

## **APPENDIX XI: DRILLING - FINAL WELL REPORT**

Wellname: WEST MEREEENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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**WEST MEREEENIE 24**  
**(25 Jul 2013 - 01 Aug 2013)**

**Field - Mereenie**

**FINAL WELL REPORT**

**Santos Ltd**

**Report Compiler: Alex Fawcett**  
**Date of Issue: 23 July 2014**

Wellname: WEST MEREEENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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## Well Summary

Well Objective	:WM Oil App E is located on the western north flank in an appraisal step-out location west of the WM4 well. The primary targets are the P3-120/130 (as completed in WM4) plus it is prognosed to intersect additional pay in the lwr P3 sands (P3-190/230/250) within the oil column, due to the 45° well design. In the mean prognosed outcome, one follow-up producer will be required to develop the area tested by App E, most likely a re-drill of 4DW1 or a step-out to the east of 4DW1, with a 45° lateral to intersect the entire P3 system.
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Country	:Australia
Field	:Mereenie
Block	:OL4
Well	:WEST MEREEENIE 24
Well Type	:Appraisal
Operating Company	:Santos Ltd
Rig	:Boart Longyear WW07

Permit	:OL 5
Licence	:-
Latitude	:23 Deg 56 Min 37.3100 Sec
Longitude	:131 Deg 25 Min 40.7200 Sec
RT to GL:	:5.15 m RT GL
GL Elevation	:749.28 m
Planned TD	:590.0 m
Actual TD	:530.0 m

Spud Date / Time	:26 Jul 2013 / 06:00
TD Reached Date / Time	:30 Aug 2013 / 20:15
Rig Released Date / Time	:01 Aug 2013 / 18:00
Total Days Since Spud	:6.50
Total Days on Operations	:7.13

Wellname: WEST MEREENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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## Well History

#	Date	Depth (m)	24 Hour Summary
1	25 Jul 2013	-0.3	15:00 Rig down & move from West Mereenie 22 to West Mereenie 24, distance of 8.6km, Last load on site @ 20:30hrs, Spot sub base, drill floor, mud system, office & crib trailer. Rig 500hrs service. Spot rig & continue to rig up for Inspections & Spudding hole
2	26 Jul 2013	29.0	Rig up all equipment, complete Hazard Hunt & Prespud Meeting. Spud West Mereenie 24 @ 06:00hrs, drilling 20" hole from surface to 29.3m, circulate hole clean. POOH B/O & L/O 20" BHA assembly, run 16" conductor casing, cement casing. Weld flange onto 16" conductor casing, nipple up diverter & blooie line. M/U 12.325" hammer BHA assembly
3	27 Jul 2013	343.7	Drill ahead 12.325" Surface hole f/- 29.3 thru 344m Average ROP: 19m/hr with connections Airlifting approx 40gpm formation water
4	28 Jul 2013	391.7	Drill 12.325" surface hole f/- 344 to 376m, Hammer stops working, POOH & lay down Air hammer assembly Make up & RIH 12.25" tricone & DTFR assembly, wash last 2 jnts to bottom Drill ahead f/- 376 to 392m Average ROP: 3.3m/hr with connections Load out non essential equipment f/- WM24 to WM23
5	29 Jul 2013	468.0	Drill ahead f/- 391.7 to 430m, Hydraulic leak in mast, Pull back & lay down 1 single, Lay mast over & Fix leak Stand mast, pick up single & cont drill ahead Drill f/- 430 to 468m Strap and prepare 9-5/8" casing Make up running tool to Braden head
6	30 Jul 2013	530.0	Drill ahead f/-468 to 530m (Section TD) Fix oil leak on oil line to compressor POOH, start break out & lay down BHA
7	31 Jul 2013	530.0	POOH Lay down BHA, nipple down diverter and flow lines, Cut off 16" conductor casing & weld in landing ring, Rig up & run 9 5/8" casing w/- shoe @ 527.58m, Head up Schlumberger & rig in cement lines Raise PTW: pressure testing, hold PJSM on cementing operations, Conduct cementing operations, Bump plug @ 500psi, try to pressure up to 2000psi, casing pressure not holding & dropping away Remove cement head cap, fill casing with water. Water continues to drop away after several attempts D Supt & DE on site discuss situation, inform Adelaide office Operation suspended wait on decision moving forward, Rig down and load out non essential equipment to WM23
8	01 Aug 2013	530.0	Continue pack up & load out non-essential equipment to WM23. Suspend well according to conditions agreed by DME & Santos Rig Released from WM24 @ 18:00hrs on 1-08-13 Rig down & move out to WM23

Wellname: WEST MEREENIE 24	Drilling Co: Santos Ltd	Rig: Boart Longyear WW07
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## BHA Record

#	Length (m)	Weight (klb)	Weight Below/Jar (klb)	String Weight (klb)	Pick-Up Weight (klb)	Slack-Off Weight (klb)	Torque Max (ft.lbf)	Torque on Bottom (ft.lbf)	Torque off Bottom (ft.lbf)	BHA Description
1	25.4									Bit, Bit Sub, Roller Reamer, X/O, Drill Collar, Roller Reamer, Drill Collar, Drill Collar
2	11.4									12.325" Air hammer Assembly
3	60.9									12.25" TCI Tricone, Bit sub, Roller reamer, 1 x 9" DC, Roller reamer, 9 x 9" DC's, Xover sub

Wellname: WEST MEREENIE 24	Drilling Co: Santos Ltd	Rig: Boart Longyear WW07
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## Mud Record

Water Based																		
Date - Time	Mud Type Description	Depth (m)	Temp (°F)	MW (ppg)	VIS (sec/qt)	PV (cP)	YP (lbf/100ft²)	Gel 10s / 10m/ 30m (lbf/100ft²)	F.L. API (cm³)	F.L. HTHP (cm³/30min)	Solids (%)	Sand (%)	MBT	pH	Cl (mg/L)	Hard (mg/L)	KCl (%)	Daily Cost (AUD)
25 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
26 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
27 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
28 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
29 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
30 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
31 Jul 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										
01 Aug 2013 - 14:30	Gel. water based	-715.2		8.40	70			/ /										

Wellname: WEST MERENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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## Casing & Cementing Summary

Wellname: WEST MEREEENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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<b>Casing Type:</b> Surface Casing		Originated By: Steve Heriot		Checked By: Matthew Howard		Date: 31 Jul 2013		
Hole Size: 12 1/4 in		Casing Size: 9 5/8 in		GL-RT: 5.15m		Contractor:		
Total Depth MD:530.00m		Total Depth 530.00m		Casing Depth 527.6m		Casing Depth 527.58m		
		TVD:		MD:		TVD:		
PRE-FLUSH 10.0bbl@ 8.3ppg				SPACER 10.0bbl @ 8.3ppg				
Additives:				Additives:				
Water Source								
CEMENT				ADDITIVES		%	Amount	Units
LEAD SLURRY :		208sack		D020			388.00	lbs
Brand / Class:		ABC / A		D047			10.00	gallons
Slurry Yield:		2.52ft³/sack		D075			70.00	gallons
Mixwater Req't:		15.23gal/sack						
Actual Slurry Pumped:		90.0bbl						
Density:		11.8ppg						
Cement Top (MD):		254.0m						
CEMENT				ADDITIVES		%	Amount	Units
TAIL SLURRY :		156sack		D047			2.50	gallons
Brand / Class:		ABC / A		D080			50.00	gallons
Slurry Yield:		1.19ft³/sack						
Mixwater Req't:		5.26gal/sack						
Actual Slurry Pumped:		32.0bbl						
Density:		15.6ppg						
Cement Top (MD):		355.0m						
DISPLACEMENT				Fluid:		Fresh water @ 8.3ppg		
Theoretical Displ. From Avg Caliper ID:		133.2bbl		Bumped Plug with:		500psi		
Actual Displ. From Tubs:		136.0bbl @ 5.0bbl/min		Pressure Tested To:				
Actual Displ. From Barrel Counter:		136.0bbl		Bleed Back:				
Actual Displ. From Tank Dip:		136.0bbl		Displaced via:		Schlumberger Pump unit		
ACTIVITY	Time/Date	Returns to Surface: 0.0bbl mud,0.0bbl cmt						
Start Running csg.	07:30 31/7/07	Casing Action During		Preflush : No Action		Cement : No Action	Displacement : No	
Casing On Bottom	13:30 31/7/07			Taken		Taken	Action Taken	
Start Circulation	15:00 31/7/07	Top Up Job run: No				of class		
Start Pressure Test	15:10 31/7/07	Plug Set:		Make: Topco		Type: Non Rotating		
Pump Preflush	15:15 31/7/07	Centralizer Type: Bow Spring				Centralizer Placement Depth: 524, 517, 508, 498, 587, 476		
Start Mixing	15:25 31/7/07					2 x Cement baskets run in tandem @ 36m		
Finish Mixing	16:15 31/7/07							
Start Displacing	16:35 31/7/07							
Stop Displ./Bump	17:05 31/7/07	Wiper Plug Top: Yes						
Pressure Test	17:10 31/7/07	Wiper Plug Bottom: Yes						
CASING AND EQUIPMENT DETAILS								
Stick Up							0.00m	
No. Joints	OD	Wt	Grade	Comment	Thread	Length	From	To
1				Datum point Ensign 918		5.15m	0.00m	5.15m
1				Braden head with pup Joint		3.30m	5.15m	8.45m
46		36.0lbs/ft	K55	46 x Casing joints ( includes 1x6met. pup jnt.)		506.29m	8.45m	514.74m
1		36.0lbs/ft	K55	Pup Joint		5.95m	514.74m	520.69m
1				float Collar		0.47m	520.69m	521.16m
1		36.0lbs/ft	K55	Pup Joint		5.92m	521.16m	527.08m
1				Float Shoe		0.50m	527.08m	527.58m



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Theoretical Bouyed wt. of casing:	56.0klb	Bradenhead Height above GL:	0.00m
Casing wt. prior to landing csg:		Bradenhead Description / Length:	11" 3000psi GE SCH1 x 9 5/8" BTC/ 3.30m
Actual wt. of casing (last joint run-block wt):		Tubing Spool Size:	11"5k flange bottom x 7 1/16" studded top
Landing wt. (after cementing and pressure bleed off):	0.0klb	Setting Slips:	
Thread Dope Used :	Bestolife 2000		
Cementing Job Remarks:	Unable to complete final casing Test due to pressure not building & Holding		

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## Activity Record

Day #1 (25 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PM	P	RM		15:00	18:00	3.00	0.0	Rig down & move from West Mereenie 22 to West Mereenie 24 distance of 8.6km. Spot sub base & rig floor. Spot mud system, workshop & storage containers. Spot offices & crib trailer.
PM	P	RMT		18:00	20:30	2.50	0.0	Rig 500hrs service
PM	P	RU		20:30	24:00	3.50	0.0	Last load on site @ 20:30hrs. Spot Rig, raise mast, spot Load Safe Trailer, continue setting up in preparation for Inspections & Spudding
Day #2 (26 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PM	P	RU		00:00	04:30	4.50	0.0	Hold PJSM Continue setting up equipment for Inspections & Pre-Spud Checklist. Mix spud mud
PS	P	RU		04:30	05:30	1.00	0.0	Make up 20" BHA
SH	P	D		05:30	06:00	0.50	0.0	Conduct Hazard Hunt. Hold Pre-Spud Meeting. Check operation of ESD. Conduct Man Down Safety Drill.
SH	P	D		06:00	10:45	4.75	29.3	Spud West Mereenie-24 @ 06:00hrs. Drill 20" Conductor hole to 29.3m
SH	P	D		10:45	11:30	0.75	29.3	Circulate hole clean. Condition mud increase viscosity to > 50
SH	P	TO		11:30	12:00	0.50	29.3	POOH to BHA
SH	P	SM		12:00	12:30	0.50	29.3	Hold Weekly Safety Meeting with both crews.
SH	P	HBHA		12:30	13:30	1.00	29.3	Trip out 20" BHA assembly
SH	P	CMC		13:30	15:00	1.50	29.3	Prepare & run 16" conductor casing, welding 2 x 12.02m lengths together, land same.
SH	P	CMC		15:00	16:45	1.75	29.3	Prepare & cement 16" conductor casing. Hot Mix of 16sx cement, 4% calcium Chloride, @ 15ppg, run cement in through stinger.
SH	P	CMC		16:45	17:00	0.25	29.3	Centralise 16" casing, WOC

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Day #2 (26 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	CMC		17:00	18:30	1.50	29.3	Mix & pump 93sx cement with 2% Calcium Chloride ( 10bbls @ 15ppg). Run cement in through stinger, cement back to surface, pull out stinger, clean all cementing equipment.
SH	P	CMC		18:30	21:00	2.50	29.3	WOC, prepare diverter & blooie line
SH	P	CMC		21:00	23:00	2.00	29.3	Raise Permit to Work, lower flange into place on top of 16" conductor casing, weld in place, nipple up diverter, put rig floor back in place
SH	P	HBHA		23:00	24:00	1.00	29.3	M/U 12.325" hammer BHA assembly
Day #3 (27 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	SM		00:00	00:15	0.25	29.3	Hold pre-Tour Safety Meeting
SH	P	HBHA		00:15	00:30	0.25	29.3	Continue to make up hammer drilling BHA.
SH	P	RU		00:30	02:45	2.25	29.3	Nipple up Diverter and rig in blooie line.
SH	P	D		02:45	06:00	3.25	60.0	RIH to 29m. (No cement inside Conductor) Hammer drill 12.325" Surface hole to 60m
SH	P	D		06:00	24:00	18.00	344.0	Cont to drill ahead 12.325" Surface hole w/- Air hammer f/- 60 to 344m Average ROP: 19m/hr with connections
Day #4 (28 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	D		00:00	04:15	4.25	376.0	Drill ahead 12.325" Surface hole w/- Air hammer f/- 344 to 376m average ROP: 9.5m/hr with connections Hammer stops working, clear hole
SH	P	TOB		04:15	08:00	3.75	376.0	POOH to BHA with 12.325" hammer assembly.
SH	P	HBHA		08:00	09:00	1.00	376.0	POH with BHA. Break out bit. Service hammer and lay down same.
SH	P	RO		09:00	09:30	0.50	376.0	Raise PTW: Hot Work and generate a JSA (new operation) Lay out roller reamer. Hard band the lower blocks on the upper roller reamer.
SH	P	HBHA		09:30	18:15	8.75	376.0	Make up 12-1/4" 5-3-7X Tri-cone Bit. S/N: PZ0979 RIH picking up 9 x 9" drill collars  Rig in flow line and discharge hose for DTFR drilling Wash to bottom last 2 joints ( as a precaution )

Wellname: WEST MEREEENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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Day #4 (28 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	D		18:15	24:00	5.75	392.0	Commence DTFR drilling w/- 12.25" Tricone Roller, f/- 376 to 392m Average ROP: 3.3m/hr with connections
Day #5 (29 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	D		00:00	16:00	16.00	430.0	Drill ahead 12.25" hole with DTFR method f/- 392 to 430m Average ROP: 2.4m/hr Hydraulic leak in mast deteriorating.
SH	TP	RR	mcrig	16:00	16:30	0.50	430.0	POH and lay down single of drill pipe. Lay mast over, repair leak, raise mast, pick up single of drill pipe.
SH	P	D		16:30	22:30	6.00	461.4	Drill 12.25" Surface hole with DTFR from 430m to 461.4m Average ROP: 5.2m/hr with connections
SH	P	RS		22:30	22:45	0.25	461.4	Rig Service
SH	P	D		22:45	24:00	1.25	468.0	Drill ahead f/- 461.4 to 468m, Average ROP 5.3m/hr with connection
Day #6 (30 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SH	P	D		00:00	08:30	8.50	504.0	Continue to drill 12.25" surface hole with DTFR system from 468m to 504m Average ROP: 4.2m/hour with connections
SH	TP	RR	mcrig	08:30	09:00	0.50	504.0	Leak in oil line fitting to air compressor. Pull off bottom 6m and repair same.
SH	P	D		09:00	20:15	11.25	530.0	Drill 12.25" surface hole with DTFR system from 504m to 530m Average ROP:2.4 m/hr
SH	P	CHC		20:15	20:30	0.25	530.0	Circulate hole clean and confirm depth
SC	P	TO		20:30	23:15	2.75	530.0	POOH 7" Drill pipe back to BHA
SC	P	HBHA		23:15	24:00	0.75	530.0	POOH, break out & lay down BHA
Day #7 (31 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	HBHA		00:00	02:00	2.00	530.0	Continue POH. Lay down BHA.

