



WELL TESTING REPORT

WELL TEST REPORT INDEX

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina

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WELL AND MEASUREMENT INFORMATION

GENERAL INFORMATION

Service / Client Ref.	:	Well Testing Services
Company	:	Santos
Field / Well / Zone	:	VIC/P44 / Casino 3 / Appraisal
Country	:	Australia
Test type	:	Drill Stem Test
Rig/Installation	:	Ocean Epoch

OPERATION DATA

Test Date	:	8-Nov-03 to 10-Nov-03
Report Number	:	2003-017
Area / GeoMarket / Base	:	MEA/APG/AUF
Co. Representative	:	P. Nardone
Schlumberger Representative	:	E. Caina
Unit system	:	US Oilfield
Comment	:	Company Man Rep. : Guy Howard
Comment	:	Petroleum Engineer : Mike Lahiff

WELL DATA

Reference Elevation	:	26 m above LAT
Well geometry	:	Vertical
Driller Depth	:	2071.33mRT PBTD
Well type	:	Appraisal
Fluid type	:	Gas
Casing size / shoe	:	9 5/8"
Packer depth	:	1977.56 m MDRT.
Minimum restriction	:	2.25"
Maximum deviation	:	1 deg
Perforation shot density	:	6 SPF
Perforation gun type	:	TCP 3 3/8" guns loaded 3406 Powerjet HMX charges.
Perforating conditions	:	Underbalance of 409 psi.
Perforation interval	:	2004 - 2013 m
Test interval / Zone	:	Waarre Sandstone

FORMATION DATA

Oil / Condensate gravity	:	0.859
Gas gravity (Air=1)	:	0.608

MUD PROPERTIES

Type	:	KCL Brine
Weight / viscosity	:	9.3 ppg
Cushion type	:	Diesel 7.0 ppg

WELL AND MEASUREMENT INFORMATION

DEPTH INFORMATION

Depth unit : meter
 Depth reference : RT
 Upper Gauges M.P. at (MDRT) : 1967.73 wireline reference.

WELL HEAD CHOKE

Well Head pressure gauge : Electronic strain gauge, Sensotec s/n : 18967
 Downstream choke pressure gauge : Electronic strain gauge, Sensotec s/n : 22730
 Casing pressure gauge : Electronic strain gauge, Sensotec s/n : 18939
 Temperature gauge : Platinum resistor, STTS-B Frode Pedersen & Co
 Choke type : McEvoy 3" 10 k psi fixed and adjustable chokes.

SEPARATOR

Capacity : 1440 psig
 Gas meter type : ITT Barton Orifice Meter
 I.D. of meter tube : 5.761"
 Low Gas Meter : Not used.
 Gas line pressure gauge : Electronic strain gauge, Sensotec TJE100, s/n : 656938
 Differential pressure gauge : Electronic strain gauge, Honeywell ST3000.
 Gas line temperature gauge : Platinum resistor, STTS-B Frode Pedersen & Co
 Gas sampling point : Top of gas outlet of separator
 Gravitometer : Ranarex
 Oil / Condensate line temperature gauge : Platinum resistor, STTS-B Frode Pedersen & Co
 Oil / Condensate rate meter : Electronic pulse transmitter Model 308 (2 "Floco)
 Oil / Condensate rate meter : Electronic pulse transmitter # (3" Rotron)
 Oil / Condensate sampling point : Separator oil sight glass
 Gravitometer type : Hydrometer
 Water rate meter : 2" Floco meter

OTHER EQUIPMENT

Tank type / capacity : Single compartment Surge tank / 100 bbls
 Pump type / capacity : Air Pump 3" / 2000 bblpd
 Heater type / capacity : 10 k pai Steam Exchanger / 75 kw/hr
 Burner type : Evergreen
 Burner capacity : 18000 bpd



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Santos VIC/P44 / Casino 3 / Appraisal	Objectives 2003-017	1
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Primary Objectives

1. To complete the well test with zero injures or incidents
2. To have no reportable spills to the environment.
3. To comply with statutory regulations and safety case.
4. To complete the well test within the estimated time and budget

Technical Objectives

1. Determine within equipment restraints, the deliverability - PI and IPR
2. On-site composition and trace element analysis for H₂S, total sulphur, individual sulphur compounds and mercury.
3. Obtain initial reseroir pressure for validation from wireline survey.

