	Cross Over Sub		8.000	3.000		147.22	B 4-1/2" IF	0.90	
8	14 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	130.10	
								188.84	

Parameter		Min	Max	Ave
WOB (lbs)	:	5	20	17
RPM (rpm)	:	70	130	121
Flow (gpm)	:	605	725	719
SPP (psi)	:	80	1200	981

Activity	Hrs
Drilling :	47.00
Reaming :	0.00
Circ-Other :	5.00
Total :	52.00

BHA Weight	(lb)
in Air (Total) :	49984
in Mud (Total) :	
in Air (Bel Jars) :	24343
in Mud (Bel Jars) :	

Drill String	OD(in)	Len(m)

PERFORMANCE

	In	Out
Inclination (deg)	0.00	0.69
Azimuth (deg)	0.00	233.46

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	664.00	14			
Total :	664.00	14	0.03	0.00	0.03

COMMENTS

Iona - 6 spudded @ 21:30 hrs 20/05/04

OBJECTIVES:

Spud well and drill 17½" hole vertically to 640m.

RESULTS:

The tophole section was drilled vertically to a TD of 664m and a drop gyro survey run prior to POOH. One survey was obtained before the gyro failed on bottom before tripping out of hole. The one survey showed an inclination on bottom of 0.4 degrees.
On the trip out the hole was very sticky from 559m to 327m with a constant 15-20k drag, at times the string taking up to 50k overpull. A wiper trip was made prior to POOH to run 13 3/8" casing.

sperry-sun
DRILLING SERVICES

BHA Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 079

BHA# 2

BHA# 2 : Date In :26/05/200 MD In (m) : 664 TVD In (m) : 664 Date Out 29/05/200 MD Out (m): 976 TVD Out (m): 941

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2	12.250	Security DBS	EBXS02S	10615071	3x18, 1x20	1.052	1-2-WT- A-E-I-NO-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
1	8.000	SSDS	SperryDrill	800052	1.50°		85	39.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	12 1/4" Insert Bit	10615071	12.250	3.000	12.250	377.57	B 6-5/8" Reg	0.30	
2	8" SperryDrill Lobe 6/7 - 4.0 stg	800052	8.000	5.250	12.125	97.54	B 6-5/8" Reg	8.91	1.10
3	Float Sub	A-604	8.250	2.810		161.04	B 6-5/8" Reg	0.81	
4	11 3/4" String Stabiliser	A-469	8.000	2.810	11.750	150.17	B 6-5/8" Reg	2.10	10.94
5	1x Non-Mag Drill collar	47625	7.880	3.250		137.93	B 6-5/8" Reg	8.86	
6	8" DWD Hangoff Sub	3001	7.750	3.375		130.28	B 6-5/8" Reg	1.45	
7	1x Non-Mag Drill collar	6484	8.000	2.875		149.18	B 6-5/8" Reg	8.33	
8	3x 8" Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	28.03	
9	Cross Over Sub		8.000	2.810		150.17	B 4-1/2" IF	1.00	
10	18x 18 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	167.19	
11	Jar		6.500	2.750		92.85	B 4-1/2" IF	9.14	
12	6x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	56.14	
								292.26	

Parameter		Min	Max	Ave
WOB (lbs)	:	15	40	24
RPM (rpm)	:	40	60	51
Flow (gpm)	:	600	750	722
SPP (psi)	:	1000	1500	1347

Activity	Hrs
Drilling :	35.50
Reaming :	0.00
Circ-Other :	4.00
Total :	39.50

BHA Weight		(lb)
in Air (Total)	:	66310
in Mud (Total)	:	57416
in Air (Bel Jars)	:	54445
in Mud (Bel Jars)	:	47142

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	684

PERFORMANCE

	In	Out
Inclination (deg)	0.69	44.89
Azimuth (deg)	233.46	304.77

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	217.00	7			
Rotated :	95.00	14			
Total :	312.00	9	4.25	0.00	4.30

COMMENTS

Motor RPM - 0.17 rev/gal
Bent housing to be set at 1.5°
Non-ported float valve installed

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 080

BHA# 2

OBJECTIVES:

Kick the well off below the 13 3/8" shoe and build at 5°/30m to 45° inclination on a 305° azimuth. Once the sail angle has been reached the assembly will be tripped, and the tangent section drilled to TD with a PDC bit.

RESULTS:

The 12¼" steerable assembly was made up and the drillstring scribed in the hole, as the 13 3/8" shoe had been set 24m deeper than planned, resulting in the well having to be kicked off directly below the shoe. Initially the well had to be turned from 207° to 305° azimuth, then the build commenced at 5°/30m as per the wellplan.
The assembly mostly slid OK with the insert bit providing reasonably steady toolface, although the string could only be turned and held with the use of a tugger chain round the kelly bushing, as the rotary table brake did not work. This was a problem when only a few degrees of turn was needed, or when the assembly hung up, as the string could not be picked up without removing the chain, with the resultant loss of toolface. The 1.5° bend provided equivalent 7.5°/30m as expected, which meant virtually 100% sliding throughout the build up, as the revised wellplan called for 6° doglegs. ROP's ranged from 10 to 20m/hr.
With the inclination at 45° and the assembly hanging up more and more frequently, the assembly was tripped to run a PDC bit to complete the build to 47 degrees, and drill the tangent section to TD.

sperry-sun
DRILLING SERVICES

BHA Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 081

BHA# 3

BHA# 3 : Date In 29/05/200 **MD In (m) :** 976 **TVD In (m) :** 941 **Date Out** 29/05/2004 **MD Out (m):** 1008 **TVD Out (m):** 963

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
3rr1	12.250	Security DBS	FM2565	7970231	5x18	1.243	1-1-WT- A-X-I-NO-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
2	8.000	SSDS	SperryDrill	800052	1.15°		50	49.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	12 1/4" PDC Bit	7970231	12.250	3.000	12.250	377.57	B 6-5/8" Reg	0.30	
2	8" SperryDrill Lobe 6/7 - 4.0 stg	800052	8.000	5.250	12.125	97.54	B 6-5/8" Reg	8.91	1.10
3	Float Sub	A-604	8.250	2.810		161.04	B 6-5/8" Reg	0.81	
4	12" String Stabiliser	47567	8.250	2.810	12.000	161.04	B 6-5/8" Reg	2.10	10.99
5	1x Non-Mag Drill collar	47625	7.880	3.250		137.93	B 6-5/8" Reg	8.86	
6	8" DWD Hangoff Sub	3001	7.750	3.375		130.28	B 6-5/8" Reg	1.45	
7	1x Non-Mag Drill collar	6484	8.000	2.875		149.18	B 6-5/8" Reg	8.33	
8	3 x 8" Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	27.91	
9	Cross Over Sub		8.000	2.810		150.17	B 4-1/2" IF	0.90	
10	18 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	167.19	
11	Jar		6.500	2.750		92.85	B 4-1/2" IF	9.86	
12	6 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	56.14	
								292.76	

Parameter		Min	Max	Ave
WOB (lbs)	:	10	20	18
RPM (rpm)	:	60	60	60
Flow (gpm)	:	725	750	748
SPP (psi)	:	1200	1500	1333

Activity	Hrs
Drilling :	7.00
Reaming :	2.50
Circ-Other :	0.50
Total :	10.00

BHA Weight	(lb)
in Air (Total) :	66497
in Mud (Total) :	57578
in Air (Bel Jars) :	54413
in Mud (Bel Jars) :	47115

Drill String	OD(in)	Len (m)

PERFORMANCE

	In	Out
Inclination (deg)	44.89	43.73
Azimuth (deg)	304.77	304.90

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	10.00	1			
Rotated :	22.00	6			
Total :	32.00	5	-1.09	0.12	1.09

COMMENTS

Non-ported float in string.

OBJECTIVES:

Complete the build to 47 degrees and drill the tangent section through the target to well TD at 1530m.

RESULTS:

The motor bend was changed to 1.15° and an FM2565 PDC bit run, along with a 12" string stabiliser in place of the 11¾". Sliding however proved to be more difficult than previously, with weight stacking more frequent and the reactive torque generated by the PDC bit unable to drill off, making toolface control virtually impossible, particularly as the rotary table could only be turned by means of a tugger chain round the kelly bushing.
After 5 hours trying to achieve 9m of what was very poor slide, the string was rotated for a single and a second slide attempted, but with the same problems as before, and with very little progress being made. The survey from the first slide in fact showed a slight drop from what was supposedly a highside toolface set, and the following surveys showed the assembly also dropping in rotary. With the tangent angle requirement now 48° it was decided to trip to change the top stabiliser back to 11¾".

sperry-sun
DRILLING SERVICES

BHA Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 083

BHA# 4

BHA# 4 : Date In 29/05/200 **MD In (m) :** 1008 **TVD In (m) :** 963 **Date Out** 30/05/200 **MD Out (m):** 1037 **TVD Out (m):** 984

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
3rr2	12.250	Security DBS	FM2565	7970231	5x18	1.243	1-1-WT- A-X-I-NO-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
3	8.000	SSDS	SperryDrill	800052			36	60.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	12 1/4" PDC Bit	7970231	12.250	3.000	12.250	377.57	B 6-5/8" Reg	0.30	
2	8" SperryDrill Lobe 6/7 - 4.0 stg	800052	8.000	5.250	12.125	97.54	B 6-5/8" Reg	8.91	1.10
3	Float Sub	A-604	8.250	2.810		161.04	B 6-5/8" Reg	0.81	
4	113/4" String Stabiliser	A-469	8.250	2.810	11.750	161.04	B 6-5/8" Reg	2.10	10.94
5	1x Non-Mag Drill collar	47625	7.880	3.250		137.93	B 6-5/8" Reg	8.86	
6	8" DWD Hangoff Sub	3001	7.750	3.375		130.28	B 6-5/8" Reg	1.45	
7	1x Non-Mag Drill collar	6484	8.000	2.875		149.18	B 6-5/8" Reg	8.33	
8	3 x 8" Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	27.91	
9	Cross Over Sub		8.000	2.810		150.17	B 4-1/2" IF	0.90	
10	18 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	167.19	
11	Jar		6.500	2.750		92.85	B 4-1/2" IF	9.86	
12	6 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	56.14	
								292.76	

Parameter	Min	Max	Ave
WOB (lbs) :	20	20	20
RPM (rpm) :	60	60	60
Flow (gpm) :	725	725	725
SPP (psi) :	1600	1650	1636

Activity	Hrs
Drilling :	9.50
Reaming :	0.50
Circ-Other :	1.00
Total :	11.00

BHA Weight	(lb)
in Air (Total) :	66497
in Mud (Total) :	57578
in Air (Bel Jars) :	54413
in Mud (Bel Jars) :	47115

Drill String	OD(in)	Len(m)

PERFORMANCE

	In	Out
Inclination (deg)	43.73	44.51
Azimuth (deg)	304.90	306.55

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	21.00	2			
Rotated :	8.00	7			
Total :	29.00	3	0.80	1.70	1.43

COMMENTS

OBJECTIVES:

Build to 48° inclination on 306° azimuth and hold through the target to well TD.

RESULTS:

The assembly was run to bottom and the first 15m drilled in sliding mode with some success, although the weight stacking and toolface problems persisted, the change in top stabiliser making little or no difference to the assembly's behaviour. This slide only succeeded in stopping the drop trend without building any angle, so having drilled only 29m the assembly was again tripped to run an insert bit.

sperry-sun
DRILLING SERVICES

BHA Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 085

BHA# 5

BHA# 5 : **Date In** :30/05/200 **MD In (m)** : 1037 **TVD In (m)** : 984 **Date Out** 2/06/2004 **MD Out (m)**: 1515 **TVD Out (m)**: 1300

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
4	12.250	Security DBS	EBXS02S	10615071	5x18	1.243	

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
4	8.000	SSDS	SperryDrill	800052	1.50°		88	120.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	12 1/4" Insert Bit	10615071	12.250	3.000	12.250	377.57	B 6-5/8" Reg	0.30	
2	8" SperryDrill Lobe 6/7 - 4.0 stg	800052	8.000	5.250	12.125	97.54	B 6-5/8" Reg	8.91	1.10
3	Float Sub	A-604	8.250	2.810		161.04	B 6-5/8" Reg	0.81	
4	11½" String Stabiliser	47570	8.250	2.810	11.500	161.04	B 6-5/8" Reg	2.30	11.17
5	1x Non-Mag Drill collar	47625	7.880	3.250		137.93	B 6-5/8" Reg	8.86	
6	8" DWD Hangoff Sub	3001	7.750	3.375		130.28	B 6-5/8" Reg	1.45	
7	1x Non-Mag Drill collar	6484	8.000	2.875		149.18	B 6-5/8" Reg	8.33	
8	3 x 8" Drill collars		8.000	3.000		147.00	B 6-5/8" Reg	27.91	
9	Cross Over Sub		8.000	2.810		150.17	B 4-1/2" IF	0.90	
10	18 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	167.19	
11	Jar		6.500	2.750		92.85	B 4-1/2" IF	9.86	
12	6 x 5" HWDP		5.000	3.000		49.30	B 4-1/2" IF	56.14	
								292.96	

Parameter		Min	Max	Ave
WOB (lbs)	:	18	40	29
RPM (rpm)	:	50	60	59
Flow (gpm)	:	635	755	708
SPP (psi)	:	1600	2000	1777

Activity	Hrs
Drilling :	57.50
Reaming :	0.50
Circ-Other :	2.00
Total :	60.00

BHA Weight		(lb)
in Air (Total)	:	66602
in Mud (Total)	:	57263
in Air (Bel Jars)	:	54519
in Mud (Bel Jars)	:	46874

Drill String	OD(in)	Len(m)

PERFORMANCE

	In	Out
Inclination (deg)	44.51	48.74
Azimuth (deg)	306.55	310.98

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	37.00	6			
Rotated :	441.00	9			
Total :	478.00	8	0.27	0.28	0.33

COMMENTS

OBJECTIVES:

To build to 49° inclination on a 306° azmiuth and hold through the target to well TD.

RESULTS:

The motor bend was changed to 1.50° and the motor top stabilizer changed to an 11 1/2". The assembly was ideal for the well characteristics. With the weight stacking problem the 1.50° bend made effective build sections and in rotary the assembly had only minor drop tendencies, with a trend to walk right at 0.45°/30m on average.
The target was penetrated 1.7m from centre and drilled on to 1515m when pulled due to high torque and low ROP. The motor and DWD was layed out.

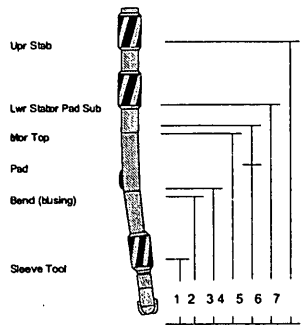
MOTOR PERFORMANCE REPORT

AU-DD-0002999700-2

908148 087

Motor Serial # : 800052	**Job #** : AU-DD-0002999700		
Directional Driller(s) : Tim Gallagher, Paul Gallagher	**Customer** : TXU Gas Storage Pty Ltd.		
Location : Iona	**Rig** : Century Rig 18		
Well Name : Iona #6	**Bit Run #** : 2	**BHA #** : 2	**Motor Run #** : 1
Depth In/Out : 664 / 976 *m*	**Date In/Out** : 26/05/2004 / 29/05/2004		**Hole Size** : 12.250 *in*
Application Details : Steerable Drilling			

MOTOR CONFIGURATION



	From Bit *(m)*	Component		Type	Diam In/Out *(in)*
1	1.10	Sleeve Stab/Pad	Yes	Stab5 I 0°	12.125 12.125
2	3.07	Bent Housing	Yes	Adjustable: 1.50° Bend	
3		Housing Tool Used	No		
4	9.21	Stator Elastomer			
5		Bent Sub / 2nd Bent Hsg	No		
6	10.94	Lower String Stab	Yes	Stab3270°	11.750 11.750
7		Upper String Stab	No		

Additional Features :

Flex Collar : No **Short Brg Pack** : No **Rtr Noz / Size** : */32's*

Brg Cfg (Off/On) : **Lobe Cfg** : 6/7 **BHA OD/ID** : 8.250 / 2.810 *in*

	Arr	Ret
Pick Up Sub :	No	No
Bit Box Protr :	Yes	No

MOTOR RUN DATA

Max Dogleg While Rotating :	°/30m	**RPM** : 60	**Motor Stalled** : No	**Prev Job/Well Hrs** :	0.00
Max Dogleg Overpulled In :	°/30m	**Force** : *lbf*	**Float Valve** : Yes	**Drilling Hrs** :	9.50
Max Dogleg Pushed Through :	°/30m	**Force** : *lbf*	**DP Filter** : Yes	**Circ Hrs** :	4.00
Hole Azimuth Start / End :	236°/ 84.77°	**Inc Start / End** :	0.69°/ 44.89°	**Reaming Hrs** :	0.00
Interval Oriented / Rot. :	217 / 95 *m*	**Directional Perf Ori / Rot** :	/ °/30m	**Total Hrs This Run** :	9.50
Jarring Occured : No				**New Cumulative Hrs** :	9.50

	Diff Press *(psi)*	Str RPM	Rotn Torque *(ft-lbs)*	Drag Up/Dn *(lbf)*	WOB *(lbs)*	ROP Oriented *(m/hr)*	ROP Rotated *(m/hr)*
Avg :	85	51		/	24	7	14
Max :	150	60		/	40	20	8

PRE-RUN TESTS

Motor Tested Pre-Run : Yes **with** 2 Collars, Bit, NM

Dump Sub Operating : N/A **Brg Play** : *mm*

Flow 1 : 600 *gpm* **Pressure 1** : 1000 *psi*

Flow 2 : *gpm* **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : No **with** :

Dump Sub Operating : N/A **Brg Play** : *mm*

Flow 1 : *gpm* **Pressure 1** : *psi*

Flow 2 : *gpm* **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

Driveshaft Rotated to Drain Mud : No

Fluid Flushed : No **Fluid Used** :

MUD DATA

Base : Water **Additives** : **Mud Wt** : 8.8 *ppg* **SPP Start/End** : 1100 / 1400 *psi*

% Oil/Water : / **% Solids** : 1.60 **% Sand** : 0.50 **PV** : 7 *cp* **YP** : 16.0 *lbf/100ft²* **pH** : 8.9

DH Temp Avg/Max : / **FlowRate Avg/Max** : 722 / 750 *gpm* **Chloride Content** : 2800 *ppm*

Principle Formation Name(s) : **Lithology** :

BIT DATA

Make : Security DBS **Type** : EBXS02S **Serial #** : 10615071

Pre Existing Hours From Other Wells:

Prev Drilling Hrs : 0.00 **Prev Reaming Hrs** : 0.00 **No of Runs This Bit** : 1

Jet Sizes */32's)* : 18, 18, 20 **TFA** : 1.052 *in²* **Gage Length** : *in*

Dull Grade	1	2	3	4	5	6	7	8
In								NEW
Out	1	2	WT	A	E	I	NO	BHA

PERFORMANCE COMMENTS

Problem Perceived : No **Problem Date** : **Service Interrupt** : No **Service Interrupt Hrs** :

Performance Motor : Yes **Tandem Motor** : No **LIH** : No **PPR Ref #** :

The motor performed to specifcation and was re-run in the follow-up assembly to drill the tangent section to TD.

Customer Representative's Signature (optional) : ..... **Date:** .....

sperry-sun DRILLING SERVICES

MOTOR PERFORMANCE REPORT

AU-DD-0002999700-3

908148 088

Motor Serial # : 800052 | **Job #** : AU-DD-0002999700

Directional Driller(s) : Tim Gallagher, Paul Gallagher | **Customer** : TXU Gas Storage Pty Ltd.

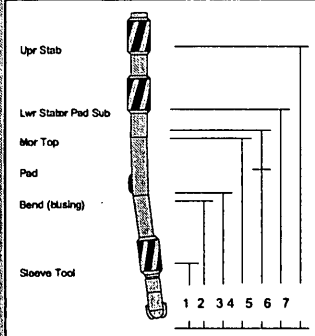
Location : Iona | **Rig** : Century Rig 18

Well Name : Iona #6 | **Bit Run #** : 1 | **BHA #** : 3 | **Motor Run #** : 2

Depth In/Out : 976 / 1008 *m* | **Date In/Out** : 29/05/2004 / 29/05/2004 | **Hole Size** : 12.250 *in*

Application Details :

MOTOR CONFIGURATION



	From Bit *(m)*	Component		Type	Diam In/Out *(in)*
1	1.10	Sleeve Stab/Pad	Yes	Stab5 I 0°	12.125 12.125
2	3.07	Bent Housing	Yes	Adjustable: 1.15° bend	
3		Housing Tool Used	No		
4	9.21	Stator Elastomer			
5		Bent Sub / 2nd Bent Hsg	No		
6	10.99	Lower String Stab	Yes	Stab3270°	12.000 12.000
7		Upper String Stab	No		

Additional Features :

Flex Collar : No | **Short Brg Pack** : No | **Rtr Noz / Size** : /32's | **Brg Cfg (Off/On)** : | **Lobe Cfg** : 6/7 | **BHA OD/ID** : 8.250 / 2.810 *in*

	Arr	Ret
Pick Up Sub	No	No
Bit Box Protr	Yes	No

MOTOR RUN DATA

Max Dogleg While Rotating : °/30m | **RPM** : | **Motor Stalled** : No

Max Dogleg Overpulled In : °/30m | **Force** : lbf | **Float Valve** : No

Max Dogleg Pushed Through : °/30m | **Force** : lbf | **DP Filter** : No

Hole Azimuth Start / End : 84.77° / 84.90° | **Inc Start / End** : 44.89° / 43.73

Interval Oriented / Rot. : 10 / 22 *m* | **Directional Perf Ori / Rot** : / °/30m

Jarring Occured : No

Prev Job/Well Hrs : 9.50

Drilling Hrs : 7.00

Circ Hrs : 0.50

Reaming Hrs : 2.50

Total Hrs This Run : 10.00

New Cumulative Hrs : 49.50

	Diff Press *(psi)*	Str RPM	Rotn Torque *(ft-lbs)*	Drag Up/Dn *(lbf)*	WOB *(lbs)*	ROP Oriented *(m/hr)*	ROP Rotated *(m/hr)*
Avg :	50	60		/	18	1	6
Max :	50	60		/	20	5	20

PRE-RUN TESTS

Motor Tested Pre-Run : Yes | **with** 2 Collars, Bit, W

Dump Sub Operating : N/A | **Brg Play** : mm

Flow 1 : 600 *gpm* | **Pressure 1** : 1000 *psi*

Flow 2 : *gpm* | **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : No | **with** :

Dump Sub Operating : N/A | **Brg Play** : mm

Flow 1 : *gpm* | **Pressure 1** : *psi*

Flow 2 : *gpm* | **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

Driveshaft Rotated to Drain Mud : No

Fluid Flushed : No | **Fluid Used** :

MUD DATA

Base : Water | **Additives** : | **Mud Wt** : 8.8 *ppg* | **SPP Start/End** : 1200 / 1150 *psi*

% Oil/Water : / | **% Solids** : 1.00 | **% Sand** : 0.25 | **PV** : 7 *cp* | **YP** : 16.0 *lbf/100ft²* | **pH** : 9.0

DH Temp Avg/Max : / | **FlowRate Avg/Max** : 748 / 750 *gpm* | **Chloride Content** : 2800 *ppm*

Principle Formation Name(s) : | **Lithology** :

BIT DATA

Make : Security DBS | **Type** : S665 | **Serial #** : 797023

Pre Existing Hours From Other Wells:

Prev Drilling Hrs : 0.00 | **Prev Reaming Hrs** : 0.00 | **No of Runs This Bit** : 1

Jet Sizes *(/32's)* : 5x18 | **TFA** : 1.243 *in²* | **Gage Length** : *in*

Dull Grade	1	2	3	4	5	6	7	8
In								RR
Out	1	1	W	A	X	I	NO	BT

PERFORMANCE COMMENTS

Problem Perceived : No | **Problem Date** : | **Service Interrupt** : No | **Service Interrupt Hrs** :

Performance Motor : Yes | **Tandem Motor** : No | **LIH** : No | **PPR Ref #** :

Customer Representative's Signature (optional) : ..... **Date:** .....

sperry-sun DRILLING SERVICES

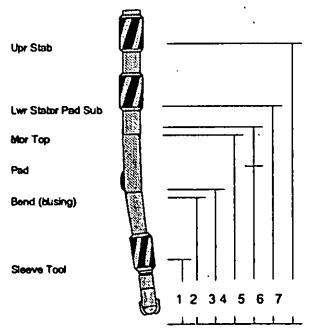
MOTOR PERFORMANCE REPORT

AU-DD-0002999700-4

908148 089

Motor Serial #	800052	**Job #**	AU-DD-0002999700		
Directional Driller(s)	Tim Gallagher, Paul Gallagher	**Customer**	TXU Gas Storage Pty Ltd.		
Location	Iona	**Rig**	Century Rig 18		
Well Name	Iona #6	**Bit Run #**	2	**BHA #** : 4	**Motor Run #** : 3
Depth In/Out	1008 / 1073 *m*	**Date In/Out**	29/05/2004/ 0/05/2004		**Hole Size** : 12.250 *in*
Application Details					

MOTOR CONFIGURATION



	From Bit *(m)*	Component		Type	Diam In/Out *(in)*
1	1.10	Sleeve Stab/Pad	Yes	Stab5 I 0°	12.125 12.125
2	307	Bent Housing	Yes	Adjustable Bend	
3		Housing Tool Used	No		
4	9.21	Stator Elastomer			
5		Bent Sub / 2nd Bent Hsg	No		
6	10.94	Lower String Stab	Yes	Stab3270°	11.750 11.750
7		Upper String Stab	No		

Additional Features :

Flex Collar : No **Short Brg Pack** : No **Rtr Noz / Size** : /32's

Brg Cfg (Off/On) : **Lobe Cfg** : 6/7 **BHA OD/ID** : 8.250 / 2.810 *in*

	Arr	Ret
Pick Up Sub	No	No
Bit Box Protr	Yes	No

MOTOR RUN DATA

Max Dogleg While Rotating	: °/30m	**RPM**	:	**Motor Stalled**	: No	**Prev Job/Well Hrs**	: 49.50
Max Dogleg Overpulled In	: °/30m	**Force**	: lbf	**Float Valve**	: No	**Drilling Hrs**	: 9.50
Max Dogleg Pushed Through	: °/30m	**Force**	: lbf	**DP Filter**	: No	**Circ Hrs**	: 1.00
Hole Azimuth Start / End	: 84.90° / 86.55°	**Inc Start / End**	: 43.73 44.51°			**Reaming Hrs**	: 0.50
Interval Oriented / Rot.	: 21 / 8 *m*	**Directional Perf Ori / Rot**	: / °/30m			**Total Hrs This Run**	: 11.00
Jarring Occured	: No					**New Cumulative Hrs**	: 60.50

	Diff Press *(psi)*	Str RPM	Rotn Torque *(ft-lbs)*	Drag Up/Dn *(lbf)*	WOB *(lbs)*	ROP Oriented *(m/hr)*	ROP Rotated *(m/hr)*
Avg :	8	60		/	20	2	7
Max :	50	60		/	20	4	15

PRE-RUN TESTS

Motor Tested Pre-Run : Yes **with** 2 Collars, Bit, NM

Dump Sub Operating : N/A **Brg Play** : *mm*

Flow 1 : 600 *gpm* **Pressure 1** : 1000 *psi*

Flow 2 : *gpm* **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : No **with** :

Dump Sub Operating : N/A **Brg Play** : *mm*

Flow 1 : *gpm* **Pressure 1** : *psi*

Flow 2 : *gpm* **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

Driveshaft Rotated to Drain Mud : No

Fluid Flushed : No **Fluid Used** :

MUD DATA

Base : Water **Additives** : **Mud Wt** : 8.8 *ppg* **SPP Start/End** : 1650 / 1600 *psi*

% Oil/Water : / **% Solids** : 1.00 **% Sand** : 0.25 **PV** : 7 *cp* **YP** : 16.0 *lbf/100ft²* **pH** : 9.0

DH Temp Avg/Max : / **FlowRate Avg/Max** : 725 / 725 *gpm* **Chloride Content** : 2800 *ppm*

Principle Formation Name(s) : **Lithology** :

BIT DATA

Make : Security DBS **Type** : FM3565 **Serial #** : 7970233

Pre Existing Hours From Other Wells:

Prev Drilling Hrs : 7.00 **Prev Reaming Hrs** : 2.50 **No of Runs This Bit** : 2

Jet Sizes *(/32's)* : 5x18 **TFA** : 1.243 *in²* **Gage Length** : *in*

Dull Grade	1	2	3	4	5	6	7	8
In	1	1	W	A	X	I	NO	RR
Out	1	1	W	A	X	I	NO	BHA

PERFORMANCE COMMENTS

Problem Perceived : No **Problem Date** : **Service Interrupt** : No **Service Interrupt Hrs** :

Performance Motor : Yes **Tandem Motor** : No **LIH** : No **PPR Ref #** :

Customer Representative's Signature (optional) : ..... **Date:** .....

MOTOR PERFORMANCE REPORT

AU-DD-0002999700-5

908148 090

Motor Serial # : 800052 | **Job #** : AU-DD-0002999700

Directional Driller(s) : Tim Gallagher, Paul Gallagher | **Customer** : TXU Gas Storage Pty Ltd.

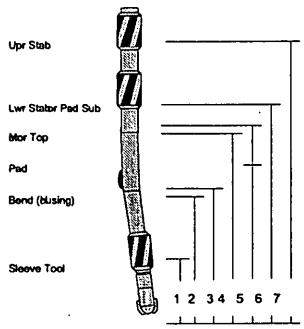
Location : Iona | **Rig** : Century Rig 18

Well Name : Iona #6 | **Bit Run #** : 4 | **BHA #** : 5 | **Motor Run #** : 4

Depth In/Out : 103 / 1515 *m* | **Date In/Out** : 0/05/2004 / 2/06/2004 | **Hole Size** : 12.250 *in*

Application Details :

MOTOR CONFIGURATION



	From Bit *(m)*	Component		Type	Diam In/Out *(in)*
1	1.10	Sleeve Stab/Pad	Yes	Stab5 I 0°	12.125 12.125
2	307	Bent Housing	Yes	Adjustable: 1.50° bnd	
3		Housing Tool Used	No		
4	9.21	Stator Elastomer			
5		Bent Sub / 2nd Bent Hsg	No		
6	11.17	Lower String Stab	Yes	Stab3270°	11.500 11.500
7		Upper String Stab	No		

Additional Features :

Flex Collar : No | **Short Brg Pack** : No | **Rtr Noz / Size** : */32's*

Brg Cfg (Off/On) : | **Lobe Cfg** : 6/7 | **BHA OD/ID** : 8.250 / 2.810 *in*

	Arr	Ret
Pick Up Sub	No	No
Bit Box Protr	Yes	No

MOTOR RUN DATA

Max Dogleg While Rotating : *°/30m* | **RPM** : | **Motor Stalled** : No | **Prev Job/Well Hrs** : 60.50

Max Dogleg Overpulled In : *°/30m* | **Force** : *lbf* | **Float Valve** : No | **Drilling Hrs** : 57.50

Max Dogleg Pushed Through : *°/30m* | **Force** : *lbf* | **DP Filter** : No | **Circ Hrs** : 2.00

Hole Azimuth Start / End : 86.55°/ 30.98° | **Inc Start / End** : 44.51°/ 48.74° | **Reaming Hrs** : 0.50

Interval Oriented / Rot. : 3 / 441 *m* | **Directional Perf Ori / Rot** : / *°/30m* | **Total Hrs This Run** : 60.00

Jarring Occured : No | **New Cumulative Hrs** : 120.50

	Diff Press *(psi)*	Str RPM	Rotn Torque *(ft-lbs)*	Drag Up/Dn *(lbf)*	WOB *(lbs)*	ROP Oriented *(m/hr)*	ROP Rotated *(m/hr)*
Avg :	88	59		/	29	6	9
Max :	100	60		/	40	22	0

PRE-RUN TESTS

Motor Tested Pre-Run : Yes | **with** 2 Collars, Bit, W

Dump Sub Operating : N/A | **Brg Play** : *mm*

Flow 1 : 600 *gpm* | **Pressure 1** : 1000 *psi*

Flow 2 : *gpm* | **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : No | **with** :

Dump Sub Operating : N/A | **Brg Play** : *mm*

Flow 1 : *gpm* | **Pressure 1** : *psi*

Flow 2 : *gpm* | **Pressure 2** : *psi*

Driveshaft Rotation Observed : No

Bearing Leakage Observed : No

Driveshaft Rotated to Drain Mud : No

Fluid Flushed : No | **Fluid Used** :

MUD DATA

Base : Water | **Additives** : | **Mud Wt** : 9.2 *ppg* | **SPP Start/End** : 1600 / 1700 *psi*

% Oil/Water : / | **% Solids** : 3.0 | **% Sand** : 0.60 | **PV** : 11 *cp* | **YP** : 21.0 *lbf/100ft²* | **pH** : 8.8

DH Temp Avg/Max : / | **FlowRate Avg/Max** : 708 / 755 *gpm* | **Chloride Content** : 26500 *ppm*

Principle Formation Name(s) : | **Lithology** :

BIT DATA

Make : Security DBS | **Type** : EBXS02S | **Serial #** : 10615071

Pre Existing Hours From Other Wells: 24

Prev Drilling Hrs : 9.5 | **Prev Reaming Hrs** : 1.50 | **No of Runs This Bit** : 2

Jet Sizes *(/32's)* : 5x18 | **TFA** : 1.243 *in²* | **Gage Length** : *in*

Dull Grade	1	2	3	4	5	6	7	8
In								NEW
Out								

PERFORMANCE COMMENTS

Problem Perceived : No | **Problem Date** : | **Service Interrupt** : No | **Service Interrupt Hrs** :

Performance Motor : Yes | **Tandem Motor** : No | **LIH** : No | **PPR Ref #** :

Customer Representative's Signature (optional) : ..... **Date:** .....

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 091

CURRENT STATUS Report # 1 19/05/2004

Total Depth	(m)	:	0	Casing Depth	(m)	:	
Drilled last 24 hrs	(m)	:	0	Casing Diameter	(in)	:	
Hole Size	(in)	:		Casing ID	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (1)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	40	6	12.0	4.0 / 8.0	11	9.5	1.00	0.40	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		No Activity

COMMENTS

Directional Driller on location

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DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 092

CURRENT STATUS Report # 2 20/05/2004

Total Depth	(m)	:	32	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	32	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	17.500	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (2)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
30.00	0.33	312.61	30.00	0.09	N47.39W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 1: 188.84 m; Bit #1 (2.5 hrs), Sub, 2 x DC, Stab, 3 x DC, Jar, Sub, HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	39	7	16.0	4.0 / 7.0	8	8.9	1.60	0.50	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	18:00	18.00	0.00		No Activity
18:00	21:30	3.50	0.00	1	M/up 17½" spud assembly and RIH
21:30	00:00	2.50	32.00	1	Drill from surface to 32m

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 093

CURRENT STATUS — Report # 3 — 21/05/2004

Total Depth	(m)	:	367	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	335	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	17.500	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (3)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
360.00	0.48	319.21	359.99	2.34	N65.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 1: 188.84 m; Bit #1 (24. hrs), Sub, 2 x DC, Stab, 3 x DC, Jar, Sub, HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	32.00	1	Repair diesel supply problem
00:30	09:00	8.50	108.00	1	Drill from 32 - 108m
09:00	09:30	0.50	108.00	1	Circ. and survey at 96m
09:30	15:30	6.00	210.00	1	Drill from 108 - 210m
15:30	16:00	0.50	210.00	1	Circ. and survey at 196m - 3/4°
16:00	23:00	7.00	367.00	1	Drill from 210 - 367m
23:00	00:00	1.00	367.00	1	Circ. and survey at 353m - 1/4°

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 094

CURRENT STATUS Report # 4 22/05/2004

Total Depth	(m)	:	636	Casing Depth	(m)	:	
Drilled last 24 hrs	(m)	:	269	Casing Diameter	(in)	:	
Hole Size	(in)	:	17.500	Casing ID	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (4), Paul Gallagher (1)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
630.00	0.69	306.89	629.98	4.34	N60.50W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 1: 188.84 m; Bit #1 (44. hrs), Sub, 2 x DC, Stab, 3 x DC, Jar, Sub, HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:30	3.50	415.00	1	Drill from 367 - 415m
03:30	04:00	0.50	415.00	1	Circulate hole clean
04:00	07:00	3.00	415.00	1	Wiper trip to 40m
07:00	14:30	7.50	521.00	1	Drill from 415 - 521m
14:30	15:00	0.50	521.00	1	Circ. and survey at 521m - 3/4°
15:00	00:00	9.00	636.00	1	Drill from 521 - 636m

COMMENTS

2nd Directional Driller on location.

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 095

CURRENT STATUS Report # 5 23/05/2004

Total Depth	(m)	:	664	Casing Depth	(m)	:	
Drilled last 24 hrs	(m)	:	28	Casing Diameter	(in)	:	
Hole Size	(in)	:	17.500	Casing ID	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (5), Paul Gallagher (2)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
658.84	0.42	297.27	658.82	4.62	N60.27W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 1: 188.84 m; Bit #1 (47. hrs), Sub, 2 x DC, Stab, 3 x DC, Jar, Sub, HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:00	3.00	664.00	1	Drill from 636 - 664m
03:00	04:00	1.00	664.00	1	Circulate hole clean
04:00	09:00	5.00	664.00	1	POOH. Very sticky 559 - 327m - max o/pull 50k. RIH.
09:00	10:30	1.50	664.00	1	RIH to bottom
10:30	14:00	3.50	664.00	1	Circulate hole clean
14:00	14:30	0.50	664.00	1	Break off kelly, insert gyro and pump down
14:30	17:00	2.50	664.00	1	Pump pill and POOH w/gyro
17:00	17:30	0.50	664.00	1	Retrieve gyro. B/off bit and lay down bit sub & stab
17:30	18:00	0.50	664.00	1	Clean rig floor
18:00	00:00	6.00	664.00		Rig up & run 13 3/8" casing

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 096

CURRENT STATUS Report # 6 24/05/2004

Total Depth	(m)	:	664	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	0	**Casing Diameter**	(in)	:	
Hole Size	(in)	:		**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (6), Paul Gallagher (3)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
658.84	0.42	297.27	658.82	4.62	N60.27W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	11:00	11.00	664.00		Continue to run 13 3/8" casing
11:00	11:30	0.50	664.00		Rig up cement head
11:30	13:00	1.50	664.00		Circulate hole clean prior to cementing
13:00	15:30	2.50	664.00		Cement as per program
15:30	23:00	7.50	664.00		Wait on Cement
23:00	00:00	1.00	664.00		Cut csg. and l/out. Remove conductor riser & dress csg. stump for wellhead

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 097

CURRENT STATUS Report # 7 25/05/2004

Total Depth	(m)	:	664	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	0	**Casing Diameter**	(in)	:	
Hole Size	(in)	:		**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (7), Paul Gallagher (4)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
658.84	0.42	297.27	658.82	4.62	N60.27W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	13:30	13.50	664.00		Con't to install well head. P/Test to 1000psi.
13:30	00:00	10.50	664.00		Nipple Up BOP

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 098

CURRENT STATUS Report # 8 26/05/2004

Total Depth	(m)	:	664	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	0	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (8), Paul Gallagher (5)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
658.84	0.42	297.27	658.82	4.62	N60.27W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 2: 292.26 m; Bit #2 (1.5 hrs), PDM #1 (1. hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3x DC, Sub, 18x HWDP, Jar, 6x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
					/					

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:00	3.00	664.00		Nipple Up BOP
03:00	12:00	9.00	664.00		Test BOP
12:00	12:30	0.50	664.00		Rig down test tools.
12:30	13:30	1.00	664.00		Install Bell nipple & flow line.
13:30	14:30	1.00	664.00		LD 3 x 8" DC's
14:30	17:30	3.00	664.00		PU Motor/set bend & m/u bit.PU NMDc & HOS, scribe to probe.
17:30	19:00	1.50	664.00		RIH 8" DC, L/D 8" jars.Shallow test MWD & Motor.RIH 6x HWDP. Scribe same.
19:00	20:00	1.00	664.00		POH HWDP & rescribe as RIH.
20:00	23:00	3.00	664.00	2	P/U 10 jts HWDP & 6 1/2" jars, Scribe as RIH, Tag cmt @ 626m.
23:00	00:00	1.00	664.00	2	POH/ LD 12jts DP.RIH (scribe) 12jts DP fm Drk to 626m.

COMMENTS

Scribe in hole to kick off at casing shoe 664m.

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 099

CURRENT STATUS Report # 9 27/05/2004

Total Depth	(m)	:	816	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	152	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (9), Paul Gallagher (6)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
804.75	18.70	304.53	802.34	25.34	N66.43W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 2: 292.26 m; Bit #2 (19. hrs), PDM #1 (20.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3x DC, Sub, 18x HWDP, Jar, 6x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	40	6	12.0	4.0 / 8.0	11	9.5	1.00	0.40	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:00	1.00	664.00	2	Circulate Hole to new mud
01:00	02:00	1.00	664.00	2	Slip & Cut 28' Drill Line
02:00	03:30	1.50	664.00	2	Drill Cement/ csg shoe
03:30	04:00	0.50	669.00	2	Drill 12¼" hole 664 - 669m
04:00	04:30	0.50	669.00	2	Circulate hole clean
04:30	05:00	0.50	669.00	2	FIT 10.5ppg.EMW.
05:00	07:00	2.00	669.00	2	Deviation Survey/ Run Gyro
07:00	00:00	17.00	816.00	2	Drill 12¼" hole 669 - 816m

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 100

CURRENT STATUS Report # 10 28/05/2004

Total Depth	(m)	:	976	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	160	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (10), Paul Gallagher (7)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
949.57	45.29	304.41	921.93	104.12	N58.43W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 2: 292.26 m; Bit #2 (37. hrs), PDM #1 (39.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3x DC, Sub, 18x HWDP, Jar, 6x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	39	7	16.0	4.0 / 7.0	8	8.9	1.60	0.50	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	18:00	18.00	976.00	2	Drill 12¼" hole 816 - 976m
18:00	19:00	1.00	976.00	2	Pump sweep & circulate hole clean
19:00	22:30	3.50	976.00	2	POOH to surface
22:30	00:00	1.50	976.00	2	Attempt pull WB - multitool h/up in BOP. Remove bell nipple, investigate problem

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 101

CURRENT STATUS Report # 11 29/05/2004

Total Depth	(m)	:	1008	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	32	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (11), Paul Gallagher (8)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1006.45	43.69	304.81	962.37	144.06	N57.56W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 2: 292.26 m; Bit #2 (37. hrs), PDM #1 (39.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3x DC, Sub, 18x HWDP, Jar, 6x HWDP
BHA 3: 292.76 m; Bit #3rr1 (9.5 hrs), PDM #2 (49.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP
BHA 4: 292.76 m; Bit #3rr2 (10. hrs), PDM #3 (50. hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	41	7	16.0	4.0 / 7.0	7	9.0	1.00	0.25	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	02:30	2.50	976.00	2	Remove bell nipple & wear bushing. Test pipe rams & re-install bell nipple & WB.
02:30	04:30	2.00	976.00	3	M/up bit, change bend on motor and string stab.
04:30	06:00	1.50	976.00	3	RIH to 669m
06:00	08:30	2.50	976.00	3	Wash/ream 669 - 976m
08:30	12:30	4.00	989.00	3	Drill 976 - 989m
12:30	13:30	1.00	989.00	3	Repair pop-off on #2 pump
13:30	16:30	3.00	1008.00	3	Drill 989 - 1008m
16:30	17:00	0.50	1008.00	3	Pump sweep & circulate hole clean
17:00	20:00	3.00	1008.00	3	POOH to surface
20:00	20:30	0.50	1008.00	3	Change out stabiliser
20:30	22:30	2.00	1008.00	4	RIH to shoe
22:30	23:00	0.50	1008.00	4	Slip & cut 22' drill line
23:00	00:00	1.00	1008.00	4	Replace low drum clutch on drawworks

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 102

CURRENT STATUS Report # 12 30/05/2004

Total Depth	(m)	:	1074	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	66	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (12), Paul Gallagher (9)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1066.11	47.95	306.15	1004.45	186.27	N56.75W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 4: 292.76 m; Bit #3rr2 (19.5 hrs), PDM #3 (60.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP
BHA 5: 292.96 m; Bit #4 (41. hrs), PDM #4 (65. hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.9	41	9	17.0	5.0 / 6.0	7	8.9	1.60	0.50	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	1008.00	4	Cont. replace low drum clutch on drawworks
00:30	01:00	0.50	1008.00	4	RIH to 710m
01:00	01:30	0.50	1008.00	4	P/up kelly & break circulation
01:30	02:00	0.50	1008.00	4	RIH 710 - 987m
02:00	02:30	0.50	1008.00	4	Wash down 987 - 1008m
02:30	12:00	9.50	1037.00	4	Drill 1008 - 1037m
12:00	12:30	0.50	1037.00	4	Pump sweep & circulate hole clean./ Mix and pump slug.
12:30	15:00	2.50	1037.00	4	POOH
15:00	15:30	0.50	1037.00	4	Trip Out (at Surface)
15:30	17:00	1.50	1037.00	4	C/o Stab to 11½". Change bit, & motor bend to 1.50°, Scribe to MWD.
17:00	19:00	2.00	1037.00	5	Trip In to shoe.
19:00	19:30	0.50	1037.00	5	P/U Kelly & fill pipe, test MWD & motor.
19:30	20:00	0.50	1037.00	5	Trip In to 1006m
20:00	20:30	0.50	1037.00	5	P/U Kelly, Wash & ream 1006 - 1037m.
20:30	00:00	3.50	1074.00	5	Drill from 1037 - 1074m

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 103

CURRENT STATUS Report # 13 31/05/2004

Total Depth	(m)	:	1247	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	173	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (13), Paul Gallagher (10)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1240.71	49.61	305.02	1120.43	316.68	N55.59W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 5: 292.96 m; Bit #4 (65. hrs), PDM #4 (89. hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.2	42	11	21.0	6.0 / 10.0	8	8.8	3.90	0.60	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:45	6.75	1125.69	5	Drilling from 1074 - 1125.69m
06:45	00:00	17.25	1247.00	5	Drilling from 1125.69 - 1247m

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 104

CURRENT STATUS — Report # 14 — 1/06/2004

Total Depth	(m)	:	1473	**Casing Depth**	(m)	:	
Drilled last 24 hrs	(m)	:	226	**Casing Diameter**	(in)	:	
Hole Size	(in)	:	12.250	**Casing ID**	(in)	:	

Operator Reps : Peter Dwyer, Andy Urdevics
SSDS Reps : Tim Gallagher (14), Paul Gallagher (11)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1471.69	48.76	309.32	1271.61	491.13	N54.65W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 5: 292.96 m; Bit #4 (89. hrs), PDM #4 (113. hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.2	42	11	21.0	6.0 / 10.0	8	8.8	3.90	0.60	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	1473.00	5	Drill 1247 - 1473m

COMMENTS

sperry-sun
DRILLING SERVICES

Daily Drilling Report

Customer : TXU Gas Storage Pty Ltd.
Well Name : Iona #6
Field : Otway Basin
Slot : Iona
Rig : Century Rig 18
Job # : AU-DD-0002999700

908148 105

CURRENT STATUS Report # 15 2/06/2004

Total Depth	(m)	:	1515	**Casing Depth**	(m) :	**Operator Reps**	: Peter Dwyer, Andy Urdevics
Drilled last 24 hrs	(m)	:	42	**Casing Diameter**	(in) :	**SSDS Reps**	: Tim Gallagher (15), Paul Gallagher (12)
Hole Size	(in)	:	12.250	**Casing ID**	(in) :		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1490.73	48.75	310.05	1284.17	505.41	N54.53W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)

BHA SUMMARY

BHA 5: 292.96 m; Bit #4 (95. hrs), PDM #4 (120.5 hrs), Sub, Stab, 1x DC, MWD, 1x DC, 3 x DC, Sub, HWDP, Jar, 6 x HWDP
BHA 6: 266.83 m; Bit #3rr3 (25. hrs), Sub, Stab, 1 x DC, Stab, 2 x DC, Sub, HWDP, Jar, 6 x HWDP

MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.2	42	11	21.0	6.0 / 10.0	8	8.8	3.90	0.60	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	1515.00	5	Drill 1473 - 1515m
06:00	07:30	1.50	1515.00	5	Circulate/ Mix KCl slug & pump.
07:30	11:00	3.50	1515.00	5	Trip Out
11:00	12:00	1.00	1515.00	5	Trip Out (at Surface)
12:00	13:30	1.50	1515.00	5	LD motor/ mwd / bit.
13:30	15:30	2.00	1515.00	5	PU rotary BHA
15:30	18:30	3.00	1515.00	6	Trip In to shoe / break circ.
18:30	00:00	5.50	1515.00	6	Reaming / Washing from 837 - 1336m.