Wellname: WEST MEREEENIE 24	Operation Co: Santos Ltd	Rig: Boart Longyear WW07
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Day #7 (31 Jul 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	RRC		02:00	03:00	1.00	530.0	Raise PTW: Hot Work and Confined Space. Nipple down diverter and flow lines. Cut off 16" conductor, install and stitch weld landing ring. (24" below GL)
SC	P	RRC		03:00	07:00	4.00	530.0	Clean out mud tank for lead slurry mix water. Rig up to run 9-5/8" casing
SC	P	SM		07:00	07:30	0.50	530.0	Hold PJSM with PCS, HSE, Santos and BLY.
SC	P	RC		07:30	13:30	6.00	530.0	Pick up pre-assembled shoe joint and float collar joints and threadlock same. Check floats. O.K. Run 45 joints + 1 pup joint of 9-5/8" 36 lb/ft K55 BTC casing. Pick up SCH1 casing head (A section) with split support ring and land casing. Shoe set @ 527.58m
SC	P	RUC		13:30	14:30	1.00	530.0	Install wiper plug into casing and load top plug. Head up Schlumberger and rig in cement lines. Chain casing down.
SC	P	SM		14:30	15:00	0.50	530.0	Raise Permit to Work: Pressure testing. Hold PJSM with Santos, Schlumberger and BLY HSE and crew.
SC	P	CMC		15:00	18:00	3.00	530.0	Pump 10 bbls of water ahead and pressure test cement lines to 3000 psi. O.K. Pump remaining 10 bbls of water. Mix and pump 90bbls (208 sacks) of Class 'A' cement with 0.01 gal/sk of DO47 Antifoam + 0.250 gal/sk DO75 Extender + 1.5% BWOC DO20 Bentonite @ 11.8ppg Tail in with 32bbls (156sacks) of Class 'A' cement with 0.01 gal/sk DO47 Antifoam and 0.300 gal/sk of DO80 Dispersant @ 15.6 ppg. Launch top plug and displace cement, plug bumped after 132 bbls pumped with 500 psi. Attempt to pressure test casing to 2000 psi without success after pumping 4 bbls over theoretical displacement. Re-attempt to pressure test casing - pressure bleeding off.
SC	TP	CMC	hp	18:00	19:30	1.50	530.0	Remove cap off cement head, Fill casing through top of cement head, Water continues to drop away, try several times with same result.  Discuss situation D SUPT & DE on site, Inform Adelaide office & discuss options. Operations suspended on WM24, wait on plan from Adelaide office.
SC	TP	RD		19:30	24:00	4.50	530.0	Nipple down Schlumberger cement head and iron. Pack up & load out non essential equipment to WM23. Operations suspended on WM24, wait on plan from Adelaide office.

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Day #8 (01 Aug 2013)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	TP	RD	mcdh	00:00	13:15	13.25	530.0	Cont pack up & load out non essential equipment to WM23.  Operations suspended on WM24, wait on plan from Adelaide office.
SC	P	RD		13:15	18:00	4.75	530.0	Cont pack up & load out non essential equipment to WM23.  Received permission f/ NT DME via Adelaide office to suspend WM24, subject to conditions. Carry out NT DME requirements. NT DME conditional requirements completed. Approval given to release rig. Rig Released f/ WM24 @ 18:00hrs. on 1-08-13 Rig down & move out to WM23

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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**WEST MEREENIE 24 West Mereenie 24 ST1**  
**(11 Feb 2014 - 16 Mar 2014)**

**Field - Mereenie**

**FINAL WELL REPORT**

**Santos Ltd**

**Report Compiler: Alex Fawcett**  
**Date of Issue: 23 July 2014**

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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## Well Summary

Well Objective	:WM Oil App E is located on the western north flank in an appraisal step-out location west of the WM4 well. The primary targets are the P3-120/130 (as completed in WM4) plus it is prognosed to intersect additional pay in the lwr P3 sands (P3-190/230/250) within the oil column, due to the 45° well design. In the mean prognosed outcome, one follow-up producer will be required to develop the area tested by App E, most likely a re-drill of 4DW1 or a step-out to the east of 4DW1, with a 45° lateral to intersect the entire P3 system.
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Country	:Australia
Field	:Mereenie
Block	:OL4
Well	:WEST MEREEENIE 24 West Mereenie 24 ST1
Well Type	:Appraisal
Operating Company	:Santos Ltd
Rig	:Ensign 918
Permit	:OL 5
Licence	:-
Latitude	:23 Deg 56 Min 37.31 Sec
Longitude	:131 Deg 25 Min 40.72 Sec
RT to GL:	:5.15 m RT GL
GL Elevation	:749.28 m
Planned TD	:1,579.0 m
Actual TD	:1,540.0 m
Spud Date / Time	:14 Feb 2014 / 21:00
TD Reached Date / Time	:14 Feb 2014 / 21:00
Rig Released Date / Time	:14 Feb 2014 / 21:00
Total Days Since Spud	:30.12
Total Days on Operations	:33.88



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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## Well History

#	Date	Depth (m)	24 Hour Summary
1	11 Feb 2014	530.0	Wait on Daylight with crews. Rig move. Wait on Daylight with crews. Rig down 90% Rig move 30% Rig up 0 %
2	12 Feb 2014	530.0	Wait on Daylight with crews. Rig move. Wait on Daylight with crews. Rig down 90% Rig move 80% Rig up 30%
3	13 Feb 2014	530.0	Complete Rig move from WM 20 to WM 24. Rig up and complete Pre Spud check lists.  Rig move 100% Rig up 85%
4	14 Feb 2014	530.0	Continue Rig up and complete Pre Spud check lists.  Rig up 95%
5	15 Feb 2014	530.0	Completed Rig up. Completed Pressure testing. Hazard Hunt. Pre spud meeting. Rigged up 100%.
6	16 Feb 2014	530.0	Picked up all tubulars and racked back in Mast. RIH with Drill out assly to TOC. Performed 9.625 Casing pressure test to 2000psi/10min's, (good).
7	17 Feb 2014	533.0	Conducted FIT unable to achieve 15ppg EMW max recorded 10.4ppg EMW. POOH with BHA. RIH open end DP to 532.5m. Pumped 40bbl cement plug & squeezed to formation 1.3bbls. WOC. RIH with BHA to drill out cement.
8	18 Feb 2014	536.0	Drilled out cement to 533m & 8 3/4" hole to 536m. Conducted FIT. POOH to pick up Air hammer BHA. RIH with Air hammer BHA to 536m.
9	19 Feb 2014	862.0	Installed RFCD Bearing. Unloaded Well (Mud to Air). Air drill with 8-3/4" Hammer from 536m to 862m.
10	20 Feb 2014	950.0	Air drill with 8-3/4" Hammer to 950m. Killed the well with water. POOH laid down Hammer. RIH with 8 1/2" Directional assly to 950m.
11	21 Feb 2014	1,189.0	Blew hole dry and displaced Mud to Air. Drilled 8-1/2" hole from 905m to 1189m. Performed Gas flow tests at 1046m, 1106m, 1108m, 1141m, all results were 0 gas observed.
12	22 Feb 2014	1,329.0	Air Drilled 8-1/2" Directional hole to 1329m. Killed Well with 8.7ppg brine. POOH for Bit change.
13	23 Feb 2014	1,329.0	Completed weekly Pressure Test. Laid out Directional BHA and Drill Collars to be sent for inspection. Wait on Fishing Hand and Fishing equipment.
14	24 Feb 2014	1,329.0	Ran in hole with 8-1/8" Overshot dressed with 6-3/4" Grapple and attempted to latch on to Fish. POOH at controlled speed from 1326m to surface, (No Fish). Wait on instructions.
15	25 Feb 2014	1,329.0	

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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#	Date	Depth (m)	24 Hour Summary
			Monitor Well on Trip Tank. Wait on instructions. RIH with 7 5/8" overshot fishing assembly #2 dressed with 4 7/8" Basket grapple to attempt to latch on to Fish. POOH at controled speed, (No Fish). RIH with 7 5/8" modified overshot fishing assembly #3 dressed with 4 7/8" Basket grapple to 1135m.
16	26 Feb 2014	1,329.0	RIH with modified 7 5/8" overshot fishing run #3 assembly dressed with 4 7/8" Basket grapple from 1135m to tag Fish at 1326m. Attempt to latch on to Fish. POOH (No Fish). RIH with modified 7 5/8" overshot fishing run #4 assembly dressed with 4" Basket grapple to tag Fish at 1326m. Attempt to latch on to Fish. POOH (No Fish). RIH with Fishing BHA #5 assembly made up of of 8-1/8" Mill, 8-1/8" Overshot from surface to tag Top of Fish at 1325m. Mill Fish from 1325m to 1325.6m as per Fishermans Instructions.
17	27 Feb 2014	1,329.0	Completed Milling Junk / Fish to 1326m. POOH. Weekly BOP Pressure Test. Wait on Cementers, ETA 06:00hrs in the morning of 28-02-2014 to set Plug back.
18	28 Feb 2014	1,329.0	Completed test BOP, RIH open end drill pipe, set 50m cement plug 1325.5m back to 1275.5m. POOH to 1220m circulated hole clean. POOH to surface. Made up 8 1/2" BHA packed assy & RIH to 1225m, wash down to 1284m no tag on cement.
19	01 Mar 2014	1,329.0	Make up whip stock assembly, RIH and hang up at 586m, POOH to 577m work tight spot at 577m, POOH to 80m.
20	02 Mar 2014	1,329.0	Lay out whipstock assembly, Wait on instruction, RIH open ended pipe, pump cement plug, POOH to 1145m, circulate pipe clean, POOH, Make up clean out BHA.
21	03 Mar 2014	1,212.2	RIH with clean out BHA, tag cmt, dress off cmt to 1212m, POOH, Make up kick off directional assembly, RIH to 1202m, wash down to 1212m, time drill to 1212.2m.
22	04 Mar 2014	1,220.0	Time drill to cut successful side track to 1220m, POOH, inspect bit, change bend on motor.
23	05 Mar 2014	1,220.0	Directional drill 8 1/2" hole to 1296m, rig service, directional drill 8 1/2" hole to 1319m.
24	06 Mar 2014	1,409.7	Directional drilled 8 1/2" hole to 1409.7m, circulated hole clean, POOH bit change.
25	07 Mar 2014	1,429.7	Make new bit & motor, RIH to 519m, slip & cut drill line, adjust brakes, realign mast, recalibrate rig smart, continue to RIH to 1390m, wash & ream to 1409m, Directional drill 8 1/2" hole to 1429m. ( last survey at 1412.7, Inc 35.60deg, Azi 237.32 deg.)
26	08 Mar 2014	1,463.0	Directional drill 8 1/2" hole to 1463m, POOH , pull wear bushing, BOP test, install wear bushing.
27	09 Mar 2014	1,463.0	RIH with DST tools, perform DST, lay out DST rotating head.
28	10 Mar 2014	1,484.0	POOH and lay out DST tools, make up PDC bit and directional BHA,Rig service RIH to 1463m, directional drill 8 1/2" hole to 1484m.
29	11 Mar 2014	1,540.0	Directional drill 8 1/2" hole to 1540m, circulate hole clean, POOH to 527m, rig service, POOH to surface, Schlumberger testing tools.
30	12 Mar 2014	1,540.0	Logging well run #1 , run #2 and #3
31	13 Mar 2014	1,540.0	Logging well with runs #3 and run #4.
32	14 Mar 2014	1,540.0	

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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#	Date	Depth (m)	24 Hour Summary
			Logged well with runs #4 MDT, Inspection on TDS, rig service, RIH wiper trip, circulate and condition mud, POOH lay pipe out sideways.
33	15 Mar 2014	1,540.0	Change pipe rams to 5 1/2" and pressure test same, Rig up volant tool to run casing, RIH with 5 1/2" casing from surface to 1473m, ( load out 8 trailers of equipment for Mt Kitty , 6 rig loads and 1x float with winch truck and 1xfloat with fork lift and attachments.)
34	16 Mar 2014	1,540.0	Continue to RIH with 5 1/2" casing, circulate casing, cement casing, set casing slips, lift BOP and cut casing, dress stump and nipple down BOP and nipple up well head pressure test , rig down top drive. (loaded out 6 x trailer loads of rig equipment ) ( 24:00 Rig Release)

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Drilling Co: Santos Ltd	Rig: Ensign 918
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## BHA Record