Crew Member

Job Title	Name
1 Well Test Supervisor	Eduadro Carina
2 Well Test Chief Operator (Day)	Alec Jennings
3 Well Test Chief Operator (Night)	Ian Kirkland
4 Well Test Operator	Andy Gillies
5 Well Test Operator	Paul Bartlett
6 Well Test Operator	Stephen Meads
7 Data Acquisition Specialist (Day)	Barry Textor
8 Data Acquisition Specialist (Night)	Karina Dorrington
9 TCP Specialist	Rowan Blok
10 Subsea Specialist	Graeme Tompkins
11 Subsea Specialist	Ian Sanderson
12 Oilphase Supervisor	Ben Leggo
13 Sampling Specialist	Christian Ritchie
14 Steam Generator Technician	Jos Poelsma
15 Completion Specialist	Scott Shepard
16 DST Specialist	Rab Nicol
17 DST Specialist	Warick Upton
18 Slickline Operator	Dave Gibert

Santos VIC/P44 / Casino 3 / Appraisal	PROCEDURE 2003-017	1
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Test procedure

Casino 3 was an appraisal gas well test conducted in block VIC/P44. The test was performed with the Diamond Offshore MODU - Ocean Epoch. The Schlumberger Sentries 3 provided the subsea quick disconnect interface.

The test was conducted using a permanent packer set on wireline with TCP 3 3/8" 6 spf guns conveyed on 4-1/2" 15.5 lb PH6 tubing. The primary downhole tester valve was a PCT. An initial underbalance of 409 psi was achieved by displacing diesel to the tubing through an MCVL circulating valve.

Produced reservoir fluids were separated and metered at surface in a 1440 psi 3 phase separator. Fluids were disposed through the Evergreen burner head and Gas flare line. A steam exchanger and chemical injection pump were also utilised at surface to manage hydrates.

Flowing choke sizes, durations and shut in periods were as directed by the on-site reservoir engineer. Separator samples and trace analysis chemistry was performed by Oilphase.



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SEQUENCE OF EVENTS

Date/Time Elapse Time	Events
06-Nov-03	
02:00	3-Nov-03 sample 1.01 mud from mud pits taken at 10:00 32,000 ppm Cl.
02:35	Picked up flowhead to rig floor.
04:15	Laid out flowhead with tail pipe to pipe deck.
05:30	Laid out Sentries to pipe deck.
06:00	Commenced rig up wireline for GR-CCL-CBL-VDL-Junk basket run
07:45	RIH with wireline string.
08:00	POOH unable to pass 90m (wear bushing).
08:25	Removed gauge ring 8 3/8" from Junk basket.
08:30	RIH with wireline string.
12:30	Wireline tools at surface.
13:00	Finished rig down of wireline tools.
13:30	0.0 Set 9 5/8" Model S permanent Seal bore packer into RT.
14:04	1.1 Connected wireline setting tool to packer.
14:40	1.7 RIH with wireline GR-CCL-CPST-packer string.
17:20	4.3 Set packer at 1977.56m MDRT.
18:30	5.5 Finished rig down of wireline equipment.
19:30	6.5 Held JSA on rig floor for running of TCP guns and BHA.
19:45	6.8 Picked up TCP guns to rig floor.
20:26	7.4 Picked up TFTV and seal assembly.
20:42	7.7 Picked up PCT and Gauge carrier.
21:40	8.7 Picked up 1 joint of 3 1/2" PH6 tubing.
21:47	8.8 Picked up MCVL.
22:10	9.2 Picked up 1 joint of 3 1/2" PH6 tubing.
22:17	9.3 Picked up SHORT.
22:40	9.7 Picked up crossover from 3 1/2" to 4 1/2" PH6
22:43	9.7 Picked up 1 stand of 4 1/2" PH6 tubing.
22:50	9.8 Commenced rig up for pressure testing BHA.
23:11	10.2 Commenced pressure test of BHA to 4500 psi
23:26	10.4 Good test to 4500psi.
23:50	10.8 Pressure tested booms found leak.
07-Nov-03	11.0
00:15	11.3 Continued to RIH with 4 1/2" PH6 tubing.
06:08	17.1 Commenced pressure test of string to 4500 psi
06:36	17.6 Good test to 4500psi.
06:40	17.7 Connected drill pipe to string.
06:55	17.9 Laid out a 1 joint of drill pipe for better height control on space out.
07:10	18.2 TCP guns in seal bore assembly.
07:23	18.4 String stab into packer assembly.
07:30	18.5 Closed LPR and UPR
07:35	18.6 Opened LPR and UPR.
07:40	18.7 POOH.
08:00	19.0 Run back into hole due to poor ram indication on drill pipe.
09:05	20.1 Sit down on packer with 20000 lbs.
09:06	20.1 Closed LPR and MPR
09:14	20.2 Opened LPR and MPR.
09:15	20.3 POOH.
10:09	21.2 Connected two 4 1/2" PH6 pup joints to string 2.38m 2.37m.