COMMENTS

APPENDIX 2b

Gyro Survey by Gyrodata

Gyro 040604 LAS

```
#ASCII Save  -  LAS format output
~Version Information
VERS.      3.0                    : Log ASCII Standard
WRAP.      NO                     : One line per depth step
DLM.       SPACE                  : Column Data Section Delimiter
~Well
STRT.m     658.8                  : START DEPTH
STOP.m     1660.2                 : STOP DEPTH
STEP.m     0.0                    : STEP
NULL.      -99999.00              : NULL VALUE
COMP.      Texas Utilities                 : Company
WELL.      Iona Gas Storage Plant Iona 6   : Well
FLD.       Field: Otway Basin              : Field
LOC.       Victoria                        : Location
SRVC.      Gyrodata                        : Service Company
CTRY.                                    : Country
DATE.      01/06/2004                      : Service Date
LATI.      -38.57                          : Latitude
LONG.      143.03                          : Longitude
GDAT.                                      : Geodetic Datum
~Parameter
outrun.                  : Outrun Survey
#Array names
~Curve
MD.m                     : 1 MEASURED DEPTH
Type                     : 2 STATION TYPE
INCL.DEG                 : 3 INCLINATION (DEG)
AZIM.DEG                 : 4 AZIMUTH (DEG)
TVD.m                    : 5 TRUE VERTICAL DEPTH
TVDSS.m                  : 6 TRUE VERTICAL DEPTH FROM SUB SEA
LOCAL-NS.m               : 7 NORTHING
LOCAL-EW.m               : 8 EASTING
VS.m                     : 9 VERTICAL SECTION
DL.DEG                   : 9 DOG LEG (DEG/30 METERS)
#       MD   Type     INC       AZ          TVD         TVDSS      LOCAL-N
LOCAL-E        V/S    DOGLEG
~Ascii
       668.4   O      1.02   202.88       668.42       668.42        2.23
 -4.07       4.62     3.53
       697.7   O      5.48   256.96       697.66       697.66        1.67
 -5.54       5.50     5.07
       726.3   O     10.95   280.71       725.91       725.91        1.87
 -9.53       8.88     6.65
       755.3   O     11.77   308.83       754.38       754.38        4.24
-14.55      14.35     5.73
       783.6   O     15.83   308.88       781.86       781.86        8.47
-19.81      21.09     4.30
       812.5   O     21.86   302.79       809.15       809.15       13.86
-27.40      30.39     6.59
       841.3   O     28.65   301.38       835.20       835.20       20.37
-37.82      42.66     7.10
       870.5   O     34.60   303.66       860.12       860.12       28.64
-50.74      57.99     6.21
       899.7   O     40.20   304.58       883.27       883.27       38.57
-65.39      75.69     5.79
       928.4   O     45.42   303.27       904.34       904.34       49.45
-81.59      95.20     5.53
       957.5   O     45.45   304.38       924.71       924.71       60.97
-98.77     115.88     0.82
       986.6   O     44.51   304.31       945.35       945.35       72.60
-115.80    136.50     0.97
      1015.7   O     43.75   306.15       966.22       966.22       84.28
-132.34    156.74     1.54
      1045.0   O     47.88   305.76       986.61       986.61       96.59
-149.31    177.71     4.25
      1074.1   O     48.00   304.77      1006.14      1006.14      109.08
-166.98    199.35     0.77
      1103.1   O     48.47   305.97      1025.47      1025.47      121.61
```

Gyro 040604 LAS

-184.64	221.00	1.04				
1132.3	o	48.81	306.58	1044.72	1044.72	134.55
-202.26	242.85	0.59				
1161.5	o	47.98	306.87	1064.11	1064.11	147.61
-219.77	264.69	0.88				
1190.7	o	48.16	304.29	1083.62	1083.62	160.24
-237.43	286.40	1.98				
1219.6	o	49.04	305.11	1102.72	1102.72	172.57
-255.24	308.07	1.12				
1248.7	o	49.58	304.64	1121.71	1121.71	185.20
-273.36	330.15	0.66				
1277.8	o	49.12	305.01	1140.70	1140.70	197.83
-291.52	352.27	0.55				
1307.0	o	49.36	304.88	1159.75	1159.75	210.49
-309.63	374.36	0.27				
1335.7	o	49.59	305.44	1178.41	1178.41	223.06
-327.48	396.19	0.51				
1364.6	o	48.87	307.38	1197.26	1197.26	236.03
-345.07	418.04	1.70				
1393.6	o	49.01	308.04	1216.31	1216.31	249.41
-362.37	439.89	0.53				
1422.3	o	49.14	308.09	1235.11	1235.11	262.77
-379.44	461.54	0.14				
1450.5	o	48.95	307.57	1253.62	1253.62	275.86
-396.29	482.85	0.47				
1478.6	o	48.70	309.72	1272.13	1272.13	289.06
-412.81	503.95	1.75				
1507.6	o	48.51	310.24	1291.29	1291.29	303.03
-429.47	525.61	0.45				
1535.7	o	48.21	310.29	1309.95	1309.95	316.60
-445.49	546.52	0.33				
1564.5	o	48.09	311.10	1329.15	1329.15	330.57
-461.74	567.84	0.64				
1593.2	o	47.74	309.38	1348.41	1348.41	344.35
-478.02	589.08	1.38				
1621.8	o	47.62	310.60	1367.65	1367.65	357.93
-494.21	610.13	0.96				
1650.6	o	47.48	310.40	1387.11	1387.11	371.74
-510.39	631.30	0.21				
1660.2	o	47.51	310.76	1393.56	1393.56	376.32
-515.73	638.31	0.84				

APPENDIX 3

Drilling Fluid Recap

908148 110

TXU GAS STORAGE PTY LTD
DRILLING FLUID RECAP
IONA - 6
PORT CAMPBELL, PPL – 2, OTWAY BASIN, VICTORIA

Prepared by : Tun Aung

Date : 07 June, 2004

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2. COST SUMMARY

2.1 Drilling Fluid Costs

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	Drilling Fluid	Hole Size	MD From	MD To	Cost (AUD$)
1.	KCl / PHPA / Polymer	17 1/2"	11 m	664 m	16,974.66
2.	KCl / PHPA / Polymer	12 1/4"	664 m	1686 m	49,841.61

Mud Materials Used For Drilling	**Total AUD$**	**66,816.27**
Mud Materials Used For Non Drilling (Cementing / Other)	**AUD$**	**50.34**
Mud Materials Used For Completion (8.6 ppg KCl Brine)	**AUD$**	**Nil**
Total Materials	**AUD$**	**66,866.61**

2.2 Engineering Costs

Service Representatives	From (date)	To (date)	Days
Tun Aung	20/05/2004	04/06/2004	16

Total Days			**16**
Service Cost (AUD $) @	**$800.00 per day**	**Total AUD $**	**12,800.00**
Total Costs		**AUD $**	**79,666.61**

3. PERFORMANCE SUMMARY

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3.1 Comments

- A KCl/PHPA/ Polymer fluid was used for the well, to provide maximum inhibition of the reactive clays in the area.
- Surface 17 1/2" hole was drilled trouble free to 664 m, and 13 3/8" casing was set.
- A 12 1/4" production hole was drilled from 664 m to 1686 m, and the well was plugged and abandoned with three cement plugs..

3.2 Performance Indicators

	Program	Actual	Achieved (± 10 %)
Interval 1. 17 1/2" Hole 11 m - 664 m (653 m drilled)			
• Salvaged Mud	Nil	Nil	Yes
• New Volume Used, bbl	1682	1288	No
• Dilution Rate, bbl/m	1.20	0.52	No
• Consumption Rate, bbl/m	2.70	1.97	No
• Mud Cost/bbl, A$	21.64	13.18	No
• Mud Cost/m, A$	57.75	25.99	No
• Interval Mud Cost, A$	36,385.50	16,974.66	No
• No differential sticking		-	Yes
• Successfully set 13 3/8" surface casing		-	Yes
• Rotating Hours (Logging Unit)			-
• Average ROP, m/hr		31.92 20.46	-

	Program	Actual	Achieved (± 10 %)
Interval 2. 12 1/4" Hole 664 m - 1686 m (1022 m drilled)			
• Salvaged Mud from 17 1/2" section	615	Nil	No
• New Volume Used, bbl	2304	2201	Yes
• Dilution Rate, bbl/m	1.30	1.05	No
• Consumption Rate, bbl/m	2.43	2.15	No
• Mud Cost/bbl., A$	17.54	22.64	No
• Mud Cost/m., A$	42.54	48.77	No
• Interval Mud Cost, A$	40,414.14	49,841.61	No
• No differential sticking.		-	Yes
• Successfully run wireline logs		-	Yes
• Rotating Hours (Logging Unit)		79.53	-
• Average ROP, m/hr		12.85	-
Entire Well			
• Total Drilling Fluid Cost A$	**76,799.64**	**66,816.27**	**No**
Completion Interval			
• Completion Fluid Cost, A$	-	-	-

Explanation of Non-Conformance
17 1/2" Interval

- All the performance indicators were not met, because due to environmental restrictions a sump was not available, and direct dumping of the mud was prohibited. As a result the performance indicators of Volume Used, Dilution and Consumption Rates, Cost/bbl and Cost/m were much lower than estimated, as compared to similar wells in the surrounding area.

- The mud cost was 50 % of the estimated cost, but the resulting mud weight was very much higher than programmed (9.8 as compared to 9.1 ppg).

12 1/4" Interval

- The 337 bbl of heavy 9.8 ppg mud from the 17 ½ inch interval was displaced out with new 8.7 ppg mud. The heavy mud was pumped into a tanker truck and carted away for disposal at a selected site.
- The Dilution and Consumption rates were lower than programmed mainly due to environmental restrictions. Since direct dumping of the mud could not be carried out, dilution had to be done by transferring mud into a spare tank, then pumping this mud into the tanker truck to be carted away for disposal.
- The mud Cost/bbl, Cost/m and Interval Mud Cost was higher than programmed mainly due to two reasons :
  a). A larger amount of KCl was used (The programmed concentration was 4 %, while the actual amount used was 6 %. The TXU program for the KCl concentration was 4 – 5 %, and the mud mixed was at 5 % KCl Content. Apart from the first heavy weight pill, all the remaining pills were made up of KCl, which increased the overall usage and incurred an additional cost of $ 4305).
  b). A larger amount of BARAZAN was used (The programmed concentration was 1.3 ppb, while the actual amount used was 1.45 ppb which incurred an additional cost of $ 4985. For the first five days of drilling, the MBT was low and the Yield Point / 6 Rpm values were also low, resulting in a higher consumption of BARAZAN).

Entire Well Mud Cost

- The Total Mud Cost for the well was 13 % lesser than the programmed cost.

4. INTERVAL - 1

4.1 SUMMARY

171/2 " Hole From 11 m To 664 m In 2 1/2 Drilling Days

Drilling Fluid KCl / PHPA / Polymer

Formations Heytesbury Group, Narrawaturk Marl, Mepunga Fm, Dilwyn Fm, Pember Mudstone, Pebble Point Fm.

Operations Summary
Drilled to casing point of 664 m. Made a wiper trip to surface, prior to running in and cementing 13 3/8 inch casing to surface with full returns. No sweeps were pumped for the interval.

Properties	Programmed		Actual (Typical Drilling)		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg	-	9.1	8.55	9.8	No
Yield Point, lb/100 ft^2	25	45	11	23	No
6 rpm, lb/100 ft^2	8	12	4	10	No
API Filtrate, ml		6	12.8	19.2	No
HPHT Filtrate, ml		12	-	-	-
KCl Content, % wt	3	4	3.3	4.5	Yes
PHPA Content, ppb	1.0		0.4	0.5	No
Low Gravity Solids, %v/v		8.0	0.1	8.4	No
pH	8.8	9.5	8.3	9.5	No
Residual Sulphites	100		20	50	No

Explanation of Non-Conformance

- Since dumping of the sand trap was prohibited due to environmental restrictions, the mud weight could not be maintained within programmed limits. Even dilution of the system was restricted by the fact, there was not enough storage space to store the excess volume. Any excess volume had to be pumped into a tanker truck and carted away for disposal. Apart from that, all the liquid effluent, including fines from the Desander / Desilter underflow discharge were put back into the mud system, sometimes after centrifuging and sometimes directly. The sand trap was ocassionally centrifuged and put back into the system. At 500 m, the centrifuge broke down, and the mud weight increased from 9.3 ppg to 9.8 ppg upon reaching casing point at 664 m.
- Initially the Yield Point was low, since after displacement some screen blinding occurred due to the effect of PHPA in the fluid. Once the mud had been sufficiently sheared, the yield point was gradually increased, but was still in the lower range than programmed.
- After displacement the 6 Rpm reading was low. After sufficient shearing had been achieved, the 6 Rpm value was maintained at the 9 to 10 range.
- The API Filtrate was also higher than programmed, in accordance with the TXU program of less than 15 ml. Fluid loss additives of PAC-L / DEXTRID was only used upon approaching surface casing point.
- Even though the KCl Content was within the programmed range, there was difficulty in monitoring and maintaining. Every 6 hours or so, the KCl Content would drop by 1 to 1.3 % mainly due to continuous hosing down of the two cuttings dump chutes which diverted the cuttings onto the DFE shaker, and also the additional hose down water directed onto the cuttings lumped / piled up on the DFE shaker itself. All the liquid effluent, including fines from the Desander / Desilter underflow discharge were then put back into the mud system, sometimes after centrifuging and sometimes directly.
- PHPA content was maintained in the 0.4 to 0.5 ppb range mainly to minimize screen blinding

- at the high pump rates used for the 17 ½ inch section.
- Upon reaching casing depth the mud weight had increased to 9.8 ppg, at which stage the low gravity solids exceeded the programmed value of 8.0 % volume.
- While drilling through the clays, the pH was kept in the lower range of 8.3 to minimize dispersion and clay swelling. Due to the high MBT of the mud, addition of caustic also tended to thicken up the mud.
- Residual Sulphites were also in the lower ranges, since continuous running of the solids control equipment caused agitation which consumed more chemical.

Maintenance

- Due to environmental restrictions, and the absence of a sump, mud or cuttings could not be dumped on the ground. The cuttings coming over the two Derrick Shakers (#50 mesh) were channeled over one DFE shaker (#110 mesh). The cuttings coming over this shaker was dumped into a metal holding "D" container, from which it was scooped out with a excavating machine, loaded onto a tipper dump truck and then carted away for disposal.
- The Desander and Desilter underflow discharge effluent was also channeled over the DFE Shaker. The solids were dumped into the metal holding "D" container, and the liquid effluent which passed through the screens were collected in a plastic rainwater tank. This was then centrifuged or directly returned to the system.
- The one centrifuge on site was mainly used for the mud system, Since the Sand Trap could not be dumped, it was occasionally centrifuged and put back into the system.
- At a later stage the sand trap was completely blocked up, and could not be centrifuged.
- The Intermediate #2 Tank was used as a holding tank to store heavy mud. This mud was then pumped out into a tanker truck (180 bbl capacity) and carted away for disposal.
- The make up water used was freshwater from a nearby dam with a composition of : pH – 6.5, Hardness – 20 mg/L, Chlorides – 150 mg/L, Carbonates – Nil, and Bicarbonates – 61 mg/L.
- Mud volume and properties were maintained with new premixed mud with a basic composition of : BARACIDE – 0.1 ppb, Caustic Potash – 0.4 ppb, KCl – 4.5 %, BARAZAN D PLUS – 1 ppb, PHPA – 0.5 ppb. No fluid loss additives were used.
- Upon approaching casing point, 0.85 ppb each of fluid loss additives PAC-L and DEXTRID was directly added to the system.

Solids Control Equipment

- The two Derrick FLC58 linear motion shale shakers were fitted with # 50 mesh screens (Due to the larger hole size of 17 ½ inch which generated a large amount of cuttings, and pump rates of 727 gpm, finer screens could not be used).
- The Harrisburg Desander (2 cone x 10 inch) was run continuously. Underflow discharge rates ranged from 1.0 - 1.7 bbl/hr, with a weight of 9.9 - 15.5 ppg.
- The Harrisburg Desilter (12 cone x 5 inch) was run continuously. Underflow discharge rates ranged from 2.1 - 4.5 bbl/hr, with a weight of 10.3 - 10.4 ppg.
- Ran the DFE centrifuge continuously while drilling or circulating, operating with a slightly wet discharge to increase colloidal solids removal.

4.2 EVALUATION

Comments

- The system in use performed well, as regards to hole cleaning and stability.

Problems, Causes, Remedial Action Taken or Recommended
Hole Conditions

1) Problem During the wiper trip at casing point, the hole was sticky from 559 m (Pember Mudstone, Clay) to 327 m (Mepunga Fm, Silt/Clay), with a maximum overpull of 50 K lb, and a constant drag of 15-20 K lb.
   Cause Possible clay swelling.
   Action Worked pipe. Cleaned out stabiliser. Upon running back in washed from 344 to 376 m.

Drilling Fluid

1) Problem No problems encountered.
   Cause
   Action

Solids Control and Mud Mixing Equipment

1) Problem Centrifuge not working from 500 m.
   Cause Motor breakdown.
   Action Replaced motor for the next hole section.

4.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- Better stability can be achieved, by minimizing swelling of clays by using a slightly higher KCl Content of 4 – 5 % range.

Drilling Fluid

- The KCl / PHPA / Polymer fluid performed well.

Solids Control and Mud Mixing Equipment.

- Since direct dumping of the mud is prohibited, improved Solids Control measures are needed.
  a). To better handle the cuttings generated by the larger 17 ½ inch hole and high flow rates of 727 gpm, three shakers will be required to permit the use of finer screens. This can be set up by removing the Desander.
  b). Two Centrifuges are required, one to process the active system and the other to process the sand trap continuously to prevent clogging.
  c). The liquid effluent from the Desander/Desilter underflow discharge and the DFE Shaker which has been collected in the Rainwater Tank should be carted away for disposal instead of pumping back into the system, sometimes without centrifuging.

5. INTERVAL - 2

5.1 SUMMARY

121/4 " Hole From 664 m To 1686 m In 8 Drilling Days

Drilling Fluid KCl / PHPA / Polymer

Formations Pebble Point Fm, Paaratte Fm, Skull Creek Member, Nullawarre Greensand, Belfast Mudstone, Eumeralla Fm, Waare Formation.

Operations Summary

This section was drilled in 79.5 rotating hours (Logging Unit Data), with five bit runs to a Total Depth of 1686 m. Pumped 50 bbl of BAROLIFT sweep (0.3 ppb) before and after the wiper trip with a minimal increase of returns. Carried out two logging runs, after which the well was plugged backed.

Properties	Programmed		Actual (Typical Drilling)		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg		9.4	8.75	9.8	No
Yield Point, lb/100 ft^2	-	-	12	24	-
6 rpm, lb/100 ft^2	10	15	4	8	No
API Filtrate, ml		6	5.7	10.6	No
HPHT Filtrate, ml		12	17.2	23.4	No
KCl Content, % wt	3	4	4.2	5.3	No
PHPA Content, ppb	1.0		1.0	1.1	Yes
Low Gravity Solids, % v/v		8	0.6	8.0	Yes
pH	8.8	9.5	8.8	9.5	Yes
Residual Sulphites	100		20	100	No

Explanation of Non-Conformance

- Up to 1500 m, the mud weight was within programmed limits, at which stage the shaker screens had been upgraded from #50 mesh on both shakers to 3 x #110 on one shaker and #84/84/50 on the other. At 1582 m added 2.5 ppb each of graded limestone Circal 60/16 (25 micron) and Circal Y (100 micron) which increased the mud weight from 9.45 to 9.55 ppg. While drilling through the Basal Belfast Mudstone (Clay/Silt), Warre Sandstone and Eumeralla Fm (Silt) the mud weight increased to 9.75 – 9.8 ppg.
- Initially the Yield Point, 6 Rpm reading and MBT value was low. From 1250 m onwards, when the MBT increased to more than 7 ppb, the Yield Point / 6 Rpm reading increased, but was still on the lower side. In order to minimize cost, the Yield Point was maintained around 20 (TXU program) which corresponded to a 6 Rpm reading of 7-8 range.
- In order to minimize cost, both the API Filtrate and HPHT was kept on the higher side, in accordance with the TXU program (API Filtrate of less than 10 above the Warre Fm, and in the Warre Fm, an API Filtrate of less than 6 and HPHT of less than 20 ml).
- In order to minimize chances of clay swelling and tight hole conditions during trips, the KCl Content was kept in the higher range of 4 – 5 % wt.
- Due to the agitation caused by the continuous running of the solids control equipment, the BARACOR 129 oxygen scavenger added was being depleted at a fast rate.

Maintenance

- After tagging cement stringer at 626 m, displaced the hole with 680 bbl of new 8.75 ppg KCl/PHPA/Polymer mud which had been pretreated with 0.3 ppb each of Citric Acid and Soda Bicarb. To minimize screen blinding and shaker losses, the new mud only had 0.25 ppb of PHPA. The new mud did not contain any caustic.

- After drilling out cement, drilled 5 m of new hole to 669 m, and carried out a FIT test to 10.5 ppg EMW.
- As drilling progressed, trickled in PHPA to a concentration of 1.0 ppb by 860 m, and maintained till Total Depth.
- The basic Premix had the following composition : BARACIDE – 0.15 ppb, KCl – 5 % wt, BARAZAN – 1.0 ppb, PAC L – 0.5 ppb, DEXTRID – 0.5 ppb, and PHPA – 1.0 to 1.5 ppb. Caustic Potash was not added in the Premix, to prevent the mud from getting too thick and clogging up the mixing hopper.
- Mud volume and properties were maintained by the addition of new premixed mud, and the premix formulation was slightly changed as required to maintain fluid properties.
- Up to 1500 m, the mud weight was within the programmed limit of 9.3 - 9.4 ppg.
- To minimize cost, the Yield Point / 6 Rpm reading was kept in the lower ranges, while the API and HPHT Filtrate was maintained in the higher ranges.
- To minimize clay swelling and dispersion, the KCl Content was maintained in the higher 4 – 5 % range, while the pH was kept in the lower ranges of 8.8 to 9.0 units.
- Used a Barite pill for the first trip, after which KCl slugs were used.
- For this hole section, the sand trap was continuously centrifuged to prevent clogging, with the overflow returns lined up to the suction pit. During trips, fluid in the active system was circulated and centrifuged.
- At 1582 m prior to entering the Warre Formation, added 2.5 ppb each of Circal 60/16 / Circal Y (Total 5 ppb) to the system, which increased the mud weight from 9.45 to 9.55 ppg.
- While drilling through the fine sands and silts of the Warre and Eumeralla Formations, the mud weight increased to 9.75 – 9.8 ppg range.
- Prior to reaching Total Depth, the fluid was treated with additional Caustic and BARACIDE to minimize the chances of bacterial degradation.
- At Total Depth of 1686 m, pumped 50 bbl of BAROLIFT sweep (0.3 ppb), before and after the wiper trip with a minimal increase in returns.
- After carrying out two logging runs, cement plugs were set.

Solids Control Equipment

- The two Derrick linear motion shale shakers were initially fitted with # 50 mesh screens. After 1000 m, the shakers were slowly upgraded to #84 mesh screens. By 1500 m, one shaker was dressed with #110 mesh screens with #84 mesh screens on the other. (With flow rates of 727 to 751 gpm, finer screens could not be fitted).
- The Harrisburg Desander (2 cone x 10 inch) was run continuously. Underflow discharge rates ranged from 0.7 – 1.2 bbl/hr with a weight of 12.5 – 16.4 ppg.
- The Harrisburg Desilter (12 cone x 5 inch) was run continuously. Underflow discharge rates ranged from 1.1 – 3.3 bbl/hr with a weight of 10.9 – 13.6 ppg.
- Ran the DFE Centrifuge with a slightly wet discharge to increase colloidal solids removal. While drilling, the centrifuge was lined up continuously to the sand trap, and during trips was lined up to the active mud system.

5.2 EVALUATION

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Comments

- A combination of 1.0 ppb of PHPA and 4 – 5 % wt of KCl provided sufficient inhibition. (During trips the hole was in good condition).

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem At 1515 m, a trip was made and the directional assembly was laid out. Upon running back in with a stiffer BHA, tight hole had to be reamed from 1001 m to 1515 m.
   Cause Most likely due to a stiffer BHA.
   Action Reamed tight section.

2) Problem During the wiper trip at Total Depth, tight hole was encountered from 1540 to 1650 m, upon running back in.
   Cause Most likely due to filter cake build up in the Warre Sandstone.
   Action Worked pipe.

Drilling Fluid

1) Problem No problems encountered.
   Cause
   Action

Solids Control and Mud Mixing Equipment

1) Problem None.
   Cause
   Action

5.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- Good hole stability can be achieved by the present combination of 1.0 ppb of PHPA and 4 – 5 % wt of KCl.

Drilling Fluid

- The system used on this well is satisfactory.

Solids Control and Mud Mixing Equipment.

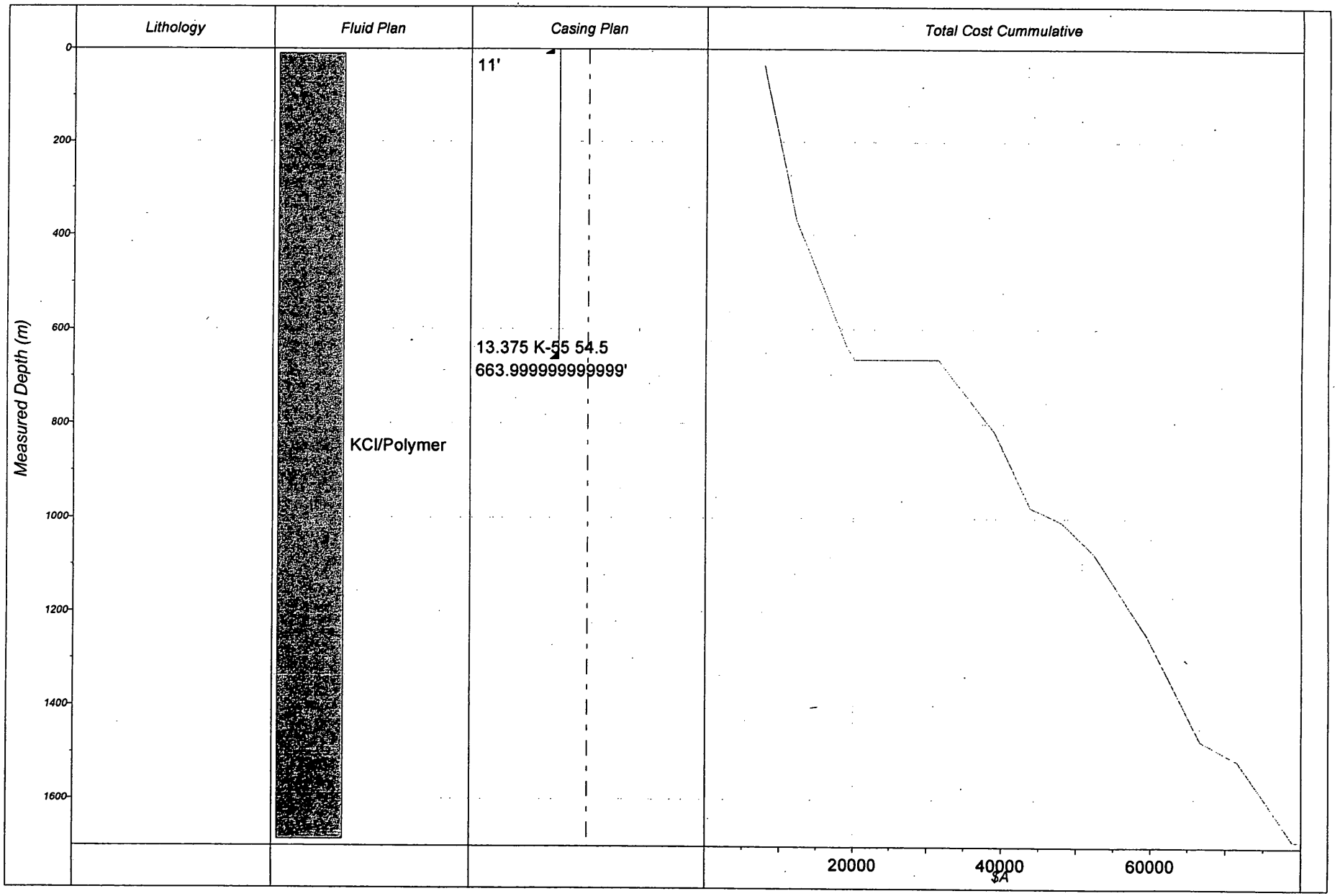
- In order to help control the mud weight improvements to the solids control equipment is needed, as described in the previous section. If these improvements are difficult to carry out, the PHPA Content should be reduced to 0.5 ppb to enable the use of finer screens on the two available shakers.

GRAPHS

Daily Costs vs Depth

Well : Iona-6

Operator : TXU GAS STORAGE PTY LTD



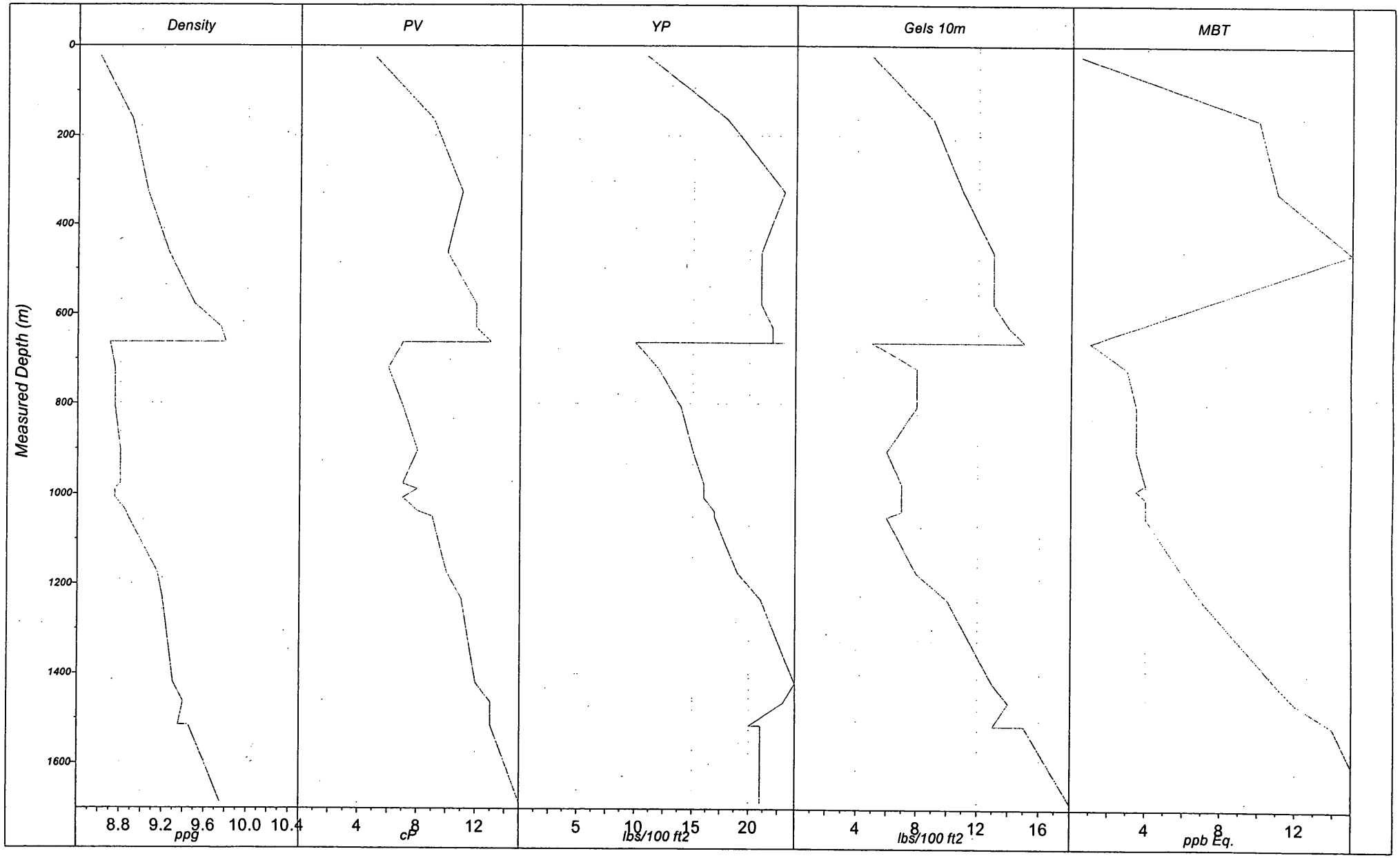
Baroid Drilling Fluids

Printed On 10/08/2004

Recap Properties Water Based vs Depth Set 1

Well : Iona-6

Operator : TXU GAS STORAGE PTY LTD



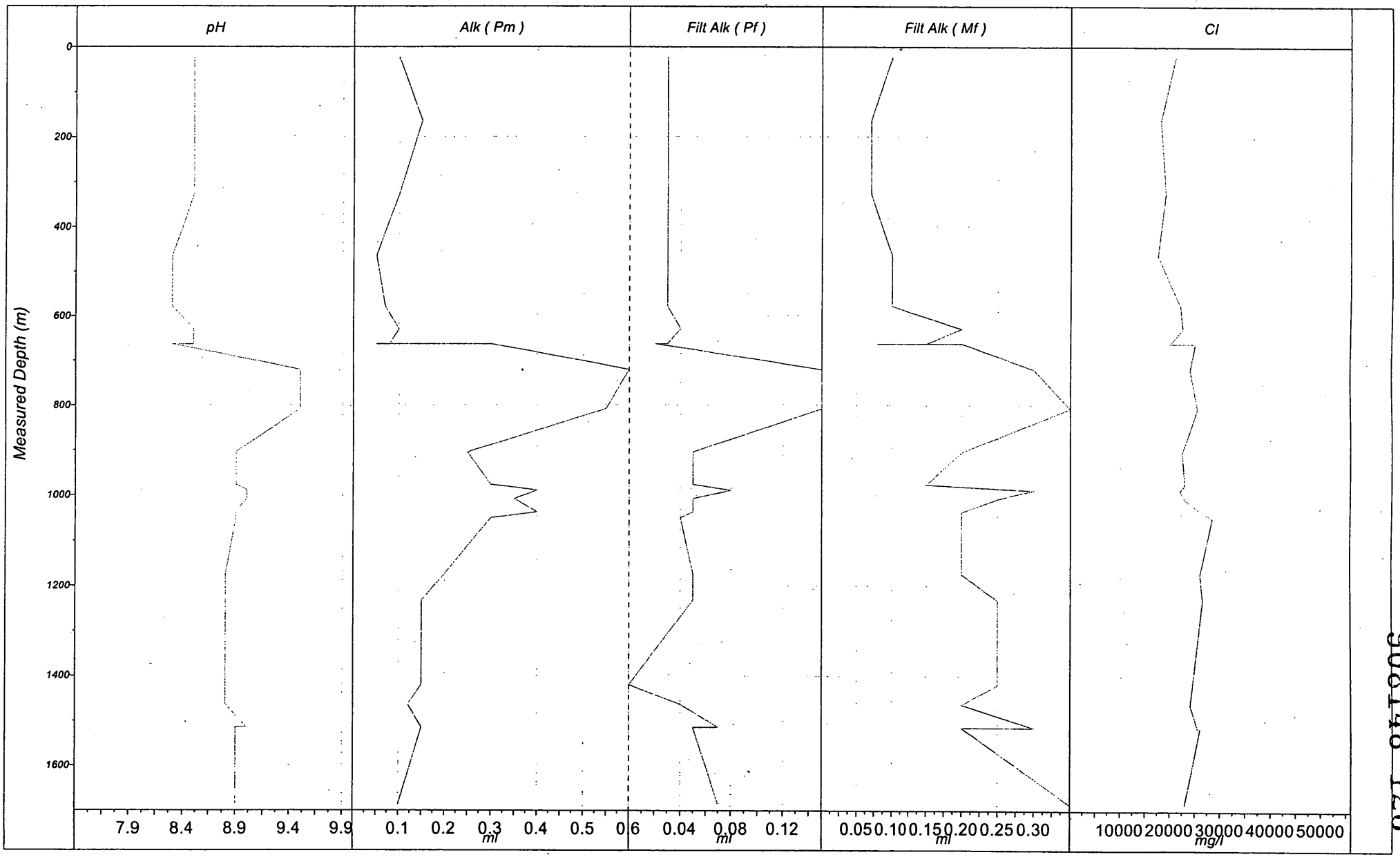
Baroid Drilling Fluids

Printed On 10/08/2004

Recap Properties Water Based vs Depth Set 2

Well : Iona-6

Operator : TXU GAS STORAGE PTY LTD



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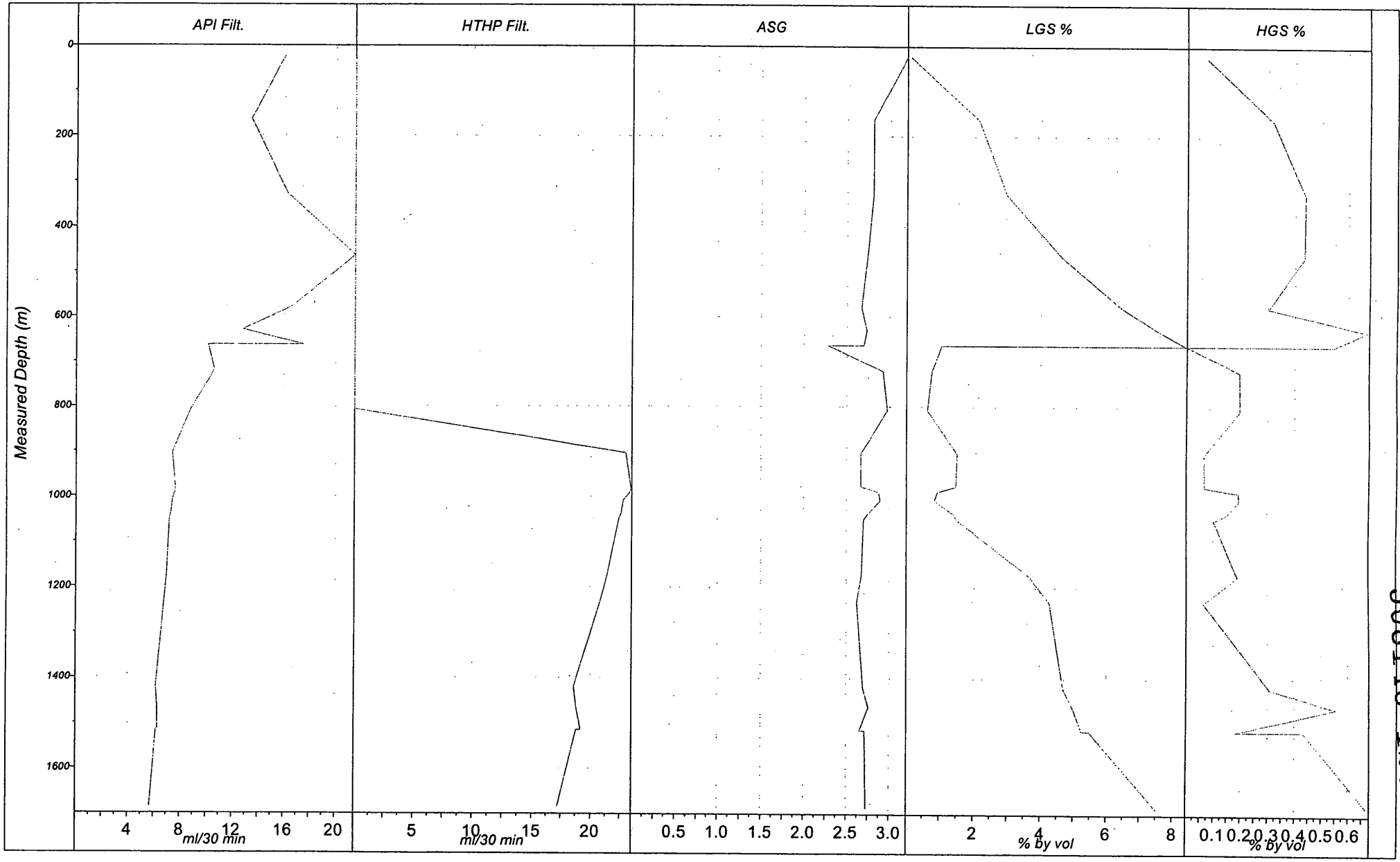
Baroid Drilling Fluids

Printed On 10/08/2004

Recap Properties Water Based vs Depth Set 3

Well : Iona-6

Operator : TXU GAS STORAGE PTY LTD



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Baroid Drilling Fluids

Printed On 10/08/2004

POSTWELL AUDIT

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Well Summary

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Well Data

Spud Date		May/20/04	Products/Fluids Drilling Cost		$A66,816.27
TD Date		Jun/03/04	Products/Fluids Completion Cost		$A0.00
Project		1003	Solids Control/ Waste Management Cost		$A0.00
Days on Well		15	Products/Fluids Cementing Cost		$A50.34
From Date		May/20/04	Products Lost/Damaged Cost		$A0.00
To Date		Jun/4/04	Engineering Services Cost		$A12,800.00
Drilling Days		12	Equipment Cost		$A0.00
Rotating Hours		179.00	Transport / Packaging		$A0.00
Average ROP	m/hr	9.9	Other Cost		$A0.00
Maximum Density	ppg	9.80	Total Well Cost		$A79,666.61
Total Measured Depth	m	1,686.0	Planned Cost		$A0.00
True Vertical Depth	m	1,413.0	Cost per Fluid Volume	$A / bbl	22.84
Distance Drilled	m	1,675.0	Cost per m Drilled	$A / m	47.56
Maximum Deviation	degrees	49.28	Cost / Volume of Hole Drilled	$A / bbl	70.74
Maximum Horiz. Displacement	m	491.1	Fluid Volume / Hole Volume	bbl / bbl	3.098
Bottom Hole Temperature	Deg C	65.00	Fluid Volume / Length Drilled	bbl/m	2.080

Casing Design

Casing Description	Set Date and Time	Top MD m	Top TVD m	End MD m	End TVD m	Csg OD in	Csg ID in	Hole Size in	Hole MD m	Hole TVD m
20 H-40 94.0	05/18/2004 00:00	0.0	0.0	11.0	11.0	20.000	19.124	24.000	11.0	11.0
13.375 K-55 54.5	05/24/2004 15:30	0.0	0.0	664.0	664.0	13.375	12.615	17.500	664.0	664.0

Mud Program

Interval #	Mud Type	Interval Days	BHT Deg C	Max. Dens ppg	Planned Fluid Cost	Actual Fluids and Products Cost	Variance
01	KCl/PHPA/Polymer	6	40	9.80	$A 0.00	$A 16,974.66	$A 16,974.66
02	KCl/PHPA/Polymer	10	65	9.80	$A 0.00	$A 49,841.61	$A 49,841.61

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Total Cost Breakdown

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	Day(s)	16.00	$A	12,800.00
		Subtotal	$A	12,800.00
Prod/Fluids : Cementing				
calcium chloride	25 Kg bag	3.00	$A	50.34
		Subtotal	$A	50.34
Prod/Fluids : Drilling				
Baracide	25 Kg can	10.00	$A	2,776.30
BARACOR 129	25 Kg can	46.00	$A	2,626.14
BARA-DEFOAM W300	25 l can	2.00	$A	150.00
BARAZAN D PLUS	25 Kg bag	76.00	$A	21,046.68
barite	25 Kg bag	51.00	$A	369.75
BAROLIFT	15 lb box	3.00	$A	879.99
bentonite	25 Kg bag	2.00	$A	19.80
Circal 60/16	25 Kg bag	48.00	$A	624.96
Circal Y	25 Kg bag	58.00	$A	926.84
citric acid	25 Kg bag	4.00	$A	285.52
DEXTRID LTE	25 Kg bag	21.00	$A	752.43
DEXTRID LTE	50 lb bag	40.00	$A	1,302.80
PAC-L	25 Kg bag	64.00	$A	7,286.40
phpa	25 Kg bag	50.00	$A	6,113.50
potassium chloride tech	25 Kg sack	1,245.00	$A	18,675.00
potassium hydroxide	20 Kg pail	48.00	$A	2,916.00
sodium bicarbonate	25 Kg bag	4.00	$A	64.16
		Subtotal	$A	66,816.27
		Total Well Cost	**$A**	**79,666.61**

Net Well Cost Breakdown

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Cost Breakdown I $A	Interval 01	Interval 02	Total
Fluids/Products : Drilling	16,974.66	49,841.61	66,816.27
Fluids Products : Comp/Filtration			
Solids Control/Waste Managment			
Fluids/Products : Cementing	50.34		50.34
Engineering Services	4,800.00	8,000.00	12,800.00
Fluids/Products : Lost Damaged			
Other Cost			
Equipment cost			
Transport / Packaging Cost			
Total Cost	21,825.00	57,841.61	79,666.61

Cost Breakdown II $A	Interval 01	Interval 02	Total
Total Products Cost	17,025.00	49,841.61	66,866.61
Total Fluids Cost			
Total Charges Cost	4,800.00	8,000.00	12,800.00
Total Cost	21,825.00	57,841.61	79,666.61
Planned Cost			
Variance	21,825.00	57,841.61	**79,666.61**

Volumes Breakdown bbl	Interval 01	Interval 02	Total
Total Base Fluids Additions			
Total Chemical Additions	41.4	103.9	145.3
Total Barite Additions	0.9	1.0	1.9
Total Water Additions	1,122.1	2,096.1	3,218.2
Total Fluid Built	**1,164.4**	**2,201.0**	3,365.4
Total Fluids Received	123.3		123.3
Total Mixing Additions			
Total Influx Additions			
Total Other Additions			
Total Fluid Volume	**1,287.7**	**2,201.0**	3,488.7

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Interval Summary

Well : Iona-6

Operator: TXU GAS STORAGE PTY LTD

Interval # 01	Bit Size 17.500 in	Hole Size Maximum 17.500 in

Interval Start Date		May/20/2004	Planned Cost	$A	0.00
Interval End Date		May/25/2004	Total Interval Cost	$A	21,825.00
Interval TD Date		May/23/2004	Programmed Variance	$A	21,825.00
Drilling Days		4.00	Total Products Cost	$A	17,025.00
Rotating / Drilling Hours		48.00 / 47.50	Total Fluids Cost	$A	0.00
Top of Int. MD/TVD	m	11.0 / 11.0	Total Charges Cost	$A	4,800.00
End of Int. MD/TVD	m	664.0 / 664.0	Total Cementing Cost	$A	50.34
Footage	m	653.0	Fluid Cost per Vol unit	$A/bbl	16.95
Average ROP	m/hr	13.7	Fluid Cost / Hole Drilled	$A/m	33.42
Max. Hole Angle	degrees	0.75	Fluid Cost / Vol Drilled	$A/bbl	34.24
Casing Size	in	13.375	Total Fluid Volume	bbl	1,287.70
Casing Shoe MD	m	664.0	Vol Fluid / Vol Drilled	bbl/bbl	2.02
Casing Length	m	664.0	Vol Fluid / Hole Drilled	bbl/m	1.97
Bottom Hole Temp.	Deg C	65	Fluid Loss / Vol Drilled	bbl/bbl	1.49
Max. Fluid Density	ppg	9.80	Fluid Loss / Hole Drilled	bbl/m	1.46