#	Length (m)	Weight (klb)	Weight Below/Jar (klb)	String Weight (klb)	Pick-Up Weight (klb)	Slack-Off Weight (klb)	Torque Max (ft.lbf)	Torque on Bottom (ft.lbf)	Torque off Bottom (ft.lbf)	BHA Description
4	220.0	44.00	34.00							Bit, Bit sub, String stab, 14 x 6.5 DC. X/O, Jars, X/O. 2 x 6.5 DC, HWDP.
5	220.0	34.00	44.00							Bit, Bit sub, String stab, 14 x 6.5 DC. X/O, Jars, X/O. 2 x 6.5 DC, HWDP.
6	932.4									
7	190.2									Bit, Dog sub, Mud motor, Float sub, Hi Tool, NMPC, NM MWD, Gap sub, String Stab, NMDC, X/O, 14 x 6-1/2" DC, X/O, Jars, X/O, 2 x 6-1/2" DC, X/O, 2 x HWDP.
8	824.9									OVershot, Float Sub, X/O, 2 x DC, X/O, Jars, X/O, 6 x DC, X/O, 78 x HWDP.
9	845.1									7-5/8 Overshot, 8-1/4" Stab, Jars, Float sub, X/O, 8 x DC, X/O, 78 x HWDP.
10	845.0									7-5/8 Overshot, 8-1/4" Stab, Jars, Float sub, X/O, 8 x DC, X/O, 78 x HWDP.
11	826.1									8-1/2" Mill, 8-1/8" Overshot, 2 x DC, X/O, 8-1/4" Stab, Jars, Float sub, X/O, 6 x DC, X/O, 78 x HWDP.
12	878.1									Cement drill/polish & check trip for Whipstock
13	184.4									
15	189.8									
14	172.6									Clean out assembly

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Drilling Co: Santos Ltd	Rig: Ensign 918
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#	Length (m)	Weight (klb)	Weight Below/Jar (klb)	String Weight (klb)	Pick-Up Weight (klb)	Slack-Off Weight (klb)	Torque Max (ft.lbf)	Torque on Bottom (ft.lbf)	Torque off Bottom (ft.lbf)	BHA Description
16	189.8									
17	189.8									
19	189.8									
20	136.2									

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Drilling Co: Santos Ltd	Rig: Ensign 918
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## Mud Record

Water Based																		
Date - Time	Mud Type Description	Depth (m)	Temp (°F)	MW (ppg)	VIS (sec/qt)	PV (cP)	YP (lb/100ft³)	Gel 10s / 10m/ 30m (lb/100ft³)	F.L. API (cm³)	F.L. HTHP (cm³/30min)	Solids (%)	Sand (%)	MBT	pH	Cl (mg/L)	Hard (mg/L)	KCl (%)	Daily Cost (AUD)
22 Feb 2014 - 18:00	Brine	1,329.0		8.80	26			/ /										5,457.00
23 Feb 2014 - 18:00	Brine	1,329.0		8.80	26			/ /										
24 Feb 2014 - 18:00	Brine	1,329.0		8.80	26			/ /										1,428.00
25 Feb 2014 - 18:00	Water Based	1,329.0		8.80	32	5	13	5 / 8 / 9			4.00	0.25		8	45,000	40.0	6.2	2,511.00
26 Feb 2014 - 15:00	Water Based	1,329.0	35.0	8.80	32	5	13	5 / 8 / 9	14.0		4.00	0.25		8	45,000	40.0	6.2	
27 Feb 2014 - 15:00	Water Based	1,329.0	35.0	8.80	32	5	13	5 / 8 / 9	14.0		4.00	0.25		8	45,000	40.0	6.2	
28 Feb 2014 - 13:00	Water Based	1,329.0	34.0	8.80	31	2	5	3 / 4 / 5	14.0		4.00	0.25		8	42,000	40.0	6.2	
01 Mar 2014 - 18:00	Water Based	1,329.0	34.0	8.80	31	1	7	3 / 4 / 5	15.0		4.00	0.25		10	40,000	120.0	6.0	
02 Mar 2014 - 17:00	Water Based	1,329.0	30.0	8.80	31	1	7	2 / 3 / 4	15.0		4.00	0.25		10	41,000	120.0	6.1	
03 Mar 2014 - 21:30	Water Based	1,212.0	30.0	8.80	31	1	7	2 / 3 / 4	15.0		4.00	0.25		10	42,000	120.0	6.1	964.00
04 Mar 2014 - 16:30	Water Based	1,220.0	35.0	8.80	32	2	5	2 / 3 / 3	15.0		4.00	0.25		12	43,000	320.0	6.2	172.00
05 Mar 2014 - 23:00	Water Based	1,317.0	37.0	8.80	31	2	7	1 / 3 / 3	13.0		4.00			12	43,000	280.0	6.2	2,649.00
06 Mar 2014 - 22:30	Water Based	1,409.0	48.0	8.90	34	8	12	3 / 4 / 5	8.0		4.00			12	43,000	280.0	6.2	1,248.00
07 Mar 2014 - 22:30	Water Based	1,424.0	48.0	8.90	35	8	12	4 / 5 / 6	7.0		4.00			12	43,000	280.0	6.2	1,248.00
08 Mar 2014 - 17:00	Water Based	1,463.0	35.0	8.90	35	9	12	4 / 5 / 6	7.0		4.00			12	43,000	280.0	6.1	
10 Mar 2014 - 23:50	Water Based	1,485.0	49.0	8.90	36	8	13	4 / 6 / 7	6.5		4.50			12	38,000	280.0	6.0	760.00
11 Mar 2014 - 08:30	Water Based	1,485.0	45.0	9.00	36	7	13	5 / 5 / 7	7.2		4.50			12	34,000	320.0	5.8	
12 Mar 2014 - 17:00	Water Based	1,485.0	45.0	9.00	36	7	13	5 / 5 / 6	7.2		4.50			9	34,000	320.0	5.8	
13 Mar 2014 - 18:00	Water Based	1,540.0	35.0	9.00	36	7	13	4 / 5 / 6	7.2		4.50			9	34,000	320.0	5.8	
14 Mar 2014 - 20:00	Water Based	1,540.0	35.0	9.00	35	7	13	4 / 5 / 6	7.2		4.50			9	34,000	320.0	5.8	
15 Mar 2014 -	Water Based	1,540.0		9.00	37			/ /						9			5.8	1,649.00

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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## Casing & Cementing Summary

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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<b>Casing Type:</b> Production Casing	Originated By: Jim Boneham	Checked By:	Date: 15 Mar 2014
Hole Size: 8 1/2 in	Casing Size: 5 1/2 in	GL-RT: 5.15m	Contractor:
Total Depth MD: 1,540.00m	Total Depth 1,491.90m	Casing Depth 1,538.2m	Casing Depth 1,491.70m
TVD:	TVD:	MD:	TVD:
PRE-FLUSH @	SPACER @		
Additives:	Additives:		
Water Source			
DISPLACEMENT	Fluid: @		
Theoretical Displ. From Avg Caliper ID:	Bumped Plug with:		
Actual Displ. From Tubs: @	Pressure Tested To:		
Actual Displ. From Barrel Counter:	Bleed Back:		
Actual Displ. From Tank Dip:	Displaced via:		
ACTIVITY	Time/Date	Returns to Surface: mud,cmt	
Start Running csg.	24:00 15/3/07	Casing Action During Preflush : Reciprocate Cement : Reciprocate Displacement : Reciprocate	
Casing On Bottom	24:00 15/3/07		
Start Circulation	24:00 15/3/07	Top Up Job run: No of class	
Start Pressure Test	24:00 15/3/07	Plug Set: Make: Topco Type: Wiper	
Pump Preflush	24:00 15/3/07	Centralizer Type: Centralizer Placement Depth: 0.00m - 924m - 1/3 jts	
Start Mixing	24:00 15/3/07	924m - 1105m - 1/1 jt	
Finish Mixing	24:00 15/3/07	1105m - 1527m 1/1 jt	
Start Displacing	24:00 15/3/07	1527m - 1540m 1 jt	
Stop Displ./Bump	24:00 15/3/07		
Pressure Test	24:00 15/3/07	Wiper Plug Top: Yes	
		Wiper Plug Bottom: Yes	

CASING AND EQUIPMENT DETAILS								
Stick Up							-1.16m	
No. Joints	OD	Wt	Grade	Comment	Thread	Length	From	To
6	5.500in	17.0lbs/ft	L-80		JFE Bear	60.40m	-1.16m	59.24m
1	5.500in	17.0lbs/ft	L80	Spacer	JFE Bear	3.02m	59.24m	62.26m
1	5.500in	17.0lbs/ft	L80		JFE Bear	12.08m	62.26m	74.34m
1	5.500in	17.0lbs/ft	L80	Spacer	JFE Bear	3.03m	74.34m	77.37m
112	5.500in	17.0lbs/ft	L80		JFE Bear	1,340.09m	77.37m	1,417.46m
1	5.500in	17.0lbs/ft	L80	Marker Joint	JFE Bear	3.05m	1,417.46m	1,420.51m
8	5.500in	17.0lbs/ft	L80		JFE Bear	106.40m	1,420.51m	1,526.91m
1	5.500in			Float Collar	JFE Bear	0.39m	1,526.91m	1,527.30m
1	5.500in	17.0lbs/ft	L80		JFE Bear	11.59m	1,527.30m	1,538.89m
1	5.500in			Float Shoe	JFE Bear	0.47m	1,538.89m	1,539.36m

Theoretical Bouyed wt. of casing:	Bradenhead Height above GL:
Casing wt. prior to landing csg:	Bradenhead Description / Length: 11"x5000 GE SCH 1Topx9-5/8" BTC Box Btm/
Actual wt. of casing (last joint run-block wt):	Tubing Spool Size: 11"x5000x7-1/16"x3000
Landing wt. (after cementing and pressure bleed off):	Setting Slips:
Thread Dope Used : Bestolife 2000	
Cementing Job Remarks:	

<b>Casing Type:</b> Production Casing	Originated By: Jim Boneham	Checked By: Darryl Whitbread	Date: 16 Mar 2014
Hole Size: 8 1/2 in	Casing Size: 5 1/2 in	GL-RT: 5.15m	Contractor:
Total Depth MD: 1,540.00m	Total Depth 1,491.90m	Casing Depth 1,538.2m	Casing Depth 1,491.70m
TVD:	TVD:	MD:	TVD:
PRE-FLUSH 10.0bbl@ 8.4ppg	SPACER 30.0bbl @ 8.4ppg		
Additives:	Additives:		
Water Source			



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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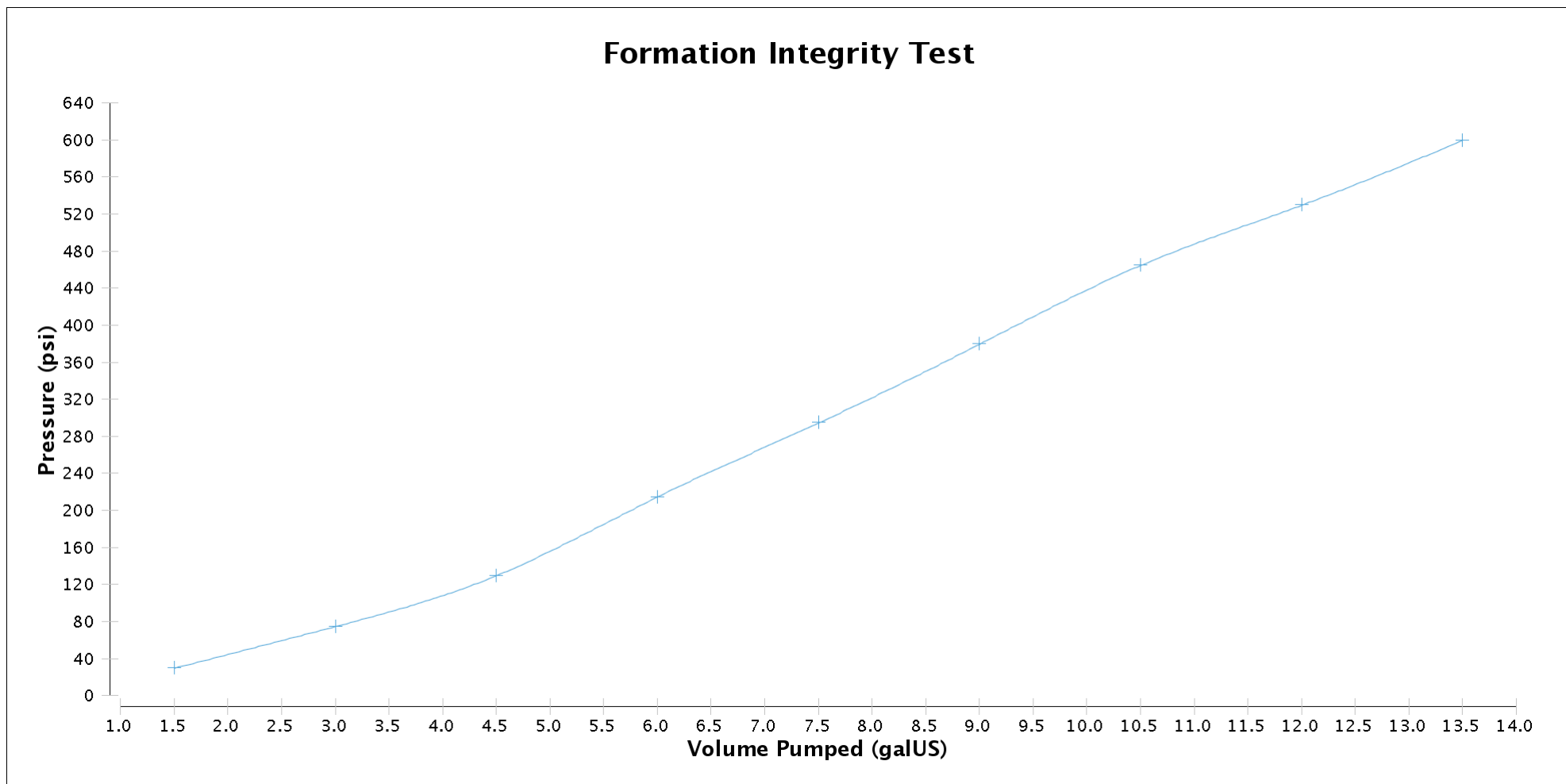
CEMENT		ADDITIVES	%	Amount	Units
LEAD SLURRY :	312sack	Anifoam		10.00	gal
Brand / Class:	ABC / G	Bentonite		495.00	lb
Slurry Yield:	2.55ft³/sack	Extender		106.00	gal
Mixwater Req't:	15.25gal/sack				
Actual Slurry Pumped:	128.3bbl				
Density:	11.8ppg				
Cement Top (MD):	0.0m				
CEMENT		ADDITIVES	%	Amount	Units
TAIL SLURRY :	582sack	Anifoam		20.00	gal
Brand / Class:	ABC / liteCRETE	Dispersant		106.00	gal
Slurry Yield:	1.65ft³/sack	Gasblok		530.00	gal
Mixwater Req't:	4.86gal/sack				
Actual Slurry Pumped:	156.1bbl				
Density:	12.0ppg				
Cement Top (MD):	710.0m				
DISPLACEMENT		Fluid:		Brine @ 8.6ppg	
Theoretical Displ. From Avg Caliper ID:	115.0bbl	Bumped Plug with:		1,667psi	
Actual Displ. From Tubs:	116.9bbl @ 4.7bbl/min	Pressure Tested To:		2,000psi	
Actual Displ. From Barrel Counter:	118.0bbl	Bleed Back:		1.4bbl	
Actual Displ. From Tank Dip:	116.9bbl	Displaced via:		cement pump	
ACTIVITY	Time/Date	Returns to Surface: 263.0bbl mud, 21.0bbl cmt			
Start Running csg.	12:30 15/3/07	Casing Action During Preflush : Reciprocate Cement : Reciprocate Displacement : Reciprocate			
Casing On Bottom	24:45 16/3/07				
Start Circulation	24:45 16/3/07	Top Up Job run: No of class			
Start Pressure Test	04:30 16/3/07	Plug Set: Make: Topco Type: Wiper			
Pump Preflush	04:40 16/3/07	Centralizer Type: Centralizer Placement Depth: 0.00m - 924m - 1/3 jts			
Start Mixing	05:00 16/3/07	924m - 1105m - 1/1 jt			
Finish Mixing	05:40 16/3/07	1105m - 1527m 1/1 jt			
Start Displacing	06:20 16/3/07	1527m - 1540m 1 jt			
Stop Displ./Bump	06:45 16/3/07				
Pressure Test	07:00 16/3/07	Wiper Plug Top: Yes			
		Wiper Plug Bottom: Yes			