SEQUENCE OF EVENTS

Date/Time	Elapse Time	Events
07-Nov-03		
10:55	21.9	Held toolbox meeting rig floor prior to connecting Sentree to string.
11:00	22.0	Picked up Sentree to rig floor.
11:05	22.1	Connected SenTree to test string.
11:20	22.3	Connected umbilical to SenTree.
11:30	22.5	Commenced function testing SenTree panel Line A for 5 mins.
11:35	22.6	Commenced function testing SenTree panel Line B for 5 mins.
11:41	22.7	Function tested line C for unlatching 14 secs to unlatch.
11:45	22.8	Opened ball and flapper on SenTree. Continued to RIH.
13:20	24.3	Connected lubricator valve to Test string. Function ball.
13:50	24.8	Changed bails.
14:40	25.7	Picked up Flow Head to rig floor.
14:45	25.8	Commenced rig up of Kill line coflexip hose.
16:00	27.0	Commenced rig up of Flow line coflexip hose.
16:30	27.5	Sample 1.02 brine from mud pits.
17:08	28.1	Opened Flow Wing Valve prior to flushing lines.
17:14	28.2	Commenced flushing lines with water to burners against TFTV prior to pressure testing.
17:15	28.3	ESD malfunction due to leak hose connection to a sation.
17:30	28.5	ESD operational, re-commenced flushing lines to burners.
17:35	28.6	Closed choke manifold and kill wing valve prior to pressure testing Kill line to 4500psi.
18:11	29.2	Good test to 4500psi.
18:12	29.2	Opened kill wing valve
18:15	29.3	Commenced pressure testing Flow line against Choke manifold and TFTV to 4500psi.
18:40	29.7	Good test to 4500psi.
18:42	29.7	Closed SSTT and bled off pressure to 500psi to monitor for returns.
18:59	30.0	Pressured to 4500psi to equalise
19:24	30.4	Bled off pressure above lubricator valve to 500 psi to monitor for returns.
19:43	30.7	Pressured back to 4500psi to equalise, opened lubricator valve.
20:37	31.6	Pressured annulus to 1500psi to lock open TFTV and shear PORT.
20:40	31.7	Bled off tubing pressure at choke manifold.
20:51	31.9	Confirmed TFTV locked open and by-pass closed. Bled annulus pressure.
20:53	31.9	Pressured annulus to 1500psi to unlock PCT.
20:56	31.9	Bled off annulus pressure to zero.
21:17	32.3	Commenced floco oil meter factor.
22:30	33.5	Finished meter factor.
08-Nov-03		
00:25	35.4	Held JSA on rig floor for displacing string with diesel cushion.
00:39	35.7	Applied 500 psi to annulus.
00:42	35.7	Commenced cycling MCCV, pressured tubing to 1500psi and bled off at choke manifold.
00:51	35.9	Confirmed MCCV open (2 cycles). Closed choke manifold.
01:00	36.0	Commenced diesel displacement.
03:20	38.3	Finished displacing diesel cushion. 88bbls pumped.
03:32	38.5	Pressure bled off at choke manifold.
03:33	38.6	Commenced pumping 10bbls of diesel to surge tank.
03:50	38.8	Finished pumping diesel. 11bbls diesel, 4 bbls water.
04:00	39.0	Closed choke manifold.
04:15	39.3	Held JSA on the rig floor prior to starting well test program.
05:00	40.0	Increased recording rate of WHP and CSGP to 1sec prior to perforating well.