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used		Product Cost
Alkalinity Control					
potassium hydroxide	20 Kg pail	KCl/Polymer	18.00	$A	1,093.50
			Total	$A	**1,093.50**
Bactericides					
Baracide	25 Kg can	KCl/Polymer	3.00	$A	832.89
			Total	$A	**832.89**
Filtration Control					
DEXTRID LTE	50 lb bag	KCl/Polymer	14.00	$A	455.98
PAC-L	25 Kg bag	KCl/Polymer	14.00	$A	1,593.90
			Total	$A	**2,049.88**
Shale Control					
phpa	25 Kg bag	KCl/Polymer	9.00	$A	1,100.43
potassium chloride tech	25 Kg sack	KCl/Polymer	398.00	$A	5,970.00
			Total	$A	**7,070.43**
Viscosifier/Suspension Agent					
bentonite	25 Kg bag	KCl/Polymer	2.00	$A	19.80
BARAZAN D PLUS	25 Kg bag	KCl/Polymer	18.00	$A	4,984.74
			Total	$A	**5,004.54**
Weighting Material					
barite	25 Kg bag	KCl/Polymer	25.00	$A	181.25
calcium chloride	25 Kg bag	No Fluid	3.00	$A	50.34
			Total	$A	**231.59**
Corrosion Inhibitor					
BARACOR 129	25 Kg can	KCl/Polymer	13.00	$A	742.17
			Total	$A	**742.17**

Total Products and Base Fluids Cost	**$A**	**17,025.00**

Interval Summary

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	02	Bit Size	12.250 in	Hole Size Maximum	12.250 in

Interval Start Date		May/26/2004	Planned Cost	$A	0.00
Interval End Date		Jun/04/2004	Total Interval Cost	$A	57,841.61
Interval TD Date		Jun/03/2004	Programmed Variance	$A	57,841.61
Drilling Days		8.00	Total Products Cost	$A	49,841.61
Rotating / Drilling Hours		131.00 / 121.50	Total Fluids Cost	$A	0.00
Top of Int. MD/TVD	m	664.0 / 664.0	Total Charges Cost	$A	8,000.00
End of Int. MD/TVD	m	1,686.0 / 1,412.9	Total Cementing Cost	$A	0.00
Footage	m	1,022.0	Fluid Cost per Vol unit	$A/bbl	26.28
Average ROP	m/hr	8.4	Fluid Cost / Hole Drilled	$A/m	56.60
Max. Hole Angle	degrees	49.28	Fluid Cost / Vol Drilled	$A/bbl	118.34
Casing Size	in	13.375	Total Fluid Volume	bbl	2,201.00
Casing Shoe MD	m	664.0	Vol Fluid / Vol Drilled	bbl/bbl	4.50
Casing Length	m	664.0	Vol Fluid / Hole Drilled	bbl/m	2.15
Bottom Hole Temp.	Deg C	65	Fluid Loss / Vol Drilled	bbl/bbl	2.90
Max. Fluid Density	ppg	9.80	Fluid Loss / Hole Drilled	bbl/m	1.39

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used	Product Cost	
Alkalinity Control					
sodium bicarbonate	25 Kg bag	KCl/Polymer	4.00	$A	64.16
citric acid	25 Kg bag	KCl/Polymer	4.00	$A	285.52
potassium hydroxide	20 Kg pail	KCl/Polymer	30.00	$A	1,822.50
			Total	$A	**2,172.18**
Bactericides					
Baracide	25 Kg can	KCl/Polymer	7.00	$A	1,943.41
			Total	$A	**1,943.41**
Filtration Control					
PAC-L	25 Kg bag	KCl/Polymer	50.00	$A	5,692.50
DEXTRID LTE	50 lb bag	KCl/Polymer	26.00	$A	846.82
DEXTRID LTE	25 Kg bag	KCl/Polymer	21.00	$A	752.43
			Total	$A	**7,291.75**
Lost Circulation/Bridging Agent					
Circal 60/16	25 Kg bag	KCl/Polymer	48.00	$A	624.96
Circal Y	25 Kg bag	KCl/Polymer	58.00	$A	926.84
			Total	$A	**1,551.80**
Shale Control					
phpa	25 Kg bag	KCl/Polymer	41.00	$A	5,013.07
potassium chloride tech	25 Kg sack	KCl/Polymer	847.00	$A	12,705.00
			Total	$A	**17,718.07**
Viscosifier/Suspension Agent					
bentonite	25 Kg bag	KCl/Polymer	0.00	$A	0.00
BARAZAN D PLUS	25 Kg bag	KCl/Polymer	58.00	$A	16,061.94
BAROLIFT	15 lb box	KCl/Polymer	3.00	$A	879.99
			Total	$A	**16,941.93**
Weighting Material					
barite	25 Kg bag	KCl/Polymer	26.00	$A	188.50
			Total	$A	**188.50**

Interval Summary

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval # 02	Bit Size 12.250 in		Hole Size Maximum 12.250 in		
Corrosion Inhibitor					
BARACOR 129	25 Kg can	KCl/Polymer	33.00	$A	1,883.97
			Total	$A	1,883.97
Defoamer					
BARA-DEFOAM W300	25 l can	KCl/Polymer	2.00	$A	150.00
			Total	$A	150.00
		Total Products and Base Fluids Cost		**$A**	**49,841.61**

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Interval Cost Breakdown

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	**01**	**From Report Date**	**20/05/2004**	**Top of Interval**	**11.0 m**
Hole Size	**17.500 in**	**To Report Date**	**25/05/2004**	**Bottom of Interval**	**664.0 m**

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	Day(s)	6.00	$A	4,800.00
		Subtotal	$A	4,800.00
Prod/Fluids : Cementing				
calcium chloride	25 Kg bag	3.00	$A	50.34
		Subtotal	$A	50.34
Prod/Fluids : Drilling				
Baracide	25 Kg can	3.00	$A	832.89
BARACOR 129	25 Kg can	13.00	$A	742.17
BARAZAN D PLUS	25 Kg bag	18.00	$A	4,984.74
barite	25 Kg bag	25.00	$A	181.25
bentonite	25 Kg bag	2.00	$A	19.80
DEXTRID LTE	50 lb bag	14.00	$A	455.98
PAC-L	25 Kg bag	14.00	$A	1,593.90
phpa	25 Kg bag	9.00	$A	1,100.43
potassium chloride tech	25 Kg sack	398.00	$A	5,970.00
potassium hydroxide	20 Kg pail	18.00	$A	1,093.50
		Subtotal	$A	16,974.66
		Interval Cost	**$A**	**21,825.00**
		Programmed Cost	**$A**	**0.00**
		Programmed Variance	**$A**	**21,825.00**

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Interval Cost Breakdown

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	02	**From Report Date**	26/05/2004	**Top of Interval**	664.0 m
Hole Size	12.250 in	**To Report Date**	4/06/2004	**Bottom of Interval**	1,686.0 m

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	Day(s)	10.00	$A	8,000.00
		Subtotal	$A	8,000.00
Prod/Fluids : Drilling				
Baracide	25 Kg can	7.00	$A	1,943.41
BARACOR 129	25 Kg can	33.00	$A	1,883.97
BARA-DEFOAM W300	25 l can	2.00	$A	150.00
BARAZAN D PLUS	25 Kg bag	58.00	$A	16,061.94
barite	25 Kg bag	26.00	$A	188.50
BAROLIFT	15 lb box	3.00	$A	879.99
Circal 60/16	25 Kg bag	48.00	$A	624.96
Circal Y	25 Kg bag	58.00	$A	926.84
citric acid	25 Kg bag	4.00	$A	285.52
DEXTRID LTE	25 Kg bag	21.00	$A	752.43
DEXTRID LTE	50 lb bag	26.00	$A	846.82
PAC-L	25 Kg bag	50.00	$A	5,692.50
phpa	25 Kg bag	41.00	$A	5,013.07
potassium chloride tech	25 Kg sack	847.00	$A	12,705.00
potassium hydroxide	20 Kg pail	30.00	$A	1,822.50
sodium bicarbonate	25 Kg bag	4.00	$A	64.16
		Subtotal	$A	49,841.61
		Interval Cost	**$A**	**57,841.61**
		Programmed Cost	**$A**	**0.00**
		Programmed Variance	**$A**	**57,841.61**

Interval Inventory Report

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	01	**From Report Date**	20/05/2004	**Top of Interval**	11.0 m
Hole Size	17.500 in	**To Report Date**	25/05/2004	**Bottom of Interval**	664.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABUF	50 lb bag						
Baracide	25 Kg can		16.00	3.00		13.00	716.5
BARACOR 100	55 gal drum						
BARACOR 129	25 Kg can		64.00	13.00		51.00	2,810.9
BARA-DEFOAM W300	25 l can		2.00			2.00	96.7
BARAFILM-Petrofree	55 Gal drum		1.00			1.00	367.0
BARAZAN D PLUS	25 Kg bag		80.00	18.00		62.00	3,417.1
barite	25 Kg bag		960.00	25.00		935.00	51,532.5
BAROFIBRE	25 lb bag		56.00			56.00	1,400.0
BAROLIFT	15 lb box		4.00			4.00	60.0
bentonite	25 Kg bag		48.00	2.00		46.00	2,535.3
calcium chloride	25 Kg bag		7.00	3.00		4.00	220.5
Circal 60/16	25 Kg bag		192.00			192.00	10,582.1
Circal Y	25 Kg bag		192.00			192.00	10,582.1
citric acid	25 Kg bag		20.00			20.00	1,102.3
DEXTRID LTE	25 Kg bag		120.00			120.00	6,613.8
DEXTRID LTE	50 lb bag		80.00	14.00		66.00	3,300.0
EZ SPOT	55 gal drum		4.00			4.00	4,220.0
Kwikseal Fine	40 lb bag		40.00			40.00	1,600.0
N-VIS P PLUS	50 lb bag						
Omyacarb 50	25 Kg bag						
PAC-L	25 Kg bag		80.00	14.00		66.00	3,637.6
phpa	25 Kg bag		120.00	9.00		111.00	6,117.8
potassium chloride tech	25 Kg sack		746.00	398.00		348.00	19,180.0
potassium hydroxide	20 Kg pail		63.00	18.00		45.00	1,984.1
soda ash	25 Kg bag		10.00			10.00	551.2
sodium bicarbonate	25 Kg bag		20.00			20.00	1,102.3

Total Weight of Products in Stock, lb 133,729.8
Total Weight of Products in Stock, Metric Tons 60.66

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Interval Inventory Report

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	**02**	**From Report Date**	**26/05/2004**	**Top of Interval**	**664.0 m**
Hole Size	**12.250 in**	**To Report Date**	**4/06/2004**	**Bottom of Interval**	**1,686.0 m**

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABUF	50 lb bag		1.00			1.00	50.0
Baracide	25 Kg can	13.00		7.00		6.00	330.7
BARACOR 100	55 gal drum		2.00			2.00	917.4
BARACOR 129	25 Kg can	51.00		33.00		18.00	992.1
BARA-DEFOAM W300	25 l can	2.00	4.00	2.00		4.00	193.5
BARAFILM-Petrofree	55 Gal drum	1.00				1.00	367.0
BARAZAN D PLUS	25 Kg bag	62.00		58.00		4.00	220.5
barite	25 Kg bag	935.00		26.00		909.00	50,099.5
BAROFIBRE	25 lb bag	56.00				56.00	1,400.0
BAROLIFT	15 lb box	4.00		3.00		1.00	15.0
bentonite	25 Kg bag	46.00				46.00	2,535.3
calcium chloride	25 Kg bag	4.00				4.00	220.5
Circal 60/16	25 Kg bag	192.00	10.00	48.00		154.00	8,487.7
Circal Y	25 Kg bag	192.00		58.00		134.00	7,385.4
citric acid	25 Kg bag	20.00		4.00		16.00	881.8
DEXTRID LTE	25 Kg bag	120.00		21.00		99.00	5,456.4
DEXTRID LTE	50 lb bag	66.00		26.00		40.00	2,000.0
EZ SPOT	55 gal drum	4.00				4.00	4,220.0
Kwikseal Fine	40 lb bag	40.00				40.00	1,600.0
N-VIS P PLUS	50 lb bag		5.00			5.00	250.0
Omyacarb 50	25 Kg bag		30.00			30.00	1,653.5
PAC-L	25 Kg bag	66.00		50.00		16.00	881.8
phpa	25 Kg bag	111.00		41.00		70.00	3,858.1
potassium chloride tech	25 Kg sack	348.00	798.00	847.00		299.00	16,479.4
potassium hydroxide	20 Kg pail	45.00		30.00		15.00	661.4
soda ash	25 Kg bag	10.00				10.00	551.2
sodium bicarbonate	25 Kg bag	20.00		4.00		16.00	881.8

Total Weight of Products in Stock, lb **112,590.0**
Total Weight of Products in Stock, Metric Tons **51.07**

Fluid Volume Record

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval # 01

		bbl	ADDITIONS bbl							LOSSES bbl					VOLUMES bbl			
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
Fluid Name: KCl/PHPA/Polymer																		
001	0/05/2004				525.4		15.2		540.6	74.9				74.9	27.7	318.0	120.0	465.7
002	1/05/2004	465.7	74.0		258.5		4.1		336.6	68.0				68.0	339.3	337.0	58.0	734.3
003	2/05/2004	734.3	126.0		154.0		6.0		286.0	145.4				145.4	595.8	273.0	6.0	874.8
004	3/05/2004	874.8	123.3			0.9	0.2		124.4	37.0				37.0	650.2	296.0	16.0	962.2
005	4/05/2004	962.2					0.1		0.1	28.0		63.5		91.5	336.8	316.0	218.0	870.8
006	5/05/2004	870.8										534.0		534.0	336.8			336.8
	Cummulative Volumes:		323.3		937.9	0.9	25.6		1,287.7	353.3		597.5		950.8				
Fluid Name: Premix																		
002	1/05/2004				76.8		3.2		80.0				74.0	74.0			6.0	6.0
003	2/05/2004	6.0			107.4		12.6		120.0				126.0	126.0				
	Cummulative Volumes:				184.2		15.8		200.0				200.0	200.0				
Fluid Name: Recovered Mud																		
004	3/05/2004		123.2						123.2				123.3	123.3				
	Cummulative Volumes:		123.2						123.2				123.3	123.3				

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Australia
Otway Basin

Iona/PPL-2
Victoria

Halliburton Australia Pty Ltd
Otway Basin, Victoria

Printed:10/08/2004

Fluid Volume Record

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval # 02

		bbl	ADDITIONS						bbl	LOSSES				bbl	VOLUMES			bbl
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
Fluid Name: KCl/PHPA/Polymer																		
007	5/05/2004	336.8			658.5		21.5		680.0			336.8		336.8	305.8	266.2	108.0	680.0
008	7/05/2004	680.0	117.0				2.2		119.2	47.1				47.1	375.1	348.0	29.0	752.1
009	3/05/2004	752.1	118.0		58.3	1.0	1.6		178.9	59.0				59.0	486.0	275.0	111.0	872.0
010	9/05/2004	872.0	92.0				4.0		96.0	52.8				52.8	462.3	358.0	95.0	915.3
011	0/05/2004	915.3	83.0				4.5		87.5	52.0		123.4		175.4	492.3	335.0		827.3
012	1/05/2004	827.3	292.0				1.3		293.3	59.0		161.4		220.4	571.2	329.0		900.2
013	1/06/2004	900.2	382.0				0.5		382.5	98.0		175.5		273.5	674.3	335.0		1,009.3
014	2/06/2004	1,009.3	146.0				3.9		149.9	41.0		92.6		133.6	697.6	328.0		1,025.6
015	3/06/2004	1,025.6	200.0				13.8		213.8	75.0		44.8		119.8	775.6	309.0	35.0	1,119.6
Cummulative Volumes:			1,430.0		716.8	1.0	53.3		2,201.1	483.9		934.5		1,418.4				
Fluid Name: Premix																		
008	7/05/2004				181.3		8.7		190.0				117.0	117.0		73.0		73.0
009	3/05/2004	73.0			90.7		4.3		95.0				118.0	118.0			50.0	50.0
010	9/05/2004	50.0			105.4		4.6		110.0				92.0	92.0			68.0	68.0
011	0/05/2004	68.0			82.1		2.9		85.0				83.0	83.0			70.0	70.0
012	1/05/2004	70.0			275.0		10.0		285.0				292.0	292.0			63.0	63.0
013	1/06/2004	63.0			367.5		12.5		380.0				382.0	382.0			61.0	61.0
014	2/06/2004	61.0			183.5		6.5		190.0				146.0	146.0			105.0	105.0
015	3/06/2004	105.0			93.8		1.2		95.0				200.0	200.0				
Cummulative Volumes:					1,379.3		50.7		1,430.0				1,430.0	1,430.0				

Australia
Otway Basin

Iona/PPL-2
Victoria

Halliburton Australia Pty Ltd
Otway Basin, Victoria

Printed:10/08/2004

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Interval Chemical Concentrations

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	**01**	**From Report Date**	**20/05/2004**	**Top of Interval**	**11.0 m**
Hole Size	**17.500 in**	**To Report Date**	**25/05/2004**	**Bottom of Interval**	**664.0 m**

Fluid Name: KCl/PHPA/Polymer

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.13	0.10	0.15
BARACOR 129	0.55	0.41	0.63
BARAZAN D PLUS	0.87	0.71	1.22
barite	1.38	1.38	1.38
bentonite	0.11	0.11	0.11
DEXTRID LTE	0.62	0.60	0.69
PAC-L	0.69	0.66	0.76
phpa	0.41	0.37	0.51
potassium chloride tech	16.61	13.20	19.45
potassium hydroxide	0.56	0.16	0.65

Fluid Name: Premix

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.36	0.03	0.69
BARAZAN D PLUS	1.31	0.54	2.07
phpa	0.80	0.69	0.91
potassium chloride tech	44.07	20.67	67.47
potassium hydroxide	0.47	0.38	0.55

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Interval Chemical Concentrations

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Interval #	02	**From Report Date**	26/05/2004	**Top of Interval**	664.0 m
Hole Size	12.250 in	**To Report Date**	4/06/2004	**Bottom of Interval**	1,686.0 m

Fluid Name: KCl/PHPA/Polymer

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.20	0.15	0.27
BARACOR 129	0.56	0.16	0.85
BARA-DEFOAM W300	0.03	0.02	0.05
BARAZAN D PLUS	1.49	0.89	1.71
barite	0.96	0.39	1.85
BAROLIFT	0.02	0.01	0.03
Circal 60/16	2.13	2.13	2.13
Circal Y	2.58	2.58	2.58
citric acid	0.25	0.11	0.46
DEXTRID LTE	0.67	0.22	0.84
PAC-L	1.03	0.54	1.67
phpa	0.88	0.28	1.06
potassium chloride tech	32.10	17.62	40.11
potassium hydroxide	0.58	0.26	0.78
sodium bicarbonate	0.25	0.11	0.46

Fluid Name: Premix

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.12	0.00	0.36
BARAZAN D PLUS	1.18	0.54	1.73
Circal Y	2.76	2.76	2.76
DEXTRID LTE	0.80	0.11	1.94
PAC-L	1.33	0.33	2.16
phpa	1.09	0.48	1.46
potassium chloride tech	26.70	7.73	67.47
potassium hydroxide	0.13	0.00	0.38

Fluid Property Recap:Water-Based Fluid

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 48.89C					Filtration					Filtrate Analysis						Sand	Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels lbs/100 ft2			API ml/30 min	HTHP ml/30 min	Cake API/HTHP 32nd in		Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l	% by Vol	Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water% by Vol							
	m	Deg C	ppg	sec/qt	cP		10s	10m	30m					Deg C												ppb Eq.	600	300	200	100	6	3
05/20/04	11.0	19	8.55	45	7	11	4	6		19.2		1			9.50	0.15	0.15	0.25	22,000	120	0.05	-0.2	-0.2		98.3	0.5	25	18	15	11	4.0	3.0
05/20/04	23.0	20	8.60	37	5	11	4	5		16.0		1			8.50	0.10	0.03	0.10	21,000	140	0.10	0.2	0.1		98.0	0.5	21	16	14	10	4.0	3.0
05/21/04	164.0	35	8.90	39	9	18	7	9		13.4		1			8.50	0.15	0.03	0.07	18,000	280	0.75	2.5	2.1		96.0	10.0	36	27	22	17	7.0	6.0
05/21/04	328.0	38	9.05	43	11	23	9	11		16.2		1			8.50	0.10	0.03	0.07	19,000	300	0.50	3.4	3.0		95.0	11.0	45	34	29	24	10.0	8.0
05/22/04	465.0	44	9.25	41	10	21	10	13		21.5		1			8.30	0.05	0.03	0.10	17,500	400	0.40	5.0	4.6		93.5	15.0	41	31	27	22	10.0	8.0
05/22/04	579.0	46	9.50	46	12	21	9	13		16.6		1			8.30	0.07	0.03	0.10	22,000	480	0.50	6.7	6.4		91.5	16.0	45	33	28	22	10.0	8.0
05/22/04	630.0	46	9.75	47	12	22	10	14		12.8		1			8.50	0.10	0.04	0.20	22,500	360	0.60	8.2	7.6		90.0	17.5	46	34	28	22	9.0	7.0
05/23/04	664.0	43	9.80	48	13	22	10	15		17.5		1			8.50	0.08	0.03	0.15	20,000	500	1.50	8.9	8.4		89.5	18.0	48	35	28	22	9.0	7.0
05/24/04	664.0	40	9.80	49	13	23	10	15		17.4		2			8.30	0.05	0.02	0.08	21,000	520	1.70	8.8	8.3		89.5	17.5	49	36	29	23	9.0	7.0
05/26/04	664.0	19	8.70	56	7	10	3	5		10.1		1			8.30	0.30	0.02	0.20	25,000	340	0.10	0.9	1.1		97.0	1.0	24	17	14	10	4.0	3.0
05/27/04	721.0	42	8.75	40	6	12	4	8		10.6		1			9.50	0.60	0.15	0.30	24,000	320	0.40	1.0	0.8		97.0	3.0	24	18	14	10	4.0	3.0
05/27/04	807.0	45	8.75	40	7	14	4	8		8.8		1			9.50	0.55	0.15	0.35	25,500	400	0.60	0.8	0.6		97.0	3.5	28	21	17	13	5.0	4.0
05/28/04	904.0	46	8.80	39	8	15	4	6		7.4	23.0	1	2		8.90	0.25	0.05	0.20	22,500	400	0.50	1.6	1.5		96.5	3.5	31	23	18	14	5.0	4.0
05/28/04	976.0	48	8.80	39	7	16	4	7		7.6	23.4	1	2		8.90	0.30	0.05	0.15	23,000	360	0.50	1.6	1.5		96.5	4.0	30	23	18	14	5.0	4.0
05/29/04	988.0	46	8.75	40	8	16	4	7		7.6	23.4	1	2		9.00	0.40	0.08	0.30	22,000	260	0.25	1.1	0.9		97.0	3.5	32	24	19	14	5.0	4.0
05/29/04	1,008.0	46	8.75	41	7	16	4	7		7.4	22.8	1	2		9.00	0.35	0.05	0.25	23,000	280	0.25	1.0	0.9		97.0	4.0	30	23	19	14	5.0	4.0
05/30/04	1,037.0	44	8.85	40	8	17	4	7		7.3	22.6	1	2		8.90	0.40	0.05	0.20	26,500	360	0.40	1.6	1.4		96.2	4.0	33	25	21	15	5.0	4.0
05/30/04	1,050.0	43	8.87	41	9	17	5	6		7.2	22.4	1	2		8.90	0.30	0.04	0.20	28,500	380	0.50	1.6	1.5		96.0	4.0	35	26	22	17	6.0	4.0
05/31/04	1,174.0	49	9.15	42	10	19	5	8		7.0	21.4	1	2		8.80	0.20	0.05	0.20	26,000	360	0.70	3.9	3.7		94.0	6.0	39	29	24	18	6.0	5.0
05/31/04	1,232.0	51	9.20	42	11	21	6	10		6.8	20.8	1	2		8.80	0.15	0.05	0.25	26,500	400	0.60	4.3	4.3		93.5	7.0	43	32	27	20	7.0	5.0
06/01/04	1,420.0	54	9.30	45	12	24	6	13		6.2	18.6	1	2		8.80	0.15		0.25	24,500	380	0.70	5.0	4.7		93.0	11.0	48	36	30	23	8.0	6.0
06/01/04	1,463.0	55	9.40	45	13	23	6	14		6.3	18.8	1	2		8.80	0.12	0.04	0.20	24,000	420	0.60	5.6	5.0		92.5	12.0	49	36	30	23	8.0	6.0
06/02/04	1,515.0	34	9.35	47	13	20	6	13		6.3	19.2	1	2		9.00	0.15	0.07	0.30	25,500	340	0.50	5.4	5.3		92.5	14.0	46	33	27	20	7.0	5.0
06/02/04	1,515.0	36	9.45	46	13	21	6	15		6.2	18.8	1	2		8.90	0.15	0.05	0.20	26,000	360	0.50	5.9	5.5		92.0	14.0	47	34	27	20	7.0	5.0
06/03/04	1,686.0	56	9.75	49	15	21	6	18		5.7	17.2	1	2		8.90	0.10	0.07	0.35	23,000	520	1.00	8.2	7.5		90.0	16.0	51	36	30	21	7.0	5.0
06/03/04	1,686.0	48	9.80	52	16	24	7	21		5.8	17.4	1	2		9.00	0.15	0.10	0.35	25,000	480	1.10	8.5	8.0		89.5	16.0	56	40	32	23	8.0	6.0
06/04/04	1,686.0	40	9.80	53															0	0		8.5	8.0		89.5	0.0						

Australia
Otway Basin

Iona/PPL-2
Victoria

Halliburton Australia Pty Ltd
Otway Basin, Victoria

Printed:10/08/2004

Fluid Program Exceptions Report

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
001	05/20/04	09:30	11	Potassium Chloride	% by vol	4.5	High	3.0	4.0
001	05/20/04	09:30	11	Yield Point	lbs/100 ft2	11	Low	25	45
001	05/20/04	22:50	23	Yield Point	lbs/100 ft2	11	Low	25	45
001	05/20/04	22:50	23	pH	-	8.50	Low	8.80	9.50
001	05/20/04	22:50	23	Potassium Chloride	% by vol	4.2	High	3.0	4.0
002	05/21/04	13:00	164	Yield Point	lbs/100 ft2	18	Low	25	45
002	05/21/04	13:00	164	pH	-	8.50	Low	8.80	9.50
002	05/21/04	22:05	328	pH	-	8.50	Low	8.80	9.50
002	05/21/04	22:05	328	Yield Point	lbs/100 ft2	23	Low	25	45
003	05/22/04	10:35	465	Density	ppg	9.25	High	8.50	9.10
003	05/22/04	10:35	465	pH	-	8.30	Low	8.80	9.50
003	05/22/04	10:35	465	Yield Point	lbs/100 ft2	21	Low	25	45
003	05/22/04	20:00	579	Yield Point	lbs/100 ft2	21	Low	25	45
003	05/22/04	20:00	579	Density	ppg	9.50	High	8.50	9.10
003	05/22/04	20:00	579	Potassium Chloride	% by vol	4.1	High	3.0	4.0
003	05/22/04	20:00	579	pH	-	8.30	Low	8.80	9.50
003	05/22/04	23:30	630	Yield Point	lbs/100 ft2	22	Low	25	45
003	05/22/04	23:30	630	Density	ppg	9.75	High	8.50	9.10
003	05/22/04	23:30	630	pH	-	8.50	Low	8.80	9.50
003	05/22/04	23:30	630	Potassium Chloride	% by vol	4.3	High	3.0	4.0
004	05/23/04	14:00	664	pH	-	8.50	Low	8.80	9.50
004	05/23/04	14:00	664	Density	ppg	9.80	High	8.50	9.40
004	05/23/04	14:00	664	PHPA Concentration	ppb	0.40	Low	1.00	1.50
005	05/24/04	12:00	664	Density	ppg	9.80	High	8.50	9.40
005	05/24/04	12:00	664	pH	-	8.30	Low	8.80	9.50
005	05/24/04	12:00	664	PHPA Concentration	ppb	0.30	Low	1.00	1.50
007	05/26/04	01:25	664	Potassium Chloride	% by vol	4.7	High	3.0	4.0
007	05/26/04	01:25	664	pH	-	8.30	Low	8.80	9.50
007	05/26/04	01:25	664	PHPA Concentration	ppb	0.25	Low	1.00	1.50
008	05/27/04	12:45	721	Potassium Chloride	% by vol	4.5	High	3.0	4.0
008	05/27/04	12:45	721	PHPA Concentration	ppb	0.60	Low	1.00	1.50
008	05/27/04	22:25	807	Potassium Chloride	% by vol	4.6	High	3.0	4.0
008	05/27/04	22:25	807	PHPA Concentration	ppb	0.75	Low	1.00	1.50
009	05/28/04	10:45	904	Potassium Chloride	% by vol	4.3	High	3.0	4.0
009	05/28/04	18:20	976	Potassium Chloride	% by vol	4.4	High	3.0	4.0
010	05/29/04	13:05	988	Potassium Chloride	% by vol	4.2	High	3.0	4.0
010	05/29/04	17:15	1,008	Potassium Chloride	% by vol	4.2	High	3.0	4.0
011	05/30/04	12:40	1,037	Potassium Chloride	% by vol	5.0	High	3.0	4.0
011	05/30/04	22:50	1,050	Potassium Chloride	% by vol	5.3	High	3.0	4.0
012	05/31/04	12:20	1,174	Potassium Chloride	% by vol	4.8	High	3.0	4.0
012	05/31/04	22:30	1,232	Potassium Chloride	% by vol	4.8	High	3.0	4.0

Fluid Program Exceptions Report

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
013	06/01/04	15:00	1,420	Potassium Chloride	% by vol	4.5	High	3.0	4.0
013	06/01/04	22:15	1,463	Potassium Chloride	% by vol	4.4	High	3.0	4.0
014	06/02/04	14:50	1,515	Potassium Chloride	% by vol	4.6	High	3.0	4.0
014	06/02/04	22:00	1,515	Density	ppg	9.45	High	8.50	9.40
014	06/02/04	22:00	1,515	Potassium Chloride	% by vol	4.6	High	3.0	4.0
015	06/03/04	15:20	1,686	Density	ppg	9.75	High	8.50	9.40
015	06/03/04	15:20	1,686	Potassium Chloride	% by vol	4.2	High	3.0	4.0
015	06/03/04	23:20	1,686	Potassium Chloride	% by vol	4.5	High	3.0	4.0
015	06/03/04	23:20	1,686	Density	ppg	9.80	High	8.50	9.40
016	06/04/04	02:00	1,686	Density	ppg	9.80	High	8.50	9.40

Well: Iona-6
Operator: TXU GAS STORAGE PTY LTD

Operations Log Recap

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For report #001A on 20/05/2004	Operation at depth(m) 32
Activity	Drill 17 1/2" Hole.
Rig Activity	Rigged up. Spudded and drilled from 11 m to 32 m. Make Up Water - Fresh. pH - 6.5. Hardness - 20 mg/L. Chlorides - 150 mg/L. Carbonates - Nil. Bicarbonates - 61 mg/L.
Fluid Treatments	Baroid on location from 15/5/2004. Received all chemicals sent. Checked all valves on mud tanks for leakages. Fixed leaking valves. Installed 6 x new #50 mesh screens on the two Derrick shakers. Installed 3 x new #110 mesh screens on the DFE shaker. Daily Volume Mixed : 540.6 bbl. Total Volume Mixed : 540.6 bbl. Spudded Iona - 6 at 21:30 hrs on 20/5/2004.
For report #002A on 21/05/2004	**Operation at depth(m) 367**
Activity	Drill 17 1/2" Hole.
Rig Activity	Drilled from 32 m to 366 m with surveys.
Fluid Treatments	Daily Volume Made : 342.6 bbl Total Volume Made : 883.2 bbl Installed 6 x new #84 mesh screens on the Derrick shakers. Desander : Underflow 9.9 ppg @ 1.0 bph. Desilter : Underflow 10.3 ppg @ 2.1 bph. Centrifuge : Overflow 8.95 ppg. Cuttings from shakers channeled onto DFE shaker and into holding tank for disposal. Sand trap occasionally centrifuged back to system. DFE shaker now dressed with #110, #250, #110 mesh screens.
For report #003A on 22/05/2004	**Operation at depth(m) 636**
Activity	Drill 17 1/2" Hole
Rig Activity	Drilled from 367 m to 636 m with surveys.
Fluid Treatments	Daily Volume Made : 280 bbl Total Volume Made : 1163.2 bbl Desander : Underflow 15.5 ppg @ 1.7 bph. Desilter : Underflow 10.4 ppg @ 4.5 bph. Centrifuge undergoing maintenance. Reduced fluid loss with a combination of PAC-L and DEXTRID. DFE shaker dressed with #110, #250, #110 mesh screens. Mud weight increasing due to being unable to dump and dilute, because of environmental restrictions. At 23:30 hrs started using diluted salvaged mud as requested.
For report #004A on 23/05/2004	**Operation at depth(m) 664**
Activity	Run 13 3/8" casing.
Rig Activity	Drilled from 636 m to casing point of 664 m (Pebble Point Clay). Circulated clean. Wiper trip to surface. Hole sticky from 559 m (Pember Mudstone) to 327 m (Mepunga Fm, Silty/Clay). Maximum overpull of 50 K lb, constant drag of 15 - 20 K lb. Cleaned out stabiliser. Ran in to bottom (washed from 344 m to 376 m). Circulated clean. Pumped down survey tool. Pulled out of hole. Rigged up and run in 13 3/8" casing.
Fluid Treatments	Daily Volume Made : 124.4 bbl (123.3 bbl of Recovered Mud already charged) Total Volume Used : 1287.6 bbl Added Recovered Mud from tanker truck to maintain volume as requested.
For report #005A on 24/05/2004	**Operation at depth(m) 664**
Activity	Cement Casing.WOC.
Rig Activity	Ran in 13 3/8 " casing to bottom. Rigged up and circulated hole clean. Cemented 13 3/8" casing in place (cement to surface). WOC.
Fluid Treatments	Daily Volume Made : Nil Total volume Made : 1287.6 Calcium Chloride used for cementing. Bentonite used for gelling up mud tanks. After cementing, started transporting mud from mud tanks for disposal.
For report #006A on 25/05/2004	**Operation at depth(m) 664**
Activity	Nipple Up BOP.
Rig Activity	Installed well head and pressure tested. Nipple up BOP.

Well: Iona-6
Operator: TXU GAS STORAGE PTY LTD

Operations Log Recap

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For report #006A on 25/05/2004	Operation at depth(m) 664
Fluid Treatments	Daily Volume Made : Nil Total Volume Made : 1287.6 Dressed both shakers with #50 mesh screens (3 x New, 3 x Used). DFE shaker to be fitted with 3 x New #110 mesh screens. Transported 534 bbl of heavy surface mud from mud tanks for disposal. Commenced mixing up new mud.
For report #007A on 26/05/2004	**Operation at depth(m) 664**
Activity	Run In Hole
Rig Activity	Nippled up BOP and pressure tested. Made up and run in with drilling assembly to tag cement stringer at 626 m.
Fluid Treatments	Daily Volume Made :680 bbl Total Volume Made :680 bbl Mixed up 680 bbl of new mud. New mud has a PHPA content of 0.25 ppb to minimise losses during displacement. Pretreated fluid with Citric Acid / Soda Bicarb before drilling cement. While running in hole, returns of old mud lined up to slug pit and pumped into haulage truck for disposal.
For report #008A on 27/05/2004	**Operation at depth(m) 816**
Activity	Drill 12 1/4"Hole
Rig Activity	Tagged stringer at 626 m. Rigged up circulating head. Displaced hole to new mud. Slipped and cut line. Washed and drilled cement to 664 m. Drilled 5 m of new hole to 669 m, circulated clean and carried out FIT test to 10.5 ppg EMW. Ran Gyro Survey. Drill / steered from 669 m to 816 m (Paaratte Sand).
Fluid Treatments	Daily Volume Made : 192.2 bbl Total Volume Made : 872.2 bbl Desander Underflow : 16.4 ppg @ 1.2 bph Desilter Underflow : 13.6 ppg @ 1.1 bph Centrifuge Overflow : 8.75 ppg At 626 m displaced hole with new KCl/PHPA/Polymer mud. Old mud from hole (336.8 bbl) pumped to haulage truck and storage tanker for disposal. After displacement, commenced trickling in additional PHPA.
For report #009A on 28/05/2004	**Operation at depth(m) 976**
Activity	Tripping.
Rig Activity	Drilled / steered from 816 m to 976 m (Paaratte Sand). Pumped 30 bbl of Barolift sweep. Tripped out. Pressure tested BOP.
Fluid Treatments	Daily Volume Made : 155.9 bbl Total Volume Made : 1028.1 bbl Installed 1 x new #84 mesh screen. Desander Underflow : 16.0 ppg @ 0.9 bph. Desilter Underflow : 12.6 ppg @ 2.2 bph. Centrifuge Overflow : 8.75 ppg. Before tripping, pumped 30 bbl of BAROLIFT sweep (0.2 ppb). No noticeable increase of returns.
For report #010A on 29/05/2004	**Operation at depth(m) 1008**
Activity	Drill. Trip.
Rig Activity	Pressure tested pipe rams. Made up new bit, changed bend on motor, and changed stabiliser. Ran in hole, washed / reamed near bottom. Drilled through Paaratte Sand from 976 m to 1008 m. Circulated clean. Tripped for BHA change. Changed stabiliser.
Fluid Treatments	Daily Volume Made : 114 bbl Total Volume Made : 1142.1 bbl Desander Underflow : 15.6 ppg @ 1.2 bph. Desilter Underflow : 12.8 ppg @ 2.8 bph. Centrifuge Overflow : 8.7 ppg. Used Barite slug for previous trip, KCl slug for present trip. For 12 1/4" interval, continously centrifuging sand trap while drilling. During trips centrifuge run in settling pit.
For report #011A on 30/05/2004	**Operation at depth(m) 1074**
Activity	Drill. Trip. Drill.

Well: Iona-6
Operator: TXU GAS STORAGE PTY LTD

Operations Log Recap

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For report #011A on 30/05/2004	Operation at depth(m) 1074
Rig Activity	Ran in to 987 m. Washed to bottom of 1008 m (hole in good condition). Drilled / steered from 1008 m to 1037 m. Circulated clean. Tripped out. Changed bit, stabiliser and angle on lobe. Ran in to 1006 m and washed to 1037 m (hole stable). Drilled / steered from 1037 m to 1074 m (approaching silt).
Fluid Treatments	Daily Volume Made : 89.4 bbl Total Volume Made : 1231.5 bbl Desander Underflow : 12.5 ppg @ 1.0 bph. Desilter Underflow : 11.0 ppg @ 2.8 bph. Centrifuge Overflow : 8.75 ppg. Used KCl slug for present trip. Increase of KCl Content due to slug.
For report #012A on 31/05/2004	**Operation at depth(m) 1247**
Activity	Drilling
Rig Activity	Drilled / steered from 1074 m to 1247 m.
Fluid Treatments	Daily Volume Made : 286.3 bbl Total Volume Made : 1517.8 bbl Used 3 x New #84 mesh and 2 x New #50 mesh screens. Desander Underflow : 12.9 ppg @ 0.6 bph. Desilter Underflow : 10.9 ppg @ 1.9 bph. Centrifuge Overflow : 9.05 ppg. Mud weight increased in the Skull Creek clays.
For report #013A on 1/06/2004	**Operation at depth(m) 1473**
Activity	Drilling
Rig Activity	Drilled / steered from 1247 m to 1473 m. (Using reduced pump rates to drill from 1473 m).
Fluid Treatments	Daily Volume Made : 380.5 bbl Total Volume Made : 1898.3 bbl Used 3 x New #110 mesh screens. Desander Underflow : 12.6 ppg @ 0.8 bph. Desilter Underflow : 12.2 ppg @ 3.3 bph. Centrifuge Overflow : 9.05 ppg. Increase of mud weight and MBT in the clays of the Skull Creek and Belfast Fm.
For report #014A on 2/06/2004	**Operation at depth(m) 1515**
Activity	Bit Trip. Run In Hole:
Rig Activity	Drilled from 1473 m to 1515 m in Belfast Mudstone. (High torque and pump pressure). Circulated clean. Tripped out. Laid out directional assembly. Ran in with new bit and stiffer BHA to 1001 m. Ream from 1001 m to 1336 m.
Fluid Treatments	Daily Volume Made : 193.9 bbl Total Volume Made : 2092.2 bbl Desander Underflow :13.0 ppg @ 0.7 bph. Desilter Underflow : 12.1 ppg @ 2.5 bph. Centrifuge Overflow : 9.05 ppg. Used KCl for slug. Increase of mud weight while reaming to bottom with stiffer BHA.
For report #015A on 3/06/2004	**Operation at depth(m) 1686**
Activity	Total Depth. Pull Out To Log.
Rig Activity	Continued reaming from 1336 m to 1515 m. Drilled from 1515 m to Total Depth of 1686 m in the Eumeralla Fm (13:30 hrs on 3/6/2004). Circulated and pumped 50 bbl of BAROLIFT pill. Made a 25 stand wiper trip. Ran in to bottom (working tight section from 1540 to 1650 m). Circulated clean with 50 bbl of BAROLIFT pill. Pumped Gyro tool. Pulled out to log.

Bit Record

Well : Iona-6

Operator: TXU GAS STORAGE PTY LTD

Run No	Bit No	Bit Size in	Bit Manufacturer	Bit Type	Bit Style	IADC Code	Serial No	Jet or TFA	Depth Out m	Run Length m	ROP m / hr	WOB lb	Bit RPM	Pump Pres psi	Pump Output gpm	Fluid Type	Fluid Density ppg	Dev Angle	Bit Grading	Reason Pulled
1	1	17.500	SEC	XT1SC	MT	115	753075	1x18|3x16	664.0	653.0	20.4	20,000.0	110	1,100.0	727	KCl/Polymer	9.80	0.41	2,1,WT,A,E,0,NO,TD	TD - Total/Casing Depth
2	2	12.250	SEC-DBS	EBXS02S	IN	417	10615071	4x18	976.0	312.0	13.1	50,000.0	173	1,350.0	751	KCl/Polymer	8.80	45.30	1,2,WT,A,E,I,NO,BHA	Bit and BHA Change
3	3	12.250	DBS	FM2565	FC	M423	7970231	5x18	1,008.0	32.0	6.6	22,000.0	183	1,450.0	751	KCl/Polymer	8.80	44.80	1,1,WT,A,X,I,NO,BHA	BHA - Change BHA
4	3	12.250	DBS	FM2565	FC	M423	7970231	5x18	1,037.0	29.0	4.4	15,000.0	164	1,520.0	696	KCl/Polymer	8.90	43.00	1,1,WT,A,X,I,No,BHA	Bit and BHA Change
5	4	12.250	SEC-DBS	EBXS02S	IN	417	10615073	3x18|1x20	1,515.0	478.0	12.7	25,000.0	169	1,850.0	727	KCl/Polymer	9.40	48.90	2,2,WT,A,F,1,NO,TQ	BHA - Change BHA
6	5	12.250	DBS	FM2565	FC	M423	7970231	5x18	1,686.0	171.0	24.5	20,000.0	70	1,575.0	727	KCl/Polymer	9.80	48.70	Not Available	TD - Total/Casing Depth

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Deviation Actual

Well : Iona-6
Operator: TXU GAS STORAGE PTY LTD

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
21/05/2004	96.0	96.0	0.50	0.0	
21/05/2004	196.0	196.0	0.75	0.0	
22/05/2004	355.0	355.0	0.25	0.0	
23/05/2004	509.0	509.0	0.75	0.0	
23/05/2004	663.9	663.9	0.41	0.0	
28/05/2004	677.9	677.8	2.28	207.0	4.6
28/05/2004	699.3	699.2	4.61	242.9	4.8
28/05/2004	718.9	718.7	8.36	268.3	6.3
28/05/2004	747.4	746.8	11.12	296.2	10.6
28/05/2004	776.4	775.1	13.86	310.5	16.9
28/05/2004	804.7	802.3	18.70	304.5	24.8
29/05/2004	833.6	829.1	25.06	301.5	35.5
29/05/2004	862.4	854.5	31.08	303.1	49.1
29/05/2004	891.7	878.8	36.40	305.8	65.3
29/05/2004	920.8	901.2	42.86	304.7	83.9
29/05/2004	949.5	921.9	45.29	304.4	103.9
29/05/2004	978.6	942.4	44.85	304.8	124.5
1/06/2004	1,006.4	962.3	43.69	304.8	143.9
1/06/2004	1,066.1	1,004.4	47.95	306.1	186.2
1/06/2004	1,114.6	1,036.9	49.12	305.7	222.3
1/06/2004	1,172.9	1,075.4	47.77	307.1	265.9
2/06/2004	1,211.8	1,101.4	48.21	305.0	294.9
2/06/2004	1,260.2	1,133.1	49.28	305.7	331.4
2/06/2004	1,356.8	1,196.1	48.97	306.8	404.7
2/06/2004	1,452.4	1,258.9	48.89	309.0	476.6
3/06/2004	1,471.7	1,271.6	48.76	309.3	491.1

DAILY MUD REPORTS

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Daily Drilling Fluid Report

Report No 001

Baroid, a Halliburton Company

Date 20/05/2004	Depth 32.0 m		
Spud Date 20/05/2004	Rig Activity Drill 17 1/2" Hole.		
Operator: TXU GAS STORAGE PTY LTD	Report For: Peter Dwyer / Andy Urdevics	Well Name: Iona-6	
Contractor: Century Drilling Ltd	Report For: Scott Bucknell/Neville Scutcheon	Rig Name: 18	
Country: Australia	State/Province/Region: Victoria	County/Geographic Area: Otway Basin	Field or Block: Iona/PPL-2

Bit Information

Bit Size	17.500 in
Make/Type	SEC / XT1SC
Jets	1x18|3x16
TFA	0.838 sq-in
Jets Velocity	52.9 m/sec
Jet Impact Force	350.6 lbf
HHSI	0.25 hhp/in2
Pres Drop @ Bit	230.9 psi
Bit Depth	32.0 m
ECD @ Shoe	8.63 ppg
ECD @ Bit	8.63 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Collar	8.000	3.063	32.0
Open Hole	17.500		21.0

Casing

OD in	Set	MD m
20.000	@	11.0

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	50	100
gpm	151	303

Total gpm	454	AV, Riser		Circ Pressure psi	900.0
Total Circ Time	32.0	AV, DP		Tot Prs Loss psi	308.4
BU Time, min	2.5	AV, DC	14.0	Pres Drop DP psi	13.5
Total Strokes	4,796	BU Stroke	372	Pres Drop An psi	0.2

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Mixing - 1	Suction - 1							
Time	09:30	22:50							
Depth m	11.0	23.0							
FL Temp Deg C	19	20							
Density ppg @ Deg C	8.55 @ 19	8.60 @ 20							8.50 | 9.10
FV @ Deg C	45 @ 19	37 @ 20							
PV @ Deg C	7 @ 49	5 @ 49							
YP lbs/100 ft2	11	11			*	*			25 | 45
Gels lbs/100 ft2	4/6/0	4/5/0							
600/300	25.0/18.0	21.0/16.0							
200/100	15.0/11.0	14.0/10.0							
6/3	4.0/3.0	4.0/3.0							
API Filt ml/30 min	19.2	16.0			*	*			| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0	1.0/0.0							
Corr Solids % by vol	-0.2	0.2							
NAP/Water % by vol	0.0/98.3	0.0/98.0							
Sand % by vol	0.05	0.10							
MBT ppb Eq.	0.5	0.5							
pH	9.50	8.50				*			8.80 | 9.50
Alk Mud (Pm)	0.15	0.10							
Alk Filt (Pf/Mf)	0.15/0.25	0.03/0.10							
Chlorides mg/l	22,000	21,000							
Hard Ca mg/l	120	140							
LGS/HGS %	-0.2/0.0	0.1/0.1							
LGS/HGS ppb	-1.78/-0.04	1.08/1.05							
ASG	2.621	3.199							
PHPA ppb	0.50	0.50							
Potassium % by vol	4.5	4.2			*	*			3.0 | 4.0
Sulfite residual mg/l	20	50							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Baroid on location from 15/5/2004. Received all chemicals sent. Checked all valves on mud tanks for leakages. Fixed leaking valves. Installed 6 x new #50 mesh screens on the two Derrick shakers. Installed 3 x new #110 mesh screens on the DFE shaker.