CASING AND EQUIPMENT DETAILS								
Stick Up							-1.16m	
No. Joints	OD	Wt	Grade	Comment	Thread	Length	From	To
6	5.500in	17.0lbs/ft	L-80		JFE Bear	60.40m	-1.16m	59.24m
1	5.500in	17.0lbs/ft	L80	Spacer	JFE Bear	3.02m	59.24m	62.26m
1	5.500in	17.0lbs/ft	L80		JFE Bear	12.08m	62.26m	74.34m
1	5.500in	17.0lbs/ft	L80	Spacer	JFE Bear	3.03m	74.34m	77.37m
112	5.500in	17.0lbs/ft	L80		JFE Bear	1,340.09m	77.37m	1,417.46m
1	5.500in	17.0lbs/ft	L80	Marker Joint	JFE Bear	3.05m	1,417.46m	1,420.51m
8	5.500in	17.0lbs/ft	L80		JFE Bear	106.40m	1,420.51m	1,526.91m
1	5.500in			Float Collar	JFE Bear	0.39m	1,526.91m	1,527.30m
1	5.500in	17.0lbs/ft	L80		JFE Bear	11.59m	1,527.30m	1,538.89m
1	5.500in			Float Shoe	JFE Bear	0.47m	1,538.89m	1,539.36m
Theoretical Bouyed wt. of casing:				Bradenhead Height above GL:				
Casing wt. prior to landing csg:				Bradenhead Description / Length: 11"x5000 GE SCH 1Topx9-5/8" BTC Box Btm/				
Actual wt. of casing (last joint run-block wt):				Tubing Spool Size: 11"x5000x7-1/16"x3000				
Landing wt. (after cementing and pressure bleed off):				Setting Slips:				
Thread Dope Used : Bestolife 2000								
Cementing Job Remarks:								

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Drilling Co: Santos Ltd	Rig: Ensign 918
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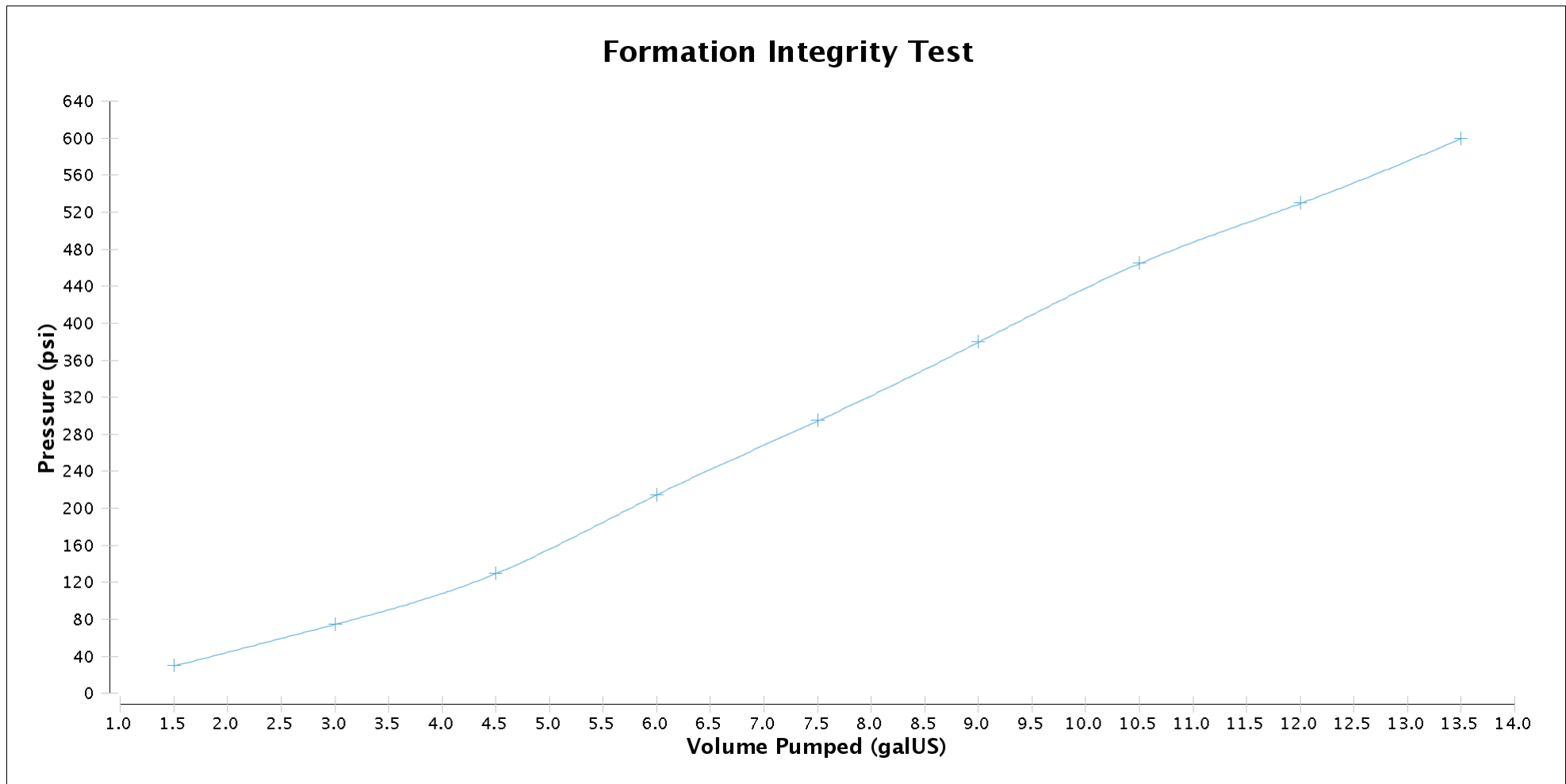
## Leak Off Test

Leak Off Test							
Day #		Leak-Off Test No		Casing Size		Rig Representative	
8		1				Mark Jachmann	
Mud Density In Use	Hole Depth	EMW	Shoe Depth	Leak-Off Pressure	Max. Pressure Recorded	Vol. Pumped	Vol. Regained
8.40 ppg	536.00 m	15.07 ppg	527.60 m	600 psi	600 psi	13.5 galUS	10.5 galUS
Leak Off Test Details							
Volume Pumped (galUS)				Pressure (psi)			
				1.5			
				30			
				3.0			
				75			
				4.5			
				130			
				6.0			
				215			
				7.5			
				295			
				9.0			
				380			
				10.5			
				465			
				12.0			
				530			
				13.5			
				600			



Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Drilling Co: Santos Ltd	Rig: Ensign 918
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Leak Off Test							
Day #		Leak-Off Test No		Casing Size		Rig Representative	
9		1				Mark Jachmann	
Mud Density In Use	Hole Depth	EMW	Shoe Depth	Leak-Off Pressure	Max. Pressure Recorded	Vol. Pumped	Vol. Regained
8.40 ppg	536.00 m	15.07 ppg	527.60 m	600 psi	600 psi	13.5 galUS	10.5 galUS
Leak Off Test Details							
Volume Pumped (galUS)				Pressure (psi)			
				1.5			
				30			
				3.0			
				75			
				4.5			
				130			
				6.0			
				215			
				7.5			
				295			
				9.0			
				380			
				10.5			
				465			
				12.0			
				530			
				13.5			
				600			



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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## Activity Record

Day #1 (11 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	RM		03:00	12:00	9.00	530.0	Rig down TDS Torque tube track. Rig down Rig floor, Mud Tanks and Mud pumps. Laid down V-door, stacked catwalk, Loaded out Mud Pumps 1 and 2. Loaded out Cat walk.
PS	P	RM		12:00	18:00	6.00	530.0	Lowered Dog house and loaded out. Removed BOP from Sub base. Lowered Rig floor. Loaded out suction and shaker tanks. Loaded out BOP cradle. Prepared Mast top section for lowering. Lowered Mast top section and prepared bottom section for lowering. Lowered Mast bottom section.
PS	P	WOD		18:00	24:00	6.00	530.0	Wait on Daylight with crews.
Day #2 (12 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	WOD		00:00	06:00	6.00	530.0	Waited on Daylight with crews.
PS	P	RM		06:00	08:00	2.00	530.0	Held PJSM. Loaded out sub base. Had one crew from 06:00hrs to 15:00hrs.
PS	P	SM		08:00	08:30	0.50	530.0	Held Safety Stand down meeting with crew. Discussed the driving roll over incident in the Cooper Basin. Discussed Monkey board incident.
PS	P	RM		08:30	18:00	9.50	530.0	Prepared and loaded out carrier with Pony base. Spotted Pony base and carrier on new lease WM 24. Spotted Shaker and suction Mud tanks and started rigging up. Spotted Doghouse and raised. Spotted Poorboy, Day tank and Generator skid. Spotted Diesel tank, Cable trays and began running cables, water lines and the air lines. Dug drains around mud tanks and Rig.
PS	P	WOD		18:00	24:00	6.00	530.0	Waited on Daylight with crews.
Day #3 (13 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	WOD		00:00	06:00	6.00	530.0	Wait on Daylight with crews.
PS	P	RM		06:00	12:00	6.00	530.0	Held PJSM. Loaded out Mini Camp to WM 24. Leveled and secured Carrier. Spotted and powered up Mini Camp, established comms. Dug drains and plumbed all shacks together. Continued to rig up Mud tanks. Spotted Mud pumps 1 & 2. Completed Santos Lease clean up check list on WM20.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #3 (13 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	RU		12:00	18:00	6.00	530.0	Held PJSM. Raised Mast. Held PJSM, prepared and scoped Mast up. Spotted Drill Quip and Elite containers. Ran all lighting cables and powered up. Ran cables for Mud Tanks, Mud Pumps, Doghouse, Ran Koomey umbilical cords.
PS	P	RU		18:00	24:00	6.00	530.0	Held PJSM, prepared and raised Rig floor. Held PJSM, installed V-door. Take on water and fill hydromatic tank and Day tank. Clear and tidy Rig floor, Installed Gantry and ladder to Mast. Installed Tail Shafts, Kill Line, access stairs from Carrier to Rig floor. Installed False floors, Ladders and Block hanging line.
Day #4 (14 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	RU		00:00	01:00	1.00	530.0	Slip 90' and cut 90' of Drilling line.
PS	P	RU		01:00	12:00	11.00	530.0	Held PJSM, reviewed JSA, Installed and hung TDS torque tube track in Mast. Picked up & rigged up TDS. Rigged up TDS service loop cables. Take on water to Mud Tanks and checked for leaks, (Had small leak between Pill tank and Premix), Welder fixed and welded hair line crack, (Good). Electrician changed out breaker in Gen shack. Installed 4" check valve and discharge lines from Mud Pumps to Pony base. Installed 4" Standpipe line and installed pressure sensors. Rigged up air lines to Mud Pumps and all shock hoses. Rigged up Koomey umbilical cords. Rigged up Vent lines, Flare lines and choke lines. Rigged up instrumentation and gauges. Raised Poorboy Degasser.
PS	P	RU		12:00	18:00	6.00	530.0	Held PJSM, connected kelly hose and control lines to TDS. Functioned tested TDS, (Good). Continued taking on water to Rig tanks. Welder fabricated camera stand and installed to monkey board. Installed Turnbuckles and Koomey lines. Prepared shakers and mixed Spud mud. Functioned tested all ESD's, Drillers control shut down 8 seconds, remote station 10 seconds.
PS	P	NUB		18:00	24:00	6.00	530.0	Installed and nipped up BOP, Spacer Spool, HCR Line, Kill line and rotating head. Continued to install Vent and Flare lines. Changed out BOP rams.
Day #5 (15 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	NUB		00:00	03:00	3.00	530.0	Continued to nipple up BOP. Ran and connected all koomey lines and function tested (Good). Centralised BOP stack to hole centre. Installed NRV and prepared for BOP pressure test. Continued general rig up.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #5 (15 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	PT		03:00	10:45	7.75	530.0	Installed and seated test tool. Pressure test BOP, choke manifold, surface lines and Rig floor Well control equipment as per Santos and Ensign policies and procedures, 200psi/5min's - 2500psi/10min's. Test #1 Outer Kill, Blind rams, Choke valves 6,8,9,10,12. Test #2 Inner Kill, Blind rams, Choke valves 4,5,7. Test #3, Inner Kill, Blind rams, Choke valves 1,4,3. Test #4, Pipe rams, MP 4" Valves, BOP check valve, Choke valves 1,2,3,4. Test #5, Inner Kill, HCR, MP#1 4" Valve, MP Isolator valve, Pipe rams. Test #6, Inner Kill, Inner Choke valve, Stand pipe 4" valve, Pipe rams. Test #7, Inner Kill, Inner Choke valve, Manual TDS valve, Pipe rams. Test #8, Inner Kill, Inner Choke valve, NC40 FOSV, Pipe rams. Test #9, Inner Kill, Inner Choke valve, NC46 FOSV, Pipe rams. Test #10, Check valve, 4" Stand pipe valve. Test #11, Inner Kill, Inner Choke valve, NC46 FOSV, Annular - 1500psi/High. (All tests good).
PS	P	PT		10:45	11:15	0.50	530.0	Break down Test assly.
PS	P	NUB		11:15	12:00	0.75	530.0	Finish rigging up RFCD lines/valves and prepare for pressure testing. Installed Camera in Mast.
PS	P	PT		12:00	14:30	2.50	530.0	Rig up and pressure test Accelobar valves, 500psi/10 min's, (Good). Pressure test RFCD and diverter valves 200psi/10 min's, (Good). Prepare and strap BHA, HWDP, DP.
PS	P	NUB		14:30	15:00	0.50	530.0	Removed RFCD plug and installed Bell Nipple.
PS	P	PT		15:00	15:30	0.50	530.0	Pick up Pup joint, screw into Test Plug. Trouble shoot Remote Choke.
PS	P	PT		15:30	16:30	1.00	530.0	Perform Koomey efficiency draw down test. Rebuild faulty Choke valve #13, (Unable to test).
PS	P	PT		16:30	16:45	0.25	530.0	Removed Test plug, ran and set Wear bushing.
PS	P	PT		16:45	17:15	0.50	530.0	Break out Test assly and make up grey valve Test assly.
PS	P	RU		17:15	23:00	5.75	530.0	Prepare Rig floor. Lay down Pressure test equipment. Pick up Bits and drilling subs. Pressure test Choke valve #13 offline and continue to prepare BHA.
PS	P	RU		23:00	23:30	0.50	530.0	Held Hazard Hunt. All 13 hazards found were identified and corrected.