Daily Volume Mixed : 540.6 bbl.
Total Volume Mixed : 540.6 bbl.

Spudded Iona - 6 at 21:30 hrs on 20/5/2004.

Rig Activity

Rigged up. Spudded and drilled from 11 m to 32 m.

Make Up Water - Fresh. pH - 6.5. Hardness - 20 mg/L. Chlorides - 150 mg/L. Carbonates - Nil. Bicarbonates - 61 mg/L.

Product Name	Units	Start	Rec	Used	End	Cost	
Drilling Fluids Engineer	Day(s)			1		$A	800.00
BARAZAN D PLUS	25 Kg bag		80	12	68	$A	3,323.16
potassium chloride tech	25 Kg sack		746	156	590	$A	2,340.00
phpa	25 Kg bag		120	5	115	$A	611.35
Baracide	25 Kg can		16	1	15	$A	277.63
BARACOR 129	25 Kg can		64	4	60	$A	228.36
potassium hydroxide	20 Kg pail		63	2	61	$A	121.50
BARA-DEFOAM W300	25 l can		2		2		
BARAFILM-Petrofree	55 Gal drum		1		1		
barite	25 Kg bag		960		960		
BAROFIBRE	25 lb bag		56		56		
BAROLIFT	15 lb box		4		4		
bentonite	25 Kg bag		48		48		
calcium chloride	25 Kg bag		7		7		
Circal 60/16	25 Kg bag		192		192		
Circal Y	25 Kg bag		192		192		
citric acid	25 Kg bag		20		20		
DEXTRID LTE	25 Kg bag		120		120		
DEXTRID LTE	50 lb bag		80		80		
EZ SPOT	55 gal drum		4		4		
Kwikseal Fine	40 lb bag		40		40		
PAC-L	25 Kg bag		80		80		
soda ash	25 Kg bag		10		10		
sodium bicarbonate	25 Kg bag		20		20		

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	20.0
FLC 58	50 50 50	20.0
Hydrocyclones	**Cones**	**Screens**	**Hrs**
Harrisburg Desand	2	10	2.0
Harrisburg Desilter	12	5	1.0
Centrifuge	**Speed**	**Feed Rate**	**Hrs**
DFE600			1.0

Time (Hrs)

Drilling	2.50
Circulating	
Trips	
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	21.50
Total	24.00
Rotating	2.50
ROP	8.4
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	26.8	NAP Base		Dumped	
Pipe Cap	1.0	Drill Water	525.4	Transferred	
Active Pits	318.0	Dewatering		SC Equip	-74.9
Total Hole	27.7	Sea Water		Evaporation	
Total Circ	345.7	Whole Mud		Trips	
Reserve	120.0	Barite		Other	
Prev Vol		Chemicals	15.2	Total Surface	-74.9
Net Chg	465.7	Other Adds.		Downhole	
Total Vol	465.7	Total Added	540.6	Total Losses	-74.9

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	m
Survey TVD	m
Angle	
Direction	
Horiz Displ.	m

Daily Products Cost	$A	6,902.00	Total Daily Cost	$A	7,702.00
Cumulative Products Cost	$A	6,902.00	Total Cumulative Cost	$A	7,702.00

Baroid Representatives: Tun Aung

Office 90 Talinga Rd	Melbourne		Tel 61-03-9581-7555
Warehouse c/o of Esso Australia Ltd	via Toora	Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 002

Baroid, a Halliburton Company

Date 21/05/2004	Depth 367.0 m		
Spud Date 20/05/2004	Rig Activity Drill 17 1/2" Hole.		
Operator: TXU GAS STORAGE PTY LTD	Report For: Peter Dwyer / Andy Urdevics	Well Name: Iona-6	
Contractor: Century Drilling Ltd	Report For: Scott Bucknell/Neville Scutcheon	Rig Name: 18	
Country: Australia	State/Province/Region: Victoria	County/Geographic Area: Otway Basin	Field or Block: Iona/PPL-2

Bit Information

Bit Size	17.500 in
Make/Type	SRB / XT1SC
Jets	1x18|3x16
TFA	0.838 sq-in
Jets Velocity	84.6 m/sec
Jet Impact Force	944.4 lbf
HHSI	1.10 hhp/in2
Pres Drop @ Bit	622.1 psi
Bit Depth	367.0 m
ECD @ Shoe	9.10 ppg
ECD @ Bit	9.12 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	168.0
Drill Pipe	5.000	3.000	141.0
Drill Collar	8.000	3.000	9.2
Drill Collar	8.000	3.063	48.8
Open Hole	17.500		356.0

Casing

OD in	Set	MD m
20.000	@	11.0

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	120	120
gpm	363	363

Total gpm	727	AV, Riser		Circ Pressure psi	965.0
Total Circ Time	39.1	AV, DP	15.9	Tot Prs Loss psi	1,085.4
BU Time, min	18.7	AV, DC	22.4	Pres Drop DP psi	287.8
Total Strokes	9,382	BU Stroke	4,493	Pres Drop An psi	4.4

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	13:00	22:05							
Depth m	164.0	328.0							
FL Temp Deg C	35	38							
Density ppg @ Deg C	8.90 @ 35	9.05 @ 38							8.50 | 9.10
FV @ Deg C	39 @ 35	43 @ 38							
PV @ Deg C	9 @ 49	11 @ 49							
YP lbs/100 ft2	18	23			*	*			25 | 45
Gels lbs/100 ft2	7/9/0	9/11/0							
600/300	36.0/27.0	45.0/34.0							
200/100	22.0/17.0	29.0/24.0							
6/3	7.0/6.0	10.0/8.0							
API Filt ml/30 min	13.4	16.2			*	*			| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0	1.0/0.0							
Corr Solids % by vol	2.5	3.4							
NAP/Water % by vol	0.0/96.0	0.0/95.0							
Sand % by vol	0.75	0.50							
MBT ppb Eq.	10.0	11.0							
pH	8.50	8.50			*	*			8.80 | 9.50
Alk Mud (Pm)	0.15	0.10							
Alk Filt (Pf/Mf)	0.03/0.07	0.03/0.07							
Chlorides mg/l	18,000	19,000							
Hard Ca mg/l	280	300							
LGS/HGS %	2.1/0.3	3.0/0.4							
LGS/HGS ppb	19.59/4.66	27.03/6.43							
ASG	2.805	2.805							
PHPA ppb	0.50	0.40							
Potassium % by vol	3.4	3.5							3.0 | 4.0
Sulfite residual mg/l	40	30							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 342.6 bbl
Total Volume Made : 883.2 bbl
Installed 6 x new #84 mesh screens on the Derrick shakers.
Desander : Underflow 9.9 ppg @ 1.0 bph.
Desilter : Underflow 10.3 ppg @ 2.1 bph.
Centrifuge : Overflow 8.95 ppg.
Cuttings from shakers channeled onto DFE shaker and into holding tank for disposal.
Sand trap occasionally centrifuged back to system. DFE shaker now dressed with #110, #250, #110 mesh screens.

Rig Activity

Drilled from 32 m to 366 m with surveys.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	68		5	63	$A 1,384.65
potassium chloride tech	25 Kg sack	590		60	530	$A 900.00
potassium hydroxide	20 Kg pail	61		9	52	$A 546.75
BARACOR 129	25 Kg can	60		5	55	$A 285.45
Baracide	25 Kg can	15		1	14	$A 277.63
phpa	25 Kg bag	115		2	113	$A 244.54
BARA-DEFOAM W300	25 l can	2			2	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	960			960	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	4			4	
bentonite	25 Kg bag	48			48	
calcium chloride	25 Kg bag	7			7	
Circal 60/16	25 Kg bag	192			192	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	20			20	
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	80			80	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
PAC-L	25 Kg bag	80			80	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	20			20	

Solid Control Equipment

Shaker	Screens			Hrs
FLC 58	84	84	84	24.0
FLC 58	84	84	84	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	23.0
Harrisburg Desilter	12	5	23.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			24.0

Time (Hrs)

Drilling	22.00
Circulating	
Trips	
Rig Surveys	1.50
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	0.50
Total	24.00
Rotating	22.00
ROP	15.2
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	323.8	NAP Base		Dumped	
Pipe Cap	15.4	Drill Water	258.5	Transferred	
Active Pits	337.0	Dewatering		SC Equip	-68.0
Total Hole	339.3	Sea Water		Evaporation	
Total Circ	676.3	Whole Mud	74.0	Trips	
Reserve	58.0	Barite		Other	
Prev Vol		Chemicals	4.1	Total Surface	-68.0
Net Chg	268.6	Other Adds.		Downhole	
Total Vol	6.0	Total Added	336.6	Total Losses	-68.0

Other Fluid Types	Vol bbl
Premix	6.0

Deviation Information

Survey MD	355 m
Survey TVD	355 m
Angle	0.25
Direction	
Horiz Displ.	m

Daily Products Cost	$A 3,639.02	Total Daily Cost	$A 4,439.02
Cumulative Products Cost	$A 10,541.02	Total Cumulative Cost	$A 12,141.02

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 003

Baroid, a Halliburton Company

Date 22/05/2004	Depth 636.0 m		
Spud Date 20/05/2004	Rig Activity Drill 17 1/2" Hole		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information	
Bit Size	17.500 in
Make/Type	SRB / XT1SC
Jets	1x18|3x16
TFA	0.838 sq-in
Jets Velocity	84.6 m/sec
Jet Impact Force	1,017.5 lbf
HHSI	1.18 hhp/in2
Pres Drop @ Bit	670.2 psi
Bit Depth	636.0 m
ECD @ Shoe	9.80 ppg
ECD @ Bit	9.81 ppg

Drill String	OD in	ID in	Length m
Drill Pipe	5.000	4.276	437.0
Drill Pipe	5.000	3.000	141.0
Drill Collar	8.000	3.000	9.2
Drill Collar	8.000	3.063	48.8
Open Hole	17.500		625.0

OD Casing in	Set	MD m
20.000	@	11.0

Circulation/Hydraulics Data		
Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	120	120
gpm	363	363

Total gpm	727	AV, Riser		Circ Pressure psi	1,000.0
Total Circ Time	50.2	AV, DP	15.9	Tot Prs Loss psi	1,305.3
BU Time, min	32.7	AV, DC	22.4	Pres Drop DP psi	426.9
Total Strokes	12,053	BU Stroke	7,838	Pres Drop An psi	6.6

Properties	1	2	3 Hyd	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1	Suction - 1						
Time	10:35	20:00	23:30						
Depth m	465.0	579.0	630.0						
FL Temp Deg C	44	46	46						
Density ppg @ Deg C	9.25 @ 44	9.50 @ 46	9.75 @ 46		*	*	*		8.50 | 9.10
FV @ Deg C	41 @ 44	46 @ 46	47 @ 46						
PV @ Deg C	10 @ 49	12 @ 49	12 @ 49						
YP lbs/100 ft2	21	21	22		*	*	*		25 | 45
Gels lbs/100 ft2	10/13/0	9/13/0	10/14/0						
600/300	41.0/31.0	45.0/33.0	46.0/34.0						
200/100	27.0/22.0	28.0/22.0	28.0/22.0						
6/3	10.0/8.0	10.0/8.0	9.0/7.0						
API Filt ml/30 min	21.5	16.6	12.8		*	*	*		| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0	1.0/0.0	1.0/0.0						
Corr Solids % by vol	5.0	6.7	8.2						
NAP/Water % by vol	0.0/93.5	0.0/91.5	0.0/90.0						
Sand % by vol	0.40	0.50	0.60						
MBT ppb Eq.	15.0	16.0	17.5						
pH	8.30	8.30	8.50		*	*	*		8.80 | 9.50
Alk Mud (Pm)	0.05	0.07	0.10						
Alk Filt (Pf/Mf)	0.03/0.10	0.03/0.10	0.04/0.20						
Chlorides mg/l	17,500	22,000	22,500						
Hard Ca mg/l	400	480	360						
LGS/HGS %	4.6/0.4	6.4/0.3	7.6/0.7						
LGS/HGS ppb	42.01/6.39	58.61/4.43	68.83/9.88						
ASG	2.738	2.672	2.731						
PHPA ppb	0.40	0.40	0.40						
Potassium % by vol	3.3	4.1	4.3				*	*	3.0 | 4.0
Sulfite residual mg/l	20	30	40						

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 280 bbl
Total Volume Made : 1163.2 bbl
Desander : Underflow 15.5 ppg @ 1.7 bph.
Desilter : Underflow 10.4 ppg @ 4.5 bph.
Centrifuge undergoing maintenance.
Reduced fluid loss with a combination of PAC-L and DEXTRID.
DFE shaker dressed with #110, #250, #110 mesh screens.
Mud weight increasing due to being unable to dump and dilute, because of environmental restrictions. At 23:30 hrs started using diluted salvaged mud as requested.

Rig Activity

Drilled from 367 m to 636 m with surveys.

Product Name	Units	Start	Rec	Used	End	Cost	
Drilling Fluids Engineer	Day(s)			1		$A	800.00
potassium chloride tech	25 Kg sack	530		182	348	$A	2,730.00
PAC-L	25 Kg bag	80		14	66	$A	1,593.90
DEXTRID LTE	25 Kg bag	120			120		
DEXTRID LTE	50 lb bag	80		14	66	$A	455.98
potassium hydroxide	20 Kg pail	52		5	47	$A	303.75
Baracide	25 Kg can	14		1	13	$A	277.63
BARAZAN D PLUS	25 Kg bag	63		1	62	$A	276.93
phpa	25 Kg bag	113		2	111	$A	244.54
BARACOR 129	25 Kg can	55		4	51	$A	228.36
BARA-DEFOAM W300	25 l can	2			2		
BARAFILM-Petrofree	55 Gal drum	1			1		
barite	25 Kg bag	960			960		
BAROFIBRE	25 lb bag	56			56		
BAROLIFT	15 lb box	4			4		
bentonite	25 Kg bag	48			48		
calcium chloride	25 Kg bag	7			7		
Circal 60/16	25 Kg bag	192			192		
Circal Y	25 Kg bag	192			192		
citric acid	25 Kg bag	20			20		
EZ SPOT	55 gal drum	4			4		
Kwikseal Fine	40 lb bag	40			40		
soda ash	25 Kg bag	10			10		
sodium bicarbonate	25 Kg bag	20			20		

Solid Control Equipment

Shaker	Screens			Hrs
FLC 58	84	84	84	24.0
FLC 58	84	84	84	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	24.0
Harrisburg Desilter	12	5	23.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			13.0

Time (Hrs)

Drilling	20.00
Circulating	0.50
Trips	3.00
Rig Surveys	0.50
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.00
Rotating	20.00
ROP	13.5
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	565.0	NAP Base		Dumped	
Pipe Cap	30.9	Drill Water	154.0	Transferred	
Active Pits	273.0	Dewatering		SC Equip	-145.4
Total Hole	595.8	Sea Water		Evaporation	
Total Circ	868.8	Whole Mud	126.0	Trips	
Reserve	6.0	Barite		Other	
Prev Vol	6.0	Chemicals	6.0	Total Surface	-145.4
Net Chg	140.6	Other Adds.		Downhole	
Total Vol		Total Added	286.0	Total Losses	-145.4

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	509 m
Survey TVD	509 m
Angle	0.75
Direction	
Horiz Displ.	m

Daily Products Cost	$A 6,111.09	Total Daily Cost	$A 6,911.09
Cumulative Products Cost	$A 16,652.11	Total Cumulative Cost	$A 19,052.11

Baroid Representatives: Tun Aung

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Daily Drilling Fluid Report

Report No 004

Baroid, a Halliburton Company

Date 23/05/2004	Depth 664.0 m		
Spud Date 20/05/2004	Rig Activity Run 13 3/8" casing.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill String ITEM	OD in	ID in	Length m
Bit Size	in				
Make/Type	/				
Jets					
TFA	sq-in				
Jets Velocity	m/sec				
Jet Impact Force	lbf				
HHSI	hhp/in2				
Pres Drop @ Bit	psi				
Bit Depth	m	Open Hole	17.500		653.0
ECD @ Shoe	ppg				
ECD @ Bit	ppg				

Casing OD in	Set	MD m
20.000	@	11.0

Circulation/Hydraulics Data		
Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm		AV, Riser	Circ Pressure psi
Total Circ Time		AV, DP	Tot Prs Loss psi
BU Time, min		AV, DC	Pres Drop DP psi
Total Strokes		BU Stroke	Pres Drop An psi

Properties	1 Hyd	2	3	4	Targets 1	2	3	4	Program
Source	Suction - 1								
Time	14:00								
Depth m	664.0								
FL Temp Deg C	43								
Density ppg @ Deg C	9.80 @ 43				*				8.50 | 9.40
FV @ Deg C	48 @ 43								
PV @ Deg C	13 @ 49								
YP lbs/100 ft2	22				*				
Gels lbs/100 ft2	10/15/0								
600/300	48.0/35.0								
200/100	28.0/22.0								
6/3	9.0/7.0								
API Filt ml/30 min	17.5				*				| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0								
Corr Solids % by vol	8.9								
NAP/Water % by vol	0.0/89.5								
Sand % by vol	1.50								
MBT ppb Eq.	18.0								
pH	8.50				*				8.80 | 9.50
Alk Mud (Pm)	0.08								
Alk Filt (Pf/Mf)	0.03/0.15								
Chlorides mg/l	20,000								
Hard Ca mg/l	500								
LGS/HGS %	8.4/0.5								
LGS/HGS ppb	76.34/8.02								
ASG	2.698								
PHPA ppb	0.40								
Potassium % by vol	3.8								3.0 | 4.0
Sulfite residual mg/l	30								

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 124.4 bbl (123.3 bbl of Recovered Mud already charged)
Total Volume Used : 1287.6 bbl

Added Recovered Mud from tanker truck to maintain volume as requested.

Rig Activity

Drilled from 636 m to casing point of 664 m (Pebble Point Clay). Circulated clean. Wiper trip to surface. Hole sticky from 559 m (Pember Mudstone) to 327 m (Mepunga Fm, Silty/Clay). Maximum overpull of 50 K lb, constant drag of 15 - 20 K lb. Cleaned out stabiliser. Ran in to bottom (washed from 344 m to 376 m). Circulated clean. Pumped down survey tool. Pulled out of hole. Rigged up and run in 13 3/8" casing.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
barite	25 Kg bag	960		25	935	$A 181.25
potassium hydroxide	20 Kg pail	47		2	45	$A 121.50
Baracide	25 Kg can	13			13	
BARACOR 129	25 Kg can	51			51	
BARA-DEFOAM W300	25 l can	2			2	
BARAFILM-Petrofree	55 Gal drum	1			1	
BARAZAN D PLUS	25 Kg bag	62			62	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	4			4	
bentonite	25 Kg bag	48			48	
calcium chloride	25 Kg bag	7			7	
Circal 60/16	25 Kg bag	192			192	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	20			20	
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	66			66	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
PAC-L	25 Kg bag	66			66	
phpa	25 Kg bag	111			111	
potassium chloride tech	25 Kg sack	348			348	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	20			20	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	84 84 84	24.0
FLC 58	84 84 84	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	14.0
Harrisburg Desilter	12	5	4.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			

Time (Hrs)

Drilling	3.00
Circulating	4.50
Trips	8.50
Rig Surveys	0.50
Fishing	
Run Casing	4.00
Coring	
Reaming	0.50
Testing	
Logging	
Dir Work	
Repair	
Other	3.00
Total	24.00
Rotating	3.50
ROP	9.3
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	650.2	NAP Base		Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits	296.0	Dewatering		SC Equip	-37.0
Total Hole	650.2	Sea Water		Evaporation	
Total Circ	296.0	Whole Mud	123.3	Trips	
Reserve	16.0	Barite	0.9	Other	
Prev Vol		Chemicals	0.2	Total Surface	-37.0
Net Chg	87.4	Other Adds.		Downhole	
Total Vol		Total Added	124.4	Total Losses	-37.0

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	664 m
Survey TVD	664 m
Angle	0.41
Direction	
Horiz Displ.	m

Daily Products Cost	$A 302.75	Total Daily Cost	$A 1,102.75
Cumulative Products Cost	$A 16,954.86	Total Cumulative Cost	$A 20,154.86

Baroid Representatives: Tun Aung

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Daily Drilling Fluid Report

Report No 005

Baroid, a Halliburton Company

Date 24/05/2004	Depth 664.0 m		
Spud Date 20/05/2004	Rig Activity Cement Casing,WOC.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill String ITEM	OD in	ID in	Length m
Bit Size	in				
Make/Type	/				
Jets					
TFA	sq-in				
Jets Velocity	m/sec				
Jet Impact Force	lbf				
HHSI	hhp/in2				
Pres Drop @ Bit	psi				
Bit Depth	664.0 m				
ECD @ Shoe	ppg				
ECD @ Bit	ppg				

OD in	Casing Set	MD m
20.000	@	11.0
13.375	@	664.0

Circulation/Hydraulics Data

	Nat 8-P-80	Nat 8-P-80
Model		
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm		AV, Riser	Circ Pressure psi
Total Circ Time		AV, DP	Tot Prs Loss psi
BU Time, min		AV, DC	Pres Drop DP psi
Total Strokes		BU Stroke	Pres Drop An psi

Properties	1 Hyd	2	3	4	Targets 1	2	3	4	Program
Source	Suction - 1								
Time	12:00								
Depth m	664.0								
FL Temp Deg C	40								
Density ppg @ Deg C	9.80 @ 40				*				8.50 | 9.10
FV @ Deg C	49 @ 40								
PV @ Deg C	13 @ 49								
YP lbs/100 ft2	23				*				25 | 45
Gels lbs/100 ft2	10/15/0								
600/300	49.0/36.0								
200/100	29.0/23.0								
6/3	9.0/7.0								
API Filt ml/30 min	17.4				*				| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	2.0/0.0								
Corr Solids % by vol	8.8								
NAP/Water % by vol	0.0/89.5								
Sand % by vol	1.70								
MBT ppb Eq.	17.5								
pH	8.30				*				8.80 | 9.50
Alk Mud (Pm)	0.05								
Alk Filt (Pf/Mf)	0.02/0.08								
Chlorides mg/l	21,000								
Hard Ca mg/l	520								
LGS/HGS %	8.3/0.5								
LGS/HGS ppb	75.66/8.02								
ASG	2.698								
PHPA ppb	0.30								
Potassium % by vol	3.8								3.0 | 4.0
Sulfite residual mg/l	10								

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : Nil
Total volume Made : 1287.6

Calcium Chloride used for cementing. Bentonite used for gelling up mud tanks. After cementing, started transporting mud from mud tanks for disposal.

Rig Activity

Ran in 13 3/8 " casing to bottom. Rigged up and circulated hole clean. Cemented 13 3/8" casing in place (cement to surface). WOC.

Product Name	Units	Start	Rec	Used	End	Cost	
Drilling Fluids Engineer	Day(s)			1		$A	800.00
calcium chloride	25 Kg bag	7		3	4	$A	50.34
bentonite	25 Kg bag	48		2	46	$A	19.80
Baracide	25 Kg can	13			13		
BARACOR 129	25 Kg can	51			51		
BARA-DEFOAM W300	25 l can	2			2		
BARAFILM-Petrofree	55 Gal drum	1			1		
BARAZAN D PLUS	25 Kg bag	62			62		
barite	25 Kg bag	935			935		
BAROFIBRE	25 lb bag	56			56		
BAROLIFT	15 lb box	4			4		
Circal 60/16	25 Kg bag	192			192		
Circal Y	25 Kg bag	192			192		
citric acid	25 Kg bag	20			20		
DEXTRID LTE	25 Kg bag	120			120		
DEXTRID LTE	50 lb bag	66			66		
EZ SPOT	55 gal drum	4			4		
Kwikseal Fine	40 lb bag	40			40		
PAC-L	25 Kg bag	66			66		
phpa	25 Kg bag	111			111		
potassium chloride tech	25 Kg sack	348			348		
potassium hydroxide	20 Kg pail	45			45		
soda ash	25 Kg bag	10			10		
sodium bicarbonate	25 Kg bag	20			20		

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	84 84 84	16.0
FLC 58	84 84 84	16.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	5.0
Harrisburg Desilter	12	5	5.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			

Time (Hrs)

Drilling	
Circulating	1.50
Trips	
Rig Surveys	
Fishing	
Run Casing	14.00
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	8.50
Total Rotating	24.00
ROP	0.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	336.8	NAP Base		Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits	316.0	Dewatering		SC Equip	-28.0
Total Hole	336.8	Sea Water		Evaporation	
Total Circ	316.0	Whole Mud		Trips	
Reserve	218.0	Barite		Other	-63.5
Prev Vol	962.2	Chemicals	0.1	Total Surface	-91.5
Net Chg	-91.4	Other Adds.		Downhole	
Total Vol	870.8	Total Added	0.1	Total Losses	-91.5

Daily Products Cost	$A	70.14	Total Daily Cost	$A	870.14
Cumulative Products Cost	$A	17,025.00	Total Cumulative Cost	$A	21,025.00

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	664 m
Survey TVD	664 m
Angle	0.41
Direction	
Horiz Displ.	m

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 006

Baroid, a Halliburton Company

Date 25/05/2004	Depth 664.0 m		
Spud Date 20/05/2004	Rig Activity Nipple Up BOP.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill String ITEM	OD in	ID in	Length m
Bit Size	in				
Make/Type	/				
Jets					
TFA	sq-in				
Jets Velocity	m/sec				
Jet Impact Force	lbf				
HHSI	hhp/in2				
Pres Drop @ Bit	psi				
Bit Depth	m				
ECD @ Shoe	ppg				
ECD @ Bit	ppg				

OD in	Casing Set	MD m
20.000	@	11.0
13.375	@	664.0

Circulation/Hydraulics Data		
Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm		AV, Riser	Circ Pressure psi
Total Circ Time		AV, DP	Tot Prs Loss psi
BU Time, min		AV, DC	Pres Drop DP psi
Total Strokes		BU Stroke	Pres Drop An psi

Properties					Targets 1	2	3	4	Program
Source									
Time									
Depth m									
FL Temp Deg C									
Density ppg @ Deg C									
FV @ Deg C									
PV @ Deg C									
YP lbs/100 ft2									
Gels lbs/100 ft2									See Rpt Tgts
600/300									
200/100									
6/3									
API Filt ml/30 min									
HTHP ml/30 min @Deg C									
Cake 32nd in									
Corr Solids % by vol									
NAP/Water % by vol									See Rpt Tgts
Sand % by vol									
MBT ppb Eq.									
pH									
Alk Mud (Pm)									
Alk Filt (Pf/Mf)									See Rpt Tgts
Chlorides mg/l									
Hard Ca mg/l									
LGS/HGS %									
LGS/HGS ppb									
ASG									

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : Nil
Total Volume Made : 1287.6

Dressed both shakers with #50 mesh screens (3 x New, 3 x Used). DFE shaker to be fitted with 3 x New #110 mesh screens.
Transported 534 bbl of heavy surface mud from mud tanks for disposal.
Commenced mixing up new mud.

Rig Activity

Installed well head and pressure tested.
Nipple up BOP.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
Baracide	25 Kg can	13			13	
BARACOR 129	25 Kg can	51			51	
BARA-DEFOAM W300	25 l can	2			2	
BARAFILM-Petrofree	55 Gal drum	1			1	
BARAZAN D PLUS	25 Kg bag	62			62	
barite	25 Kg bag	935			935	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	4			4	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	192			192	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	20			20	
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	66			66	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
PAC-L	25 Kg bag	66			66	
phpa	25 Kg bag	111			111	
potassium chloride tech	25 Kg sack	348			348	
potassium hydroxide	20 Kg pail	45			45	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	20			20	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	0.0
FLC 58	50 50 50	0.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	
Harrisburg Desilter	12	5	

Centrifuge	Speed	Feed Rate	Hrs
DFE600			

Time (Hrs)

Drilling	
Circulating	
Trips	
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	24.00
Total Rotating	24.00
ROP	0.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	336.8	NAP Base		Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits		Dewatering		SC Equip	
Total Hole	336.8	Sea Water		Evaporation	
Total Circ		Whole Mud		Trips	
Reserve		Barite		Other	-534.0
Prev Vol	870.8	Chemicals		Total Surface	-534.0
Net Chg	-534.0	Other Adds.		Downhole	
Total Vol	336.8	Total Added		Total Losses	-534.0

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	664 m
Survey TVD	664 m
Angle	0.41
Direction	
Horiz Displ.	m

Daily Products Cost	$A	0.00	Total Daily Cost	$A	800.00
Cumulative Products Cost	$A	17,025.00	Total Cumulative Cost	$A	21,825.00

Baroid Representatives: Tun Aung

Office 90 Talinga Rd	Melbourne		Tel 61-03-9581-7555
Warehouse c/o of Esso Australia Ltd	via Toora	Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 007

Baroid, a Halliburton Company

Date 26/05/2004	Depth 664.0 m		
Spud Date 20/05/2004	Rig Activity Run In Hole		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	SEC-DBS / EBXS02S
Jets	4x18
TFA	0.994 sq-in
Jets Velocity	59.4 m/sec
Jet Impact Force	531.5 lbf
HHSI	0.88 hhp/in2
Pres Drop @ Bit	295.2 psi
Bit Depth	664.0 m
ECD @ Shoe	8.76 ppg
ECD @ Bit	8.76 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	380.5
Drill Pipe	5.000	3.000	54.0
Drill Collar	6.500	2.750	9.1
Drill Pipe	5.000	3.000	162.0
Drill Collar	8.000	3.000	49.5
Drill Motor	8.000	0.000	8.9

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	100	100
gpm	303	303

Total gpm	606	AV, Riser		Circ Pressure psi	1,000.0
Total Circ Time	39.7	AV, DP	33.7	Tot Prs Loss psi	975.2
BU Time, min	19.2	AV, DC	47.5	Pres Drop DP psi	343.9
Total Strokes	7,935	BU Stroke	3,830	Pres Drop An psi	7.2

Properties	1 Hyd	2	3	4	Targets 1	2	3	4	Program
Source	Suction - 1								
Time	01:25								
Depth m	664.0								
FL Temp Deg C	19								
Density ppg @ Deg C	8.70 @ 19								8.50 | 9.10
FV @ Deg C	56 @ 19								
PV @ Deg C	7 @ 49								
YP lbs/100 ft2	10				*				25 | 45
Gels lbs/100 ft2	3/5/0								
600/300	24.0/17.0								
200/100	14.0/10.0								
6/3	4.0/3.0								
API Filt ml/30 min	10.1				*				| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0								
Corr Solids % by vol	0.9								
NAP/Water % by vol	0.0/97.0								
Sand % by vol	0.10								
MBT ppb Eq.	1.0								
pH	8.30				*				8.80 | 9.50
Alk Mud (Pm)	0.30								
Alk Filt (Pf/Mf)	0.02/0.20								
Chlorides mg/l	25,000								
Hard Ca mg/l	340								
LGS/HGS %	1.1/-0.2								
LGS/HGS ppb	9.65/-2.62								
ASG	2.277								
PHPA ppb	0.25								
Potassium % by vol	4.7				*				3.0 | 4.0

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made :680 bbl
Total Volume Made :680 bbl

Mixed up 680 bbl of new mud. New mud has a PHPA content of 0.25 ppb to minimise losses during displacement. Pretreated fluid with Citric Acid / Soda Bicarb before drilling cement.

While running in hole, returns of old mud lined up to slug pit and pumped into haulage truck for disposal.

Rig Activity

Nippled up BOP and pressure tested. Made up and run in with drilling assembly to tag cement stringer at 626 m.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	62		12	50	$A 3,323.16
potassium chloride tech	25 Kg sack	348	798	221	925	$A 3,315.00
PAC-L	25 Kg bag	66		6	60	$A 683.10
Baracide	25 Kg can	13		2	11	$A 555.26
phpa	25 Kg bag	111		3	108	$A 366.81
citric acid	25 Kg bag	20		4	16	$A 285.52
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	66		6	60	$A 195.42
sodium bicarbonate	25 Kg bag	20		4	16	$A 64.16
potassium hydroxide	20 Kg pail	45		1	44	$A 60.75
BARACOR 100	55 gal drum		2		2	
BARACOR 129	25 Kg can	51			51	
BARA-DEFOAM W300	25 l can	2	4		6	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	935			935	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	4			4	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	192	10		202	
Circal Y	25 Kg bag	192			192	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag		30		30	
soda ash	25 Kg bag	10			10	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	10.0
FLC 58	50 50 50	10.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	
Harrisburg Desilter	12	5	

Centrifuge	Speed	Feed Rate	Hrs
DFE600			

Time (Hrs)

Drilling	
Circulating	
Trips	5.50
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	18.50
Total Rotating	24.00
ROP	0.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	276.1	NAP Base		Dumped	
Pipe Cap	29.7	Drill Water	658.5	Transferred	
Active Pits	266.2	Dewatering		SC Equip	
Total Hole	305.8	Sea Water		Evaporation	
Total Circ	572.0	Whole Mud		Trips	
Reserve	108.0	Barite		Other	-336.8
Prev Vol	336.8	Chemicals	21.5	Total Surface	-336.8
Net Chg	343.2	Other Adds.		Downhole	
Total Vol	680.0	Total Added	680.0	Total Losses	-336.8

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	664 m
Survey TVD	664 m
Angle	0.41
Direction	
Horiz Displ.	m

Daily Products Cost	$A 8,849.18	Total Daily Cost	$A 9,649.18
Cumulative Products Cost	$A 25,874.18	Total Cumulative Cost	$A 31,474.18

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

Daily Drilling Fluid Report

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Report No 008

Baroid, a Halliburton Company

Date 27/05/2004	Depth 816.0 m
Spud Date 20/05/2004	Rig Activity Drill 12 1/4"Hole

Operator: TXU GAS STORAGE PTY LTD	Report For: Peter Dwyer / Andy Urdevics	Well Name: Iona-6
Contractor: Century Drilling Ltd	Report For: Scott Bucknell/Neville Scutcheon	Rig Name: 18
Country: Australia	State/Province/Region: Victoria	County/Geographic Area: Otway Basin
		Field or Block: Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	SEC-DBS / EBXS02S
Jets	4x18
TFA	0.994 sq-in
Jets Velocity	73.7 m/sec
Jet Impact Force	822.0 lbf
HHSI	1.70 hhp/in2
Pres Drop @ Bit	456.5 psi
Bit Depth	816.0 m
ECD @ Shoe	8.83 ppg
ECD @ Bit	8.84 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	532.5
Drill Pipe	5.000	3.000	54.0
Drill Collar	6.500	2.750	9.1
Drill Pipe	5.000	3.000	162.0
Drill Collar	8.000	3.000	49.5
Drill Motor	8.000	0.000	8.9
Open Hole	12.250		152.0

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	124	124
gpm	375	375

Total gpm	751	AV, Riser		Circ Pressure psi	1,250.0
Total Circ Time	40.4	AV, DP	41.8	Tot Prs Loss psi	1,336.3
BU Time, min	18.8	AV, DC	65.2	Pres Drop DP psi	497.6
Total Strokes	10,031	BU Stroke	4,671	Pres Drop An psi	12.8

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	12:45	22:25							
Depth m	721.0	807.0							
FL Temp Deg C	42	45							
Density ppg @ Deg C	8.75 @ 42	8.75 @ 45							8.50 | 9.40
FV @ Deg C	40 @ 42	40 @ 45							
PV @ Deg C	6 @ 49	7 @ 49							
YP lbs/100 ft2	12	14							
Gels lbs/100 ft2	4/8/0	4/8/0							
600/300	24.0/18.0	28.0/21.0							
200/100	14.0/10.0	17.0/13.0							
6/3	4.0/3.0	5.0/4.0							
API Filt ml/30 min	10.6	8.8			*	*			| 6.0
HTHP ml/30 min @Deg C									
Cake 32nd in	1.0/0.0	1.0/0.0							
Corr Solids % by vol	1.0	0.8							
NAP/Water % by vol	0.0/97.0	0.0/97.0							
Sand % by vol	0.40	0.60							
MBT ppb Eq.	3.0	3.5							
pH	9.50	9.50							8.80 | 9.50
Alk Mud (Pm)	0.60	0.55							
Alk Filt (Pf/Mf)	0.15/0.30	0.15/0.35							
Chlorides mg/l	24,000	25,500							
Hard Ca mg/l	320	400							
LGS/HGS %	0.8/0.2	0.6/0.2							
LGS/HGS ppb	7.00/2.87	5.85/2.91							
ASG	2.924	2.976							
PHPA ppb	0.60	0.75			*	*			1.00 | 1.50
Potassium % by vol	4.5	4.6			*	*			3.0 | 4.0
Sulfite residual mg/l	100	100							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 192.2 bbl
Total Volume Made : 872.2 bbl

Desander Underflow : 16.4 ppg @ 1.2 bph
Desilter Underflow : 13.6 ppg @ 1.1 bph
Centrifuge Overflow : 8.75 ppg
At 626 m displaced hole with new KCl/PHPA/Polymer mud. Old mud from hole (336.8 bbl) pumped to haulage truck and storage tanker for disposal.
After displacement, commenced trickling in additional PHPA.

Rig Activity

Tagged stringer at 626 m. Rigged up circulating head. Displaced hole to new mud. Slipped and cut line. Washed and drilled cement to 664 m. Drilled 5 m of new hole to 669 m, circulated clean and carried out FIT test to 10.5 ppg EMW. Ran Gyro Survey. Drill / steered from 669 m to 816 m (Paaratte Sand).

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	50		12	38	$A 3,323.16
potassium chloride tech	25 Kg sack	925		85	840	$A 1,275.00
phpa	25 Kg bag	108		9	99	$A 1,100.43
BARACOR 129	25 Kg can	51		7	44	$A 399.63
Baracide	25 Kg can	11		1	10	$A 277.63
PAC-L	25 Kg bag	60		2	58	$A 227.70
BARA-DEFOAM W300	25 l can	6		1	5	$A 75.00
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	60		2	58	$A 65.14
BARACOR 100	55 gal drum	2			2	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	935			935	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	4			4	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	202			202	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag	30			30	
potassium hydroxide	20 Kg pail	44			44	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	16			16	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	24.0
FLC 58	50 50 50	24.0
Hydrocyclones	**Cones**	**Screens**	**Hrs**
Harrisburg Desand	2	10	21.5
Harrisburg Desilter	12	5	20.0
Centrifuge	**Speed**	**Feed Rate**	**Hrs**
DFE600			22.0

Time (Hrs)

Drilling	19.00
Circulating	1.00
Trips	
Rig Surveys	2.00
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	2.00
Total	24.00
Rotating	19.00
ROP	8.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	336.7	NAP Base		Dumped	
Pipe Cap	38.4	Drill Water		Transferred	
Active Pits	348.0	Dewatering		SC Equip	-47.1
Total Hole	375.1	Sea Water		Evaporation	
Total Circ	796.1	Whole Mud	117.0	Trips	
Reserve	29.0	Barite		Other	
Prev Vol	680.0	Chemicals	2.2	Total Surface	-47.1
Net Chg	72.1	Other Adds.		Downhole	
Total Vol	752.1	Total Added	119.2	Total Losses	-47.1

Other Fluid Types	Vol bbl
Premix	73.0

Deviation Information

Survey MD	805 m
Survey TVD	802 m
Angle	18.70
Direction	305
Horiz Displ.	25 m

Daily Products Cost	$A 6,743.69	Total Daily Cost	$A 7,543.69
Cumulative Products Cost	$A 32,617.87	Total Cumulative Cost	$A 39,017.87

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 009

Baroid, a Halliburton Company

Date 28/05/2004	Depth 976.0 m		
Spud Date 20/05/2004	Rig Activity Tripping.		
Operator: TXU GAS STORAGE PTY LTD	Report For: Peter Dwyer / Andy Urdevics	Well Name: Iona-6	
Contractor: Century Drilling Ltd	Report For: Scott Bucknell/Neville Scutcheon	Rig Name: 18	
Country: Australia	State/Province/Region: Victoria	County/Geographic Area: Otway Basin	Field or Block: Iona/PPL-2

Bit Information

Bit Size	in
Make/Type	/
Jets	
TFA	sq-in
Jets Velocity	m/sec
Jet Impact Force	lbf
HHSI	hhp/in2
Pres Drop @ Bit	psi
Bit Depth	m
ECD @ Shoe	ppg
ECD @ Bit	ppg

Drill String

ITEM	OD in	ID in	Length m
Open Hole	12.250		312.0

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm; Total Circ Time; BU Time, min; Total Strokes

AV, Riser; AV, DP; AV, DC; BU Stroke

Circ Pressure psi; Tot Prs Loss psi; Pres Drop DP psi; Pres Drop An psi

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	10:45	18:20							
Depth m	904.0	976.0							
FL Temp Deg C	46	46							
Density ppg @ Deg C	8.80 @ 46	8.80 @ 48							8.50 | 9.40
FV @ Deg C	39 @ 46	39 @ 48							
PV @ Deg C	8 @ 49	7 @ 49							
YP lbs/100 ft2	15	16							
Gels lbs/100 ft2	4/6/0	4/7/0							
600/300	31.0/23.0	30.0/23.0							
200/100	18.0/14.0	18.0/14.0							
6/3	5.0/4.0	5.0/4.0							
API Filt ml/30 min	7.4	7.6			*	*			| 6.0
HTHP ml/30 min @Deg C	23.0 @	23.4 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	1.6	1.6							
NAP/Water % by vol	0.0/96.5	0.0/96.5							
Sand % by vol	0.50	0.50							
MBT ppb Eq.	3.5	4.0							
pH	8.90	8.90							8.80 | 9.50
Alk Mud (Pm)	0.25	0.30							
Alk Filt (Pf/Mf)	0.05/0.20	0.05/0.15							
Chlorides mg/l	22,500	23,000							
Hard Ca mg/l	400	360							
LGS/HGS %	1.5/0.1	1.5/0.1							
LGS/HGS ppb	13.93/0.99	13.56/0.99							
ASG	2.667	2.669							
PHPA ppb	1.10	1.00							1.00 | 1.50
Potassium % by vol	4.3	4.4			*	*			3.0 | 4.0
Sulfite residual mg/l	80	70							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 155.9 bbl
Total Volume Made : 1028.1 bbl

Installed 1 x new #84 mesh screen.
Desander Underflow : 16.0 ppg @ 0.9 bph.
Desilter Underflow : 12.6 ppg @ 2.2 bph.
Centrifuge Overflow : 8.75 ppg.
Before tripping, pumped 30 bbl of BAROLIFT sweep (0.2 ppb). No noticeable increase of returns.

Rig Activity

Drilled / steered from 816 m to 976 m (Paaratte Sand). Pumped 30 bbl of Barolift sweep. Tripped out. Pressure tested BOP.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	38		5	33	$A 1,384.65
phpa	25 Kg bag	99		8	91	$A 978.16
potassium chloride tech	25 Kg sack	840		42	798	$A 630.00
BAROLIFT	15 lb box	4		1	3	$A 293.33
barite	25 Kg bag	935		26	909	$A 188.50
potassium hydroxide	20 Kg pail	44		3	41	$A 182.25
BARACOR 129	25 Kg can	44		3	41	$A 171.27
PAC-L	25 Kg bag	58		1	57	$A 113.85
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	58		1	57	$A 32.57
Baracide	25 Kg can	10			10	
BARACOR 100	55 gal drum	2			2	
BARA-DEFOAM W300	25 l can	5			5	
BARAFILM-Petrofree	55 Gal drum	1			1	
BAROFIBRE	25 lb bag	56			56	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	202			202	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag	30			30	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	16			16	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	20.0
FLC 58	84 50 50	20.0
Hydrocyclones	Cones	Screens / Hrs
Harrisburg Desand	2	10 / 19.0
Harrisburg Desilter	12	5 / 19.0
Centrifuge	Speed	Feed Rate / Hrs
DFE600		20.0

Time (Hrs)

Drilling	18.00
Circulating	1.00
Trips	3.00
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	2.00
Total	24.00
Rotating	18.00
ROP	8.9
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	486.0	NAP Base		Dumped	
Pipe Cap		Drill Water	58.3	Transferred	
Active Pits	275.0	Dewatering		SC Equip	-59.0
Total Hole	486.0	Sea Water		Evaporation	
Total Circ	275.0	Whole Mud	118.0	Trips	
Reserve	111.0	Barite	1.0	Other	
Prev Vol	752.1	Chemicals	1.6	Total Surface	-59.0
Net Chg	119.9	Other Adds.		Downhole	
Total Vol	872.0	Total Added	178.9	Total Losses	-59.0

Other Fluid Types	Vol bbl
Premix	50.0

Deviation Information

Survey MD	950 m
Survey TVD	922 m
Angle	45.29
Direction	304
Horiz Displ.	104 m

Daily Products Cost	$A	3,974.58	Total Daily Cost	$A	4,774.58
Cumulative Products Cost	$A	36,592.45	Total Cumulative Cost	$A	43,792.45

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 010

Baroid, a Halliburton Company

Date 29/05/2004	Depth 1,008.0 m		
Spud Date 20/05/2004	Rig Activity Drill. Trip.		

Operator TXU GAS STORAGE PTY LTD	**Report For** Peter Dwyer / Andy Urdevics	**Well Name** Iona-6
Contractor Century Drilling Ltd	**Report For** Scott Bucknell/Neville Scutcheon	**Rig Name** 18
Country Australia	**State/Province/Region** Victoria	**County/Geographic Area** Otway Basin
		Field or Block Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	DBS / FM2565
Jets	5x18
TFA	1.243 sq-in
Jets Velocity	58.9 m/sec
Jet Impact Force	657.3 lbf
HHSI	1.08 hhp/in2
Pres Drop @ Bit	291.9 psi
Bit Depth	1,008.0 m
ECD @ Shoe	8.84 ppg
ECD @ Bit	8.85 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	715.7
Drill Pipe	5.000	3.000	56.1
Drill Collar	6.500	2.750	9.8
Drill Pipe	5.000	3.000	167.2
Drill Collar	8.000	3.000	50.3
Drill Motor	8.000	0.000	8.9
Open Hole	12.250		344.0

Casing

OD in		Set m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	124	124
gpm	375	375

Total gpm	751	AV, Riser		Circ Pressure	psi	1,450.0
Total Circ Time	45.9	AV, DP	41.8	Tot Prs Loss	psi	1,200.1
BU Time, min	23.1	AV, DC	65.2	Pres Drop DP	psi	531.6
Total Strokes	11,379	BU Stroke	5,731	Pres Drop An	psi	17.1

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	13:05	17:15							
Depth m	988.0	1,008.0							
FL Temp Deg C	46	46							
Density ppg @ Deg C	8.75 @ 46	8.75 @ 46							8.50 | 9.40
FV @ Deg C	40 @ 46	41 @ 46							
PV @ Deg C	8 @ 49	7 @ 49							
YP lbs/100 ft2	16	16							
Gels lbs/100 ft2	4/7/0	4/7/0							
600/300	32.0/24.0	30.0/23.0							
200/100	19.0/14.0	19.0/14.0							
6/3	5.0/4.0	5.0/4.0							
API Filt ml/30 min	7.6	7.4			*	*			
HTHP ml/30 min @Deg C	23.4 @	22.8 @							| 6.0
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	1.1	1.0							
NAP/Water % by vol	0.0/97.0	0.0/97.0							
Sand % by vol	0.25	0.25							
MBT ppb Eq.	3.5	4.0							
pH	9.00	9.00							8.80 | 9.50
Alk Mud (Pm)	0.40	0.35							
Alk Filt (Pf/Mf)	0.08/0.30	0.05/0.25							
Chlorides mg/l	22,000	23,000							
Hard Ca mg/l	260	280							
LGS/HGS %	0.9/0.2	0.9/0.2							
LGS/HGS ppb	8.51/2.84	7.76/2.85							
ASG	2.874	2.897							
PHPA ppb	1.10	1.10							1.00 | 1.50
Potassium % by vol	4.2	4.2			*	*			3.0 | 4.0
Sulfite residual mg/l	80	60							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 114 bbl
Total Volume Made : 1142.1 bbl

Desander Underflow : 15.6 ppg @ 1.2 bph.
Desilter Underflow : 12.8 ppg @ 2.8 bph.
Centrifuge Overflow : 8.7 ppg.
Used Barite slug for previous trip, KCl slug for present trip. For 12 1/4" interval, continously centrifuging sand trap while drilling. During trips centrifuge run in settling pit.

Rig Activity

Pressure tested pipe rams. Made up new bit, changed bend on motor, and changed stabiliser. Ran in hole, washed / reamed near bottom. Drilled through Paaratte Sand from 976 m to 1008 m. Circulated clean. Tripped for BHA change. Changed stabiliser.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
potassium chloride tech	25 Kg sack	798		84	714	$A 1,260.00
BARAZAN D PLUS	25 Kg bag	33		4	29	$A 1,107.72
phpa	25 Kg bag	91		3	88	$A 366.81
potassium hydroxide	20 Kg pail	41		4	37	$A 243.00
PAC-L	25 Kg bag	57		2	55	$A 227.70
BARACOR 129	25 Kg can	41		3	38	$A 171.27
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	57		2	55	$A 65.14
Baracide	25 Kg can	10			10	
BARACOR 100	55 gal drum	2			2	
BARA-DEFOAM W300	25 l can	5			5	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	909			909	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	3			3	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	202			202	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag	30			30	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	16			16	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	22.0
FLC 58	84 50 50	22.0
Hydrocyclones	**Cones**	**Screens**	**Hrs**	
Harrisburg Desand	2	10	8.0
Harrisburg Desilter	12	5	8.0
Centrifuge	**Speed**	**Feed Rate**	**Hrs**
DFE600			18.5

Time (Hrs)

Drilling	8.00
Circulating	0.50
Trips	13.00
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	2.50
Total	24.00
Rotating	8.00
ROP	4.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	413.1	NAP Base		Dumped	
Pipe Cap	49.2	Drill Water		Transferred	
Active Pits	358.0	Dewatering		SC Equip	-52.8
Total Hole	462.3	Sea Water		Evaporation	
Total Circ	820.3	Whole Mud	92.0	Trips	
Reserve	95.0	Barite		Other	
Prev Vol	50.0	Chemicals	4.0	Total Surface	-52.8
Net Chg	43.2	Other Adds.		Downhole	
Total Vol	68.0	Total Added	96.0	Total Losses	-52.8

Other Fluid Types	Vol bbl
Premix	68.0

Deviation Information

Survey MD	1,006 m
Survey TVD	962 m
Angle	43.69
Direction	305
Horiz Displ.	144 m

Daily Products Cost	$A	3,441.64	Total Daily Cost	$A	4,241.64
Cumulative Products Cost	$A	40,034.09	Total Cumulative Cost	$A	48,034.09

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 011

Baroid, a Halliburton Company

Date	30/05/2004	Depth	1,074.0 m
Spud Date	20/05/2004	Rig Activity	Drill. Trip. Drill.

Operator TXU GAS STORAGE PTY LTD	**Report For** Peter Dwyer / Andy Urdevics	**Well Name** Iona-6
Contractor Century Drilling Ltd	**Report For** Scott Bucknell/Neville Scutcheon	**Rig Name** 18
Country Australia	**State/Province/Region** Victoria	**County/Geographic Area** Otway Basin
		Field or Block Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	SEC-DBS / EBXS02S
Jets	3x18|1x20
TFA	1.052 sq-in
Jets Velocity	67.4 m/sec
Jet Impact Force	737.3 lbf
HHSI	1.39 hhp/in2
Pres Drop @ Bit	386.9 psi
Bit Depth	1,074.0 m
ECD @ Shoe	8.97 ppg
ECD @ Bit	8.99 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	781.5
Drill Pipe	5.000	3.000	56.1
Drill Collar	6.500	2.750	9.8
Drill Pipe	5.000	3.000	167.2
Drill Collar	8.000	3.000	50.5
Drill Motor	8.000	0.000	8.9
Open Hole	12.250		410.0

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	120	120
gpm	363	363

Total gpm	727	AV, Riser		Circ Pressure psi	1,600.0
Total Circ Time	47.8	AV, DP	40.5	Tot Prs Loss psi	1,316.8
BU Time, min	25.4	AV, DC	63.1	Pres Drop DP psi	549.9
Total Strokes	11,477	BU Stroke	6,095	Pres Drop An psi	20.7

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	12:40	22:50							
Depth m	1,037.0	1,050.0							
FL Temp Deg C	44	43							
Density ppg @ Deg C	8.85 @ 44	8.87 @ 43							8.50 | 9.40
FV @ Deg C	40 @ 44	41 @ 43							
PV @ Deg C	8 @ 49	9 @ 49							
YP lbs/100 ft2	17	17							
Gels lbs/100 ft2	4/7/0	5/6/0							
600/300	33.0/25.0	35.0/26.0							
200/100	21.0/15.0	22.0/17.0							
6/3	5.0/4.0	6.0/4.0							
API Filt ml/30 min	7.3	7.2			*	*			| 6.0
HTHP ml/30 min @Deg C	22.6 @	22.4 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	1.6	1.6							
NAP/Water % by vol	0.0/96.2	0.0/96.0							
Sand % by vol	0.40	0.50							
MBT ppb Eq.	4.0	4.0							
pH	8.90	8.90							8.80 | 9.50
Alk Mud (Pm)	0.40	0.30							
Alk Filt (Pf/Mf)	0.05/0.20	0.04/0.20							
Chlorides mg/l	26,500	28,500							
Hard Ca mg/l	360	380							
LGS/HGS %	1.4/0.1	1.5/0.1							
LGS/HGS ppb	13.01/2.16	13.78/1.50							
ASG	2.749	2.701							
PHPA ppb	1.10	1.10							1.00 | 1.50
Potassium % by vol	5.0	5.3			*	*			3.0 | 4.0
Sulfite residual mg/l	50	40							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 89.4 bbl
Total Volume Made : 1231.5 bbl

Desander Underflow : 12.5 ppg @ 1.0 bph.
Desilter Underflow : 11.0 ppg @ 2.8 bph.
Centrifuge Overflow : 8.75 ppg.
Used KCl slug for present trip. Increase of KCl Content due to slug.

Rig Activity

Ran in to 987 m. Washed to bottom of 1008 m (hole in good condition). Drilled / steered from 1008 m to 1037 m. Circulated clean. Tripped out. Changed bit, stabiliser and angle on lobe. Ran in to 1006 m and washed to 1037 m (hole stable). Drilled / steered from 1037 m to 1074 m (approaching silt).

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	29		4	25	$A 1,107.72
potassium chloride tech	25 Kg sack	714		63	651	$A 945.00
BARACOR 129	25 Kg can	38		5	33	$A 285.45
Baracide	25 Kg can	10		1	9	$A 277.63
phpa	25 Kg bag	88		2	86	$A 244.54
potassium hydroxide	20 Kg pail	37		4	33	$A 243.00
PAC-L	25 Kg bag	55		2	53	$A 227.70
BARA-DEFOAM W300	25 l can	5		1	4	$A 75.00
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	55		2	53	$A 65.14
BARACOR 100	55 gal drum	2			2	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	909			909	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	3			3	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	202			202	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag	30			30	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	16			16	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	50 50 50	24.0
FLC 58	84 50 50	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	13.5
Harrisburg Desilter	12	5	13.5

Centrifuge	Speed	Feed Rate	Hrs
DFE600			24.0

Time (Hrs)

Drilling	13.00
Circulating	0.50
Trips	9.00
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	1.00
Testing	
Logging	
Dir Work	
Repair	
Other	0.50
Total	24.00
Rotating	14.00
ROP	5.1
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	439.4	NAP Base		Dumped	
Pipe Cap	53.0	Drill Water		Transferred	
Active Pits	335.0	Dewatering		SC Equip	-52.0
Total Hole	492.3	Sea Water		Evaporation	
Total Circ	827.3	Whole Mud	83.0	Trips	
Reserve		Barite		Other	-123.4
Prev Vol	68.0	Chemicals	4.5	Total Surface	-175.4
Net Chg	-87.9	Other Adds.		Downhole	
Total Vol	70.0	Total Added	87.5	Total Losses	-175.4

Other Fluid Types	Vol bbl
Premix	70.0

Deviation Information

Survey MD	1,066 m
Survey TVD	1,004 m
Angle	47.95
Direction	306
Horiz Displ.	186 m

Daily Products Cost	$A	3,471.18	Total Daily Cost	$A	4,271.18
Cumulative Products Cost	$A	43,505.27	Total Cumulative Cost	$A	52,305.27

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 012

Baroid, a Halliburton Company

Date 31/05/2004	Depth 1,247.0 m		
Spud Date 20/05/2004	Rig Activity Drilling		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	SEC-DBS / EBXS02S
Jets	3x18|1x20
TFA	1.052 sq-in
Jets Velocity	67.4 m/sec
Jet Impact Force	764.8 lbf
HHSI	1.44 hhp/in2
Pres Drop @ Bit	401.3 psi
Bit Depth	1,247.0 m
ECD @ Shoe	9.32 ppg
ECD @ Bit	9.35 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	954.5
Drill Pipe	5.000	3.000	56.1
Drill Collar	6.500	2.750	9.8
Drill Pipe	5.000	3.000	167.2
Drill Collar	8.000	3.000	50.5
Drill Motor	8.000	0.000	8.9
Open Hole	12.250		583.0

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	120	120
gpm	363	363

Total gpm	727	AV, Riser		Circ Pressure psi	1,650.0
Total Circ Time	52.0	AV, DP	40.5	Tot Prs Loss psi	1,472.0
BU Time, min	29.4	AV, DC	63.1	Pres Drop DP psi	664.5
Total Strokes	12,488	BU Stroke	7,052	Pres Drop An psi	28.6

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	12:20	22:30							
Depth m	1,174.0	1,232.0							
FL Temp Deg C	49	51							
Density ppg @ Deg C	9.15 @ 49	9.20 @ 51							8.50 | 9.40
FV @ Deg C	42 @ 49	42 @ 51							
PV @ Deg C	10 @ 49	11 @ 49							
YP lbs/100 ft2	19	21							
Gels lbs/100 ft2	5/8/0	6/10/0							
600/300	39.0/29.0	43.0/32.0							
200/100	24.0/18.0	27.0/20.0							
6/3	6.0/5.0	7.0/5.0							
API Filt ml/30 min	7.0	6.8			*	*			| 6.0
HTHP ml/30 min @Deg C	21.4 @	20.8 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	3.9	4.3							
NAP/Water % by vol	0.0/94.0	0.0/93.5							
Sand % by vol	0.70	0.60							
MBT ppb Eq.	6.0	7.0							
pH	8.80	8.80							8.80 | 9.50
Alk Mud (Pm)	0.20	0.15							
Alk Filt (Pf/Mf)	0.05/0.20	0.05/0.25							
Chlorides mg/l	26,000	26,500							
Hard Ca mg/l	360	400							
LGS/HGS %	3.7/0.2	4.3/0.1							
LGS/HGS ppb	33.51/2.78	38.94/0.94							
ASG	2.678	2.624							
PHPA ppb	1.10	1.10							1.00 | 1.50
Potassium % by vol	4.8	4.8			*	*			3.0 | 4.0
Sulfite residual mg/l	60	50							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 286.3 bbl
Total Volume Made : 1517.8 bbl

Used 3 x New #84 mesh and 2 x New #50 mesh screens.

Desander Underflow : 12.9 ppg @ 0.6 bph.
Desilter Underflow : 10.9 ppg @ 1.9 bph.
Centrifuge Overflow : 9.05 ppg.
Mud weight increased in the Skull Creek clays.

Rig Activity

Drilled / steered from 1074 m to 1247 m.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARAZAN D PLUS	25 Kg bag	25		9	16	$A 2,492.37
potassium chloride tech	25 Kg sack	651		86	565	$A 1,290.00
PAC-L	25 Kg bag	53		7	46	$A 796.95
phpa	25 Kg bag	86		6	80	$A 733.62
BARACOR 129	25 Kg can	33		7	26	$A 399.63
potassium hydroxide	20 Kg pail	33		6	27	$A 364.50
DEXTRID LTE	25 Kg bag	120			120	
DEXTRID LTE	50 lb bag	53		7	46	$A 227.99
Baracide	25 Kg can	9			9	
BARACOR 100	55 gal drum	2			2	
BARA-DEFOAM W300	25 l can	4			4	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	909			909	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	3			3	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	202			202	
Circal Y	25 Kg bag	192			192	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
Omyacarb 50	25 Kg bag	30			30	
soda ash	25 Kg bag	10			10	
sodium bicarbonate	25 Kg bag	16			16	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	84 50 50	24.0
FLC 58	84 84 50	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	24.0
Harrisburg Desilter	12	5	24.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			24.0

Time (Hrs)

Drilling	24.00
Circulating	
Trips	
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.00
Rotating	24.00
ROP	7.2
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	508.3	NAP Base		Dumped	
Pipe Cap	62.9	Drill Water		Transferred	
Active Pits	329.0	Dewatering		SC Equip	-59.0
Total Hole	571.2	Sea Water		Evaporation	
Total Circ	900.2	Whole Mud	292.0	Trips	
Reserve		Barite		Other	-161.4
Prev Vol	70.0	Chemicals	1.3	Total Surface	-220.4
Net Chg	72.9	Other Adds.		Downhole	
Total Vol	63.0	Total Added	293.3	Total Losses	-220.4

Other Fluid Types	Vol bbl
Premix	63.0

Deviation Information

Survey MD	1,212 m
Survey TVD	1,101 m
Angle	48.21
Direction	305
Horiz Displ.	295 m

Daily Products Cost	$A 6,305.06	Total Daily Cost	$A 7,105.06
Cumulative Products Cost	$A 49,810.33	Total Cumulative Cost	$A 59,410.33

Baroid Representatives: Tun Aung

Office 90 Talinga Rd	Melbourne		Tel 61-03-9581-7555
Warehouse c/o of Esso Australia Ltd	via Toora	Victoria	Tel 61-3-56-881-445

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Daily Drilling Fluid Report

Report No 013

Baroid, a Halliburton Company

Date 1/06/2004	Depth 1,473.0 m		
Spud Date 20/05/2004	Rig Activity Drilling		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill String	OD in	ID in	Length m
Bit Size	12.250 in	ITEM			
Make/Type	SEC-DBS / EBXS02S	Drill Pipe	5.000	4.276	1,180.5
Jets	3x18|1x20	Drill Pipe	5.000	3.000	56.1
TFA	1.052 sq-in	Drill Collar	6.500	2.750	9.8
Jets Velocity	67.4 m/sec	Drill Pipe	5.000	3.000	167.2
Jet Impact Force	781.4 lbf	Drill Collar	8.000	3.000	50.5
HHSI	1.47 hhp/in2	Drill Motor	8.000	0.000	8.9
Pres Drop @ Bit	410.0 psi				
Bit Depth	1,473.0 m	Open Hole	12.250		809.0
ECD @ Shoe	9.54 ppg				
ECD @ Bit	9.58 ppg				

OD in	Casing Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data							
Model	Nat 8-P-80	Nat 8-P-80					
Bore in	6.000	6.000					
Stroke in	8.500	8.500					
Eff (%)	97	97					
bbl/strk	.072	.072					
SPM	120	120					
gpm	363	363					
Total gpm	727	AV, Riser		Circ Pressure	psi	1,850.0	
Total Circ Time	58.3	AV, DP	40.5	Tot Prs Loss	psi	1,633.6	
BU Time, min	34.6	AV, DC	63.1	Pres Drop DP	psi	792.7	
Total Strokes	14,001	BU Stroke	8,301	Pres Drop An	psi	38.1	

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	15:00	22:15							
Depth m	1,420.0	1,463.0							
FL Temp Deg C	54	55							
Density ppg @ Deg C	9.30 @ 54	9.40 @ 55							8.50 | 9.40
FV @ Deg C	45 @ 54	45 @ 55							
PV @ Deg C	12 @ 49	13 @ 49							
YP lbs/100 ft2	24	23							
Gels lbs/100 ft2	6/13/0	6/14/0							
600/300	48.0/36.0	49.0/36.0							
200/100	30.0/23.0	30.0/23.0							
6/3	8.0/6.0	8.0/6.0							
API Filt ml/30 min	6.2	6.3			*	*			| 6.0
HTHP ml/30 min @Deg C	18.6 @	18.8 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	5.0	5.6							
NAP/Water % by vol	0.0/93.0	0.0/92.5							
Sand % by vol	0.70	0.60							
MBT ppb Eq.	11.0	12.0							
pH	8.80	8.80							8.80 | 9.50
Alk Mud (Pm)	0.15	0.12							
Alk Filt (Pf/Mf)	0.00/0.25	0.04/0.20							
Chlorides mg/l	24,500	24,000							
Hard Ca mg/l	380	420							
LGS/HGS %	4.7/0.3	5.0/0.6							
LGS/HGS ppb	42.82/4.54	45.58/8.18							
ASG	2.698	2.760							
PHPA ppb	1.10	1.10							1.00 | 1.50
Potassium % by vol	4.5	4.4			*	*			3.0 | 4.0
Sulfite residual mg/l	40	30							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 380.5 bbl
Total Volume Made : 1898.3 bbl

Used 3 x New #110 mesh screens.
Desander Underflow : 12.6 ppg @ 0.8 bph.
Desilter Underflow : 12.2 ppg @ 3.3 bph.
Centrifuge Overflow : 9.05 ppg.
Increase of mud weight and MBT in the clays of the Skull Creek and Belfast Fm.

Rig Activity

Drilled / steered from 1247 m to 1473 m. (Using reduced pump rates to drill from 1473 m).

Product Name	Units	Start	Rec	Used	End	Cost	
Drilling Fluids Engineer	Day(s)			1		$A	800.00
BARAZAN D PLUS	25 Kg bag	16		6	10	$A	1,661.58
potassium chloride tech	25 Kg sack	565		104	461	$A	1,560.00
PAC-L	25 Kg bag	46		12	34	$A	1,366.20
phpa	25 Kg bag	80		7	73	$A	855.89
Baracide	25 Kg can	9		1	8	$A	277.63
DEXTRID LTE	25 Kg bag	120		6	114	$A	214.98
DEXTRID LTE	50 lb bag	46		6	40	$A	195.42
BARACOR 129	25 Kg can	26		3	23	$A	171.27
potassium hydroxide	20 Kg pail	27		2	25	$A	121.50
BARACOR 100	55 gal drum	2			2		
BARA-DEFOAM W300	25 l can	4			4		
BARAFILM-Petrofree	55 Gal drum	1			1		
barite	25 Kg bag	909			909		
BAROFIBRE	25 lb bag	56			56		
BAROLIFT	15 lb box	3			3		
bentonite	25 Kg bag	46			46		
calcium chloride	25 Kg bag	4			4		
Circal 60/16	25 Kg bag	202			202		
Circal Y	25 Kg bag	192			192		
citric acid	25 Kg bag	16			16		
EZ SPOT	55 gal drum	4			4		
Kwikseal Fine	40 lb bag	40			40		
Omyacarb 50	25 Kg bag	30			30		
soda ash	25 Kg bag	10			10		
sodium bicarbonate	25 Kg bag	16			16		

Daily Products Cost	$A	6,424.47	Total Daily Cost	$A	7,224.47
Cumulative Products Cost	$A	56,234.80	Total Cumulative Cost	$A	66,634.80

Baroid Representatives: Tun Aung

Office 90 Talinga Rd	Melbourne		Tel 61-03-9581-7555
Warehouse c/o of Esso Australia Ltd	via Toora	Victoria	Tel 61-3-56-881-445

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	110 110 110	24.0
FLC 58	84 84 50	24.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	24.0
Harrisburg Desilter	12	5	24.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			24.0

Time (Hrs)

Drilling	23.50
Circulating	0.50
Trips	
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.00
Rotating	23.50
ROP	9.6
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	598.4	NAP Base		Dumped	
Pipe Cap	75.9	Drill Water		Transferred	
Active Pits	335.0	Dewatering		SC Equip	-98.0
Total Hole	674.3	Sea Water		Evaporation	
Total Circ	1,009.3	Whole Mud	382.0	Trips	
Reserve		Barite		Other	-175.5
Prev Vol	63.0	Chemicals	0.5	Total Surface	-273.5
Net Chg	109.0	Other Adds.		Downhole	
Total Vol	61.0	Total Added	382.5	Total Losses	-273.5

Other Fluid Types	Vol bbl
Premix	61.0

Deviation Information

Survey MD	1,472 m
Survey TVD	1,272 m
Angle	48.76
Direction	309
Horiz Displ.	491 m

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Daily Drilling Fluid Report

Report No 014

Baroid, a Halliburton Company

Date 2/06/2004	Depth 1,515.0 m		
Spud Date 20/05/2004	Rig Activity Bit Trip. Run In Hole.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill St ring	OD	ID	Length
		ITEM	in	in	m
Bit Size	12.250 in	Drill Pipe	5.000	4.276	1,248.3
Make/Type	DBS / FM2565	Drill Pipe	5.000	3.000	56.1
Jets	5x18	Drill Collar	6.500	2.750	9.8
TFA	1.243 sq-in	Drill Pipe	5.000	3.000	167.2
Jets Velocity	m/sec	Drill Collar	8.000	3.000	33.6
Jet Impact Force	lbf				
HHSI	hhp/in2				
Pres Drop @ Bit	psi				
Bit Depth	1,515.0 m	Open Hole	12.250		851.0
ECD @ Shoe	9.45 ppg				
ECD @ Bit	9.45 ppg				

OD in	Casing Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data		
Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm	AV, Riser	Circ Pressure	psi
Total Circ Time	AV, DP	Tot Prs Loss	psi
BU Time, min	AV, DC	Pres Drop DP	psi
Total Strokes	BU Stroke	Pres Drop An	psi

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Suction - 1							
Time	14:50	22:00							
Depth m	1,515.0	1,515.0							
FL Temp Deg C	34	36							
Density ppg @ Deg C	9.35 @ 34	9.45 @ 36				*			8.50 | 9.40
FV @ Deg C	47 @ 34	46 @ 36							
PV @ Deg C	13 @ 49	13 @ 49							
YP lbs/100 ft2	20	21							
Gels lbs/100 ft2	6/13/0	6/15/0							
600/300	46.0/33.0	47.0/34.0							
200/100	27.0/20.0	27.0/20.0							
6/3	7.0/5.0	7.0/5.0							
API Filt ml/30 min	6.3	6.2			*	*			| 6.0
HTHP ml/30 min @Deg C	19.2 @	18.8 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	5.4	5.9							
NAP/Water % by vol	0.0/92.5	0.0/92.0							
Sand % by vol	0.50	0.50							
MBT ppb Eq.	14.0	14.0							
pH	9.00	8.90							8.80 | 9.50
Alk Mud (Pm)	0.15	0.15							
Alk Filt (Pf/Mf)	0.07/0.30	0.05/0.20							
Chlorides mg/l	25,500	26,000							
Hard Ca mg/l	340	360							
LGS/HGS %	5.3/0.2	5.5/0.4							
LGS/HGS ppb	47.90/2.70	49.93/6.37							
ASG	2.654	2.717							
PHPA ppb	1.10	1.10							1.00 | 1.50
Potassium % by vol	4.6	4.6			*	*			3.0 | 4.0
Sulfite residual mg/l	40	20							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 193.9 bbl
Total Volume Made : 2092.2 bbl

Desander Underflow :13.0 ppg @ 0.7 bph.
Desilter Underflow : 12.1 ppg @ 2.5 bph.
Centrifuge Overflow : 9.05 ppg.

Used KCl for slug. Increase of mud weight while reaming to bottom with stiffer BHA.

Rig Activity

Drilled from 1473 m to 1515 m in Belfast Mudstone. (High torque and pump pressure). Circulated clean. Tripped out. Laid out directional assembly. Ran in with new bit and stiffer BHA to 1001 m. Ream from 1001 m to 1336 m.

Product Name	Units	Start	Rec	Used	End	Cost	
Drilling Fluids Engineer	Day(s)			1		$A	800.00
potassium chloride tech	25 Kg sack	461		92	369	$A	1,380.00
PAC-L	25 Kg bag	34		8	26	$A	910.80
BARAZAN D PLUS	25 Kg bag	10		2	8	$A	553.86
phpa	25 Kg bag	73		3	70	$A	366.81
DEXTRID LTE	25 Kg bag	114		8	106	$A	286.64
DEXTRID LTE	50 lb bag	40			40		
Baracide	25 Kg can	8		1	7	$A	277.63
potassium hydroxide	20 Kg pail	25		3	22	$A	182.25
BARACOR 129	25 Kg can	23		3	20	$A	171.27
BARABUF	50 lb bag		1		1		
BARACOR 100	55 gal drum	2			2		
BARA-DEFOAM W300	25 l can	4			4		
BARAFILM-Petrofree	55 Gal drum	1			1		
barite	25 Kg bag	909			909		
BAROFIBRE	25 lb bag	56			56		
BAROLIFT	15 lb box	3			3		
bentonite	25 Kg bag	46			46		
calcium chloride	25 Kg bag	4			4		
Circal 60/16	25 Kg bag	202			202		
Circal Y	25 Kg bag	192			192		
citric acid	25 Kg bag	16			16		
EZ SPOT	55 gal drum	4			4		
Kwikseal Fine	40 lb bag	40			40		
N-VIS P PLUS	50 lb bag		5		5		
Omyacarb 50	25 Kg bag	30			30		

Daily Products Cost	$A	4,129.26	Total Daily Cost	$A	4,929.26
Cumulative Products Cost	$A	60,364.06	Total Cumulative Cost	$A	71,564.06

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	110 110 110	20.0
FLC 58	84 84 50	20.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	13.0
Harrisburg Desilter	12	5	13.0

Centrifuge	Speed	Feed Rate	Hrs
DFE600			24.0

Time (Hrs)

Drilling	6.00
Circulating	1.50
Trips	11.00
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	5.50
Testing	
Logging	
Dir Work	
Repair	
Other	
Total	24.00
Rotating	11.50
ROP	7.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	618.4	NAP Base		Dumped	
Pipe Cap	79.3	Drill Water		Transferred	
Active Pits	328.0	Dewatering		SC Equip	-41.0
Total Hole	697.6	Sea Water		Evaporation	
Total Circ	1,025.6	Whole Mud	146.0	Trips	
Reserve		Barite		Other	-92.6
Prev Vol	1,009.3	Chemicals	3.9	Total Surface	-133.6
Net Chg	16.3	Other Adds.		Downhole	
Total Vol	1,025.6	Total Added	149.9	Total Losses	-133.6

Other Fluid Types	Vol bbl
Premix	105.0

Deviation Information

Survey MD	1,472 m
Survey TVD	1,272 m
Angle	48.76
Direction	309
Horiz Displ.	491 m

Baroid Representatives: Tun Aung

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Daily Drilling Fluid Report

Report No 015

Baroid, a Halliburton Company

Date 3/06/2004	Depth 1,686.0 m		
Spud Date 20/05/2004	Rig Activity Total Depth. Pull Out To Log.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information

Bit Size	12.250 in
Make/Type	DBS / FM2565
Jets	5x18
TFA	1.243 sq-in
Jets Velocity	57.0 m/sec
Jet Impact Force	689.5 lbf
HHSI	1.10 hhp/in2
Pres Drop @ Bit	306.2 psi
Bit Depth	1,686.0 m
ECD @ Shoe	9.93 ppg
ECD @ Bit	9.97 ppg

Drill String

ITEM	OD in	ID in	Length m
Drill Pipe	5.000	4.276	1,419.3
Drill Pipe	5.000	3.000	56.1
Drill Collar	6.500	2.750	9.8
Drill Pipe	5.000	3.000	167.2
Drill Collar	8.000	3.000	33.6
Open Hole	12.250		1,022.0

Casing

OD in	Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data

Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM	120	120
gpm	363	363

Total gpm	727	AV, Riser		Circ Pressure psi	1,575.0
Total Circ Time	62.7	AV, DP	40.5	Tot Prs Loss psi	1,564.8
BU Time, min	39.7	AV, DC	63.1	Pres Drop DP psi	985.0
Total Strokes	15,046	BU Stroke	9,524	Pres Drop An psi	42.1

Properties	1	2 Hyd	3	4	Targets 1	2	3	4	Program
Source	Suction - 1	Flow Line							
Time	15:20	23:20							
Depth m	1,686.0	1,686.0							
FL Temp Deg C	56	48							
Density ppg @ Deg C	9.75 @ 56	9.80 @ 48			*	*			8.50 | 9.40
FV @ Deg C	49 @ 56	52 @ 48							
PV @ Deg C	15 @ 49	16 @ 49							
YP lbs/100 ft2	21	24							
Gels lbs/100 ft2	6/18/0	7/21/0							
600/300	51.0/36.0	56.0/40.0							
200/100	30.0/21.0	32.0/23.0							
6/3	7.0/5.0	8.0/6.0							
API Filt ml/30 min	5.7	5.8							| 6.0
HTHP ml/30 min @Deg C	17.2 @	17.4 @							
Cake 32nd in	1.0/2.0	1.0/2.0							
Corr Solids % by vol	8.2	8.5							
NAP/Water % by vol	0.0/90.0	0.0/89.5							
Sand % by vol	1.00	1.10							
MBT ppb Eq.	16.0	16.0							
pH	8.90	9.00							8.80 | 9.50
Alk Mud (Pm)	0.10	0.15							
Alk Filt (Pf/Mf)	0.07/0.35	0.10/0.35							
Chlorides mg/l	23,000	25,000							
Hard Ca mg/l	520	480							
LGS/HGS %	7.5/0.7	8.0/0.5							
LGS/HGS ppb	68.48/9.89	72.87/8.07							
ASG	2.731	2.703							
PHPA ppb	1.00	1.00							1.00 | 1.50
Potassium % by vol	4.2	4.5			*	*			3.0 | 4.0
Sulfite residual mg/l	80	30							

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : 108.8 bbl.
Total Volume Made : 2201.0 bbl.
Desander Underflow : 13.8 ppg @ 0.7 bph.
Desilter Underflow : 13.2 ppg @ 3.0 bph.
Centrifuge Overflow : 9.5 ppg.
Added 2.5 ppb each of Circal 60/16 (Baracarb 25) and Circal Y (Baracarb 100) at 1582 m. While drilling through the Warre Sands and Eumeralla Silts mud weight increased from 9.5 + to 9.7+ ppg.
At TD, pumped 50 bbl BAROLIFT sweep (0.3 ppb) before and after wiper trip, minimal increase in returns. Pumped 2 x KCl pills.

Rig Activity

Continued reaming from 1336 m to 1515 m. Drilled from 1515 m to Total Depth of 1686 m in the Eumeralla Fm (13:30 hrs on 3/6/2004). Circulated and pumped 50 bbl of BAROLIFT pill. Made a 25 stand wiper trip. Ran in to bottom (working tight section from 1540 to 1650 m). Circulated clean with 50 bbl of BAROLIFT pill. Pumped Gyro tool. Pulled out to log.

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
PAC-L	25 Kg bag	26		10	16	$A 1,138.50
BARAZAN D PLUS	25 Kg bag	8		4	4	$A 1,107.72
potassium chloride tech	25 Kg sack	369		70	299	$A 1,050.00
Circal Y	25 Kg bag	192		58	134	$A 926.84
Circal 60/16	25 Kg bag	202		48	154	$A 624.96
BAROLIFT	15 lb box	3		2	1	$A 586.66
potassium hydroxide	20 Kg pail	22		7	15	$A 425.25
Baracide	25 Kg can	7		1	6	$A 277.63
DEXTRID LTE	25 Kg bag	106		7	99	$A 250.81
DEXTRID LTE	50 lb bag	40			40	
BARACOR 129	25 Kg can	20		2	18	$A 114.18
BARABUF	50 lb bag	1			1	
BARACOR 100	55 gal drum	2			2	
BARA-DEFOAM W300	25 l can	4			4	
BARAFILM-Petrofree	55 Gal drum	1			1	
barite	25 Kg bag	909			909	
BAROFIBRE	25 lb bag	56			56	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
citric acid	25 Kg bag	16			16	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
N-VIS P PLUS	50 lb bag	5			5	
Omyacarb 50	25 Kg bag	30			30	
phpa	25 Kg bag	70			70	

Daily Products Cost	$A	6,502.55	Total Daily Cost	$A	7,302.55
Cumulative Products Cost	$A	66,866.61	Total Cumulative Cost	$A	78,866.61

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	110 110 110	21.0
FLC 58	84 84 50	21.0
Hydrocyclones	**Cones**	**Screens**	**Hrs**	
Harrisburg Desand	2	10	20.5	
Harrisburg Desilter	12	5	20.5	
Centrifuge	**Speed**	**Feed Rate**	**Hrs**	
DFE600			24.0	

Time (Hrs)

Drilling	10.00
Circulating	4.50
Trips	4.50
Rig Surveys	1.50
Fishing	
Run Casing	
Coring	
Reaming	3.00
Testing	
Logging	
Dir Work	
Repair	
Other	0.50
Total	24.00
Rotating	13.00
ROP	17.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	686.5	NAP Base		Dumped	
Pipe Cap	89.1	Drill Water		Transferred	
Active Pits	309.0	Dewatering		SC Equip	-75.0
Total Hole	775.6	Sea Water		Evaporation	
Total Circ	1,084.6	Whole Mud	200.0	Trips	
Reserve	35.0	Barite		Other	-44.8
Prev Vol	1,025.6	Chemicals	13.8	Total Surface	-119.8
Net Chg	94.0	Other Adds.		Downhole	
Total Vol	1,119.6	Total Added	213.8	Total Losses	-119.8

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	1,472 m
Survey TVD	1,272 m
Angle	48.76
Direction	309
Horiz Displ.	491 m

Baroid Representatives: Tun Aung

Office 90 Talinga Rd Melbourne Tel 61-03-9581-7555

Warehouse c/o of Esso Australia Ltd via Toora Victoria Tel 61-3-56-881-445

908148 166

Daily Drilling Fluid Report

Report No 016

Baroid, a Halliburton Company

Date 4/06/2004	Depth 1,686.0 m		
Spud Date 20/05/2004	Rig Activity Logging.		
Operator TXU GAS STORAGE PTY LTD	Report For Peter Dwyer / Andy Urdevics	Well Name Iona-6	
Contractor Century Drilling Ltd	Report For Scott Bucknell/Neville Scutcheon	Rig Name 18	
Country Australia	State/Province/Region Victoria	County/Geographic Area Otway Basin	Field or Block Iona/PPL-2

Bit Information		Drill String ITEM	OD in	ID in	Length m
Bit Size	in				
Make/Type	/				
Jets					
TFA	sq-in				
Jets Velocity	m/sec				
Jet Impact Force	lbf				
HHSI	hhp/in2				
Pres Drop @ Bit	psi				
Bit Depth	m	Open Hole	12.250		1,022.0
ECD @ Shoe	ppg				
ECD @ Bit	ppg				

OD in	Casing Set	MD m
20.000	@	11.0
13.375	@	664.0

Form Integrity 10.50 ppg

Circulation/Hydraulics Data		
Model	Nat 8-P-80	Nat 8-P-80
Bore in	6.000	6.000
Stroke in	8.500	8.500
Eff (%)	97	97
bbl/strk	.072	.072
SPM		
gpm		

Total gpm | AV, Riser | Circ Pressure psi
Total Circ Time | AV, DP | Tot Prs Loss psi
BU Time, min | AV, DC | Pres Drop DP psi
Total Strokes | BU Stroke | Pres Drop An psi

Properties	1	2	3	4	Targets 1	2	3	4	Program
Source	Suction - 1								
Time	02:00								
Depth m	1,686.0								
FL Temp Deg C	40								
Density ppg @ Deg C	9.80 @				*				8.50 | 9.40
FV @ Deg C	53 @ 48								
PV @ Deg C	0 @ 49								
YP lbs/100 ft2	0								
Gels lbs/100 ft2	0/0/0								
600/300	0.0/0.0								
200/100	0.0/0.0								
6/3	0.0/0.0								
API Filt ml/30 min	0.0								
HTHP ml/30 min @Deg C									| 6.0
Cake 32nd in	0.0/0.0								
Corr Solids % by vol	8.5								
NAP/Water % by vol	0.0/89.5								
Sand % by vol	0.00								
MBT ppb Eq.	0.0								
pH	0.00				*				8.80 | 9.50
Alk Mud (Pm)	0.00								
Alk Filt (Pf/Mf)	0.00/0.00								
Chlorides mg/l	0								
Hard Ca mg/l	0								
LGS/HGS %	8.0/0.5								
LGS/HGS ppb	72.87/8.07								
ASG	2.703								

Fluid Treatments

Fluid Type: KCl/PHPA/Polymer

Daily Volume Made : Nil.
Total Volume Made : 2201.0 bbl.

No chemicals used today. Inventory adjustment made on Report #15.

Total 48 pallets to be sent back (including 1 pallet of mud testing equipment).

Baroid off location on 5/6/2004.

Rig Activity

Continued pulling out of hole. Laid out bit and BHA. Rigged up and ran wireline logs (two runs).

Product Name	Units	Start	Rec	Used	End	Cost
Drilling Fluids Engineer	Day(s)			1		$A 800.00
BARABUF	50 lb bag	1			1	
Baracide	25 Kg can	6			6	
BARACOR 100	55 gal drum	2			2	
BARACOR 129	25 Kg can	18			18	
BARA-DEFOAM W300	25 l can	4			4	
BARAFILM-Petrofree	55 Gal drum	1			1	
BARAZAN D PLUS	25 Kg bag	4			4	
barite	25 Kg bag	909			909	
BAROFIBRE	25 lb bag	56			56	
BAROLIFT	15 lb box	1			1	
bentonite	25 Kg bag	46			46	
calcium chloride	25 Kg bag	4			4	
Circal 60/16	25 Kg bag	154			154	
Circal Y	25 Kg bag	134			134	
citric acid	25 Kg bag	16			16	
DEXTRID LTE	25 Kg bag	99			99	
DEXTRID LTE	50 lb bag	40			40	
EZ SPOT	55 gal drum	4			4	
Kwikseal Fine	40 lb bag	40			40	
N-VIS P PLUS	50 lb bag	5			5	
Omyacarb 50	25 Kg bag	30			30	
PAC-L	25 Kg bag	16			16	
phpa	25 Kg bag	70			70	
potassium chloride tech	25 Kg sack	299			299	
potassium hydroxide	20 Kg pail	15			15	

Solid Control Equipment

Shaker	Screens	Hrs
FLC 58	84 110 110	0.0
FLC 58	84 84 50	0.0

Hydrocyclones	Cones	Screens	Hrs
Harrisburg Desand	2	10	
Harrisburg Desilter	12	5	

Centrifuge	Speed	Feed Rate	Hrs
DFE600			

Time (Hrs)

Drilling	
Circulating	
Trips	4.00
Rig Surveys	
Fishing	
Run Casing	
Coring	
Reaming	
Testing	
Logging	19.50
Dir Work	
Repair	
Other	0.50
Total	24.00
Rotating	
ROP	0.0
Dil Rate	

Fluid Volume Breakdown KCl/PHPA/Polymer

Active	bbl	Additions	bbl	Losses	bbl
Annulus	825.6	NAP Base		Dumped	
Pipe Cap		Drill Water		Transferred	
Active Pits	268.0	Dewatering		SC Equip	
Total Hole	825.6	Sea Water		Evaporation	
Total Circ	268.0	Whole Mud		Trips	
Reserve	26.0	Barite		Other	
Prev Vol		Chemicals		Total Surface	
Net Chg		Other Adds.		Downhole	
Total Vol		Total Added		Total Losses	

Other Fluid Types	Vol bbl

Deviation Information

Survey MD	1,472 m
Survey TVD	1,272 m
Angle	48.76
Direction	309
Horiz Displ.	491 m

Daily Products Cost	$A	0.00	Total Daily Cost	$A	800.00
Cumulative Products Cost	$A	66,866.61	Total Cumulative Cost	$A	79,666.61

Baroid Representatives: Tun Aung

Office	90 Talinga Rd	Melbourne	Tel 61-03-9581-7555
Warehouse	c/o of Esso Australia Ltd	via Toora Victoria	Tel 61-3-56-881-445

APPENDIX 4

Cuttings Descriptions (664m – TD)

IONA-6 CUTTINGS DESCRIPTION 664M-TD	
Depth (mRT)	**Lithology & Texture**
669	**95% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse to vcse, poorly - mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **5% Siltstone**, lt-med gry, had, blocky, ?qtz cmt, sandy, micro-micaceous. **Trace Claystone**, med-gry to rd-brn, hd, angular, massive, micaceous
672	**100% Sandstone**, translucent to lt gry, loose –friable, med-cse grned, occ vcse, poorly - mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **Tr Siltstone and Claystone as above.**
675	**100% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse to vcse, poorly - mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **tr Siltstone and Claystone as above.**
678	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse to vcse, poorly - mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **tr Siltstone** lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous.and **Claystone** as above.
681	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **tr Siltstone** lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous.and **Claystone** as above.
684	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, had, massive, micromicac.
687	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **5% Siltstone**,lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous **Tr Claystone**, med-dk gry, had, massive, micromicac.
690	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic). Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, had, massive, micromicac.
693	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to med, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, had, massive, micromicac.
696	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to med, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry to rd-brn, had, massive, micromicac.
699	sample missed
702-705	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to med, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry to rd-brn, had, massive, micromicac.
708	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to med, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry to rd-brn, had, massive, micromicac.
711	**90% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **10% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry to rd-brn, hrd, massive, micromicac.
714	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to med, poorly-mod srtd, ang – submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, massive, micromicac.
717	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, massive, micromicac.
720	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, massive, micromicac.
723	**80% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - submnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **15% Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.

726	**90% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **5% Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
729	**90% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **5% Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
732	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
735	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
738	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
741	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
744	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous.
747	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous.
750	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous, pyritised i/p.
753	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous, pyritised i/p.
756	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous, pyritised i/p.
759	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** – blk, fibrous, pyritised i/p.
762	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-fn grned, occ cse, mod - well srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.
765	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-fn grned, occ cse, mod - well srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.
768	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, fn-cse grned, occvcse, mod - poor srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.
771	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, fn-cse grned, occvcse, mod - poor srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.

774	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, fn-cse grned, occvcse, mod - poor srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.
777	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, fn-cse grned, occvcse, mod - poor srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous, pyritised i/p.
780	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity.
783	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity.
786	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
789-792	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal**, blk, fibrous
795-798	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
801-804	**100% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang – subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
807	**90% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **10% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
810	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity **.5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
813	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
816	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
819	**90% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **10% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
822	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
825	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
828	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. NB: Probable pebble-sized material
831	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity **.5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
834	**95% Sandstone**, translucent to lt gry to rare lt yel grey, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
837	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous.

	Tr Claystone, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
840	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse to vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **5% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, vitreous blk, fibrous.
843	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med to cse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, vitreous blk, fibrous.
846	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med to cse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
849	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med to cse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **10% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
852	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **10% Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
855	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
858	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
861	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
864	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
867	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
870-873	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
876	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly-mod srtd, ang - subrnnded, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
879-882	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
885-888	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
891	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, hrd, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
894	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, hrd, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
897	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity. **Tr Siltstone**, lt-med gry to lt gry-grn, hrd, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
900	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, poorly srtd, ang - subang, trace lithic grns (granitic, & quartzitic), tr pyrite. Fair to good inferred porosity.

	Tr Siltstone, lt-med gry to lt gry-grn, had, blocky, ?qtz cmt, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
903	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **Tr Siltstone**, lt-med gry, hrd, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
906	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **10% Siltstone**, lt-med gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
909	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
912	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
915	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
918	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above.
921	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, blk, vitreous, brittle.
924	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
927	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
930-933	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
936-945	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
948-51	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
954	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
957	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, blk, vitreous, brittle.
960	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity

	15% Siltstone, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, blk, vitreous, brittle.
963	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, blk, vitreous, brittle.
966	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
969	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
972	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
975	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod-poorly srtd, ang - subang, trace lithic grns, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle.
978	**100% Sandstone**, translucent to lt gry, loose -friable, med grned, rarely cse, mod-well srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
981	**100% Sandstone**, translucent to lt gry, loose -friable, med grned, rarely cse, mod-well srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
984	**100% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, mod srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
987	**100% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
990	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle
993	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle
996	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **5% Coal** as above, blk, vitreous, brittle
999	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle. NB: possible shattered qtz pebbles.
1002	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle. NB: possible shattered qtz pebbles.
1005	**100% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **Tr Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac. **Tr Coal** as above, blk, vitreous, brittle. NB: possible shattered qtz pebbles.

1008	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **20% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1011-1014	**95% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1017	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod-poorly srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1020	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom med, mod-well srtd, ang - subang, tr pyrite. Good to excellent inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1023	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1026	**95% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd, blocky-platy fract, massive, micromicac.
1029	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd. **Tr Coal**, blk, vitreous.
1032	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd. **Tr Coal**, blk, vitreous.
1035	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd. **Tr Coal**, blk, vitreous.
1038	**90% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **10% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd. **Tr Coal**, blk, vitreous.
1041-1044	**95% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom med-cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd.
1047	**95% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd.
1050	**90% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **5% Siltstone**, med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **5% Claystone**, med-dk gry to blk-gry, hrd., blky, micac.
1053	**60% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **40% Siltstone**, lt-med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1056	**60% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom med-cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **40% Siltstone**, lt-med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1059-1062	**85% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **15% Siltstone**, lt-med-dk gry, sft-firm, argillac, blocky, micro-micaceous. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1065-1068	**30% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **70% Siltstone**, lt-med-dk gry, sft-firm, argillac, blocky. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1071	**85% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity.

	15% Siltstone, lt-med-dk gry, sft-firm, argillac, blocky. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1074-1077	**85% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. Good inferred porosity. **15% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1080	**85% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **15% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1083	**70% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **30% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1086	**70% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **30% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1089	**70% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **30% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1092-1095	**50% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **50% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1098	**50% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **50% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1101	**50% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. Possible pebble bands. **50% Siltstone,** lt-med-dk gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1104	**50% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **50% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1107	**50% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **50% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac..
1110	**60% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. . **40% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1113	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **20% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1116	**40% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **60% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1119-1122	**30% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. Good inferred porosity. **70% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1125	**5% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **95% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1128-1131	**5% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **95% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1134	**5% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **95% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1137	**10% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **90% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1140	**20% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **80% Siltstone,** lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.