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #5 (15 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PS	P	SM		23:30	24:00	0.50	530.0	Held Pre Spud Meeting with both crews, Pathfinder, Geoservice. Discussed the drilling programme and Santos expectations. Discussed speed limits and cultural heritage. Held Weekly Safety Meeting with both crews.
Day #6 (16 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	SM		00:00	00:30	0.50	530.0	Held Weekly Safety Meeting with both crews.
SC	P	HBHA		00:30	01:00	0.50	530.0	Picked up Mousehole drilling assly.
SC	P	DO		01:00	03:00	2.00	530.0	Drilled Mousehole. Installed Mousehole sock.
SC	P	HBHA		03:00	03:30	0.50	530.0	Layed down Mousehole drilling assly.
SC	P	TI		03:30	16:30	13.00	530.0	Made up 645m drill pipe & 760m heavy weight pipe and racked back in Mast.
SC	P	HBHA		16:30	18:30	2.00	530.0	Made up shoe track 8 3/4" BHA.
SC	P	TI		18:30	21:15	2.75	530.0	RIH with drill out BHA assembly from surface to tag top of cement at 518m.
SC	P	SM		21:15	21:30	0.25	530.0	Held Muster BOP Drill.
SC	P	CIR		21:30	22:00	0.50	530.0	Circulated 150gpm and established Dynamic and static losses. (No losses observed.)
SC	P	PT		22:00	23:30	1.50	530.0	Racked one stand back and performed Casing test to 2000psi in 500psi increments. (2000psi/10min's good). Pumped 0.85bbl and bled back 0.75bbl.
SC	P	TI		23:30	24:00	0.50	530.0	Rig down testing equipment and RIH one stand to tag TOC at 518m.
Day #7 (17 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	DFS		00:00	02:30	2.50	530.0	Drill out cement, float collar and shoe track with 50rpm, 200-250gpm and 2-3k WOB. Observed Well for any losses through out task (No losses observed).
SC	P	D		02:30	04:30	2.00	533.0	Drilled 3m of new formation.
SC	P	CMD		04:30	05:00	0.50	533.0	Circulated and condition mud, 2 x bottoms up.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #7 (17 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	LOT		05:00	05:30	0.50	533.0	Pulled inside 9.625 shoe and rigged up to attempt FIT to 600psi. 15.1ppg EMW with 8.4ppg water. Pumped 32gals & 180psi max pressure observed, bled off to zero psi regained 3gals. Speculation of air in well system.
SC	P	CIR		05:30	06:15	0.75	533.0	Screwed in top drive and pumped full circulation of well system. Monitored for dynamic losses while circulating @ 186gpm, no losses observed.
SC	P	CIR		06:15	06:45	0.50	533.0	Flow checked well for static losses. 0.5bbl to 1.0bbl / hr static losses. Discussed with Drilling team forward plan.
SC	P	TO		06:45	09:15	2.50	533.0	POOH from 525m to surface.
SC	P	TI		09:15	10:30	1.25	533.0	RIH open end drill pipe 532.5m to perform cement squeeze plug.
SC	P	CMP		10:30	11:00	0.50	533.0	Rigged up SLB cement surface lines.
SC	P	CMP		11:00	12:00	1.00	533.0	Waited on revised cement plug / squeeze program.
SC	P	CMP		12:00	13:15	1.25	533.0	Held PJSM cementing operations. Pumped 5bbls of fresh water, pressure tested surface lines to 3000psi x 10mins. Pumped 15bbls of fresh water. Mixed & pumped 40bbls of 15.8ppg cement slurry @ 3bbls/min. Displaced with 12.1bbls of water @ 3bbls/min.
SC	P	TO		13:15	14:00	0.75	533.0	Rigged down cement lines. POOH from 532.5m to 311m. Monitored annulus via trip tank, well had taken 10.4bbls while rig down lines & POOH to 311m.
SC	P	CIR		14:00	14:30	0.50	533.0	Screwed in top drive & circulated drill pipe clean (full circulation) @ 380gpm.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #7 (17 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	CMP		14:30	15:15	0.75	533.0	Rigged up SLB cement line to conduct cement squeeze. Began squeeze #1 @ 0.3bbbls/min. Pumped 1.6bbbls to 1010psi. Held pressure for 5mins pressure bled off to 760psi. Bled off pressure to zero back to unit, observed 0.4bbbl return. Attempt 2nd squeeze. Pumped 0.7bbbl to 1030psi. Held pressure for 5mins pressure bled off to 924psi. Bled off pressure to zero back to unit, observed 0.6bbbl return.  Total cement squeezed to formation 1.3bbbls. Total cement fallen away to formation before squeeze 10.4bbbls, totaling 11.7bbbls to formation.
SC	P	RD		15:15	15:45	0.50	533.0	Rig down cement lines and prepare to POOH.
SC	P	RD		15:45	16:30	0.75	533.0	POOH from 311m to surface.
SC	P	HBHA		16:30	17:15	0.75	533.0	Changed handling gear. Make up BHA #2.
SC	P	SM		17:15	18:15	1.00	533.0	Held a Man Down Muster Drill.
SC	P	TI		18:15	20:30	2.25	533.0	Continue to Make up BHA #2. RIH from surface to 300m.
SC	P	WOC		20:30	24:00	3.50	533.0	Sit at 300m and WOC. While wait on cement ADA pressure test their surface lines from air package to Rig floor Stand pipe to 2200psi/10min's, (Good).
Day #8 (18 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
SC	P	TI		00:00	00:30	0.50	533.0	RIH to tag TOC at 411.5m with 10k WOB.
SC	P	DC		00:30	02:00	1.50	533.0	Drill cement from 411.5m to 435m with 200gpm, 50rpm and 3-5k WOB. Wet cement observed.
SC	P	CIR		02:00	02:30	0.50	533.0	Circulate bottoms up sample. Sample good with firmer cement.
SC	P	DC		02:30	10:15	7.75	533.0	Drill cement from 435m to 533m with 300gpm, 50-70rpm and 10-15k WOB, 2300ft/lb torque.
SC	P	D		10:15	11:00	0.75	536.0	Drilled 8 3/4" hole from 533m to 536m Displaced well to clean water hile drilling new hole.
SC	P	CHC		11:00	11:30	0.50	536.0	Circulated hole clean 2 x bottoms up @ 320gpm.
SC	P	LOT		11:30	11:45	0.25	536.0	Flow checked well. No losses observed (well static).

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #8 (18 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	LOT		11:45	12:45	1.00	536.0	Pulled back from 536m to inside casing shoe 527m. Held PJSM. Rigged up for FIT. Conducted FIT to 600psi with 8.4ppg test fluid, EMW= 15.0ppg. Pumped 13.5gals, bled off to zero psi regained 10.5gals.
PH	P	LOT		12:45	13:00	0.25	536.0	Rigged down FIT line up & line up well control equipment for drilling.
PH	P	TO		13:00	14:30	1.50	536.0	Held PJSM. POOH from 527m to 222m
PH	P	HBHA		14:30	16:45	2.25	536.0	Continued POOH BHA, broke out 8 3/4" bit & laid out string stabilizer.
PH	P	RS		16:45	17:15	0.50	536.0	Rig Service
PH	P	HBHA		17:15	21:00	3.75	536.0	Pick up and Make up BHA #6 as per DD instructions. Surface tested Hammer (Good).
PH	P	TI		21:00	24:00	3.00	536.0	Trip in hole making up BHA from surface to 536m.
Day #9 (19 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	RU		00:00	01:15	1.25	536.0	Held PJSM. Installed RFCD bearing as per Elite instructions.
PH	P	CHC		01:15	02:00	0.75	536.0	Held PJSM and Unloaded Well to Flare pit with 1000cfm.
PH	P	DH		02:00	06:15	4.25	629.0	Air Hammer Drilled 8-3/4 hole from 536m to 629m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2 -5k WOB. ROP = 23m/hr - Torque = 2400 ft/lb.
PH	P	DH		06:15	18:00	11.75	800.0	Air Hammer Drilled 8-3/4 hole from 629m to 800m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2 -3k WOB. ROP = 14.5m/hr - Torque = 2500 ft/lb.
PH	P	DH		18:00	24:00	6.00	862.0	Air Hammer Drilled 8-3/4 hole from 800m to 862m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2 -3k WOB. ROP = 10.5 m/hr - Torque = 2500 ft/lb.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #10 (20 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	DH		00:00	05:15	5.25	905.0	Air Hammer Drilled 8-3/4 hole from 862m to 905m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2-3k WOB. ROP = 11m-25mm/hr - Torque = 2600 ft/lbs
PH	P	FLTG		05:15	05:45	0.50	905.0	Blow well clean, perform gas flow test at 905m = 0
PH	P	DH		05:45	08:00	2.25	930.0	Air Hammer Drilled 8-3/4 hole from 905m to 930m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2-4k WOB. ROP = 11m-25mm/hr - Torque = 2800 ft/lbs
PH	P	FLTG		08:00	08:15	0.25	930.0	Blow well clean, perform gas flow test at 930m = 0
PH	P	DH		08:15	10:00	1.75	950.0	Air Hammer Drilled 8-3/4 hole from 930m to 950m. Drilled with 3000cfm - 15gpm mist injection. 40 - 50 RPM. 2-4k WOB. ROP = 11m-25mm/hr - Torque = 2800 ft/lbs
PH	P	CHC		10:00	10:30	0.50	950.0	Circulated hole clean.
PH	P	SM		10:30	10:45	0.25	950.0	Held PJSM, Well kill operations.
PH	P	CIR		10:45	11:30	0.75	950.0	Displaced well to water 8.4ppg, observed fluid returns to surface as per calculated well volume 292bbls total well system, circulated another 50bbls to flare pit. Shut in well and monitored SICP & SIDPP zero psi observed, lined up well on trip tank and flow checked well for 15mins no loss & gain observed.
PH	P	TO		11:30	11:45	0.25	950.0	POOH from 950m to 912m.
PH	P	WH		11:45	12:00	0.25	950.0	Removed RFCD, installed bell nipple.
PH	P	TO		12:00	14:15	2.25	950.0	POOH from 912m to 195m. Flow checked well at 9 5/8" casing shoe.
PH	P	TO		14:15	14:30	0.25	950.0	Flow checked well @ BHA 195m & changed out handling equipment to layout BHA.
PH	P	TO		14:30	16:00	1.50	950.0	Continued POOH BHA from 195m to 32m..
PH	P	HBHA		16:00	17:00	1.00	950.0	Held PJSM. Removed MWD Tool, Break out and laid down Hammer, Near bit Stab, Hi Tool and X/O's.
PH	P			17:00	17:15	0.25	950.0	Housekeeping on Rig Floor.
PH	P	HBHA		17:15	19:15	2.00	950.0	Held PJSM. Picked up and Made up 8-1/2" Directional assly. Made up 8-1/2" Bit, Dog Sub, Install 1.83deg Bend in Mud Motor. Functioned test Mud Motor (Good). Pick up and make up MWD and RIH to 27m.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #10 (20 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	TI		19:15	22:30	3.25	950.0	RIH from 27m to 907m.
PH	P	WH		22:30	23:00	0.50	950.0	Held PJSM. Installed RFCD Bearing.
PH	P	TI		23:00	23:45	0.75	950.0	RIH from 907m to 950m
PH	P	CIR		23:45	24:00	0.25	950.0	Line up and prepare to Unload Well.
Day #11 (21 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	CIR		00:00	00:30	0.50	950.0	Held PJSM. Displaced water with air and unloaded the Well to Blooie line.
PH	P	DM		00:30	08:45	8.25	1,046.0	Air drilled 8-1/2" hole from 950m to 1046m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 15m - 20m/hr. Torque = 3400 ft/lbs
PH	P	FLTG		08:45	09:15	0.50	1,046.0	Blew well clean, performed gas flow test at 1046m = 0
PH	P	DM		09:15	14:45	5.50	1,106.0	Air drilled 8-1/2" hole from 1046m to 1106m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 15m - 20m/hr. Torque = 3400 ft/lbs
PH	P	FLTG		14:45	15:15	0.50	1,106.0	Blew well clean, performed gas flow test at 1106m = 0
PH	P	DM		15:15	15:45	0.50	1,108.0	Air drilled 8-1/2" hole from 1106m to 1108m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 15m - 20m/hr. Torque = 3400 ft/lbs
PH	P			15:45	16:30	0.75	1,108.0	Circulated well clean / dry. Conducted simulated flow test with air package to confirm lower flow limit of accelabar flow meter on blooie line. Confirmed lower limit reading minimum of 560,000 scfm/ day.
PH	P	DM		16:30	19:30	3.00	1,141.0	Air drilled 8-1/2" hole from 1108m to 1141m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 12m - 15m/hr. Torque = 3400 ft/lbs
PH	P	FLTG		19:30	20:00	0.50	1,141.0	Blew well clean, performed gas flow test at 1141m = 0
PH	P	DM		20:00	24:00	4.00	1,189.0	Air drilled 8-1/2" hole from 1141m to 1189m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 12m - 15m/hr. Torque = 3300 ft/lbs