1143	**20% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **80% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1146	**50% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **50% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1149-1152	**70% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse-vcse, mod-prly srtd, ang - subang, tr pyrite. **30% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1155	**85% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod srtd, ang - subang, tr pyrite. **15% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1158	**60% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom cse, mod srtd, ang - subrndded, tr pyrite. **40% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1161	**90% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med-cse, mod-prly srtd, ang - subrndded, tr pyrite. **10% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1164	**90% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med-cse, mod-prly srtd, ang - subrndded, tr pyrite. **10% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1167	**90% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med-cse, mod-prly srtd, ang - subrndded, tr pyrite. **10% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1170	**85% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med-cse, mod-prly srtd, ang - subrndded, tr pyrite. **15% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1173	**15% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med-cse, mod-prly srtd, ang - subrndded, tr pyrite. **85% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1176	**10% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **90% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd., blky, micac.
1179	**10% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **90% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1182	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1185	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1188	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1191	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1194	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1197	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1200	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1203	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1206	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1209-1212	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks. **Tr Claystone**, med-dk gry, hrd, blky, micac.
1215	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite, . **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.

1218	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.
1221	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.
1224	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.
1227	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.
1230	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks.
1233	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1236-1239	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1242	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1245-1248	**Tr Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **100% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1251	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1254	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1257	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite. **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1260	**5% Sandstone**, translucent to lt gry, loose -friable, fn-med-vcse grned, dom med, mod-prly srtd, ang - subrndded, tr pyrite, . **95% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite. V mnr tr glauconite, bri grn, sft, mass.
1263	**10% Sandstone**, translucent to lt gry to lt grn, loose -friable, fn-med grned, mod srtd, ang, tr pyrite, glauconitic, tr dk grn glauconite grns. **90% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1266	**50% Sandstone**, translucent to lt gry to lt grn, loose -friable, fn-med grned, dom med-grnd, mod srtd, ang, tr pyrite, glauconitic, tr dk grn glauconite grns. **50% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1269	**90% Sandstone**, translucent to lt gry to lt grn, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, tr dk grn glauconite grns. Good to excellent inferred porosity. **10% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1272	**60% Sandstone**, translucent to lt gry to lt grn, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, tr dk grn glauconite grns. Good to excellent inferred porosity. **40% Siltstone**, lt-med gry to lt-med brn-gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1275-1278	**95% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1281	**85% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **15% Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1284	**85% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **15% Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1287	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1290-1293	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1296	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1299	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1302-1305	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod-well srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1308	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod-well srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Siltstone**, lt-med gry, sft-firm, argillac, blocky, minor carbonacaeous flecks, tr pyrite.
1311-1314	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, dom med-grnd, mod-well srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1317	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1320	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1323	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr

	pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1326	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1329	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1332-1338	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.
1341	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above.
1344	**95% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **5% Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1347	**95% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **5% Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1350	**95% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **5% Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1353	**95% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **5% Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1356	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1359	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1362	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1365	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1368	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1371	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1374	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1377-1380	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1383-1386	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1389	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1392-1395	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1398-1401	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky.
1404	**100% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **Tr Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky. **Tr Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1407	**60% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **35% Sandy Siltstone**, lt gry-brn, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1410	**60% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **35% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1413	**80% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **20% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **Tr Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.

1416	**80% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. Sli less glauconitic than above. **20% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **Tr Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1419	**15% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **80% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1422	**35% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **60% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1425	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1428	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1431	**15% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **80% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1434	**50% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **50% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1437	**50% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **50% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1440-1443	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1446	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1449	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1452	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1455	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1458	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1461	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1464	**5% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **5% Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1467	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1470	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1473	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to submdded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity.

	Tr Sandy Siltstone, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1476	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1479	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1482	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1485	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1488	**Tr Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **100% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1491	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1494	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1497	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1500	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1503	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1506	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1509	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular.
1512	**10% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **90% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular. Sli less glauconitic than above.
1515	**15% Sandstone**, translucent to lt gry to lt grn to lt yell, loose -friable, fn-med grned, occ cse-vcse, mod srtd, subang to subrndded, tr pyrite, glauconitic, mnr dk grn glauconite grns. Good inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **85% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic, both as dispersed and nodular. Sli less glauconitic than above.
1518	**60% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **40% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1521	**80% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **20% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1524	**90% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **10% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1527	**90% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity.

	Tr Sandy Siltstone, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **10% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1530	**90% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **10% Silty Claystone**, med gryish-grn, sft, dispersive, glauconitic.
1533-1536	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-grn, sft, dispersive, glauconiti.c.
1539-1542	**90% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **10% Silty Claystone**, med gry, sft, dispersive, glauconitic.
1545-1551	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, dom cse, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gry to med-gry, sft, dispersive.
1554-1557	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse grned, dom cse, occ vcse, mod srtd, subang to subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, to med-gry, sft, dispersive.
1560-1563	**95% Sandstone**, translucent to lt gry, loose -friable, cse-vcse grned, mod srtd, subang to dom subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med-gry, sft, dispersive.
1566-1569	**95% Sandstone**, translucent to lt gry, loose -friable, cse-vcse grned, mod srtd, subang to dom subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, to med-gry, sft, dispersive.
1572-1578	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse-vcse grned, mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-brn to med-gry, sft, dispersive.
1581-1584	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse-vcse grned, mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-brn to med-gry, sft, dispersive.
1587	**95% Sandstone**, translucent to lt gry, loose -friable, med-cse-vcse grned, mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **Tr Sandy Siltstone**, lt gry-brn to occ yell-gry, sli argillac, brittle-sft, blocky. **5% Silty Claystone**, med gryish-brn to med-gry, sft, dispersive.
1590	**80% Sandstone**, translucent to lt gry, loose -friable, med-cse-vcse grned, mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **10% Silty Claystone**, med gry-brn to med-gry, sft, dispersive. **10% Coal**,blk, brittle, fissile, vitreous.
1593-1596	**70% Sandstone**, translucent to lt gry, loose -friable, med-cse-vcse grned, mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **20% Silty Claystone**, med gry-brn to.med-gry, sft, dispersive. **10% Coal**,blk, brittle, fissile, vitreous.
1599-1602	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **20% Silty Claystone**, med gry-brn to med-gry, sft, dispersive. **Tr Coal**,blk, brittle, fissile, vitreous.
1605	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **20% Silty Claystone**, med gry-brn to med-gry, sft, dispersive. **Tr Coal**,blk, brittle, fissile, vitreous.
1608	**80% Sandstone**, translucent to lt gry, loose -friable, med-vcse grned, dom med-cse mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **20% Silty Claystone**, med gry-brn to med-gry, sft, dispersive.
1611	**80% Sandstone**, translucent to lt gry, loose –friable, med-vcse grned, dom med-cse mod-poorly srtd, dom subang subrndded, tr pyrite. Good to excellent inferred porosity. **20% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1614	**80% Sandstone**, translucent to lt gry, loose -friable to firm, med-vcse grned, dom med, mod-poorly srtd, dom subang subrndded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **20% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1617	**80% Sandstone**, translucent to lt gry, loose -friable to firm, med-vcse grned, dom med, mod-poorly srtd, dom subang subrndded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **20% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1620	**80% Sandstone**, translucent to lt gry, loose -friable to firm, med-vcse grned, dom med-cse mod-poorly srtd, dom subang subrndded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **20% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.

1623	**95% Sandstone**, translucent to lt gry, loose -friable to firm, med-vcse grned, dom med, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **5% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1626	**95% Sandstone**, translucent to lt gry, loose -friable to firm, fn-cse grned, dom fn-med, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **5% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1629-1632	**95% Sandstone**, translucent to lt gry, loose -friable to firm, fn-cse grned, dom fn-med, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **5% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1635	**95% Sandstone**, translucent to lt gry, loose -friable to firm, fn-cse grned, dom fn-med, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **5% Silty Claystone gading to Argillaceous Siltstone**, med gry-brn to med-gry, sft, dispersive.
1638	**50% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **50% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p.
1641	**40% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **60% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1644	**40% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **60% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1647-1650	**20% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **80% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1653-1656	**20% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **80% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1659-1662	**10% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **90% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1665-1668	**10% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **90% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1671-1674	**10% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **90% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1677-1680	**10% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **90% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
1683-1686	**10% Sandstone**, translucent to lt gry, loose -friable to firm, fn-vcse grned, dom med-cse, mod-poorly srtd, dom subang submdded, tr pyrite, patchily cmted with calcite in finer grain fraction. Good inferred porosity. **90% Silty Claystone gading to Argillaceous Siltstone**, lt to med-gry to med gry-brn, sft, dispersive, sandy i/p, tr carbonaceous flecks.
TD = 1686.0m MDRT (Driller's Depth)	

APPENDIX 5

Daily Geological Reports by ECL Australia

APPENDIX 6

Well Seismic Edit & Geogram Report

Schlumberger

908148 220

TXU Gas Storage Pty Ltd

IONA-6

WELL SEISMIC PROCESSING REPORT

CHECKSHOT / GEOGRAM

FIELD: Iona

COUNTRY: Australia

COORDINATES: Easting: 677 185.6 m
: Northing: 5 728 761.7 m

PERMIT: PPL2

DATE OF SURVEY: 4-JUN-2004

SURVEY TYPE: Offset Source Checkshot, Onshore, Airgun

REFERENCE NO: DS 1004-05

Prepared by: L. Dahlhaus

Schlumberger Oilfield Australia Pty Ltd
Level 5, 256 St. Georges Terrace, Perth
WA 6000 Australia

908148 221

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1 Introduction

A borehole seismic survey was recorded in one run in the deviated (max 49.5 deg) onshore VIC well Iona-6 on 4 June 2004. This survey consisted of fixed offset checkshot measurements in open and cased hole. The data were acquired using a single Combinable Seismic Acquisition Tool (CSAT-B) downhole and an Air gun source deployed in a pit at 524 m offset. This source offset was chosen to be vertically above the downhole intersection of the well track and the Top Waarre formation at 1513 m MD RT.

Processing of the data consisted of performing Checkshot processing, Sonic calibration and Synthetic seismogram generation. This report describes the processing techniques used, the parameters chosen and presents the results of the data processing.

In deviated wells it is recommended that for sonic calibration purposes vertical incident ray paths be recorded. In this case a fixed offset source was used. To reduce the errors in using only a straight ray geometrical correction to correct these slant measured transit times to true vertical times, ray tracing and travel time inversion were used. This greatly improved the shape of the drift curve and allowed drift correction without introducing artificial contrasts. It should be noted however that this is still an approximation that does not take into account possible lateral velocity variations in the overburden.

2 Data Acquisition

The data were acquired in one logging run in both open and cased hole, using the three component Combinable Seismic Acquisition Tool (CSAT-B) fitted with GAC accelerometers. One 150 cu in G-Gun Airgun was used as the source operating under 2000 psi. The gun was suspended in a pit 2m below GL (102 m above MSL) at an offset of 524 m, azimuth 305 deg from the wellhead. A reference hydrophone was positioned 1 m above the gun. Recording was made on the Schlumberger Maxis 500 Unit using DLIS format. 11 Checkshot levels were acquired from 1619 m MD RT to 109.2 m MD RT at varying intervals. A minimum of 3 good shots were recorded for each level. Figure 13 shows a plan of the well deviation and the source location.

Table 1. Survey Parameters

Elevation of KB/RT	110.5 m above MSL
Elevation of GL (at Source)	102 m above MSL
Well Deviation	Max 49.5 deg
Energy Source	1x 150 cu in G-Gun
Reference Sensor	Hydrophone
Source & Hyd. Offset	524 m
Source & Hyd. Azimuth	305 deg
Source Depth	10.5 m below RT
Hydrophone Depth	9.5 m below RT
Tool	CSAT-B
Sensor Type	3-C GAC – Geophone Accelerometer

3 Well Seismic Edit

The initial preparation of the data is called Well Seismic Edit and consists of:

- Load Data
- Edit bad records & Sort Data
- Pick Reference Break times
- Median stack & Geophone Transform
- Bandpass Filter : Butterworth Zero Phase, 5-60Hz
- Rotation to Tangent to RaY Component: X,Y to HMX / Z,HMX to TRY
- Pick Break time on TRY
- Survey Geometry / Datum corrections: 2D Ray Tracing / Travel Time Inversion

Each shot of the raw GAC data was evaluated and edited to remove bad traces. The hydrophone data were also evaluated for signature changes and timing shifts. The good shots at each level were stacked, using a median stacking technique, to increase the signal to noise ratio of the data. For better comparison with geophone data, a transform to a 10 Hz/76% damped geophone is applied to the GAC data. This transform from acceleration to velocity is in the field approximated by integrating raw data. After stacking and transform the transit time of each trace was re-computed. The following subsections describe the main aspects of the well seismic edit phase.

3.1 Data Quality

The data quality is good. The source signature is stable indicating a constant gun pressure and gun depth. As the well is highly deviated all three GAC receiver components show energy. There is good continuity and little contamination. Due to the fixed offset and the non-gimballed receivers in the CSAT-B, a rotation towards the maximum downgoing arriving energy is performed. This Tangent to Ray (TRY) component will be used for the final time picking.

3.2 Transit Time Measurement

The measured transit time corresponds to the difference between arrivals recorded by surface and downhole sensors. The reference time (zero time) is the physical recording of the source signal by accelerometers on the gun or sensors positioned near the source. In this case, a hydrophone positioned 1 m above the gun was used as the reference. An inflection point tangent first break picking algorithm was used on both the hydrophone and the geophone data.

3.3 Stacking

After reordering and selecting the raw shots, a median stack was performed on the three component data. In this method of stacking, at each sample time, the amplitudes of the input traces are read and sorted in ascending order. The output is the median amplitude value from this ordering. If an even number of traces is input, the first is dropped and a median calculated. Then the last is dropped and another median found. The final output is the average of these two median values. The surface sensor (hydrophone) breaks are used as the zero time for stacking. The break time of each trace is recomputed after stacking and GAC transform. The X, Y and Z component stacks are presented in Figures 2 ,3 and 4.

3.4 Bandpass Filter

The effective bandwidth of the recorded data is evaluated by examining the amplitude spectrum of the stacked vertical component presented in Figure 1. A zero phase Butterworth Bandpass filter was applied to the data limiting the bandwidth to 5-60 Hz.

3.5 Rotation to Vertical Component

Non-gimballed GAC receivers record the CSAT-B data. To obtain the best component for picking the downgoing first break, the 3 component data need to be rotated to the TRY axis (i.e. Tangent to RaY direction). This can be done by first taking the two horizontal components X and Y and determining via energy hodograms around the picked transit time the orientation of the maximum horizontal component (HMX) as shown in Figure 5. Figure 6 shows the remaining residual energy on the orthogonal component (HMN). The Z and HMX components are then rotated also using energy hodograms and this produces the TRY component for time picking. Figure 7 shows this TRY Component used for further processing.

3.6 Survey Geometry / Datum corrections

Seismic Reference Datum (SRD) is at Mean Sea Level. A near surface reference velocity of 1600 m/s was determined using borehole seismic data, WesternGeco and Client input and applied to the data to correct to SRD. Survey geometry corrections for the lateral offset of the source position with respect to the downhole receiver in this well taking into account well deviation have been applied. This produced a very irregular drift curve, while using good quality sonic data, indicating that straight geometrical corrections to correct the measured times to vertical times are not sufficiently accurate. This may also be further complicated by lateral velocity variations.

To obtain a better vertical time depth relation the measured borehole seismic times were used to construct a 1D model. 2D Ray tracing using the actual source-receiver geometry in a homogeneous background model and travel time inversion were used to obtain a calibrated model matching +/- 1ms to the measured data. This model is shown in figures 8a and 8b. Vertical travel times from MSL to each receiver were subsequently obtained by Ray tracing through this model as shown in figures 9a and 9b.

Figure 9c shows that the vertical times from Ray Tracing/ Travel Time Inversion produce a different and smoother time-depth curve than the geometry corrected vertical times. Drift curve analysis in the next chapter confirms that this is a more realistic result.

3.7 Composite Displays of Results

A snapshot of the 40 cm/s composite display (PLOT-1) of checkshot calibrated log and synthetic data is shown in figure 10.

Composite displays of the generated Synthetic Seismograms are also shown in Figures 11a / 11b. These figures show displays in both normal and reverse polarity. The polarity convention used (Normal: Increase in Acoustic Impedance is a Trough) is explained in Figure 14.

4 Sonic Calibration Processing

4.1 Sonic Calibration

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift versus increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift ($\Delta drift/\Delta depth < 0$) the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift ($\Delta drift/\Delta depth > 0$), the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. Uniform or block shift. This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in µsec/m .

2. ΔT Minimum. In the case of negative drift a second method is used, called Δ minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min} . Values of Δwhich are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, $\Delta t - \Delta t_{min}$.

$\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be defined as:

$$G = 1 + \frac{drift}{(\Delta t - \Delta t_{min})dZ}$$

Where drift is the drift over the interval to be corrected and the value $(\Delta t - \Delta t_{min})dZ$ is the time difference between the integrals of the two curves Δt and Δt_{min}. only over the intervals where $\Delta t > \Delta t_{min}$.

Hence the corrected sonic: $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$.

4.2 Open Hole Logs

The monopole mode compressional DTCO curve from the DSI data was used for drift computation. The log quality is good.

The density log was also recorded to the top of the sonic log. Other logs included as companion curves are: Gamma Ray, Neutron Porosity, Resistivity (Deep and Shallow) and Caliper.

4.3 Correction to Datum and Velocity Modeling

The sonic calibration processing has been referenced to mean sea level which the seismic reference datum. Geometry corrections are applied to correct for well deviation, source offset, source depth and SRD elevation.

4.4 Sonic Calibration Results

The checkshot near the Top of the Waarre Formation on the sonic log (1513 m MD RT) is chosen as the origin for the calibration drift curve.

The drift curve is the correction imposed upon the sonic log. The adjusted sonic curve is considered to be the best result using the available data. A list of shifts used on the sonic data is given in A2 Listing (supplied in digital form on Final Results CD-ROM). A minimum number of knee points were used due to the increased measurement uncertainty introduced by both the well deviation and possible lateral velocity variations in the overburden.

The Velocity Crossplot is presented in Figure 12 and as a separate plot.

The goals of sonic calibration and time-to-depth conversion in a deviated well may not be compatible due to anisotropy and the different ray paths of sonic and borehole seismic data. The mild, largely positive drift (normal dispersion) however indicates that this calibration method here may be reasonably used.

On request the adjusted sonic Velocity versus Depth curve was resampled at 10 m and is shown on the velocity crossplot and attached as listing in Appendix 4.

5 Synthetic Seismogram Processing

GEOGRAM plots were generated using three different wavelets: 20 Hz, 30 Hz and 40 Hz (Dominant Frequency) zero phase Ricker wavelets.

The presentation includes composite plots on a time scale of 40 cm/sec in both normal and reverse polarity (Plots 1 and 2).

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated form sonic and density measurements in the wellbore. The steps in the processing chain are the following:

- Depth to time conversion
- Reflection coefficient generation
- Attenuation coefficient calculation
- Convolution
- Output

5.1 Depth to Time Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index.

5.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 ms). Reflection coefficients are then computed using:

$$R = \frac{r_2.v_2 - r_1.v_1}{r_2.v_2 + r_1.v_1}$$

where:

r_1 = density of the layer above the reflection interface
r_2 = density of the layer below the reflection interface
v_1 = compressional wave velocity of the layer above the reflection interface
v_2 = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

5.3 Primaries with Transmission Losses

Transmission loss on two-way attenuation coefficients is computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

5.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

5.5 Multiples Only

By subtracting previously calculated primaries form the above result we obtain multiples only.

5.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
Butterworth wavelet
User defined wavelet

Time variant Butterworth filtering can be applied after convolution.

5.7 Polarity Convention

An increase in acoustic impedance gives a positive reflection coefficient, is written to tape as a negative number and is displayed as a white trough under normal polarity. Polarity conventions are displayed in Figure 14.

5.8 Convolution

The standard procedure of convolving the wavelet with reflection coefficients; the output is the synthetic seismogram.

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FIGURES

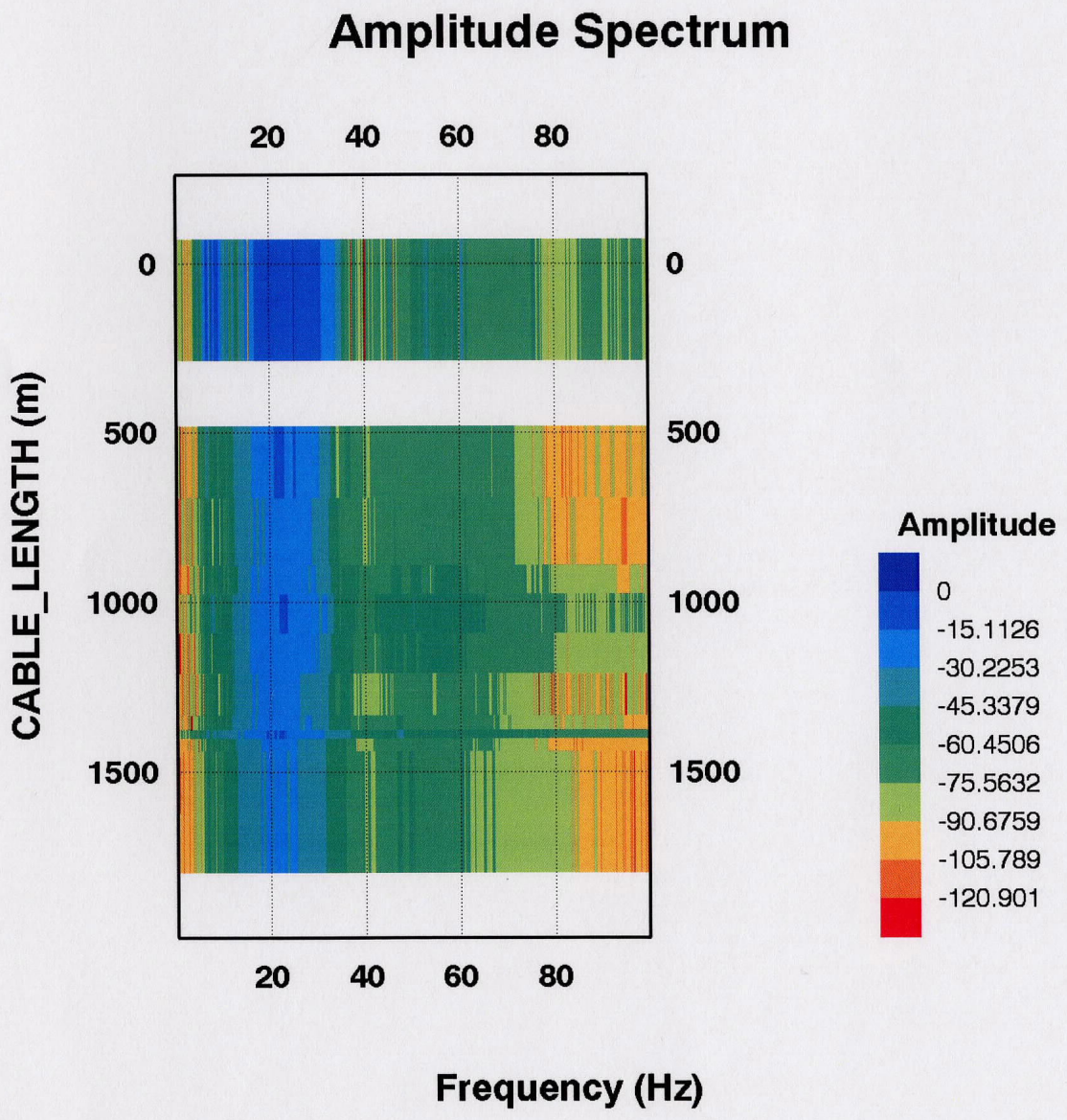

Figure 1. Amplitude Spectrum

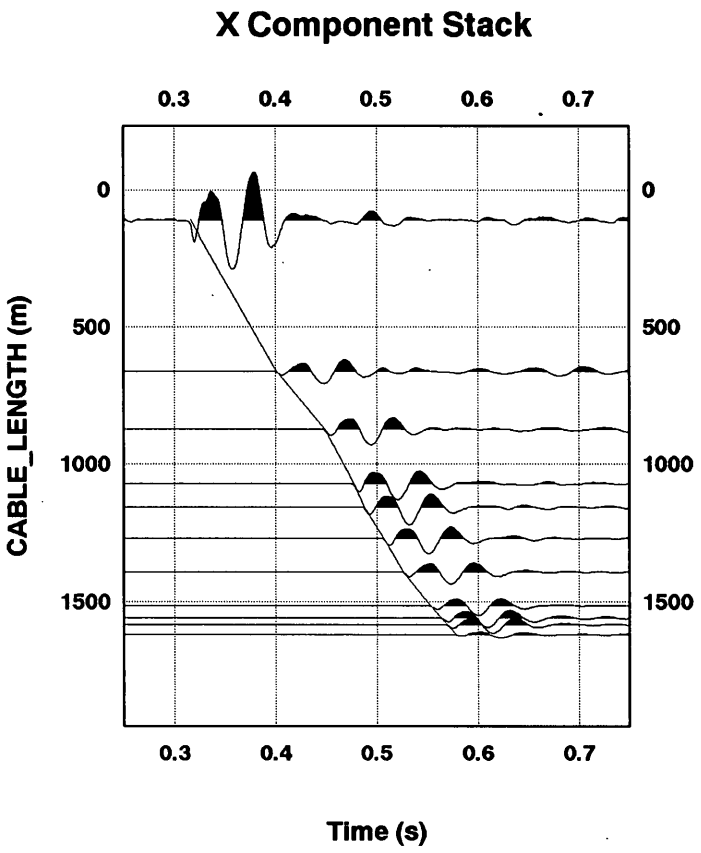

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Figure 2. X Component Stack

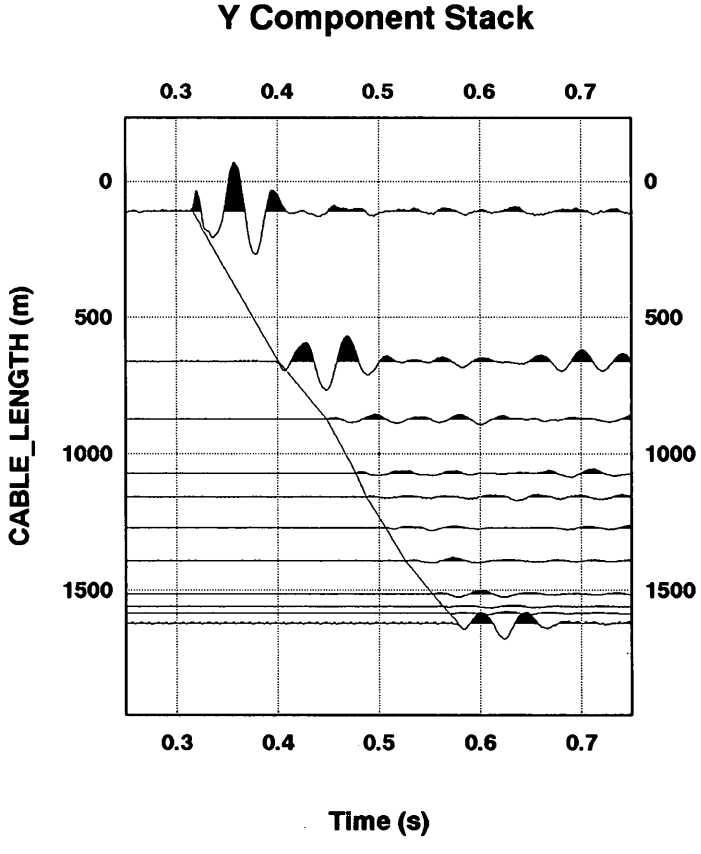

Figure 3. Y Component Stack

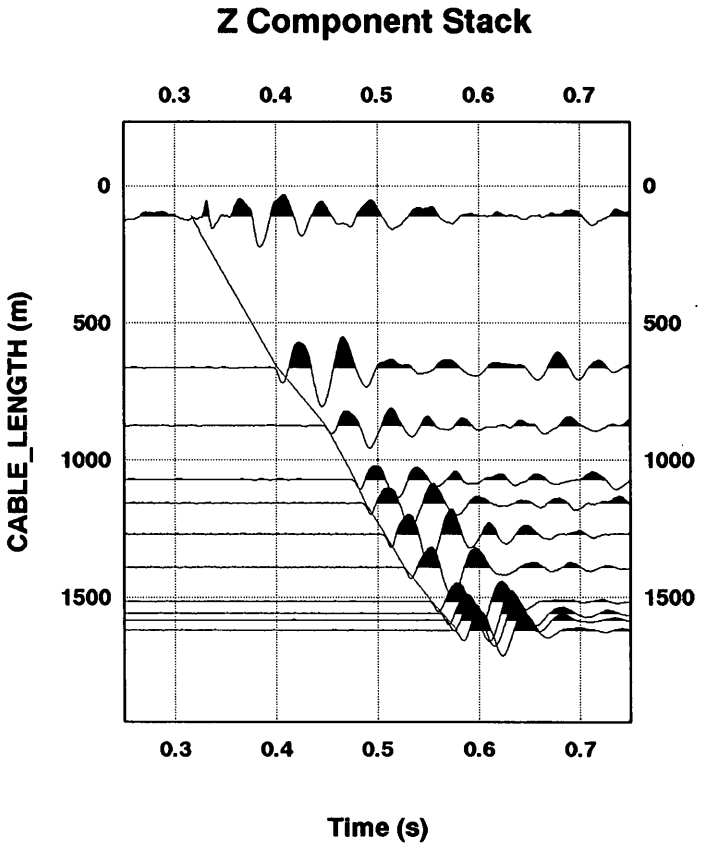

Figure 4. Z Component Stack

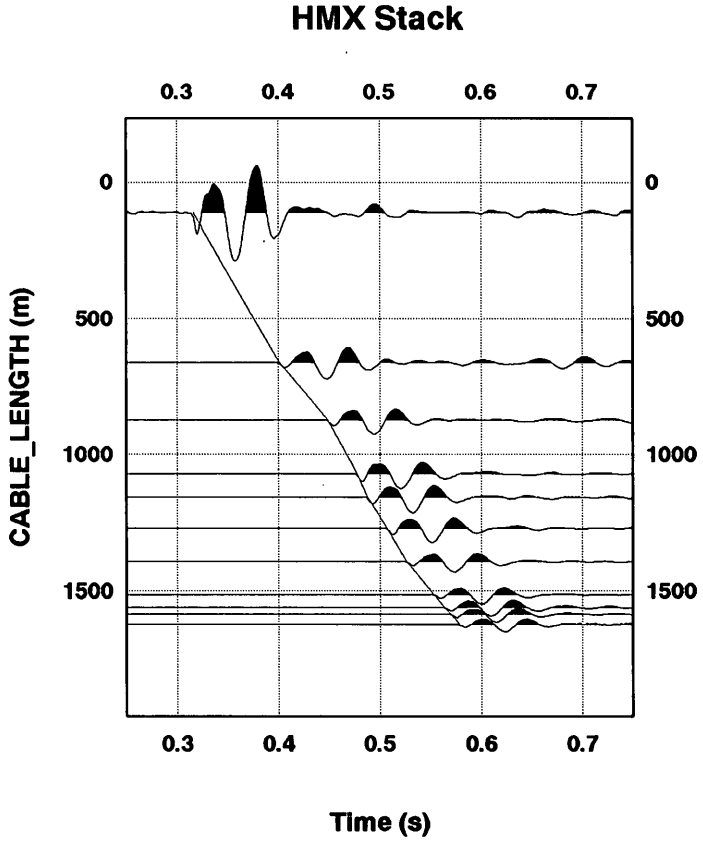

Figure 5. X,Y Components Rotated to HMX Component

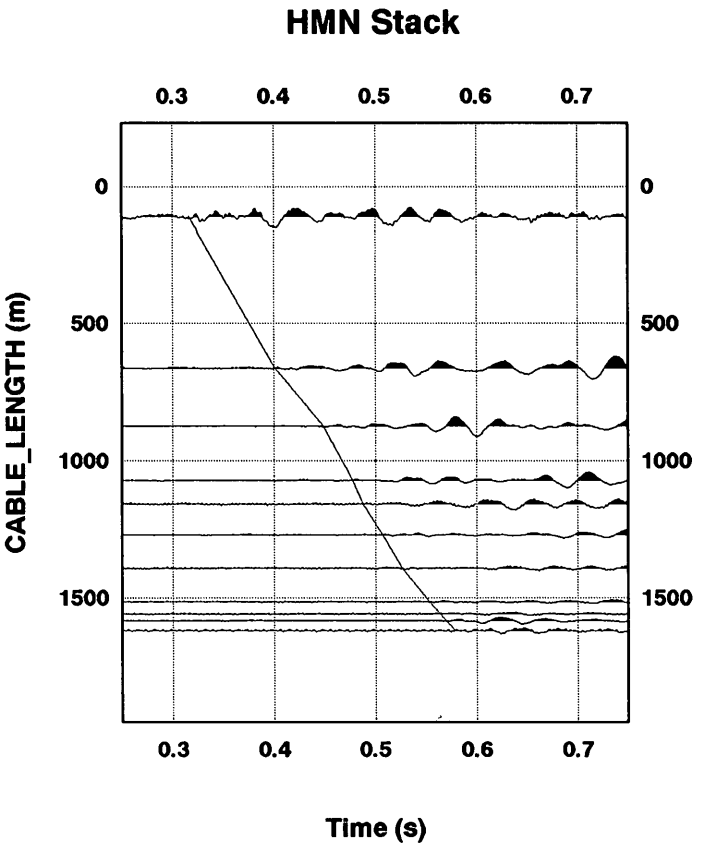

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Figure 6. X,Y Components Rotated to HMN Component

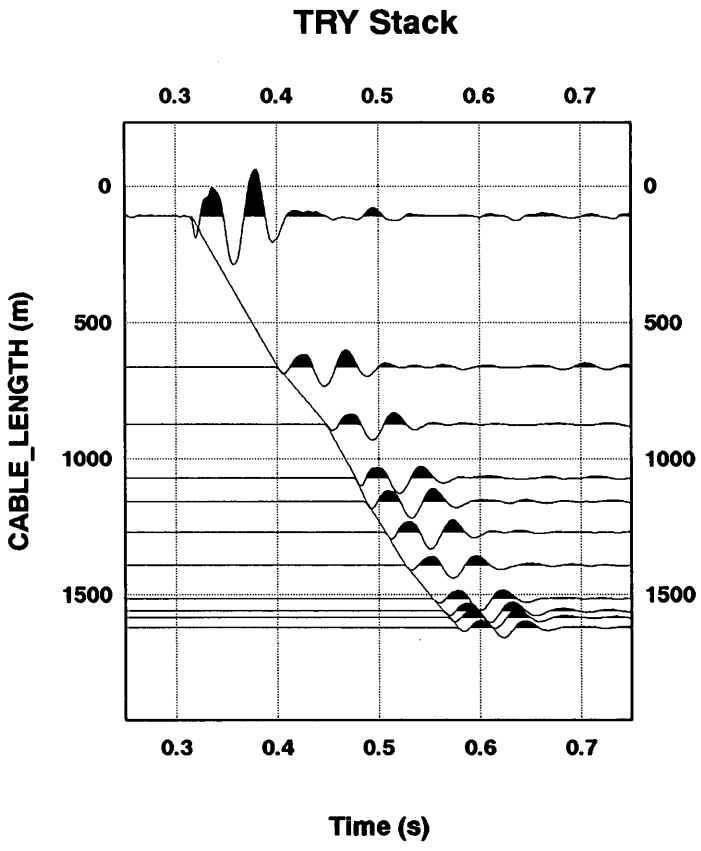

Figure 7. Z,HMX Components Rotated to TRY Component

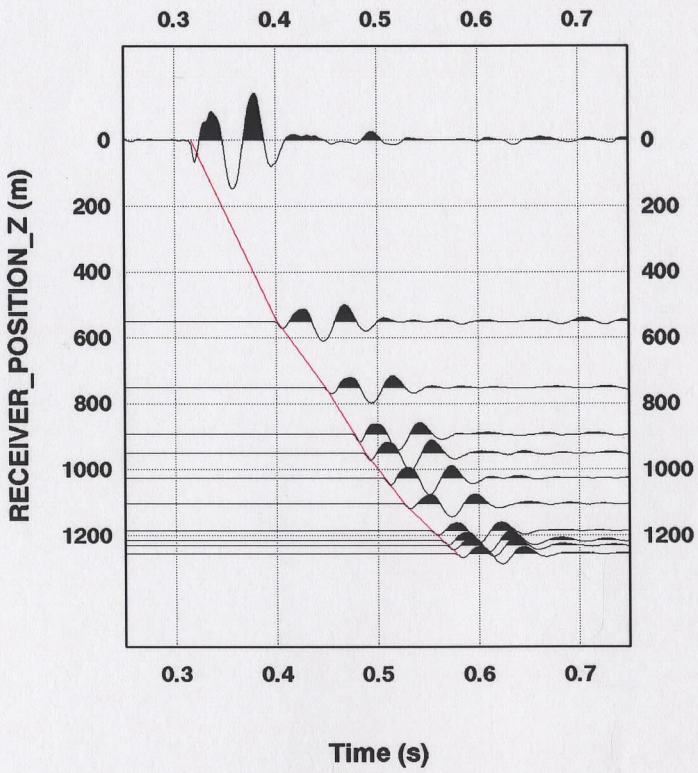

Figure 8a. Iona-6 Final Stack: Measured Times

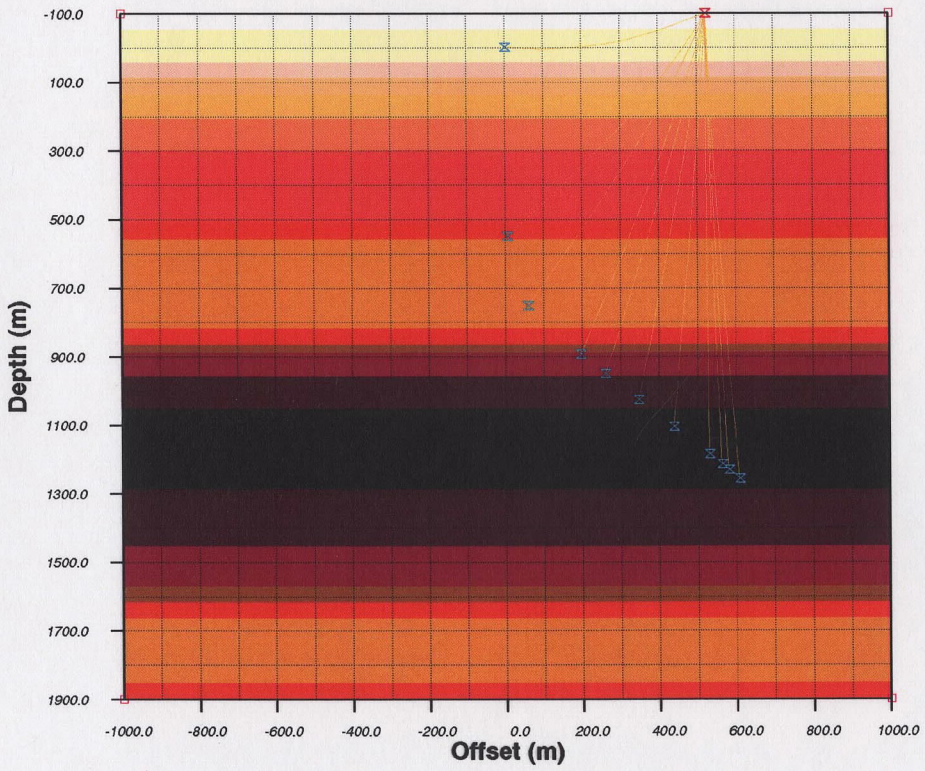

Figure 8b. 2D Travel Time Inversion: Measured Times

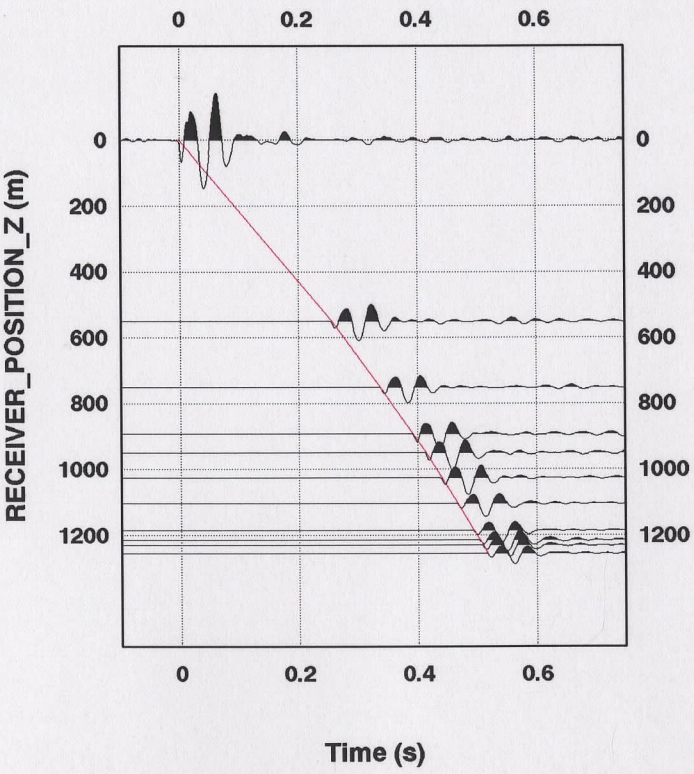

Figure 9a. Iona-6 Final Stack: True Vertical Corrected Times

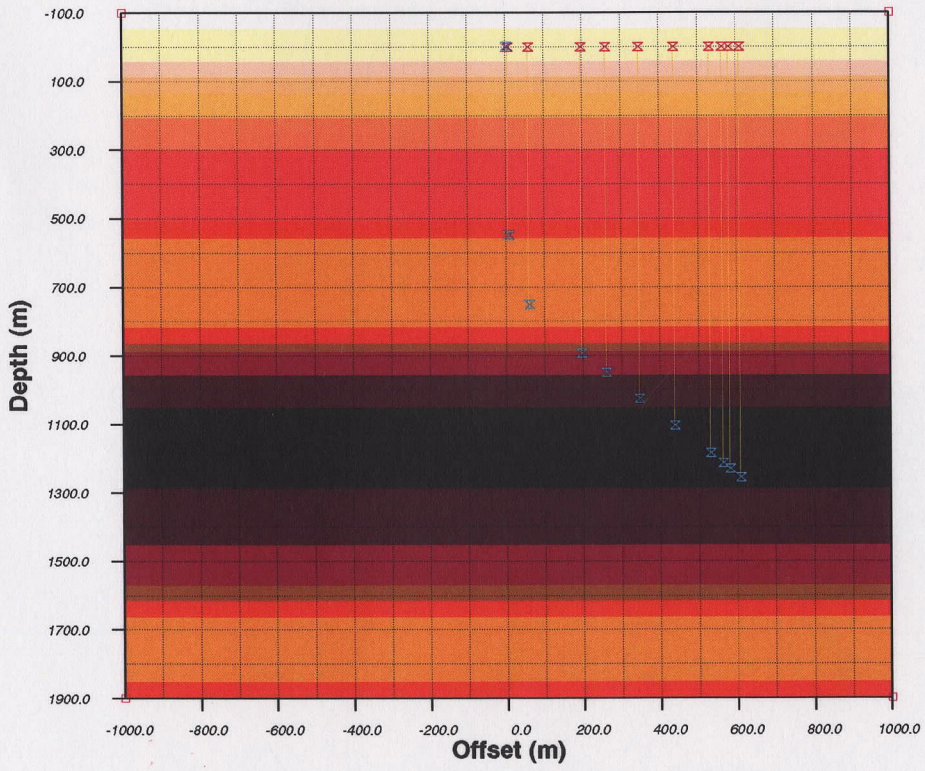

Figure 9b. 2D Travel Time Inversion: True Vertical Corrected Times

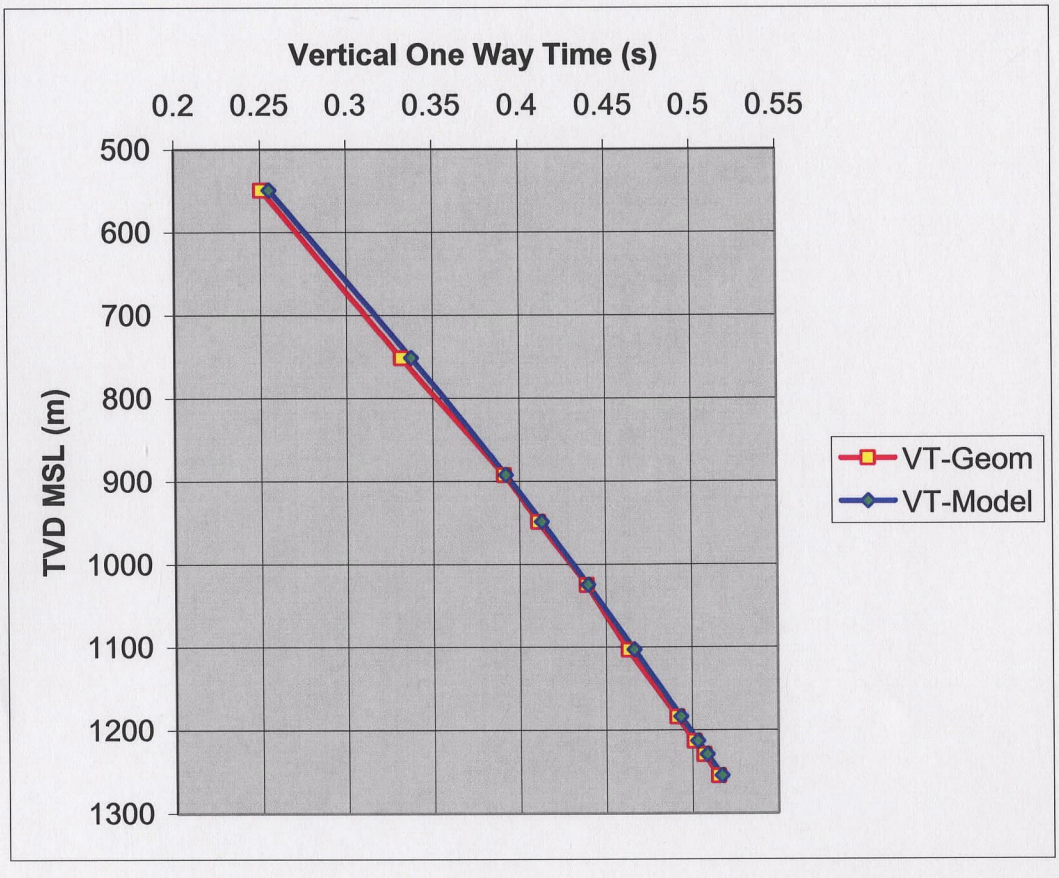

Figure 9c. Comparison Vertical Times corrected using Geometry vs Ray Tracing/Travel time Inversion

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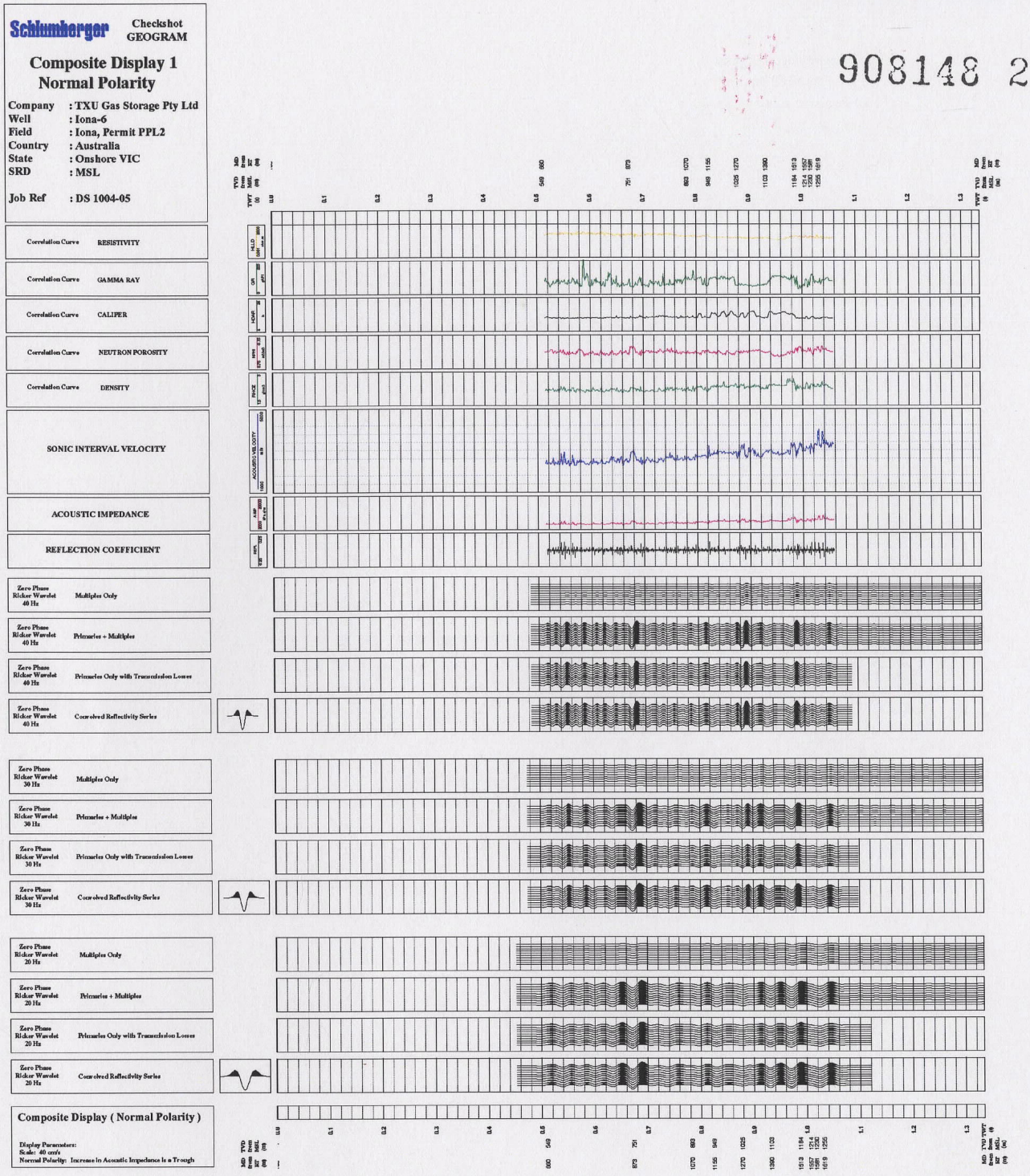

Figure 10. Composite Display (See Plot 1)

Synthetics Display

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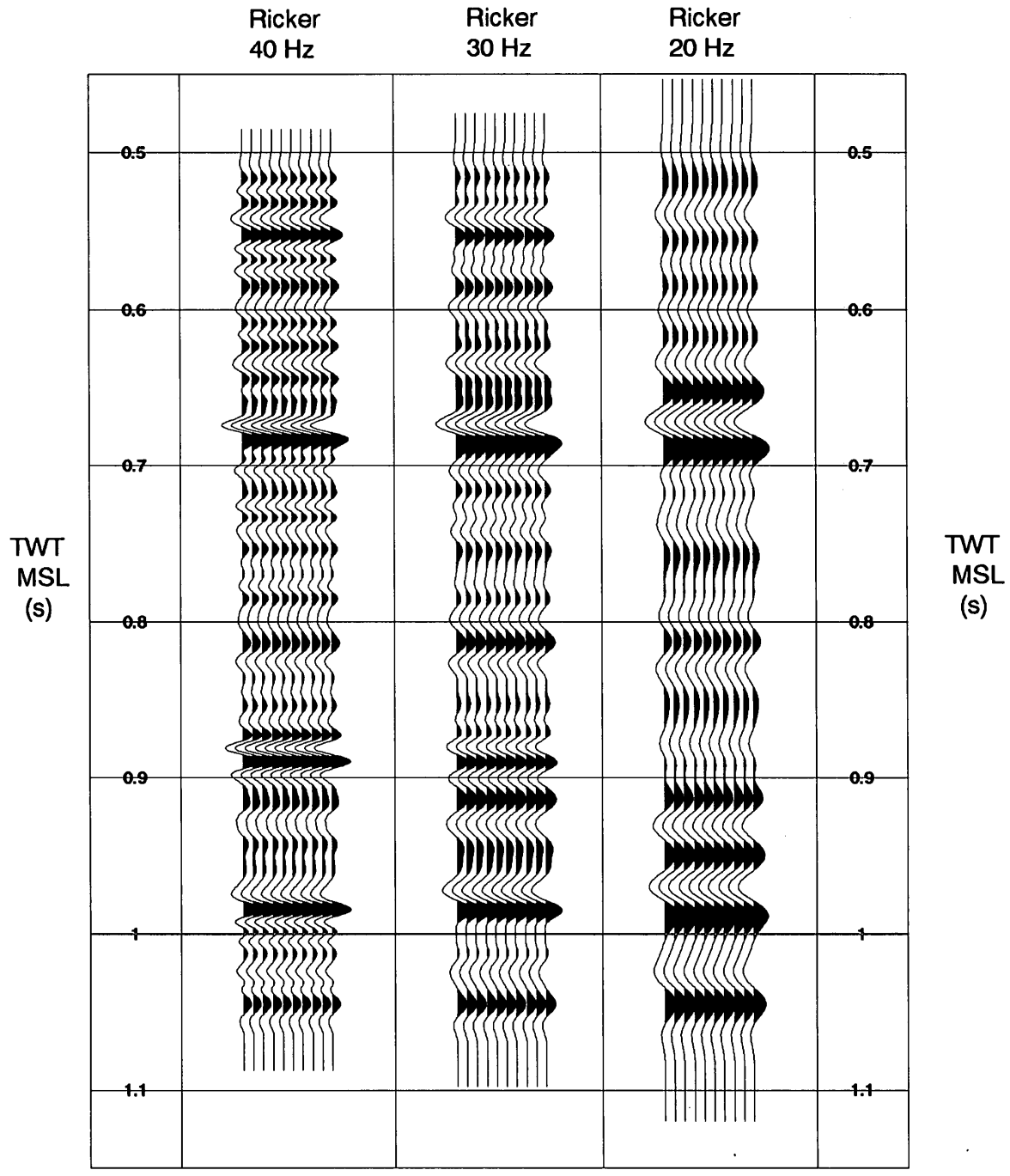

Normal Polarity - Increase in Acoustic Impedance is Trough

Figure 11a. Display Zero Phase Synthetics (N)

Synthetics Display

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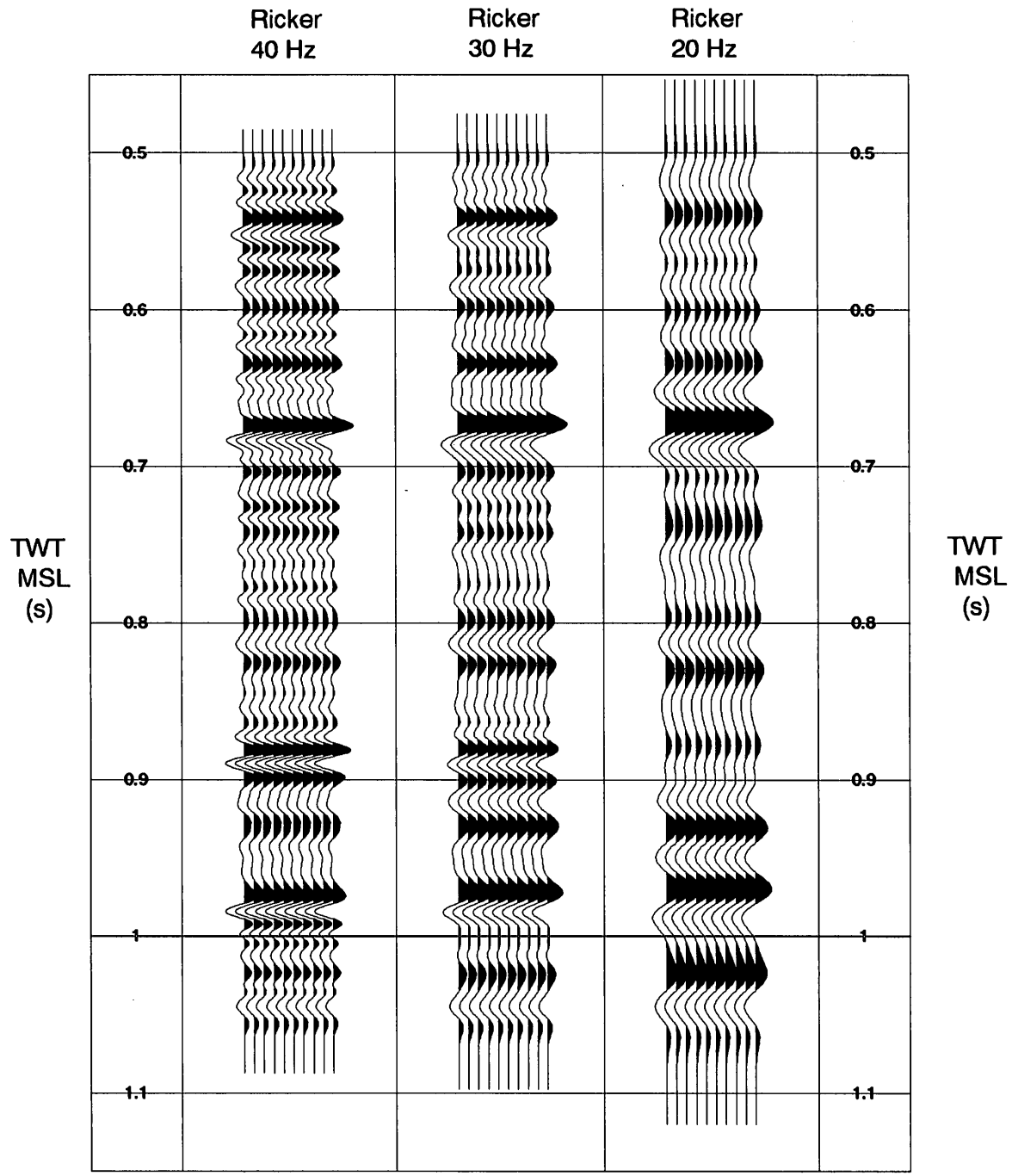

Reverse Polarity - Increase in Acoustic Impedance is Peak

Figure 11b. Display Zero Phase Synthetics (R)

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Schlumberger Checkshot GEOGRAM

VELOCITY CROSS PLOT

Company : TXU Gas Storage Pty Ltd
Well : Iona-6
Field : Permit PPL2
Country : Australia
State : Onshore VIC
SRD : MSL

Job Ref : DS 1004-05

Display Parameters:

Depth Scale: 1:2000
Log Index: Vertical Depth MSL

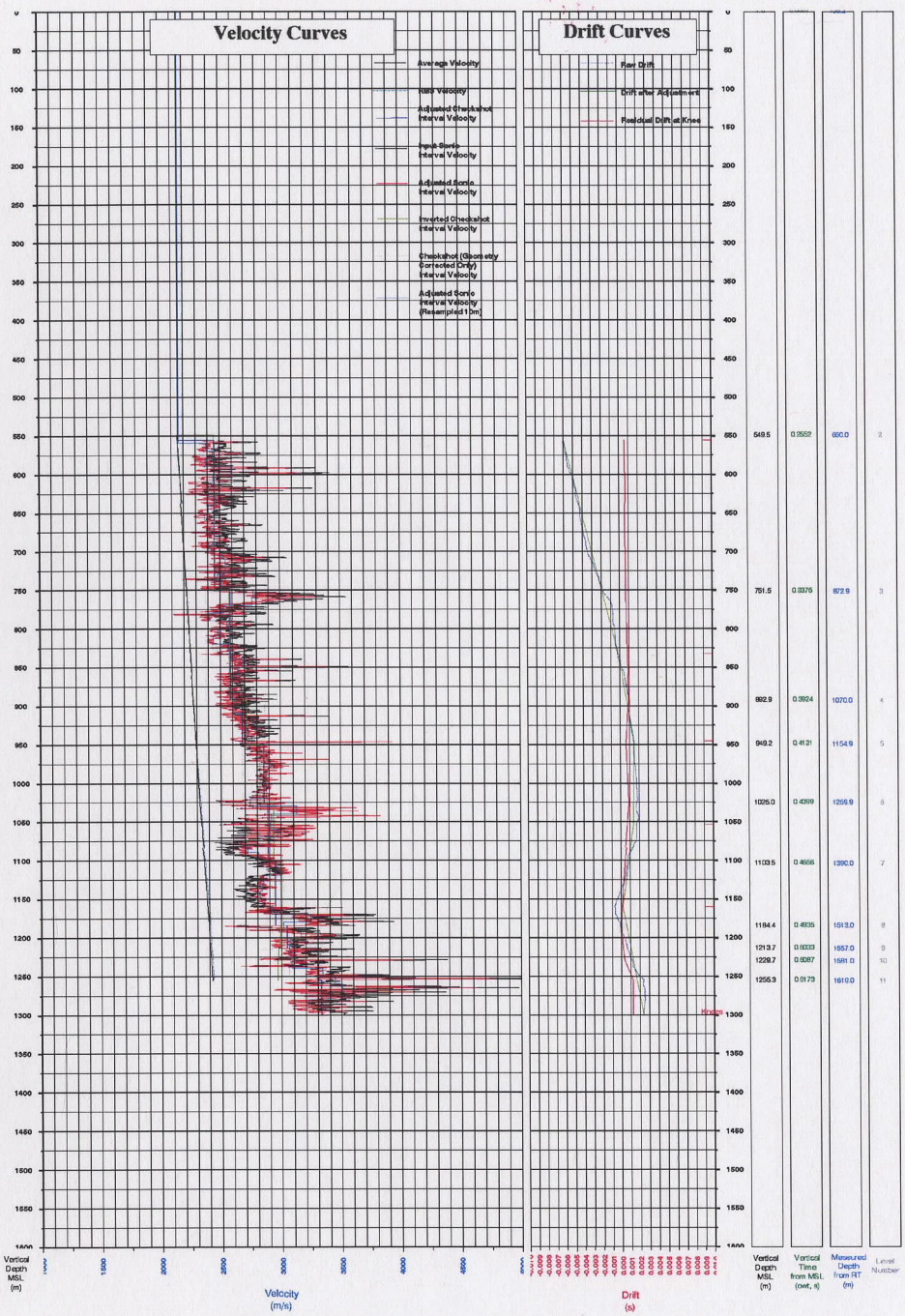

Figure 12. Velocity Crossplot (see Plot Vel 1)

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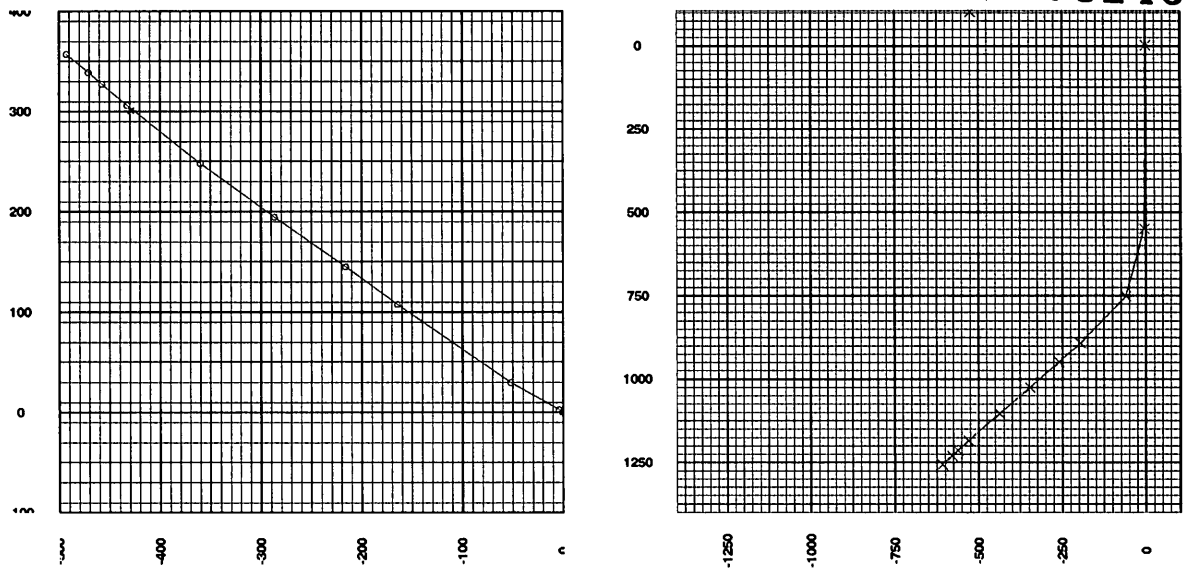

Figure 13. Iona-6 Well Deviation: X-Y and Offset-Z planes

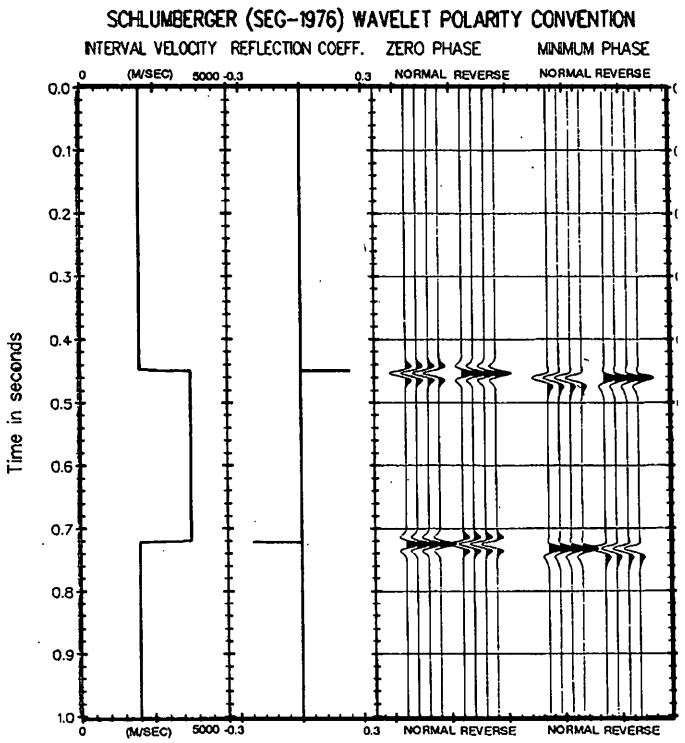

Figure 14. Schlumberger Wavelet Polarity Convention

Attachment 1: Summary of Geophysical Listings

Four geophysical data listings are appended to this report. A1 is included in the report, A2, A3 and A4 are provided in electronic form on the CD-ROM. Following is a brief description of the format.

A1 Check Shot Data

1. Level number: the level number starting from the top level (includes any imposed shots).

2. Vertical depth form SRD: *dsrd*, the depth in meters from seismic reference datum.

3. Measured depth from KB: *dkb*, the depth in meters from KB.

4. Observed travel time HYD to GEO: *tim*0, the transit time picked form the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.

5. Vertical travel time SRD to GEO: *shtm*, is *timv* – vertical time, corrected for the vertical distance between source and datum.

6. Delta depth between shots: Δ*depth*, the vertical distance between each level.

7. Delta time between shots: Δ*time*, difference in vertical travel time (*shtm*) between each level.

8. Interval velocity between shots: average velocity between each level, Δ*depth*/Δ*time*

9. Average velocity SRD to GEO: average velocity from datum to the checkshot level, shtm/dsrd

A2 Drift & Sonic Adjustment

Zone Set Data

1. Knee number: the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)

2. Measured depth from RT: the depth in meters from RT

3. Vertical depth from MSL: the depth in meters from seismic reference datum.

4. Selected Drift at knee: the value of drift imposed at each knee.

5. Shift: the change in drift divided by the change in depth between any two levels.

6. Delta-T: see section 4 of report for an explanation of Δt_{min}.

7. Reduction factor G: see section 4 of report.

8. Selected Drift Gradient: the gradient of the imposed drift curve.

Sonic Adjustment Data

1. Measured depth from RT: the depth in meters from RT

2. Vertical depth from MSL: the depth in meters from seismic reference datum.

3. Vertical shot time MSL to GEO: the calculated vertical travel time from datum to geophone.

4. Adjusted Sonic Time.

5. Computed drift at level: the checkshot time minus the integrated raw sonic time.

6. Residual Shot Time - Adjusted Sonic Time.

7. Adjusted Interval Velocity.

8. Adjusted RMS Velocity.

9. Adjusted Average Velocity.

A3 Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from MSL: this is the index for the data in this listing. The first value is at MSL (0 ms) and is reported every 10 ms.

2. Measured depth from RT: the depth from RT at each corresponding value of two way time.

3. Vertical depth from MSL: the vertical depth from SRD at each corresponding value of two way time.

4. Average velocity MSL to GEO: the vertical depth from SRD divided by half the two way time.

5. RMS velocity: the root mean square velocity from datum to the corresponding value of two way time.

$$v_{rms} = \sqrt{(\Sigma v_i^2 t_i / \Sigma t_i)}$$

where v_i is the velocity between each 2 ms interval.

6. Interval velocity: the velocity between each sampled depth.

A4 Time to Depth

1. Two Way Sonic Time from MSL

2-11. Depth at Time, ms: times every 1 ms

Attachment 2: A-1 Well Seismic Report

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Client and Well Information

Country	Australia
State	Onshore VIC
Logging Date	4-Jun-2004
Company	TXU Gas Storage Pty Ltd
Field	Iona
Well	Iona-6

Check Shot Data (Travel Time Inversion)

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM RT m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL (OWT) s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s	ACOUSTIC RMS VELOCITY m/s
1	-1.3	109.2	0.3161	-0.0007					
					550.8	0.2559	1859		
2	0.0	110.5	0.3163	0.0000					
					550.8	0.2559	2153		
3	549.5	660.0	0.4005	0.2552				2153	2153
					202.0	0.0823	2454		
4	751.5	872.9	0.4486	0.3375				2226	2230
					141.4	0.0548	2578		
5	892.9	1070.0	0.4772	0.3924				2276	2282
					56.4	0.0207	2718		
6	949.2	1154.9	0.4876	0.4131				2298	2306
					75.8	0.0268	2828		
7	1025.0	1269.9	0.5073	0.4399				2330	2341
					78.4	0.0267	2942		
8	1103.5	1390.0	0.5266	0.4666				2365	2379
					80.9	0.0270	3001		
9	1184.4	1513.0	0.5533	0.4935				2400	2418
					29.3	0.0098	2990		
10	1213.7	1557.0	0.5636	0.5033				2411	2430
					16.1	0.0054	2978		
11	1229.7	1581.0	0.5695	0.5087				2417	2436
					25.5	0.0086	2967		
12	1255.3	1619.0	0.5784	0.5173				2426	2446

Attachment 3: Listing of Deliverables (CD-ROM)

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Report:

I06_report	Checkshot/Geogram Processing Report	PDF

Graphics Displays:

comp1	Plot 1. Composite Display 1– Normal Polarity	PDF / PDS / CGM/ TIF
comp2	Plot 2. Composite Display 2 – Reverse Polarity	PDF / PDS / CGM/ TIF
vel1	Plot 3. Velocity Crossplot	PDF / PDS / CGM/ TIF

Data files plus Verification (.txt) listings:

I06_rawx.sgy	raw x axis downhole data	(2 files)	SEGY
I06_rawy.sgy	raw y axis downhole data	(2 files)	SEGY
I06_rawz.sgy	raw z axis downhole data	(2 files)	SEGY
I06_rawh.sgy	surface sensor data	(2 files)	SEGY
I06_xstk.sgy	stacked x axis data		SEGY
I06_ystk.sgy	stacked y axis data		SEGY
I06_zstk.sgy	stacked z axis data		SEGY
I06_try.sgy	Tangent to RaY (TRY) rotated data		SEGY
I06_synt_R20.sgy	Zero Phase Synthetic Seismograms – Ricker 20Hz		SEGY
I06_synt_R30.sgy	Zero Phase Synthetic Seismograms – Ricker 30Hz		SEGY
I06_synt_R40.sgy	Zero Phase Synthetic Seismograms – Ricker 40Hz		SEGY
I06_logs_depth.las	Depth indexed Logs		ASCII (LAS)
I06_logs_time.las	Time indexed Logs		ASCII (LAS)
I06_synthetics.las	Time indexed Synthetic Seismograms		ASCII (LAS)

Listings:

A1	Well_Seismic_Report	EXCEL
A2	Drift_and_Sonic_Adjustment_Report	EXCEL
A3	Velocity_Report	EXCEL
A4	Time_to_Depth_Report	EXCEL

Attachment 4: Velocity Listing – Resampled at 10m

Client and Well Information

Country	Australia
State	Onshore VIC
Logging Date	4-Jun-2004
Company	TXU Gas Storage Pty Ltd
Field	Iona
Well	Iona-6

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Adjusted Sonic Data (10m Resampling)

VERTICAL DEPTH FROM MSL m	ONE WAY TRAVEL TIME FROM MSL s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s	ACOUSTIC RMS VELOCITY m/s
0	0.0000			
		2163		
560	0.2589		2163	2163
		2392		
570	0.2631		2166	2167
		2445		
580	0.2672		2171	2171
		2387		
590	0.2713		2174	2175
		2611		
600	0.2752		2180	2181
		2451		
610	0.2793		2184	2185
		2415		
620	0.2834		2187	2189
		2398		
630	0.2876		2190	2192
		2469		
640	0.2916		2194	2196
		2410		
650	0.2958		2197	2199
		2375		
660	0.3000		2200	2202
		2457		
670	0.3040		2203	2206
		2421		
680	0.3082		2206	2209
		2457		
690	0.3122		2210	2212
		2415		
700	0.3164		2212	2215
		2525		
710	0.3203		2216	2219

Schlumberger

VERTICAL DEPTH FROM MSL m	ONE WAY TRAVEL TIME FROM MSL s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s	ACOUSTIC RMS VELOCITY m/s
		2545		
720	0.3243		2220	2223
		2545		
730	0.3282		2224	2227
		2481		
740	0.3322		2227	2231
		2513		
750	0.3362		2230	2234
		2778		
760	0.3398		2236	2241
		2770		
770	0.3434		2242	2247
		2532		
780	0.3474		2245	2250
		2415		
790	0.3515		2247	2252
		2558		
800	0.3554		2251	2256
		2488		
810	0.3595		2253	2259
		2445		
820	0.3635		2255	2261
		2571		
830	0.3674		2259	2264
		2591		
840	0.3713		2262	2268
		2688		
850	0.3750		2266	2272
		2646		
860	0.3788		2270	2276
		2604		
870	0.3826		2274	2280
		2584		
880	0.3865		2277	2283
		2584		
890	0.3904		2280	2286
		2618		
900	0.3942		2283	2290
		2604		
910	0.3980		2286	2293
		2674		
920	0.4018		2290	2297
		2710		
930	0.4055		2293	2301
		2732		
940	0.4091		2297	2305
		2762		
950	0.4127		2301	2310
		2801		
960	0.4163		2306	2314
		2882		

VERTICAL DEPTH FROM MSL m	ONE WAY TRAVEL TIME FROM MSL s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s	ACOUSTIC RMS VELOCITY m/s
970	0.4198		2311	2320
		2915		
980	0.4232		2315	2325
		2907		
990	0.4266		2320	2330
		2874		
1000	0.4301		2325	2335
		2874		
1010	0.4336		2329	2340
		2882		
1020	0.4371		2333	2345
		2747		
1030	0.4407		2337	2348
		3135		
1040	0.4439		2343	2355
		2924		
1050	0.4473		2347	2360
		2915		
1060	0.4508		2351	2365
		2976		
1070	0.4541		2356	2370
		2809		
1080	0.4577		2360	2373
		2725		
1090	0.4613		2362	2376
		2817		
1100	0.4649		2366	2380
		2959		
1110	0.4683		2370	2385
		2994		
1120	0.4716		2375	2390
		2857		
1130	0.4751		2378	2393
		2841		
1140	0.4786		2382	2397
		2825		
1150	0.4822		2385	2400
		2865		
1160	0.4857		2388	2404
		2924		
1170	0.4891		2392	2408
		3247		
1180	0.4922		2397	2414
		3021		
1190	0.4955		2402	2419
		3165		
1200	0.4986		2406	2424
		3077		
1210	0.5019		2411	2429
		3067		
1220	0.5052		2415	2434

Schlumberger

VERTICAL DEPTH FROM MSL m	ONE WAY TRAVEL TIME FROM MSL s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s	ACOUSTIC RMS VELOCITY m/s
		3106		
1230	0.5084		2419	2439
		3086		
1240	0.5116		2424	2443
		3344		
1250	0.5146		2429	2449
		3448		
1260	0.5175		2435	2456
		3509		
1270	0.5203		2441	2463
		3390		
1280	0.5233		2446	2469
		3226		
1290	0.5264		2450	2474

PE908150

This is an enclosure indicator page.
The enclosure PE908150 is enclosed within the container PE908148 at this location in this document.

The enclosure PE908150 has the following characteristics:

ITEM_BARCODE	= PE908150
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 VSP Composite Display 1
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= SYNTH_SEISMOGRAM
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 04-JUN-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	=
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)

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PE908151

This is an enclosure indicator page.
The enclosure PE908151 is enclosed within the container PE908148 at this location in this document.

The enclosure PE908151 has the following characteristics:

ITEM_BARCODE	= PE908151
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 VSP Composite Display 2
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= SYNTH_SEISMOGRAM
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 04-JUN-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	=
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)

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PE908152

This is an enclosure indicator page.
The enclosure PE908152 is enclosed within the container PE908148 at this location in this document.

The enclosure PE908152 has the following characteristics:

ITEM_BARCODE	= PE908152
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 Velocity Cross Plot
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= VELOCITY_CHART
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 04-JUN-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	=
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 7

Petrophysics Report

TXU Gas Storage Pty Ltd

VOBE_TXU_0001_06_04
Attention: Rod Harris
Dean Grant

29 June 2004

IONA-6

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OPEN-HOLE LOG ANALYSIS

Objectives:

The purpose of this analysis was to provide a Petrophysical Interpretation of the open-hole logs for Iona_6.

The data used was provided by TXU Gas Storage Pty Ltd as received from Schlumberger in digital LAS_ASCII format from HALS-DSI-PEX tool combination. Crocker Data Processing Petrolog Well Data Management and Advanced Log Analysis Software was used for this interpretation.

A summary of the procedure used and the log analysis results are detailed on the following pages.

Conclusions:

- 3.05m net gas sand with average porosity 24.05% from 1513.64-1516.68m and 2.44m net gas sand with average porosity 19.61% from 1520.34-1522.78m.
- Based on formation water salinity of 5,000ppm NaCl
  - 1513.64-1516.68m has calculated average water saturation of 69.89% and 0.22 hydrocarbon meters.
  - 1520.34-1522.78m has calculated average water saturation of 81.58% and 0.09 hydrocarbon meters.
- Using formation water salinity of 30,000ppm NaCl
  - 1513.64-1516.68m has calculated average water saturation of 32.93% and 0.49 hydrocarbon meters.
  - 1520.34-1522.78m has calculated average water saturation of 38.99% and 0.29 hydrocarbon meters.
- Gas-water contact not intersected in the well, Lowest-Known-Gas @ 1522.78m

Recommendations:

- Analysis of the formation water salinity within the gas zone should be undertaken to resolve water salinity issue.
- Repeat section of logs were run from 1320-1095m which is above the reservoir interval. For the next well it is recommended that the repeat section be run across the reservoir interval.

Angela Cernovskis
Petrophysicist

1. General Information

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All depths quoted in this report are m MDKB.

Well Name	**Iona-6**				
Country	Australia				
Company	TXU Gas Storage Pty Ltd				
Location	PPL-2 Otway Basin				
Permanent Dat.	MSL				
Elevation of DF (M)	110.5				
Elevation of GL (M)	104.5				
Logging Co.	SCHLUMBERGER				
Logging Date	4 Jun 2004				
Logs Recorded	HALS-DSI-PEX				
Bottom depth (M)	1691.7924				
Top depth (M)	637.9464				
Casing shoe (M)	666				
Bit size (inch)	12.25				
Fluid Type	KCL-PHPA				
RM (OhmM) @ TEMP (DegC)	0.187 @ 15				
Recorded by	G. Jonsson				

2. Log Quality Control

Digital data received was of good quality, no processing undertaken.

3. Log Compositing and Editing

The methodology applied is summarised as follows:

1. Load data into PETROLOG
2. Check for depth match.

For this interpretation a shift of –0.5m was required to match the density curve (RHOZ) to the GR, HLLD, HLLS, RXOZ, and DTCO curves (refer Figure 1).

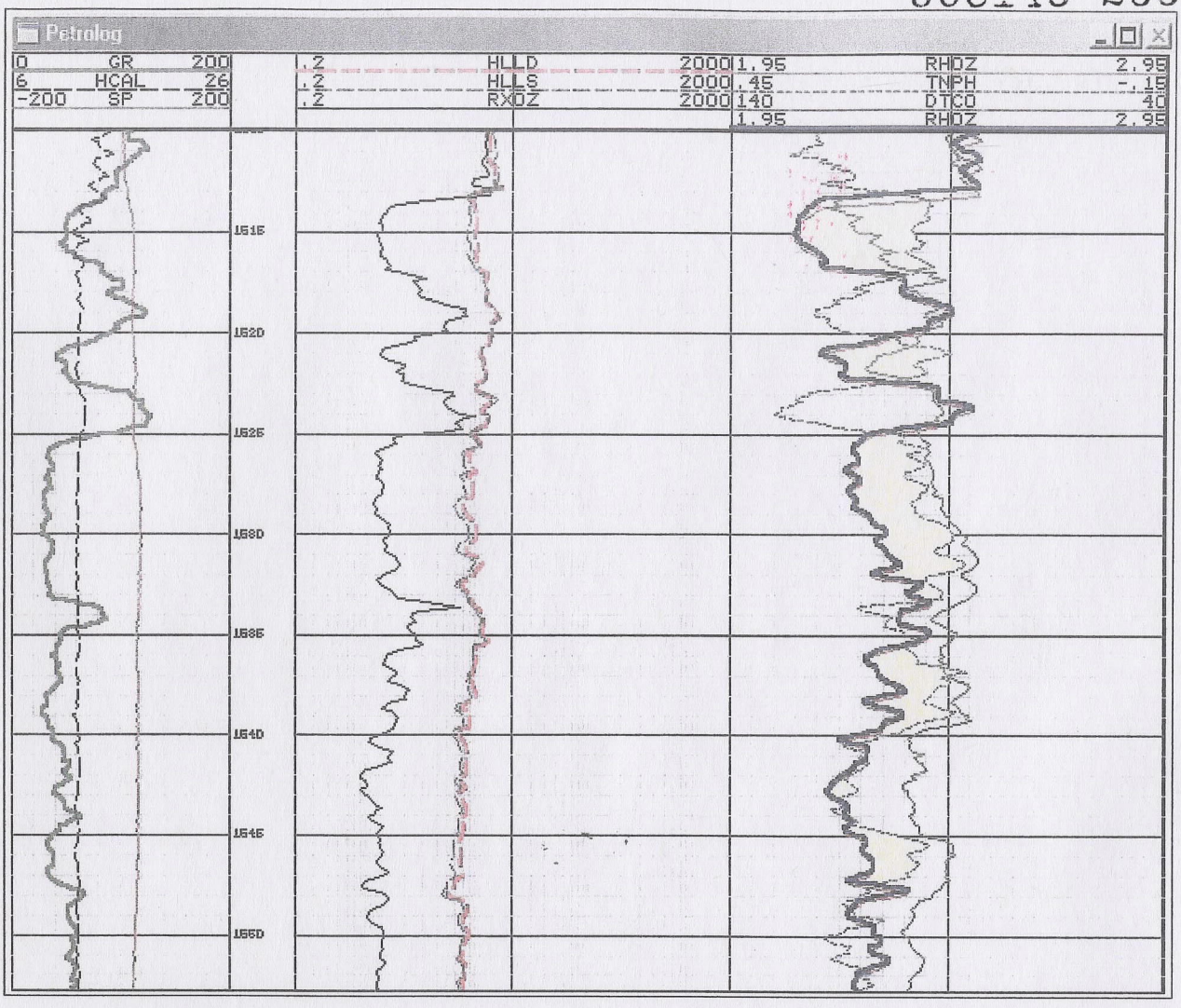

FIGURE 1 – Composite Log

Track 1 shows the GR, Caliper and SP.
Track 2 shows the measured depths in meters.
Track 3and 4 shows the HLLD, HLLS, RXOZ.
Track 5 and 6 shows the Blue RHOZthat has been depth shifted to match the TNPH, DTCO, HLLD, HLLS, RXO, and GR. The original RHOB is faint red RHOZ.

4. Environmental corrections

During the pre-interpretation process environmental corrections were applied to all log data. After pre-interpretation the density (RHOB-Depth Matched) and neutron (TNPH) were corrected for gas effect.

5. Petrolog Model Selection

The Silt Shale Sand Model (SSS) was selected for the interpretation. This is a deterministic model that computes Vclay, Vsilt, Vsand, Porosity and Water Saturation.

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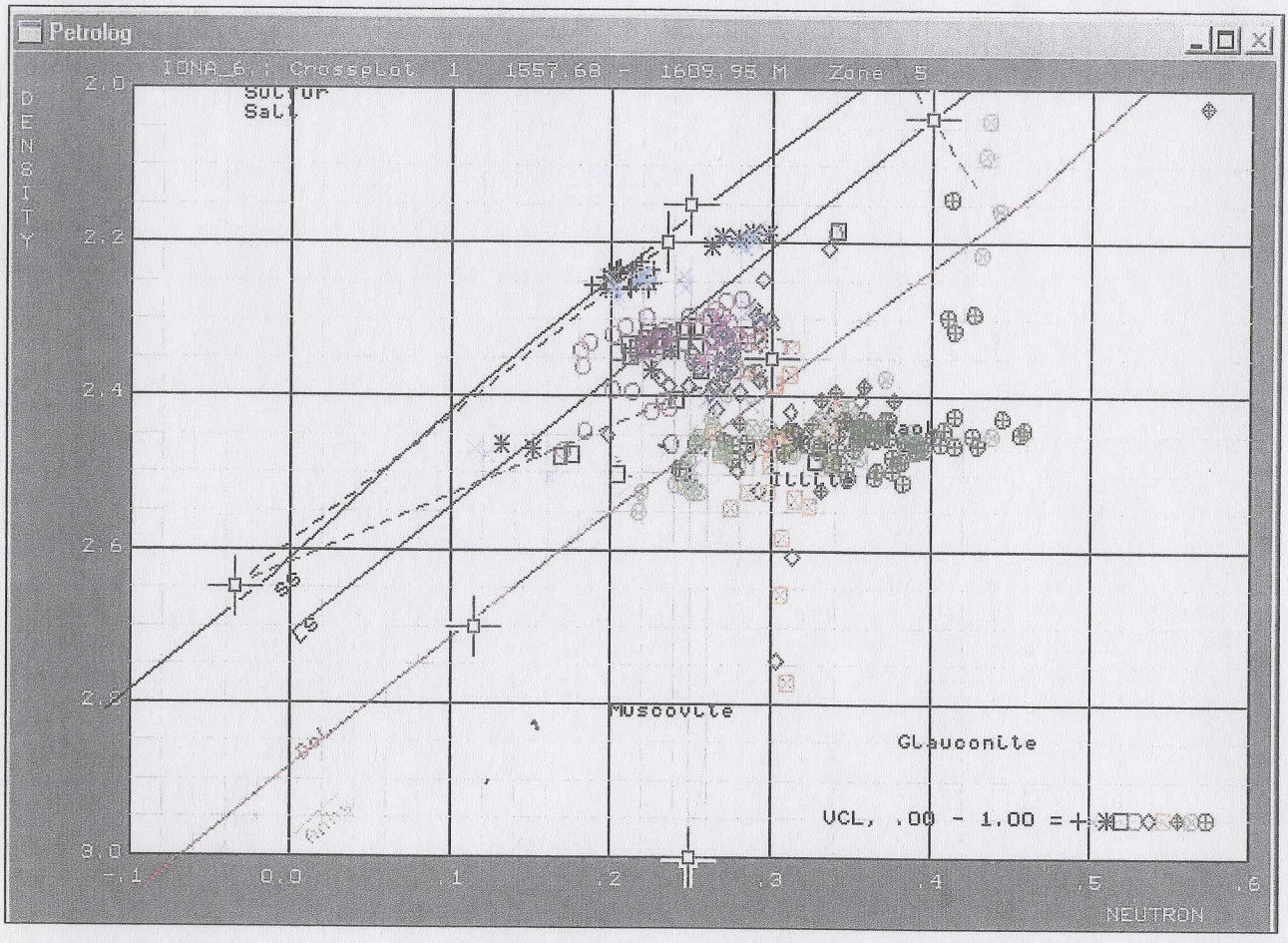

FIGURE 2 – Neutron Density Crossplot. Data points from 1557-1610m.

6. Vclay Determination

The following clay indicators have been used:

GR where VGR = GR-Grmin/Grmax-Grmin and invoking linear VGR relationship
RT where VRT = RT-Rsand/Rclay-Rsand

Then VCL = minimum clay (limited from 0 to 1).

7. Porosity Determination

PHIsand = (RhobS - Rhoma)/(Rhof – Rhoma)
Where RhobS is the sand point density

PHIsilt = (RhobSi - Rhoma)/(Rhof – Rhoma)
Where RhobSi is the sand point density

PHIcl = (RhobC - Rhoma)/(Rhodry – Rhoma)
Where RhobC is the wet clay point density and Rhodry is the dry clay point density.

PHIE = Vsand*PHIsand +Vsilt*PHIsilt

PHIT = PHIE + PHIcl*Vclay

8. RW Determination

The formation water salinity profile in this well is complex as it is relatively fresh and increases in salinity with increasing depth. Analysis of Rwa from logs using the various methods available indicated that the formation water salinity is ~3,000ppm NaCl equivalent across the intervl 1525-1558m increasing to ~5,000ppm NaCl equivalent across the interval 1565-1582m and ~10,000ppm NaCl equivalent across the interval 1620-1631m (refer Rwa curve Figure 3).

In this analysis Rw was based on salinity of 5,000ppm NaCl equivalent across the hydrocarbon zone to conform with previous well determinations.

In conventional log analysis the formation water salinity in the hydrocarbon zonesis assumed to be the same as that of the underlying water sands. However it has been found in Gippsland Basin (Kuttann et.al. APEA 1986) that the water salinity associated with the hydrocarbon zones is significantly more saline (30-40,000ppm NaCl equivalent) than the salinities associated with the underlying water sands (less than 5,000ppm NaCl equivalent) and by using the higher salinity value it ultimately results in the calculation of greater hydrocarbon volumes.

Based on this hypothesis an alternative interpretation was carried out using formation water salinity of 30,000ppm NaCl equivalent was across the zone of interest from 1513-1525m and the results are presented in Figure 4b and Table 2.

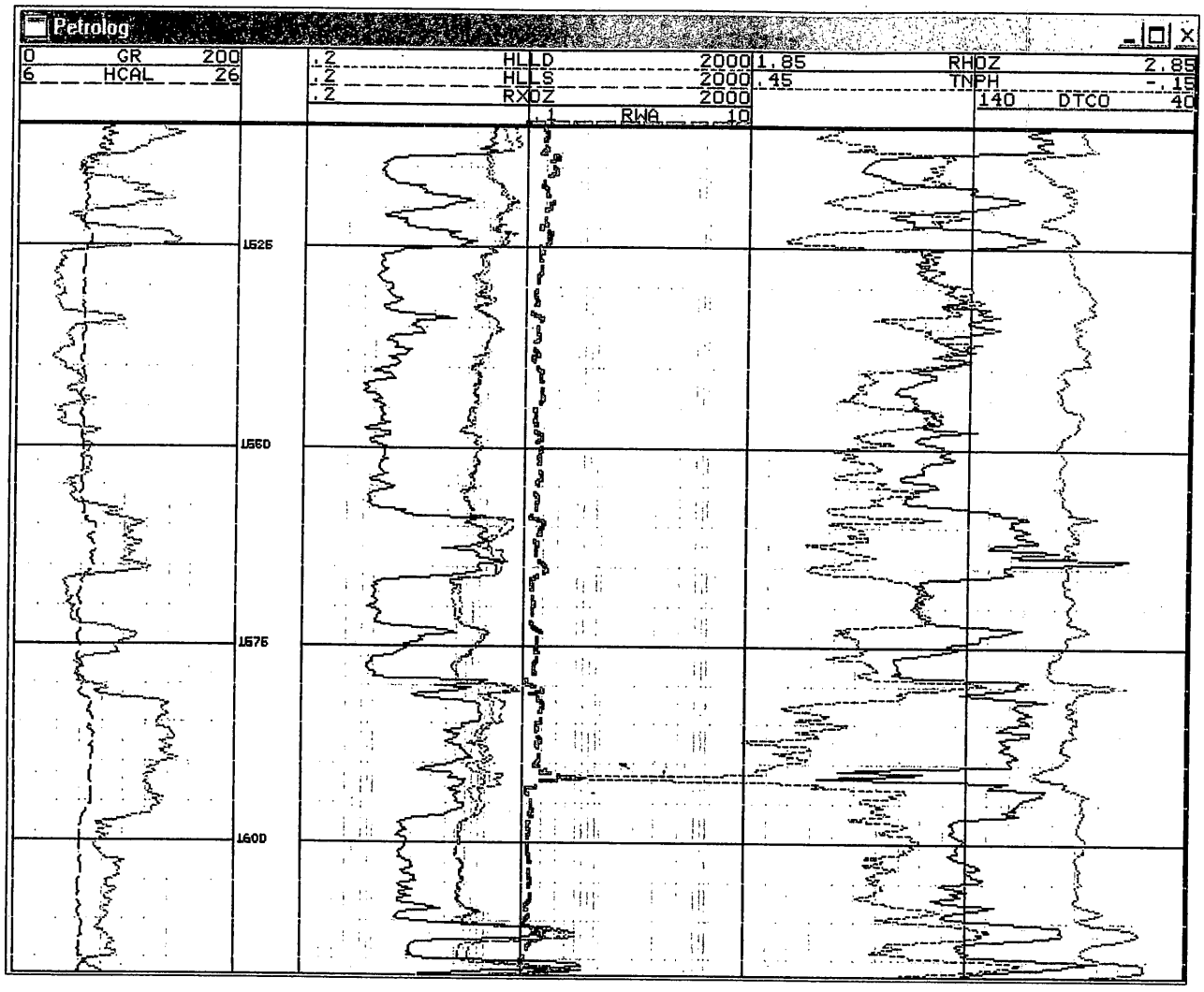

FIGURE-3 Composite plot with RWA curve

Track 1 shows the GR, Caliper and SP.
Track 2 shows the measured depths in meters.
Track 3and 4 shows the HLLD, HLLS, RXOZ.
Track 4 shows the Rwa .
Track 5 and 6 shows the RHOZ, TNPH, DTCO

9. Determination of Sw, a, m, n

For this interpretation the **Indonesia equation** was used to compute water saturation (Sw) and is defined as follows:

$$Swe = (1.0 / (Y*SQRT(RT)))^{**}(2.0/n)$$

And $$Y = VCL^{**}(1.0-VCL/2)/ SQRT(RCL) + PHIE^{**}(m/2)/SQRT(a*Rw)$$

In this interpretation a=1, m= 1.78 and n=1.87. These values were derived cores taken from previous wells.