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #12 (22 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	DM		00:00	00:30	0.50	1,192.0	Air drilled 8-1/2" hole from 1189m to 1192m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 15m - 20m/hr. Torque = 3400 ft/lbs
PH	P	DM		00:30	02:30	2.00	1,222.0	Kicked off at 1192m and Air drilled 8-1/2" Directional hole from 1192m to 1222m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 16m/hr. Torque = 3400 ft/lbs
PH	P	FLTG		02:30	03:00	0.50	1,222.0	Blew well clean, performed gas flow test at 1222m = 0
PH	P	DM		03:00	10:30	7.50	1,306.0	Air drilled 8-1/2" Directional hole from 1222m to 1306m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 12m/hr. Torque = 3400 ft/lbs when rotating.
PH	P	FLTG		10:30	11:15	0.75	1,306.0	Blew well clean, performed gas flow test at 1306m = 4.1mmcf/d.
PH	P	DM		11:15	16:15	5.00	1,329.0	Air drilled 8-1/2" Directional hole from 1306m to 1329m. Drilled with 3200cfm - 30gpm mist injection. 40-50 RPM. 15k - 18k WOB. ROP = 4.5m/hr. Torque = 3400 ft/lbs when rotating.
PH	P	FLTG		16:15	16:45	0.50	1,329.0	Blew well clean, performed gas flow test at 1329m = 8.9mmcf/d.
PH	P	SM		16:45	17:00	0.25	1,329.0	Held PJSM with all involved in Killing the Well. Discussed Well Kill procedure.
PH	P	CIR		17:00	17:30	0.50	1,329.0	Killed Well and displaced Air to 8.7ppg brine with total of 5200 strokes.
PH	P			17:30	18:00	0.50	1,329.0	Shut the Well in to monitor pressures (0psi observed at surface). Mixed new mud.
PH	P	CIR		18:00	18:45	0.75	1,329.0	Opened up Well and circulated bottoms up through Choke and Poorboy Degasser. Shut down pumps and observed pressures (opsi observed).
PH	P			18:45	19:00	0.25	1,329.0	Flow check on Trip Tank (Static). Held PJSM.
PH	P	TOB		19:00	19:30	0.50	1,329.0	POOH from 1329m to 1240m.
PH	P	WH		19:30	20:00	0.50	1,329.0	Held PJSM. Rigged down and remove RFCD bearing and install Bell Nipple.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #12 (22 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	TOB		20:00	24:00	4.00	1,329.0	POOH from 1240m to 26m. Flow checked at 1329m, 1240m and 190m, (Static). Simultaneously rig down Blooie lines. Held Weekly Safety Meeting with oncoming crew.
Day #13 (23 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	HBHA		00:00	00:30	0.50	1,329.0	Held PJSM with oncoming crew. Continue POOH with BHA from 26m to surface.
PH	P			00:30	01:30	1.00	1,329.0	Observed no Bit or Dog Sub on the end of Mud Motor. Take photo's and made sure Mud Motor safe to lay down. Laid down Mud motor for inspection. Confirmed 1.85m of Fish left down hole. Consult Fishing Inventory.
PH	P	WH		01:30	02:15	0.75	1,329.0	Made up Combination Tool and pulled Wear bushing.
PH	P			02:15	02:45	0.50	1,329.0	Monitored Well bore fluid on Trip Tank. (Static losses observed 1.8 bbl/hr).
PH	P	PT		02:45	03:30	0.75	1,329.0	Changed out Test Plug rubber. Made up Pressure Test assly, removed Choke valve purge lines.
PH	P	PT		03:30	09:30	6.00	1,329.0	Completed Weekly Pressure Test on BOP, Choke Manifold and Rig Floor Well control equipment. Test #1, TDS Manual Shut In, Pipe Rams, C/Tool, Outer Kill, Choke valves 2,10,11,12. Test #2, HCR, Inner Kill, NC40 FOSV, Pipe Rams, C/Tool. Test #3, Inner HCR, Inner Kill, Pipe Rams, NC46 FOSV, C/ Tool. Test #4, Inner Kill, Inner HCR, Annular NC46 FOSV, C/ Tool. Test #5, Blind Rams, BOP Check Valve, Choke valves 5,6,7,8,9, C/Tool. Test #6, HCR, Choke valves 1,3,6. Test #7, HCR, Choke valves 1,3,4.
PH	P	WH		09:30	10:30	1.00	1,329.0	Broke down and laid down Test assly. Installed Wear Bushing.
PH	P			10:30	11:00	0.50	1,329.0	Installed Camera cable. Mixed Mud. Packed up Pressure test equipment.
PH	P	RS		11:00	11:30	0.50	1,329.0	Rig Service.
PH	U	RS		11:30	12:00	0.50	1,329.0	Monitor Well via Trip Tank. Wait on Instructions.
PH	P	SM		12:00	12:45	0.75	1,329.0	Held Weekly Safety Meeting with all personnel on site. Camlock Safety Training with crews.



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #13 (23 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	BT		12:45	13:15	0.50	1,329.0	Performed Accumulator efficiency draw down test. (Satisfactory).
PH	U	HBHA		13:15	14:45	1.50	1,329.0	Held PJSM. Broke and laid down all Pathfinder Directional Tools and 5 x 6-1/2" Drill Collars from in the Mast.
PH	U	HBHA		14:45	16:30	1.75	1,329.0	Monitor Well on Trip Tank. Housekeeping and clean Rig. Prepared for Slip and Cut Drill Line.
PH	U	HBHA		16:30	18:00	1.50	1,329.0	Held PJSM. Slipped and cut Drilling Line. Cut 42', slipped 40'.
PH	U	WO		18:00	24:00	6.00	1,329.0	Monitor Well on Trip Tank, (Static Losses 1.5 bbl/hr). Wait on Fishing hand and equipment to arrive on Rig, ETA 06:00hrs tomorrow morning 24/02/2014..
Day #14 (24 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	WO		00:00	07:00	7.00	1,329.0	Monitored Well on Trip Tank, (Static Losses 1.4 bbl/hr). Waited on Fishing hand and equipment to arrive on Rig. Continued with house keeping and maintenance.
PH	U	FSH		07:00	08:45	1.75	1,329.0	Prepared fishing equipment to RIH.
PH	U	SM		08:45	09:00	0.25	1,329.0	Held PJSM, Tripping & Fishing operations.
PH	U	TI		09:00	15:00	6.00	1,329.0	Made up 8 1/8" Slim hole overshot fishing assembly dressed with 6 3/4" Spiral grapple. RIH to 1310m.
PH	U	FSH		15:00	15:15	0.25	1,329.0	Broke circulation @ 200gpm, recorded ssp 250psi. String weights: 125k static. 122k down. 132k up. 1350 ft/lbs Rotary torque.
PH	U	FSH		15:15	16:30	1.25	1,329.0	Washed down & tagged fish @ 1323m Attempted to engage fish, pushed fish down to bottom 1326m top of fish. Attempted to rotate onto fish observed high rotary torque until stalled out @11,000 ft/lbs. Worked overshot onto fish applying 40k of BHA weight onto fish.
PH	U	FSH		16:30	16:45	0.25	1,329.0	Flow checked well. (Static)
PH	U	FSH		16:45	20:15	3.50	1,329.0	POOH from 1326m to surface at controlled speed. (No Fish).

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #14 (24 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	FSH		20:15	20:45	0.50	1,329.0	Broke and laid down Over shot for inspection.
PH	U	WO		20:45	24:00	3.25	1,329.0	Monitored Well on Trip Tank (0.8 bbl/hr static losses). Waited on forward plan possible mobilisation of open hole Whipstock side tack. Rig crew conducted house keeping and general maintenance around rig.
Day #15 (25 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	WO		00:00	07:00	7.00	1,329.0	Monitored Well on Trip Tank (0.8 bbl/hr static losses). Waited on forward plan possible mobilisation of open hole Whipstock side tack. Rig crew conducted house keeping and general maintenance around rig.
PH	U	FSH		07:00	09:00	2.00	1,329.0	Discussed with Drilling Superintendent and Drilling team forward plan to attempt fish run #2. Prepared and made up 7 5/8" OD overshot assembly with 4 7/8" basket grapple to fish inner drive shaft in mud motor fish.
PH	U	TI		09:00	13:45	4.75	1,329.0	RIH with 7 5/8" overshot fishing assembly dressed with 4 7/8" Basket grapple to 1310m.
PH	U	CIR		13:45	14:30	0.75	1,329.0	Broke circulation & displaced well to 8.8ppg drilling polymer mud.
PH	U	FSH		14:30	15:15	0.75	1,329.0	Washed down @560gpm & tagged fish @ 1326m Attempted to engage fish, no positive indication of engagement to fish.
PH	U	FSH		15:15	15:30	0.25	1,329.0	Flow checked well. (Static).
PH	U	TO		15:30	18:30	3.00	1,329.0	POOH at controled speed from 1326m to surface. (No Fish).
PH	U	TO		18:30	19:15	0.75	1,329.0	Broke and laid down Over shot for inspection.
PH	U	SC		19:15	20:15	1.00	1,329.0	Held PJSM. Slipped and Cut Drilling Line.
PH	U			20:15	21:00	0.75	1,329.0	Welder Modified 7-5/8 Overshot.
PH	U	TI		21:00	24:00	3.00	1,329.0	Held PJSM. RIH with 7 5/8" modified overshot fishing assembly dressed with 4 7/8" Basket grapple to 1135m.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #16 (26 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	TI		00:00	01:00	1.00	1,329.0	Held PJSM. Continued to RIH with modified 7 5/8" overshot fishing assembly dressed with 4 7/8" Basket grapple from 1135m to 1323m.
PH	U	FSH		01:00	01:30	0.50	1,329.0	Washed down @500gpm & tagged fish @ 1326m. Attempted to engage fish, no positive indication of engagement to fish.
PH	U	SM		01:30	01:45	0.25	1,329.0	Flow checked and Held PJSM.
PH	U	TO		01:45	05:30	3.75	1,329.0	POOH at controlled speed from 1326m to surface. (No Fish).
PH	U	HT		05:30	06:30	1.00	1,329.0	Prepared 7-5/8" Overshot and dress with 4" Basket Grapple.
PH	U	TI		06:30	09:15	2.75	1,329.0	Held PJSM. RIH with 7 5/8" overshot fishing run #4 assembly dressed with 4" Basket grapple to 1310m.
PH	U	FSH		09:15	10:00	0.75	1,329.0	Washed down @500gpm & tagged fish @ 1326m Attempted to engage fish. Applied 5k to 10k weight on fish with slow rotation, observed rotary torque increase from 2400ft/lbs to 6800ft/lbs then weight dropped off to zero weight on fish. Continued applying 5k weight on fish with rotation, rotary torque ranging from 3200ft/lbs to 5700ft/lbs. Observed weight on fish decreasing continued applying weight and gained depth from 1326m to 1326.29m. Applied maximum weight on fish to 50k without rotation, pulled up and observed 10k overpull, 130k string weight to 140k. worked string up slowly to 1325m string weight back to 133k.
PH	U	FSH		10:00	10:15	0.25	1,329.0	Flow checked well.
PH	U	TO		10:15	10:30	0.25	1,329.0	POOH at controled speed from 1325m to 1177m
PH	U	RR		10:30	11:15	0.75	1,329.0	Repaired snagged electrical control cable on TDS service loop.
PH	U	TO		11:15	14:30	3.25	1,329.0	Continued POOH at controlled speed from 1177m to surface. (No Fish).
PH	U	HT		14:30	14:45	0.25	1,329.0	Broke and laid down 7-5/8" Overshot for inspection.
PH	U	RS		14:45	15:15	0.50	1,329.0	Rig Service.
PH	U	RR		15:15	16:30	1.25	1,329.0	Changed out TDS control cable.
PH	U	TI		16:30	23:15	6.75	1,329.0	RIH with Fishing BHA #5 assembly made up of of 8-1/8" Mill, 8-1/8" Overshot from surface to 1320m.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #16 (26 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	M		23:15	24:00	0.75	1,329.0	Wash down from 1320m to tag Top of Fish at 1325m. Mill Fish from 1325m to 1325.6m as per Fishermans Instructions. 500 GPM, 4-5k WOB 60-80 RPM.
Day #17 (27 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	M		00:00	05:30	5.50	1,329.0	Milled junk/fish from 1325.6m to 1326m as per Fishermans Instructions. 500 GPM, 4-5k WOB, 60-80 RPM.
PH	U	CHC		05:30	06:00	0.50	1,329.0	Circulated Hi/vis sweep to clean hole before POOH.
PH	U	SM		06:00	06:15	0.25	1,329.0	Held PJSM, Flow Checked well (Static).
PH	U	TOB		06:15	09:30	3.25	1,329.0	POOH with 8-1/8" Mill from 1326m to surface
PH	U	TOB		09:30	10:45	1.25	1,329.0	Broke out and laid down Mill assly for inspection.
PH	U	WO		10:45	17:15	6.50	1,329.0	Wait on Instructions. Drift 5-1/2" Casing and general housekeeping around Rig.
PH	U	RS		17:15	17:45	0.50	1,329.0	Rig Service.
PH	U	WH		17:45	18:45	1.00	1,329.0	Made up Combo tool, RIH and removed Wear bushing.
PH	U	PT		18:45	24:00	5.25	1,329.0	Pressure Tested BOP, Choke Manifold and Rig floor Well control equipment. Test #1, Inner Kill, Blind rams, Choke valves 12,13,14. Test #2, Outer Kill, Blind Rams, Choke valves 5,7,9,10,13. Test #3, Inner Kill, Blind Rams, Choke valves 1,3,6. Test #4, Inner Kill, Blind Rams, Choke valves 1,3,4. Test #5, BOP Check Valve, Pipe Rams, Choke valve 2. Test #6, HCR, Check valve, Pipe Rams. Test #7, Check valve, Pipe Rams, Inner Choke. Test #8, Check valve, Inner Choke, Annular 1500psi. Changed out Outer Kill Valve, (unable to get a test on it).
Day #18 (28 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	BT		00:00	02:00	2.00	1,329.0	Continued tesing BOP / Choke manifold. Test #6, HCR, Check valve, Pipe Rams. Test #7, Check valve, Pipe Rams, Inner Choke. Test #8, Check valve, Inner Choke, Annular 1500psi.
PH	U	PT		02:00	02:15	0.25	1,329.0	Rig down pressure test unit.
PH	U	WH		02:15	02:30	0.25	1,329.0	Installed wear bushing.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #18 (28 Feb 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	RU		02:30	03:00	0.50	1,329.0	Monitored well via trip tank. Prepared rig floor for RIH cement stinger.
PH	U	TI		03:00	05:15	2.25	1,329.0	RIH with open ended drill pipe and HWDP from surface to tag top of fish 1326m.
PH	U	CIC		05:15	10:00	4.75	1,329.0	Pulled back to 1325.5m, circulated hole clean for cement plug. Continued circulating until approval from DME plug back & side track well.
PH	U	SM		10:00	10:15	0.25	1,329.0	Held PJSM regarding cementing operations.
PH	U	CMP		10:15	10:30	0.25	1,329.0	Rigged up surface lines to cementing string.
PH	U	CMP		10:30	11:30	1.00	1,329.0	Pumped 5bbls of fresh water, pressure tested surface lines to 3000psi x 10mins. Pumped 15bbls of fresh water. Mixed & pumpd 11.5bbls of 15.8ppg cement slurry @ 3bbls /min. Displaced with 3.7bbls of water & 30.3bbls 8.8ppg drilling fluid total displacement 34bbls. Plug set from 1275.5m to 1325.5m
PH	U	TO		11:30	12:00	0.50	1,329.0	Rigged down cement line. POOH from 1325.5m to 1220m at controlled speed.
PH	U	CIR		12:00	13:15	1.25	1,329.0	Circulated 2 x well volumes @ 550gpm
PH	U	TO		13:15	16:00	2.75	1,329.0	Held PJSM, flow checked well. POOH from 1220m to surface, flow checked well at casing shoe & at surface.
PH	U	HT		16:00	17:15	1.25	1,329.0	Cleaned up drill floor & prepared for make up clean out wiper trip BHA.
PH	U	HBHA		17:15	20:00	2.75	1,329.0	Held PJSM, Made up 8 1/2" packed BHA assembly for Whipstock check trip & drill out cement plug back.
PH	U	TI		20:00	23:00	3.00	1,329.0	RIH From 143m to 1225m
PH	U	TI		23:00	24:00	1.00	1,329.0	Wash down from 1225m to 1285m, no tag on cement.
Day #19 (01 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	RW		00:00	01:00	1.00	1,329.0	Wash down from 1285m to 1290m, @ 200gpm, no tag on cement.
PH	U	CIR		01:00	01:15	0.25	1,329.0	Circulate bottoms up, @ 338 gpm check for cement.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #19 (01 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	RW		01:15	01:30	0.25	1,329.0	Wash down from 1290m to 1295.6m, Tag top of cement with 15klbs @ 130gpm,
PH	U	TO		01:30	02:00	0.50	1,329.0	Flow check, POOH from 1295.6m to 1260m.
PH	U	TI		02:00	02:15	0.25	1,329.0	Count all tubulars on location, check pipe tally. RIH from 1260m to 1290m.
PH	U	TI		02:15	02:30	0.25	1,329.0	Wash from 1290m to 1295.6m, Tag top of cement with 15klbs @ 130gpm,
PH	U	TI		02:30	05:00	2.50	1,329.0	Flow check, POOH from 1295.6m to 143m.
PH	U	HT		05:00	05:15	0.25	1,329.0	Change elevators, rig down pipe spinner.
PH	U	HBHA		05:15	06:30	1.25	1,329.0	POOH from 143m to surface , break out BHA.
PH	U	RR		06:30	09:15	2.75	1,329.0	Repaired leaking make up tong hydraulic hard line in mast.
PH	U	RS		09:15	09:45	0.50	1,329.0	Conducted rig service.
PH	U	HBHA		09:45	10:30	0.75	1,329.0	Broke out stablizers & 8 1/2" RR bit, cleaned up rig floor.
PH	U	SM		10:30	10:45	0.25	1,329.0	Held PJSM regarding handling & making up Side track Whipstock assembly
PH	U	HT		10:45	12:45	2.00	1,329.0	Made up assembly to fuction test MCBV & tested same. Laid out same.
PH	U	HT		12:45	14:30	1.75	1,329.0	Made up Side track Whipstock assembly as per Smith Whipstock hand instructions.
PH	U	HT		14:30	16:30	2.00	1,329.0	Continued make up Pathfinder / MWD BHA, scribed Whipstock to Pathfinder BHA & installed MWD survering components.
PH	U	TI		16:30	19:15	2.75	1,329.0	RIH with Whipstock / directional BHA to 586m.
PH	U	TI		19:15	19:45	0.50	1,329.0	Took weight at 586m. 7K over. ( STWT =82, P/UP =85, S/OFF = 78 )
PH	U	WO		19:45	20:45	1.00	1,329.0	Call town, wait on instructions.
PH	U	WTH		20:45	22:00	1.25	1,329.0	POOH from 586m to 577m,( at 577m pulling tight 10k over ) Work string.
PH	U	TO		22:00	24:00	2.00	1,329.0	String free, POOH form 577m to 80m.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #20 (02 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	TO		00:00	00:45	0.75	1,329.0	Continue to POOH from 80m to 50m.
PH	U	HBHA		00:45	02:00	1.25	1,329.0	B/out and L/out directional / Pathfinder assembly to HYD running tool 14m.
PH	U	WO		02:00	05:30	3.50	1,329.0	Wait on whipstock hand out of hours.
PH	U	HBHA		05:30	07:00	1.50	1,329.0	Laid out Whip stock assembly.
PH	U	WO		07:00	09:00	2.00	1,329.0	Discussed with drilling team forward plan: Decision made to set 17ppg 100m cement plug to side track well.
PH	U	TI		09:00	12:00	3.00	1,329.0	RIH with open ended drill pipe to 1295m.
PH	U	CIR		12:00	14:15	2.25	1,329.0	Circulated hole clean while waiting on cementing plug back program.
PH	U	SM		14:15	14:30	0.25	1,329.0	Held PJSM. Cementing operations.
PH	U	CMP		14:30	14:45	0.25	1,329.0	Rigged up SLB cementing surface lines.
PH	U	CMP		14:45	16:00	1.25	1,329.0	Pumped 5bbbls of fresh water, pressure tested surface lines to 3000psi x 10mins. Pumped 15bbbls of fresh water. Mixed & pumpd 23bbbls of 17.0ppg cement slurry @ 3bbbls/ min. Displaced with 3.7bbbls of water & 28.2bbbls 8.8ppg drilling fluid total displacement 31.9bbbls. Plug set from 1195m to 1295m
PH	U	TO		16:00	17:00	1.00	1,329.0	Rigged down surface line & POOH to 1140m at controlled rate.
PH	U	CIR		17:00	18:45	1.75	1,329.0	Circulated well 2 x hole volumes @ 500gpm.
PH	U	TO		18:45	21:15	2.50	1,329.0	Flow check & POOH from 1145m to surface.
PH	U	HT		21:15	22:00	0.75	1,329.0	Prep BHA #14
PH	U	HBHA		22:00	24:00	2.00	1,329.0	Pick up & make up BHA #14 clean out and dress cement run.
Day #21 (03 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	TI		00:00	01:30	1.50	1,329.0	RIH from 16m to 154m.
PH	U	HT		01:30	01:45	0.25	1,329.0	Changed elevators, rig up pipe spinner