10. Petrolog Silt Shale Sand Analysis results

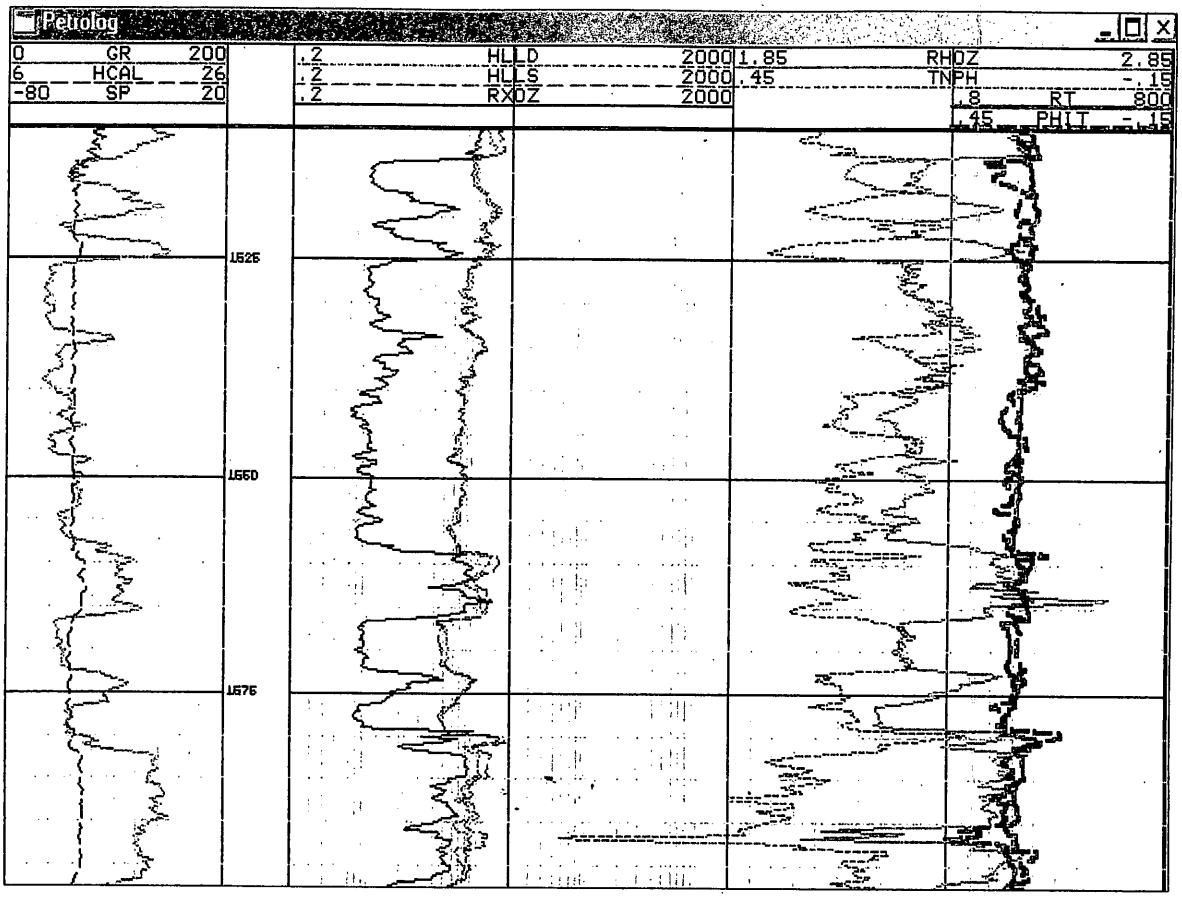

FIGURE-4a PHIT-RT Plot

Track 1 shows GR and caliper
Track 2 shows the measured depths in meters.
Tracks 3and 4 shows the resistivity curves HLLD, HLLS, RXOZ
Tracks 5and 6 shows the TNPH and RHOZ curves
Track 6 shows the PHIT RT overlay and the gas separation from 1513-1522.5m

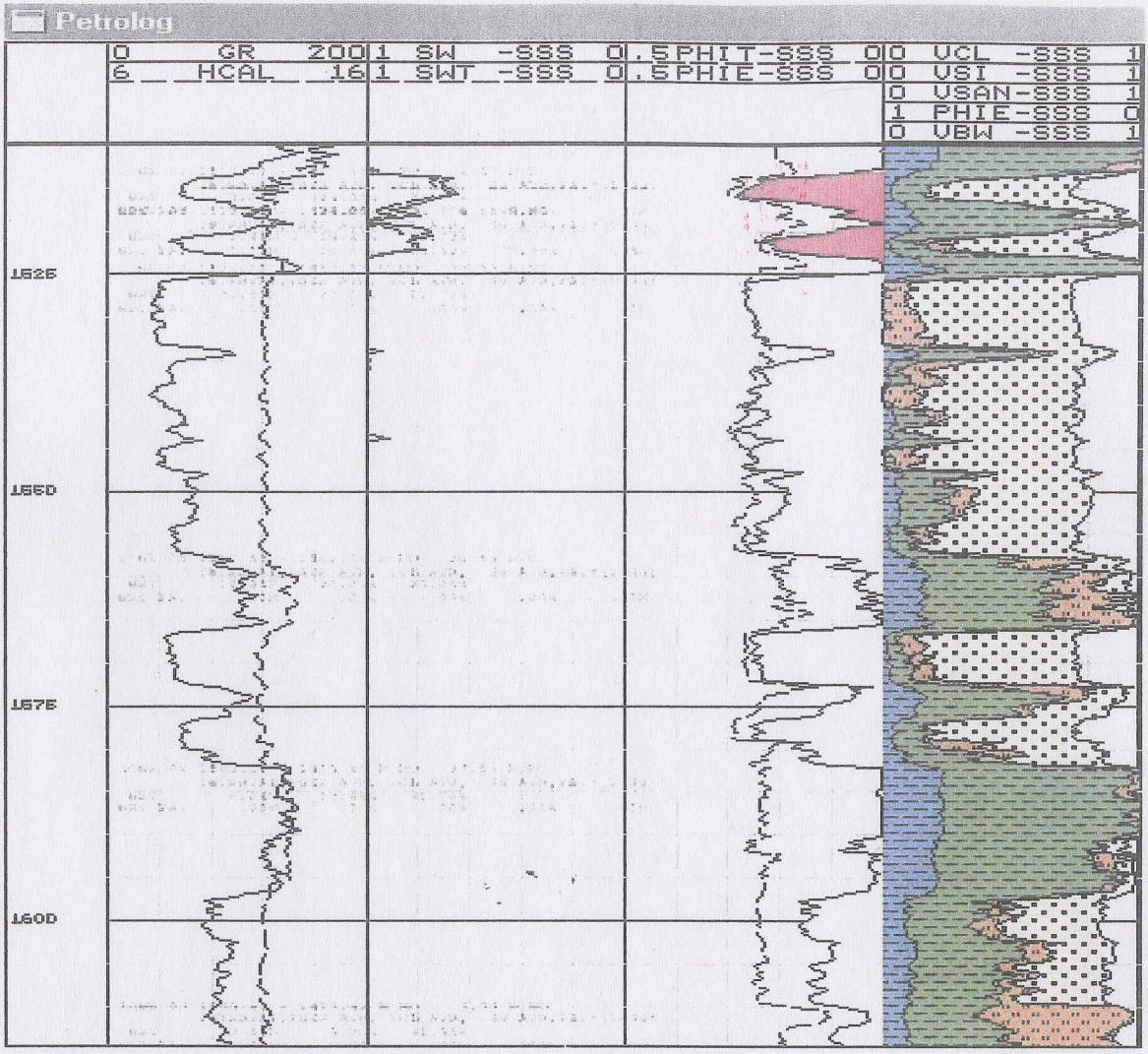

FIGURE-4b SSS Results plot using salinity 5,000ppm NaCl across the interval 1513-1525m

Track 1 shows the measured depths in meters.
Track 2 shows GR and caliper
Track 3 shows the computed SWt and Swe based on Rw calculated from underlying water sand 1550-1572m .
Track 5 shows the lithology as computed from the logs.

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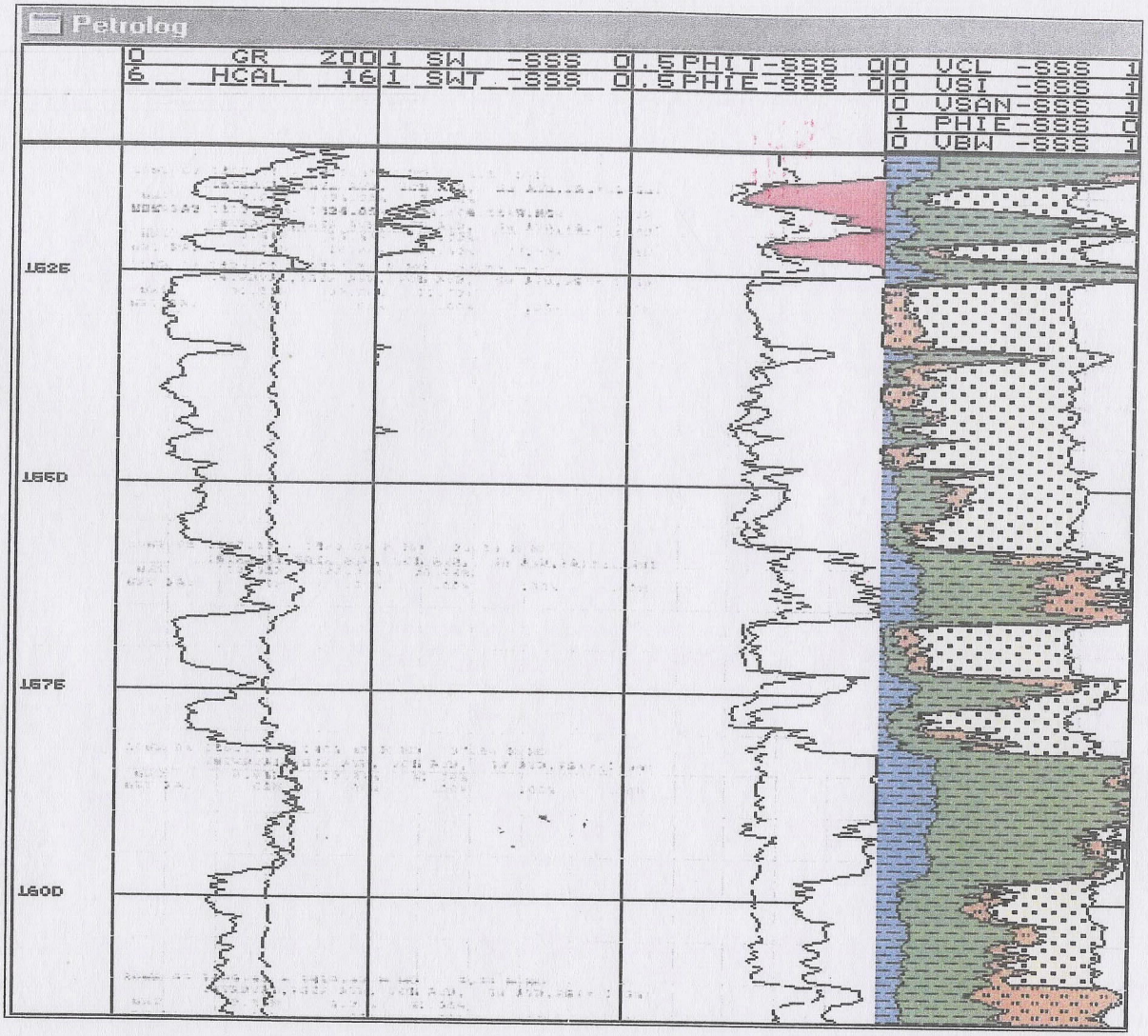

FIGURE-4c SSS Results plot using salinity 30,000ppm NaCl equivalent across interval 1513-1525m

Track 1 shows the measured depths in meters.
Track 2 shows GR and caliper
Track 3 shows the computed SWt and Swe based on hypothetical Rw of 30,000ppm NaCl equivalent.
Track 5 shows the lithology as computed from the logs.

11. Results

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A total 5.49m of net gas sand is interpreted in Iona-6 from 1513.64-1522.78m (3.05m across the interval 1513.64-1516.68m and 2.44m across the interval 1520.34-1522.78m). A gas water contact was not intersected by the well and Lowest-Known-Gas is located at 1522.78m. Average porosity of the net gas sands range from 24.8% to 22.72%. The calculated water saturations are dependant on the formation water salinity used and two cases are presented in Table 1 using 5,000ppm formation water salinity and Table 2 using 30,000ppm formation water salinity.

Petrolog

MEASURED DEPTH RESULTS:

PHIE CUT OFF	.050
SWE CUT OFF	.800
VCLAY CUT OFF	.500
PHIT CUT OFF	.100
SWT CUT OFF	1.000
NET MINIMUN THICKNESS	.000 M

INTERVAL FROM M	INTERVAL TO M	NET INTERVAL M	AVERG VCL %	AVERG PHIE %	NET PAY INTERVAL M	AVERG VCL %	AVERG PHIE %	AVERG SWE %	TOTAL POR. M	TOTAL HC M
1513.64	1516.68	3.05	24.80	24.05	3.05	24.80	24.05	69.89	.73	.22
1520.34	1522.78	2.44	22.72	19.64	1.07	26.42	18.88	77.33	.20	.05
1525.22	1533.60	8.38	3.15	24.52						
1534.52	1557.83	23.32	15.05	22.44						
1558.29	1558.90	.61	43.42	9.23						
1566.06	1572.62	6.55	11.58	23.09						
1572.92	1573.07	.15	48.61	6.97						
1575.05	1575.21	.15	49.62	11.94						
1576.27	1581.61	5.33	25.31	19.28						
1597.46	1598.22	.76	40.62	14.45						
1598.37	1602.33	3.96	38.81	14.64						
1604.77	1605.99	1.22	45.03	13.08						
1606.60	1607.67	1.07	44.40	13.72						
1607.97	1610.26	2.29	44.89	12.01						
1612.09	1612.70	.61	47.37	7.68						
1613.15	1613.46	.30	48.84	9.58						
1613.61	1614.07	.46	43.82	10.12						

Table 1 Results plot using salinity 5,000ppm NaCl

Petrolog

MEASURED DEPTH RESULTS:

PHIE CUT OFF	.050
SWE CUT OFF	.800
VCLAY CUT OFF	.500
PHIT CUT OFF	.100
SWT CUT OFF	1.000
NET MINIMUM THICKNESS	.000 M

INTERVAL FROM M	INTERVAL TO M	NET INTERVAL M	AVERG VCL %	AVERG PHIE %	NET PAY INTERVAL M	AVERG VCL %	AVERG PHIE %	AVERG SWE %	TOTAL POR. M	TOTAL HC M
1513.64	1516.68	3.05	24.80	24.05	3.05	24.80	24.05	32.93	.73	.49
1520.34	1522.78	2.44	22.72	19.61	2.44	22.72	19.61	38.99	.48	.29
1525.22	1533.60	8.38	3.15	24.52						
1534.52	1557.83	23.32	15.05	22.44						
1558.29	1558.90	.61	43.42	9.23						
1566.06	1572.62	6.55	11.58	23.09						
1572.92	1573.07	.15	48.61	6.97						
1575.05	1575.21	.15	49.62	11.94						
1576.27	1581.61	5.33	25.31	19.28						
1597.46	1598.22	.76	40.62	14.45						
1598.37	1602.33	3.96	38.81	14.64						
1604.77	1605.99	1.22	45.03	13.08						
1606.60	1607.67	1.07	44.40	13.72						
1607.97	1610.26	2.29	44.89	12.01						
1612.09	1612.70	.61	47.37	7.68						
1613.15	1613.46	.30	48.84	9.58						
1613.61	1614.07	.46	43.82	10.12						

Table 2 Results using salinity 30,000ppm NaCl equivalent across interval 1513-1525m

12. Reference

Kuttan, K., Kulla, J.B. and Neumann, R.G. 1986 APEA Journal: Freshwater Influx In The Gippsland Basin: Impact On Formation Evaluation, Hydrocarbon Volumes, and Hydrocarbon Migration.

Petrolog

Zone no.		2	3	4	5	6	7	8
Top depth	M	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801	1617.574
Bottom depth	M	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421	1691.792
Formation Name								
Top depth	M	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801	1617.574
Bottom depth	M	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421	1691.792
Facies		.000	.000	.000	.000	.000	.000	.000
No logs								
RM	ohmm	.187	.187	.187	.187	.187	.187	.187
Temp. RM	degC	14.700	14.700	14.700	14.700	14.700	14.700	14.700
RMF	ohmm	.155	.155	.155	.155	.155	.155	.155
Temp. RMF	degC	14.600	14.600	14.600	14.600	14.600	14.600	14.600
RMC	ohmm	.212	.212	.212	.212	.212	.212	.212
Temp. RMC	degC	14.500	14.500	14.500	14.500	14.500	14.500	14.500
Bit size	inch	12.250	12.250	12.250	12.250	12.250	12.250	12.250
Mud wt	gm/cc	1.170	1.170	1.170	1.170	1.170	1.170	1.170
SSP		.000	.000	.000	.000	.000	.000	.000
RW (SP)	ohmm	.0585683	.0584809	.0581679	.0577204	.0573246	.0570591	.0564517
Temperature	degC	59.808	59.930	60.368	61.003	61.573	61.960	62.858
RW @ FT	ohmm	.622	.621	1.000	.613	.608	.606	.313
RW@75F(23.9C	ohmm	1.113	1.113	1.803	1.113	1.113	1.113	.581
RW salinity	ppm	5000.000	5000.000	3000.000	5000.000	5000.000	5000.000	10000
RMF @ FT	ohmm	.0689039	.0688010	.0684328	.0679064	.0674406	.0671283	.0664138
RMF salinity	parts	.0555293	.0555293	.0555293	.0555293	.0555293	.0555293	.0555293
RM @ FT	ohmm	.0833946	.0832701	.0828244	.0821873	.0816236	.0812456	.0803808
RHO H	gm/cc	.700	.700	.800	.800	.800	.800	.800
Gas Flag		1.000	1.000	.000	.000	.000	.000	.000
RHO F	gm/cc	1.034	1.034	1.034	1.034	1.034	1.034	1.034
t F	us/ft	188.985	188.985	188.985	188.985	188.985	188.985	188.985
RHOMA	gm/cc	2.640	2.640	2.640	2.640	2.640	2.640	2.640

Petrolog

Zone no.		1	2	3	4	5	6	7
Top depth	M	1490.015	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801
Bottom depth	M	1513.027	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421
Formation Name								
PHIN min		-.0350000	-.0350000	-.0350000	-.0350000	-.0350000	-.0350000	-.0350000
t MA	us/ft	55.500	55.500	55.500	55.500	55.500	55.500	55.500
t MA min	us/ft	48.000	48.000	48.000	48.000	48.000	48.000	48.000
Sonic option		1.000	1.000	1.000	1.000	1.000	1.000	1.000
Compact/Ovrt		1.000	1.000	1.000	1.000	1.000	1.000	1.000
CAL cut off	inch	16.000	16.000	16.000	16.000	16.000	16.000	16.000
RUGO.cut off	inch	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DRHO cut off	gm/cc	.150	.150	.150	.150	.150	.150	.150
Bad Hole		1.000	1.000	1.000	1.000	1.000	1.000	1.000
No clay		SP N S MN	SP N S MN	SP N S MN	SP N S MN	SP N S MN	SP N S MN	SP N S MN
Vclay Flag		.000	.000	.000	.000	.000	.000	.000
Vclay type		1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vclay inp1		.200	.200	.200	.200	.200	.200	.200
Vclay out1		.150	.150	.150	.150	.150	.150	.150
Vclay inp2		.800	.800	.800	.800	.800	.800	.800
Vclay out2		.800	.800	.800	.800	.800	.800	.800
Vclay 50%		.500	.500	.500	.500	.500	.500	.500
VclayGR type		1.000	1.000	1.000	1.000	1.000	1.000	1.000
GR clean		40.000	40.000	40.000	40.000	40.000	40.000	40.000
GR clay		130.000	140.000	140.000	140.000	140.000	140.000	140.000
GR1		41.000	51.000	51.000	51.000	51.000	51.000	51.000
VGR1		.100	.100	.100	.100	.100	.100	.100
GR2		59.000	84.000	84.000	79.000	79.000	79.000	79.000
VGR2		.800	.800	.800	.800	.800	.800	.800
GR50%		70.000	70.000	70.000	70.000	70.000	70.000	70.000
R clay		15.000	15.000	15.000	15.000	15.000	15.000	15.000

Petrolog

Zone no.		1	2	3	4	5	6	7
Top depth	M	1490.015	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801
Bottom depth	M	1513.027	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421
Formation Name								
R limit		1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
Rclay1 flag		1.000	1.000	1.000	1.000	1.000	1.000	1.000
Rclay1		10.000	10.000	10.000	10.000	30.000	30.000	30.000
Vcl @ Rclay1		.150	.150	.150	.150	.150	.150	.150
RHOB sand	gm/cc	2.150	2.150	2.150	2.150	2.150	2.150	2.150
RHOB silt	gm/cc	3.000	3.000	3.000	3.000	3.000	3.000	2.300
RHOB clay	gm/cc	2.350	2.450	2.450	2.300	2.300	2.300	2.350
RHO Dry Clay	gm/cc	2.700	2.700	2.700	2.700	2.700	2.700	2.700
Rhob Calcite		2.710	2.710	2.710	2.710	2.710	2.710	2.710
PHIN Sand		.250	.250	.250	.250	.250	.250	.250
PHIN silt		.150	.150	.150	.150	.150	.150	.150
PHIN clay		.300	.300	.300	.400	.400	.400	.300
Phin Calcite		.100	.100	.100	.100	.100	.100	.100
PHISILT		.000	.000	.000	.000	.000	.000	.212
Calcite Flag		.000	.000	.000	.000	.000	.000	.000
t clay	us/ft	100.000	100.000	100.000	100.000	100.000	100.000	100.000
M clay		.676	.628	.628	.703	.703	.703	.676
N clay		.532	.494	.494	.474	.474	.474	.532
PHIN 2.2		.235	.220	.220	.220	.235	.235	.235
t 2.2	us/ft	90.000	90.000	90.000	90.000	90.000	90.000	90.000
a		1.000	1.000	1.000	1.000	1.000	1.000	1.000
A1		1.000	1.000	1.000	1.000	1.000	1.000	1.000
m		1.780	1.780	1.780	1.780	1.780	1.780	1.780
m1		2.000	2.000	2.000	2.000	2.000	2.000	2.000
m Function		1.000	1.000	1.000	1.000	1.000	1.000	1.000
n		1.870	1.870	1.870	1.870	1.870	1.870	1.870

Petrolog

Zone no.		1	2	3	4	5	6	7
Top depth	M	1490.015	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801
Bottom depth	M	1513.027	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421
Formation Name								
n1		2.000	2.000	2.000	2.000	2.000	2.000	2.000
B from BQV		4.546	4.566	4.574	4.603	4.644	4.682	4.707
A(QV)		.0003050	.0003050	.0003050	.0003050	.0003050	.0003050	.0003050
B(QV)		-3.450	-3.450	-3.450	-3.450	-3.450	-3.450	-3.450
Lithomod		1.000	1.000	1.000	1.000	1.000	1.000	1.000
SXO limit		.200	.200	.200	.200	.200	.200	.200
PHI max		.400	.400	.400	.400	.400	.400	.400
PHI min c.o.		.0100000	.0010000	.0010000	.0010000	.0010000	.0010000	.0010000
EXPX		1.500	1.500	1.500	1.500	1.500	1.500	1.500
Pay Flag typ		.000	.000	.000	.000	.000	.000	.000
Clay cut off		.500	.500	.500	.500	.500	.500	.500
PHIe cut off		.0500000	.0500000	.0500000	.0500000	.0500000	.0500000	.0500000
PHIt cut off		.100	.100	.100	.100	.100	.100	.100
SWe cut off		.800	.800	.800	.800	.800	.800	.800
SWt cut off		1.000	1.000	1.000	1.000	1.000	1.000	1.000
GrossRockVol	Mbbl	.000	.000	.000	.000	.000	.000	.000
Oil Exp.Fact		1.200	1.200	1.200	1.200	1.200	1.200	1.200
FormGeom.Fac		1.000	1.000	1.000	1.000	1.000	1.000	1.000
RecoveryFact		.200	.200	.200	.200	.200	.200	.200
SWB max		1.000	1.000	1.000	1.000	1.000	1.000	1.000
RWB	ohmm	.100	.100	.100	.100	.100	.100	.100
SWB cut off		.300	.300	.300	.300	.300	.300	.300
RWF	ohmm	.624	.622	.621	.617	.613	.608	.606
RMFF	ohmm	.0691590	.0689939	.0688010	.0684328	.0679064	.0674406	.0671283
Sw Eq. CPX		1.000	1.000	1.000	1.000	1.000	1.000	1.000
Sw Eq. SSS		1.000	1.000	1.000	1.000	1.000	1.000	1.000

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Petrolog

Zone no.		1	2	3	4	5	6	7
Top depth	M	1490.015	1513.027	1517.599	1524.152	1557.680	1582.217	1609.801
Bottom depth	M	1513.027	1517.447	1524.000	1557.528	1582.064	1609.649	1617.421
Formation Name								
Glauconite		.000	.000	.000	.000	.000	.000	.000
SWirr.cutoff		.300	.300	.300	.300	.300	.300	.300
Perm Expon.		6.000	6.000	6.000	6.000	6.000	6.000	6.000
PERM K coef		62500	62500	62500	62500	62500	62500	62500
RHOMA 1	gm/cc	2.650	2.650	2.650	2.650	2.650	2.650	2.650
RHOMA 2	gm/cc	2.710	2.710	2.710	2.710	2.710	2.710	2.710
RHOMA 3	gm/cc	2.850	2.850	2.850	2.850	2.850	2.850	2.850
UMA 1		4.800	4.800	4.800	4.800	4.800	4.800	4.800
UMA 2		13.760	13.760	13.760	13.760	13.760	13.760	13.760
UMA 3		8.970	8.970	8.970	8.970	8.970	8.970	8.970
UF		.400	.400	.400	.400	.400	.400	.400
UNACL		8.000	8.000	8.000	8.000	8.000	8.000	8.000
GR Dispersed		55.000	55.000	55.000	55.000	55.000	55.000	55.000
PHIT Dispers		.0500000	.0500000	.0500000	.0500000	.0500000	.0500000	.0500000
PHIT Laminat		.200	.200	.200	.200	.200	.200	.200
PHIT Sand		.200	.200	.200	.200	.200	.200	.200
Vp/Vs Sand		1.500	1.500	1.500	1.500	1.500	1.500	1.500
Vp/Vs LS		1.900	1.900	1.900	1.900	1.900	1.900	1.900
Vp/Vs DOL		1.800	1.800	1.800	1.800	1.800	1.800	1.800
Vp/Vs VCL		1.700	1.700	1.700	1.700	1.700	1.700	1.700
Vp/Vs Salt		1.810	1.810	1.810	1.810	1.810	1.810	1.810
Vp/Vs Trona		2.250	2.250	2.250	2.250	2.250	2.250	2.250
Vp/Vs Anhyd		1.840	1.840	1.840	1.840	1.840	1.840	1.840
Vp/Vs Gypsum		2.450	2.450	2.450	2.450	2.450	2.450	2.450
Vp/Vs Coal		2.000	2.000	2.000	2.000	2.000	2.000	2.000

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CROCKER
DATA
PROCESSING

Iona-6

SILTY SHALY SAND MODEL

Company	TXU Gas Storage Pty Ltd
Well Name	Iona-6
Field	Iona
Country	Australia
Nation	Australia
State	Victoria
County or Rig name	Century #18
Field Location	Permit PPL2

Field Locn. Line 2	Northing 5 728 761.684
Permanent Datum	MEAN SEA LEVEL
Elevation of PD	.00 M
Elevation of KB	110.50 M
Elevation Ground lv	104.50 M
Elevation Log Zero	109.30 M
Above Perm. Datum	109.30 M
Log measured from	DF
Drill measured from	DF
Other Services Ln 1	CSI-GR
Service company	Schlumberger
TD Date	1686.00000
Log date	04-Jun-2004 4-Jun-2004
Date computed	30-06-04
Date plotted	06-07-2004
Time plotted	15:42:14

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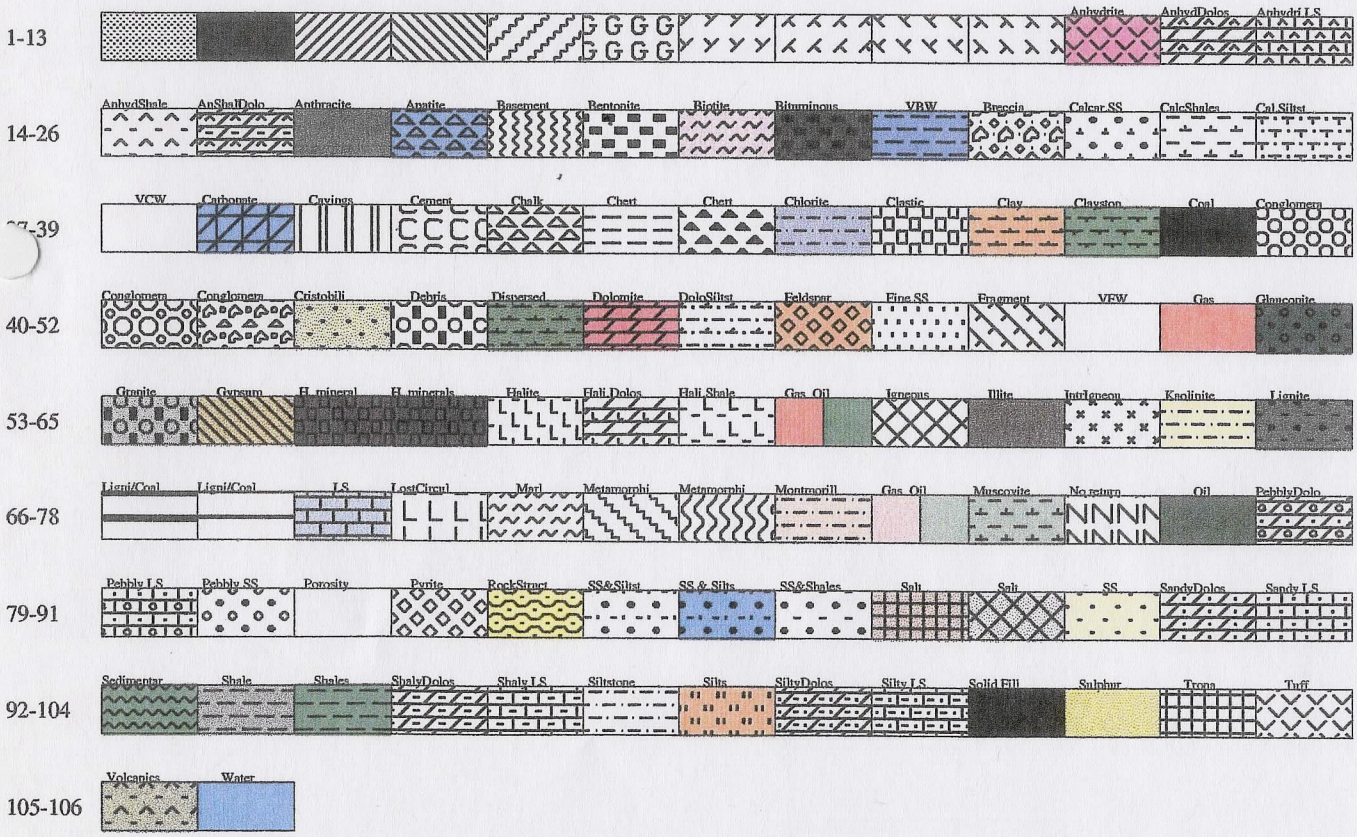
PETROLOG SOFTWARE Revision 9.10

CROCKE
DATA PROCESSIN

FIELD REMARKS

Dep[illegible]rrelated to downlog.
Repeat run twice to ensure tool functionality.
Hole deviated by 49 deg

LITHOLOGY TABLE



LOG DESCRIPTION

PHIT-SSS	Total Porosity, SSS Model= PHIE+VCL*PHICL
PHIE-SSS	Effective Porosity, SSS Model= Vsand*PHIsand+Vsilt*PHIsilt
VCL -SSS	Vclay SSS Model
VSI -SSS	Volume of Silt, SSS Model
VSAN-SSS	Volume of Sand. SSS Model
PHIE-SSS	Effective Porosity, SSS Model= Vsand*PHIsand+Vsilt*PHIsilt
VBW -SSS	Volume of bound water (SSS Model)
SWT -SSS	Total Water Saturation, SSS Model
GR	Gamma-Ray {F13.4}
HCAL	HRCC Cal. Caliper {F13.4}

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DEPTH
M
:200

GAMMA RAY
0.0 (API) 200.0
CALIPER
6.0 (INCH) 16.0

SW
1.0 (V/V) 0.0
SWT
1.0 (V/V) 0.0

PHIT
0.5 (V/V) 0.0
PHIE
0.5 (V/V) 0.0

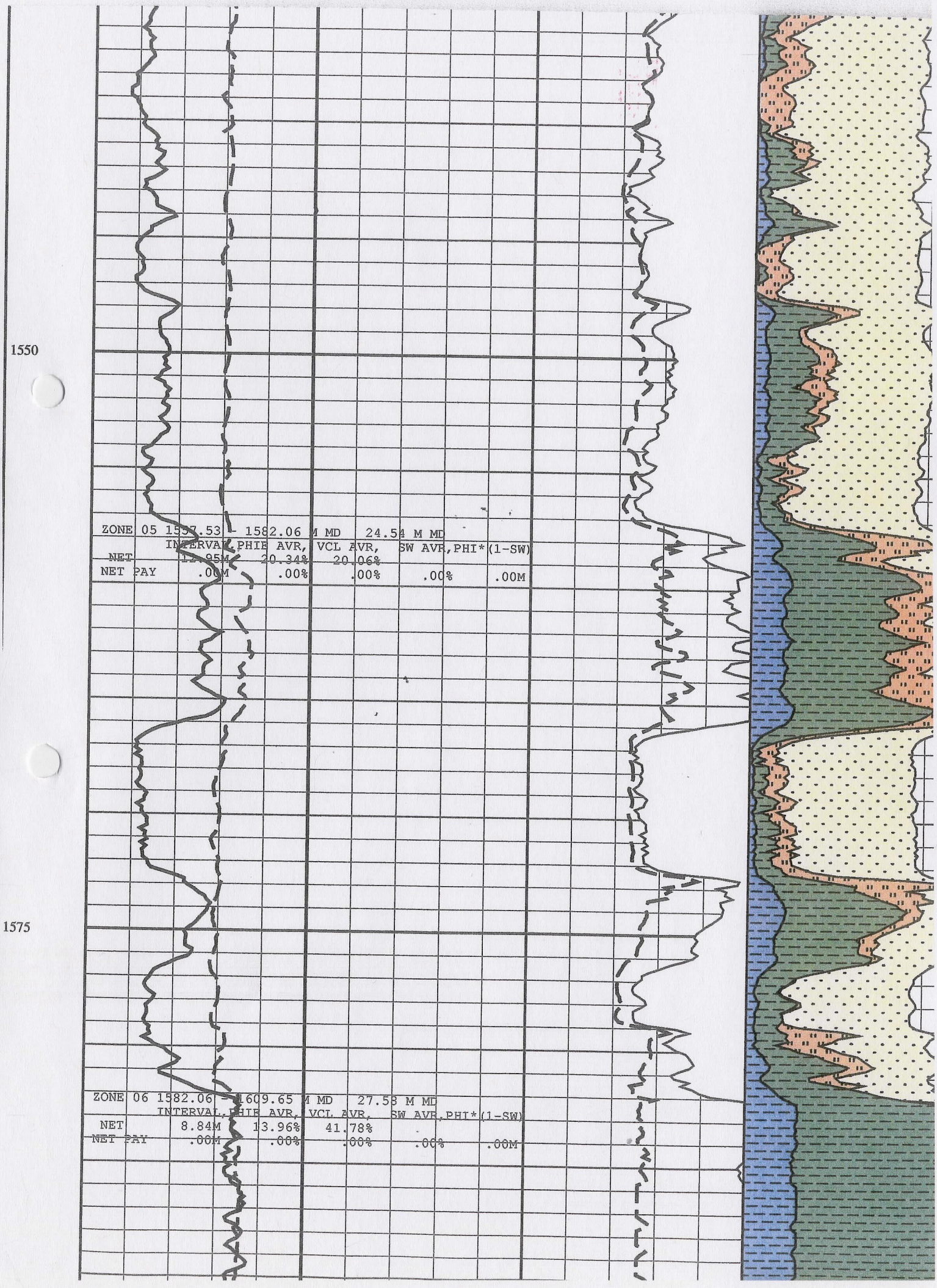
VCL
0.0 (V/V)
VSILT
0.0 (V/V)
VSAND
0.0 (V/V)
OIL & GAS
1.0 (V/V)
BOUND WATER
0.0 (V/V)

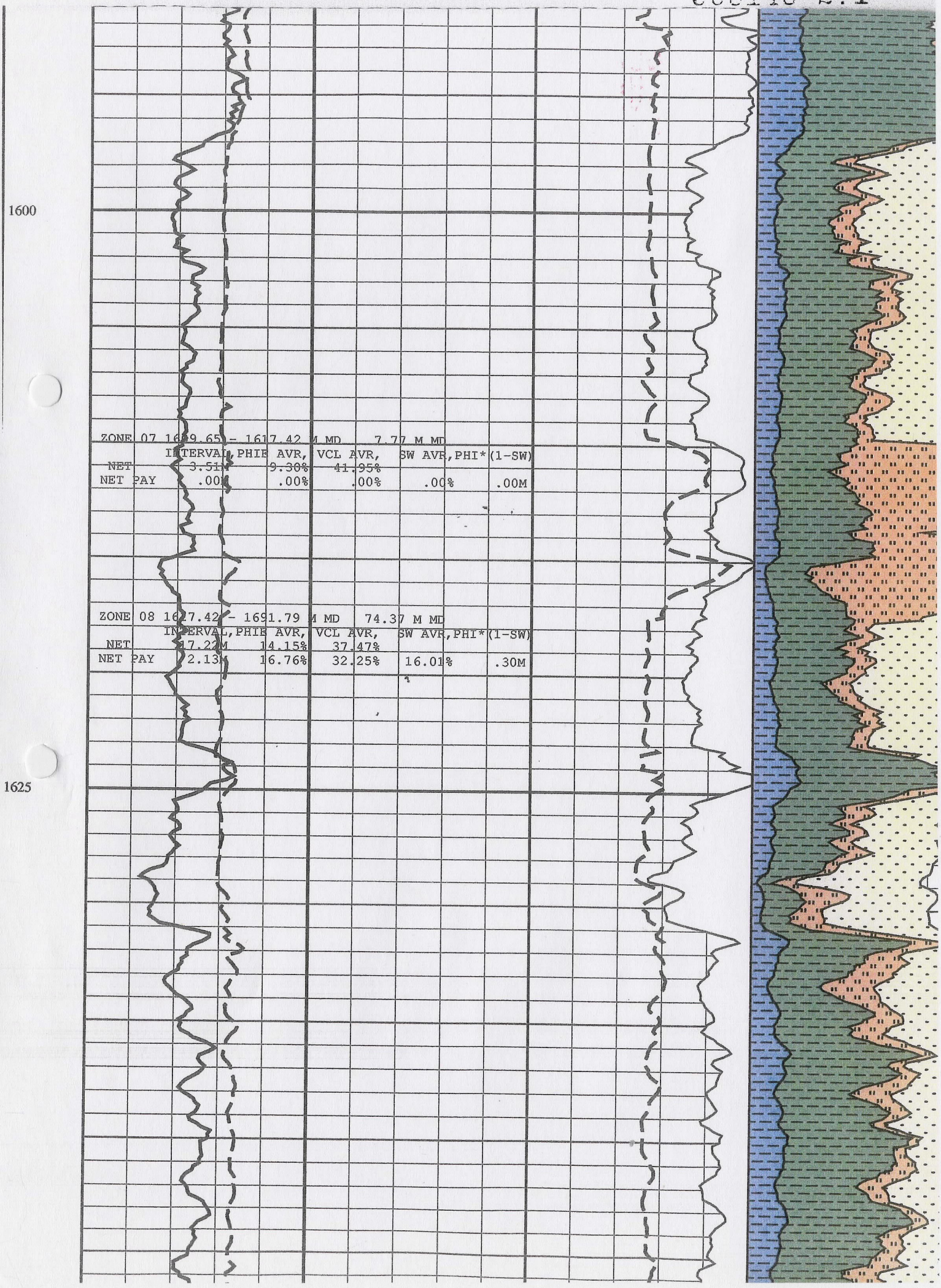
ZONE 02 1512.07 - 1517.45 M MD 4.57 M MD
INTERVAL PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 3.05M 24.05% 24.80%
NET PAY 3.05M 24.05% 24.80% 69.89% .22M

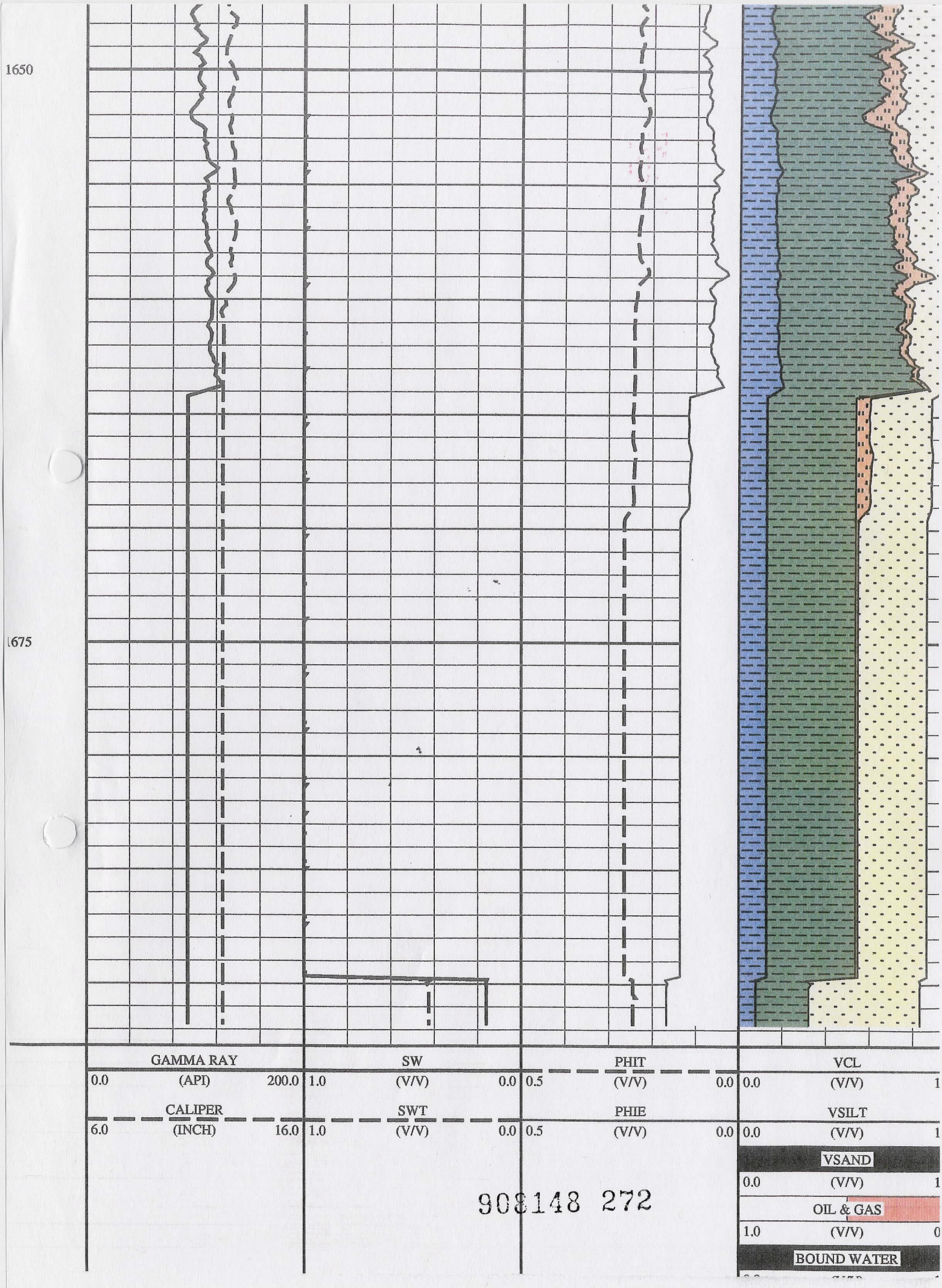
ZONE 03 1517.45 - 1524.00 M MD 6.55 M MD
INTERVAL PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 2.44M 19.64% 22.72%
NET PAY 1.02M 18.88% 26.42% 77.33% .05M

ZONE 04 1524.00 - 1557.53 M MD 33.53 M MD
INTERVAL PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 31.55M 23.09% 11.72%
NET PAY .00M .00% .00% .00% .00M

525


1550
1575
ZONE 05 1557.53 - 1582.06 M MD 24.54 M MD
INTERVAL PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 12.95M 20.34% 20.06%
NET PAY .00M .00% .00% .00% .00M
ZONE 06 1582.06 - 1609.65 M MD 27.58 M MD
INTERVAL PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 8.84M 13.96% 41.78%
NET PAY .00M .00% .00% .00% .00M


1600
1625
ZONE 07 1609.65 - 1617.42 M MD 7.77 M MD
INTERVAL, PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 3.51M 9.30% 41.95%
NET PAY .00M .00% .00% .00% .00M
ZONE 08 1617.42 - 1691.79 M MD 74.37 M MD
INTERVAL, PHIE AVR, VCL AVR, SW AVR, PHI*(1-SW)
NET 17.22M 14.15% 37.47%
NET PAY 2.13M 16.76% 32.25% 16.01% .30M


1650
1675
GAMMA RAY
0.0 (API) 200.0
CALIPER
6.0 (INCH) 16.0
SW
1.0 (V/V) 0.0
SWT
1.0 (V/V) 0.0
PHIT
0.5 (V/V) 0.0
PHIE
0.5 (V/V) 0.0
VCL
0.0 (V/V) 1
VSILT
0.0 (V/V) 1
VSAND
0.0 (V/V) 1
OIL & GAS
1.0 (V/V) 0
BOUND WATER

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PE613660

This is an enclosure indicator page.
The enclosure PE613660 is enclosed within the container PE908148 at this location in this document.

The enclosure PE613660 has the following characteristics:

ITEM_BARCODE	= PE613660
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 mudlog 1:200
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= MUD_LOG
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 30-SEP-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	= 1681.2
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)

PE613661

This is an enclosure indicator page.
The enclosure PE613661 is enclosed within the container PE908148 at this location in this document.

The enclosure PE613661 has the following characteristics:

ITEM_BARCODE	= PE613661
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 composite log
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= COMPOSITE_LOG
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 30-SEP-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	= 1686
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)

PE613662

This is an enclosure indicator page.
The enclosure PE613662 is enclosed within the container PE908148 at this location in this document.

The enclosure PE613662 has the following characteristics:

ITEM_BARCODE	= PE613662
CONTAINER_BARCODE	= PE908148
NAME	= Iona-6 composite log reservoir section
BASIN	= OTWAY
OFFSHORE?	= Y
DATA_TYPE	= COMPOSITE_LOG
DATA_SUB_TYPE	= HARDCOPY-PAPER
DESCRIPTION	=
REMARKS	= 30-SEP-2004
DATE_WRITTEN	=
DATE_PROCESSED	= TXU Gas Storage Pty Ltd
DATE_RECEIVED	=
RECEIVED_FROM	= 16-NOV-2004
WELL_NAME	= 1349
CONTRACTOR	=
AUTHOR	=
ORIGINATOR	= DH00_SW
TOP_DEPTH	=
BOTTOM_DEPTH	=
ROW_CREATED_BY	=

(Inserted by DNRE - Vic Govt Mines Dept)