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #21 (03 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	TI		01:45	02:30	0.75	1,329.0	RIH from 154m to 500m.
PH	U	WOC		02:30	03:30	1.00	1,329.0	WOC
PH	U	TI		03:30	05:30	2.00	1,329.0	RIH from 500m to 1180m.
PH	U	CIR		05:30	06:15	0.75	1,329.0	Washed down from 1180m to 1200m with 130gpm. 5k WOB observed at 1200m. Circulated bottoms up with 320gpm to check condition of cement returns.
PH	U	CIR		06:15	07:45	1.50	1,329.0	Continued wash down to 1205m minimal WOB observed, Circulated bottoms up with 320gpm to check condition of cement returns, contaminated cement observed at bottoms up.
PH	U	DC		07:45	08:45	1.00	1,329.0	Washed down from 2105m to 1207.5m, observed WOB constant at 5k. Drilled cement from 1207.5m to 1212m to confirm consistent hard cement. Confirmed with weight test of 20k WOB with no rotation.
PH	U	CHC		08:45	09:15	0.50	1,329.0	Pumped Hi/vis sweep & circulated hole clean.
PH	U	TO		09:15	11:30	2.25	1,329.0	Flow checked well. POOH from 1212m to 152m
PH	U	HT		11:30	11:45	0.25	1,329.0	Changed elevators for BHA.
PH	U	HBHA		11:45	13:00	1.25	1,329.0	Continued POOH BHA assembly to surface
PH	U	HBHA		13:00	13:30	0.50	1,329.0	Make up bit, dog sub and down hole motor.
PH	U	HBHA		13:30	15:00	1.50	1,329.0	Reset angle on motor to 2.12deg. Make up MWD assembly, scribe and RIH from surface to 25m
PH	U	TI		15:00	21:30	6.50	1,329.0	RIH from 25m to 1202m. ( hole was tight from 560m to 1202m)
PH	U	RW		21:30	22:00	0.50	1,329.0	Wash down from 1202m to 1212m, 200gpm / no rotary.
PH	U	DM		22:00	22:30	0.50	1,329.0	Orientate mud motor as per DD instructions.
PH	U	DM		22:30	24:00	1.50	1,212.2	Time drill from 1212m to 1212.2m, at 6"/hr to cut lip.
Day #22 (04 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	DM		00:00	16:30	16.50	1,220.0	Time drilled 8 1/2" directional hole from 1212.2m to 1220m.



Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #22 (04 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	CIR		16:30	17:15	0.75	1,220.0	Pump HI-VIS sweep, circulate hole clean
PH	U	HT		17:15	17:30	0.25	1,220.0	Flow check, Rig up pipe spinner.
PH	U	TO		17:30	20:15	2.75	1,220.0	POOH from 1220m to 527m.
PH	U	SM		20:15	20:30	0.25	1,220.0	BOP trip drill, response time 20sec, Flow check.
PH	U	TO		20:30	21:15	0.75	1,220.0	Continue to POOH from 527m to 189m
PH	U	HT		21:15	21:30	0.25	1,220.0	Flow check, rig down pipe spinner.
PH	U	TO		21:30	23:30	2.00	1,220.0	Continue to POOH from 189m to surface.
PH	U	HT		23:30	24:00	0.50	1,220.0	Inspect bit, reset bend on mud motor to 1.83 deg.
Day #23 (05 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	TI		00:00	01:30	1.50	1,220.0	RIH from surface to 170m.
PH	U	HT		01:30	01:45	0.25	1,220.0	Change elevators, rig up pipe spinner.
PH	U	TI		01:45	04:15	2.50	1,220.0	RIH from 170m to 1202m.
PH	U	RW		04:15	04:30	0.25	1,220.0	Wash down from 1202m to 1220m
PH	U	DM		04:30	18:15	13.75	1,296.0	Directional drill 8 1/2" hole from 1220m to 1296m - WOB - 25k - SPM - 2 x 82stks - 450GPM - SPP - 1850psi - ROP - 5.52m/hr (Survey as required).
PH	U	RS		18:15	18:45	0.50	1,296.0	Rig service
PH	U	DM		18:45	24:00	5.25	1,319.0	Directional drill 8 1/2" hole from 1296m to 1319m - WOB - 25k - SPM - 2 x 82stks - 450GPM - SPP - 1850psi - ROP - 4.0m/hr (Survey as required).
Day #24 (06 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	U	DM		00:00	02:30	2.50	1,329.0	Directional drilled 8 1/2" hole from 1319m to 1329m - WOB - 25k - SPM - 2 x 82stks - 450GPM - SPP - 1850psi - ROP - 4.0m/hr (Survey as required).
PH	P	DM		02:30	09:45	7.25	1,358.0	Directional drilled 8 1/2" hole from 1329m to 1358m - WOB - 25k - SPM - 2 x 82stks - 450GPM - SPP - 1740psi - ROP - 4.0m/hr (Survey as required).

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #24 (06 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	RS		09:45	10:00	0.25	1,358.0	Trouble shot leak between discharge manifold and pulsation dampner on mud pump #2. Tighten up bolts on flange connection.
PH	P	DM		10:00	22:30	12.50	1,409.7	Directional drilled 8 1/2" hole from 1358m to 1409.7m - WOB - 30k - SPM - 2 x 82stks - 450GPM - SPP - 1800psi - ROP - 4.2m/hr (Survey as required).
PH	P	CIR		22:30	23:15	0.75	1,409.7	Circulated hole clean, SCRS and survey.
PH	P	TO		23:15	24:00	0.75	1,409.7	PJSM, prepared JSA, flow check, POOH from 1409.7m to 1296m.
Day #25 (07 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	TO		00:00	02:30	2.50	1,409.7	Continued to POOH from 1296m to 520m.
PH	P	SM		02:30	02:45	0.25	1,409.7	Held BOP emergency drill, flow check.
PH	P	TO		02:45	03:15	0.50	1,409.7	Continued to POOH from 520m to 189m.
PH	P	HT		03:15	03:30	0.25	1,409.7	Flow checked well, rigged down pipe spinner.
PH	P	TO		03:30	06:00	2.50	1,409.7	Continued to POOH from 189m to surface.
PH	P	HBHA		06:00	06:45	0.75	1,409.7	Break out and lay down bit - dog sub and mud motor
PH	P	HBHA		06:45	09:15	2.50	1,409.7	Make up new motor and bit - Test mud motor at 46spm-130gpm and set bend to 1.83deg. -
PH	P	TI		09:15	11:45	2.50	1,409.7	Trip in hole from 25m to 519m
PH	P	RS		11:45	12:15	0.50	1,409.7	Rig service
PH	P	SC		12:15	14:30	2.25	1,409.7	Held pre job safety meeting - Reposition block hanging lines - Slip and cut 90ft of drilling line.
PH	P	RMT		14:30	15:00	0.50	1,409.7	Check kicker rollers and adjust brakes
PH	P	RMT		15:00	15:30	0.50	1,409.7	Realign mast for torque track - Recalibrate rig smart and function same ok
PH	P	TI		15:30	19:15	3.75	1,409.7	Continue to RIH from 519m to 1390m.
PH	P	RW		19:15	19:30	0.25	1,409.7	Wash down the last stand from 1390m to 1409m.
PH	P	DM		19:30	24:00	4.50	1,429.7	Directional drilled 8 1/2" hole from 1409.7m to 1429.7m - WOB - 37k - SPM - 2 x 82stks - 450GPM - SPP - 1750psi - ROP - 4.25m/hr (Survey as required).

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #26 (08 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	DM		00:00	07:30	7.50	1,463.0	Directional drilled 8 1/2" hole from 1429.7m to 1463m - WOB - 37k - SPM - 2 x 82stks - 450GPM - SPP - 1750psi - ROP - 4.5m/hr (Survey as required).
PH	P	CIR		07:30	09:45	2.25	1,463.0	Circulate BTM/up mud logger collect sample, pump HI vis sweep , circulate hole clean.
PH	P	TO		09:45	12:00	2.25	1,463.0	Flow check, POOH from 1463m to 604m, BOP emergency drill, 19 sec response time to secure well.
PH	P	TO		12:00	14:00	2.00	1,463.0	Continue to POOH from 604m to 179m, flow check at BHA.
PH	P	HBHA		14:00	17:00	3.00	1,463.0	Held PJSM, continue to POOH from 179m to surface, lay out jars, NMDC, motor.
PH	P	RS		17:00	17:30	0.50	1,463.0	Rig service, grease wash pipe, crown,blocks.
PH	P	HT		17:30	18:00	0.50	1,463.0	Make up combo tool, pull wear bushing.
PH	P	PT		18:00	23:00	5.00	1,463.0	Pressure test BOP and choke manifold 200psi low and 2500psi high.
PH	P	HT		23:00	24:00	1.00	1,463.0	Install wear bushing and lay out combo tool assembly.
Day #27 (09 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	HBHA		00:00	04:15	4.25	1,463.0	Make up DST BHA to 32m.
PH	P	CIR		04:15	04:30	0.25	1,463.0	Function Test both mud pump.
PH	P	TI		04:30	05:15	0.75	1,463.0	RIH with DST tools from 32m to 126m
PH	P	HT		05:15	05:30	0.25	1,463.0	BOP emergency drill, 16sec response time for well secured, change elevators, rig up pipe spinner,
PH	P	TI		05:30	09:30	4.00	1,463.0	Continue to RIH from 126m to 1462m.
PH	P	CIR		09:30	09:45	0.25	1,463.0	Flow check, function test rig pumps at 120spm.
PH	P	TI		09:45	10:30	0.75	1,463.0	P/up and M/up 3.1m,4.64m and 1.56m pup joints, tag bottom at 1463.80m
PH	P	HT		10:30	11:15	0.75	1,463.0	P/up and rig up DST surface equipment.
PH	P	PT		11:15	12:00	0.75	1,463.0	PJSM with pro test, and all on site, Pressure test DST surface equipment, 10min at 1500psi.
PH	P	DST		12:00	13:30	1.50	1,463.0	PJSM, Rotate to inflate packer, confirm with 10K over pull, open tool.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #27 (09 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	DST		13:30	17:30	4.00	1,463.0	DST flow period.
PH	P	DST		17:30	17:45	0.25	1,463.0	Attempt to close DST, pick up 10K over pull, rotate pipe, pick up 20K over pull.
PH	P	DST		17:45	18:00	0.25	1,463.0	Monitor flow at surface, slack off, pick up 20K while rotating 30rpm
PH	P	DST		18:00	22:00	4.00	1,463.0	Shut in period of 4hrs.
PH	P	DST		22:00	22:30	0.50	1,463.0	PJSM slack off to 100K, rotate pipe, deflate packer, pick up to confirm, monitor flow at surface.
PH	P	DST		22:30	22:45	0.25	1,463.0	Drop bar down string and pump down annulus, 491stks.
PH	P	DST		22:45	23:15	0.50	1,463.0	Close annular, pump down annular and monitor returns and take samples.
PH	P	CIR		23:15	23:45	0.50	1,463.0	Reverse circulate through poor boy, 550stks
PH	P	HT		23:45	24:00	0.25	1,463.0	Rig down and Lay out DST surface equipment and rotating head.
Day #28 (10 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	HT		00:00	00:45	0.75	1,463.0	Continue to lay out DST rotating head, and rack back 1 stand of pipe.
PH	P	CIR		00:45	03:00	2.25	1,463.0	Circulate full hole volume through poor boy, monitor for gas, circulate full hole volume trough flow line, monitor for gas.
PH	P	TO		03:00	03:15	0.25	1,463.0	PJSM, OPTW, flow check, POOH and lay out pup joints 3.1m, 4.64m & 1.56m.
PH	P	TO		03:15	07:15	4.00	1,463.0	POOH with DST tools from 1440m to 56m.
PH	P	HBHA		07:15	11:00	3.75	1,463.0	PJSM, Break out and lay out DST tools.
PH	P	HBHA		11:00	12:00	1.00	1,463.0	Lay out single DC, clear rig floor, preppare BHA #19.
PH	P	HBHA		12:00	13:30	1.50	1,463.0	Make up motor, PDC bit and test motor, scribe in to MWD tools at 34m.
PH	P	TI		13:30	17:00	3.50	1,463.0	RIH from 34m to 515m.
PH	P	RS		17:00	17:30	0.50	1,463.0	Rig service, grease crown, blocks, carrier, THD.
PH	P	TI		17:30	20:00	2.50	1,463.0	Continue to RIH from 515m to 1390m.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #28 (10 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	RW		20:00	20:30	0.50	1,463.0	Wash and ream down from 1390m to 1410m
PH	P	TI		20:30	21:30	1.00	1,463.0	Continue to RIH from 1410m to 1449m, wash and ream down to 1463m.
PH	P	DM		21:30	24:00	2.50	1,484.0	Directional drilled 8 1/2" hole from 1463m to 1484m - WOB - 20k - SPM - 2 x 82stks - 450GPM - SPP - 1900psi - ROP - 10.5m/hr (Survey as required).
Day #29 (11 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	DM		00:00	08:30	8.50	1,540.0	Directional drilled 8 1/2" hole from 1484m to 1540m - WOB - 20k - SPM - 2 x 82stks - 450GPM - SPP - 1900psi - ROP - 6.5m/hr (Survey as required)
PH	P	CIR		08:30	09:45	1.25	1,540.0	Circulate bottoms up , pump 20bbl HI-vis sweep, circulate hole clean.
PH	P	SM		09:45	10:00	0.25	1,540.0	OPTW , PJSM, well controll emergency drill
PH	P	TO		10:00	14:00	4.00	1,540.0	Flow check, POOH from 1540m to 527m.
PH	P	CIR		14:00	15:15	1.25	1,540.0	Circulate at the casing shoe 527m, wait on instructions.
PH	P	RS		15:15	15:45	0.50	1,540.0	Rig service, grease crown, wash pipe, blocks, THD, carrier.
PH	P	WO		15:45	16:15	0.50	1,540.0	Continue to circulate at shoe 527m, wait on instructions.
PH	P	TO		16:15	19:15	3.00	1,540.0	POOH from 527m, to 140m, flow check.
PH	P	HBHA		19:15	20:00	0.75	1,540.0	Lay out MWD tools and motor, clean rig floor.
PH	P	WO		20:00	24:00	4.00	1,540.0	Wait on Schlumberger testing and checking tools.
Day #30 (12 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	WO		00:00	00:45	0.75	1,540.0	Wait on Schlumberger testing and checking tools.
PH	P	SM		00:45	01:00	0.25	1,540.0	PJSM with Schlumberger and all on site
PH	P	LOG		01:00	04:15	3.25	1,540.0	Rig up for logging.
PH	P	LOG		04:15	09:15	5.00	1,540.0	RIH logging run #1 PEX-HRGA-HINGS.
PH	P	LOG		09:15	16:00	6.75	1,540.0	Male up tools, RIH logging run #2 FMI-Sonic Scanner.
PH	P	LOG		16:00	17:00	1.00	1,540.0	Tools at surface, lay down tools.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #30 (12 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	LOG		17:00	19:00	2.00	1,540.0	working on tools.
PH	P	LOG		19:00	20:15	1.25	1,540.0	Make up tools for run #3
PH	P	LOG		20:15	24:00	3.75	1,540.0	RIH with tools, logging run #3 ECS-CMR
Day #31 (13 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	LOG		00:00	06:00	6.00	1,540.0	Logging run #3 ECS-CMR - Tools at surface (lay out same)
PH	P	LOG		06:00	07:30	1.50	1,540.0	Lay out logging tools.
PH	P	LOG		07:30	08:45	1.25	1,540.0	Make up logging tools for run #4
PH	P	LOG		08:45	12:00	3.25	1,540.0	RIH with wire line logging run #4 MDT. ( Held muster drill, discussed first aid response.)
PH	P	LOG		12:00	16:00	4.00	1,540.0	Continue with wire line logging run #4 MDT. ( Held safety alert with rig crew and HSC in dog house.)
PH	P	LOG		16:00	24:00	8.00	1,540.0	Continue with wire line logging run #4 MDT. ( Safety meeting with all rig crew and 3rd party personal, man down drill ) during logging operations.)
Day #32 (14 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	LOG		00:00	07:15	7.25	1,540.0	Continue with wire line logging run #4 MDT.
PH	P	LOG		07:15	08:45	1.50	1,540.0	Rig down schlumberger wire line unit.
PH	P	RMT		08:45	09:15	0.50	1,540.0	Inspection on TDS, replace two pressure regulators on TDS, and two pressure relief valves.
PH	P	RS		09:15	09:45	0.50	1,540.0	Rig service, grease blocks,TDS,wash pipe, carrier.
PH	P	HBHA		09:45	12:00	2.25	1,540.0	Held PJSM, make up BHA for wiper trip, RIH from surface to 134m.
PH	P	TI		12:00	17:00	5.00	1,540.0	Continue to RIH from 134m to 1540m.
PH	P	CIR		17:00	19:00	2.00	1,540.0	Circulate and condition mud. Circ 2x hole volumes.
PH	P	SM		19:00	19:15	0.25	1,540.0	Hold safety meeting and review SOP prior to lay down pipe.

Wellname: WEST MEREEENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #32 (14 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	TO		19:15	24:00	4.75	1,540.0	POOH and lay pipe out sideways from 1540m to 680m, flow checks 1440m,700m,
Day #33 (15 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	TO		00:00	05:15	5.25	1,540.0	POOH and lay pipe out sideways from 680m to surface, flow checks
PH	P	HT		05:15	05:45	0.50	1,540.0	Make up running tool retrieve wear bushing.
PH	P	PT		05:45	08:30	2.75	1,540.0	Change out pipe rams to 5 1/2", pressure test 200psi low 5minutes, 2000psi high 10minutes.
PH	P	HT		08:30	11:45	3.25	1,540.0	Held PJSM, rig up floor to run casing, rig up volent tool, install casing bails and elevators.
PH	P	RC		11:45	12:00	0.25	1,540.0	Make up shoe and first joint of casing
PH	P	SM		12:00	12:30	0.50	1,540.0	Safety meeting with rig personal, OCR, DQ hand and volent tool hand.
PH	P	RC		12:30	24:00	11.50	1,540.0	RIH with 5 1/2" casing from surface to 1473m with volent tool, breaking circulation at 500m and 1000m.
Day #34 (16 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	RC		00:00	00:45	0.75	1,540.0	RIH with 5 1/2" casing from 1473m to 1539m with volent tool,
PH	P	CIR		00:45	02:45	2.00	1,540.0	Circulate casing 1x hole volume at 335gpm.
PH	P	HT		02:45	03:15	0.50	1,540.0	Rig down volent tool, rig up cement head and surface lines.
PH	P	CMC		03:15	07:00	3.75	1,540.0	PJSM, cement casing as per program. flush lines, pressure test 3000psi for ten minutes, pump 30bbls water, mix and pump 128bbl Lead CMT at 11.8ppg, mix and pump 156 Tail cmt at 12ppg, displace with 116.9bbls of brine at 8.9ppg, cement returns at 93bbl in to displacement, with 21bbls cmt returns, bump plug and P/ test to 2000psi with 1.4bbl bleed back.
PH	P	HT		07:00	08:30	1.50	1,540.0	Clean possum belly, flush BOP, poor boy, choke manifold surface lines, Set casing bowl slips, lay out cement head and equipment.
PH	P	HT		08:30	10:00	1.50	1,540.0	Rig down Elite RCD and valves, stand and flow lines, bell nipple.

Wellname: WEST MEREENIE 24 West Mereenie 24 ST1	Operation Co: Santos Ltd	Rig: Ensign 918
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Day #34 (16 Mar 2014)								
PHSE	CLS	OP	RC	From	To	Hrs	Depth (m)	Activity Description
PH	P	NUB		10:00	13:00	3.00	1,540.0	Bleed down and remove koomey lines, Nipple down BOP, lift BOP and rough cut casing. lower BOP.
PH	P	NUB		13:00	16:15	3.25	1,540.0	nipple down BOP and place on trolley.
PH	P	WH		16:15	20:30	4.25	1,540.0	Install well head and pressure test.
PH	P	RD		20:30	24:00	3.50	1,540.0	Rig down top drive, 24:00 Rig release.



# DRILLING & COMPLETIONS DEPARTMENT

## 2-3/8" EUE Gas-lift Completion

WELL: West Mereenie 24

DATE: 26/07/2013

LAST ACTIVITY: 14/04/2014

# Santos

Santos Ltd A.C.N 007 550 923

Page 1 of 1

	No	DESCRIPTION	LENGTH (m)	DEPTH RT (m)	MIN ID (in)	MAX OD (in)
	1	R.T. to top of tubing spool	4.69			
	2	Tubing hanger, EN, 7-1/16" x 2-3/8" c/w 2" BPV	0.25	4.69		
	3	1 joint 2-3/8" 4.7lb/ft J55 EUE tubing	9.61	4.94	1.995	3.063
	4	10ft, 4ft pup joint, 2-3/8" EUE 4.7 lb/ft	4.12	14.55	1.995	3.063
	5	74 joints 2-3/8" 4.7lb/ft J55 EUE tubing	707.18	18.67	1.995	3.063
	6	6ft pup joint, 2-3/8" EUE 4.7 lb/ft	1.77	725.85	1.995	3.063
	7	2-3/8" EUE KBMM SPM (fitted with 1" IPO valve, set P = 500 psi)	2.11	727.62	1.995	4.236
	8	4ft pup joint, 2-3/8" EUE 4.7 lb/ft	1.15	729.73	1.995	3.063
	9	63 joints 2-3/8" 4.7lb/ft J55 EUE tubing	600.08	730.88	1.995	3.063
	10	10ft pup joint, 2-3/8" EUE 4.7 lb/ft	2.98	1330.96	1.995	3.063
	11	2-3/8" EUE KBMM SPM (fitted with 1" orifice valve 3/16" orifice)	2.11	1333.94	1.995	4.236
	12	2ft pup joint, 2-3/8" EUE 4.7 lb/ft	0.58	1336.05	1.995	3.063
	13	8 joint 2-3/8" 4.7lb/ft J55 EUE tubing	76.53	1336.63	1.995	3.063
	14	2ft pup joint, 2-3/8" EUE 4.7 lb/ft	0.66	1413.16	1.995	3.063
	15	BOT L-10 on-off connector, 2-3/8" EUE b x p	0.50	1413.82	1.875	4.500
	16	5-1/2" x 2-3/8" EUE FH packer, size 45A4, shear setting = 30K	0.70	1414.32	1.995	4.500
	17	COE to bottom of mandrel	1.40	1415.02		
	18	1 joint 2-3/8" 4.7lb/ft J55 EUE tubing	9.43	1416.42	1.995	3.063
	19	Otis 2-3/8" EUE nipple c/w XN landing profile	0.43	1425.85	1.791	3.063
20	BOT E Hydrotrip sub, Shear pressure = 2500 psi	0.36	1426.28	1.995	3.063	
	Wireline re-entry guide, 2-3/8" EUE b x 2-7/8" blank	0.30	1426.64	1.995	3.063	
	End of tubing		1426.94			

HUD: 1499.43 m

(e-line 11/4/2014)

PBTD: 1526.9m (D)

TD: 1540.0m (D)