SEQUENCE OF EVENTS

Date/Time Elapse Events
Time

08-Nov-03

05:35	40.6	Held JSA on the rig floor prior to perforating the well.
05:44	40.7	Pressured annulus to 1500psi to open the PCT.
05:45	40.8	Pressured tubing to 4000 psi from cement unit.
05:53	40.9	Pressure bled off at choke manifold to activated HDF firing head.
06:02	41.0	Good indication guns fired.
06:03	41.1	Opened well on 16/64" adjustable choke to surge tank. (Initial Flow Period)
06:06	41.1	Increased to 20/64" adjustable choke.
06:07	41.1	Increased to 24/64" adjustable choke.
06:12	41.2	14 bbls return to Surge tank.
06:13	41.2	Shut in well at PCT and choke manifold for initial build up. (Initial Shut-In Period)
08:13	43.2	Pressured up annulus to 1500psi to open PCT.
08:14	43.2	Opened well on 16/64" adjustable choke to surge tank. (Clean-up Flow Period)
08:22	43.4	Increased to 20/64" adjustable choke.
08:30	43.5	Diverted flow from Surge tank to Burner.
08:32	43.5	Increased to 24/64" adjustable choke.
08:37	43.6	BSW 100% diesel.
08:38	43.6	Commenced methanol injection at upstream data header.
08:44	43.7	Bled down annulus pressure 1250 psi
08:48	43.8	Increased to 32/64" adjustable choke.
08:51	43.9	Diverted flow through steam exchanger.
08:53	43.9	Shut in well at choke manifold to allow re-ignition of pilots.
09:09	44.2	Commenced pumping from surge tank to burner.
09:15	44.3	Opened well on 16/64" adjustable choke to burner
09:16	44.3	Increased to 20/64" adjustable choke.
09:19	44.3	Increased to 24/64" adjustable choke.
09:20	44.3	Diverted flow through steam exchanger. Gas at surface
09:21	44.3	Increased to 28/64" adjustable choke.
09:29	44.5	Increased to 32/64" adjustable choke.
09:33	44.6	Exercised choke.
09:36	44.6	Increased to 36/64" adjustable choke.
09:46	44.8	BSW 95%
09:49	44.8	Exercised choke.
10:15	45.3	Increased to 40/64" adjustable choke.
10:22	45.4	Bled off annulus pressure to 1300
10:45	45.8	Increased to 44/64" adjustable choke.
10:49	45.8	Exercised choke.
10:51	45.8	Increased to 42/64" adjustable choke.
10:56	45.9	Bled off annulus pressure to 1300.
11:06	46.1	Opened steam exchanger bypass by a couple of turns to reduce unstable WHDCP.(possible hydrate)
11:18	46.3	Closed steam exchanger bypass.
11:30	46.5	Increased to 44/64" adjustable choke.
11:38	46.6	Bled off annulus pressure to 1300.
12:17	47.3	Bled off annulus pressure to 1300.
12:22	47.4	Increased to 52/64" adjustable choke.
12:37	47.6	Finished pumping methanol to data header.
12:54	47.9	Opened inlet valve to separator.
13:01	48.0	Increased to 58/64" adjustable choke.

SEQUENCE OF EVENTS

Date/Time	Elapse Time	Events
08-Nov-03		
13:34	48.6	Diverted flow from adjustable choke 58/64" to fixed choke 64/64".
13:40	48.7	Bypassed steam exchanger.
14:03	49.1	Bled off annulus pressure to 1300.
14:14	49.2	Lowered 4" orifice plate.
15:00	50.0	Sample 1.03 water from water sight glass on separator.
15:10	50.2	Commenced samples 1.04 & 1.05; PVT condensate (bottle 7597-MA), & PVT gas (bottle 5072A).
15:35	50.6	Finished taking samples 1.04 & 1.05.
15:44	50.7	Raised orifice plate.
15:45	50.8	Shut in well at PCT and choke manifold for build up 2. (Build Up Period #2)
15:46	50.8	Closed choke manifold.
17:03	52.1	Opened SSV and PWV on FH after repairs to ESD panel.
21:00	56.0	Tooped up annulus during shut in.
21:30	56.5	Held JSA on rig floor for Multi-flow period prior to opening well.
21:36	56.6	Started methanol injection into data header, 60gallons/day.
21:48	56.8	Pressured annulus to 1500 psi to open PCT.
21:55	56.9	Opened well on 36/64" adjustable choke to gas flare. (Multi Flow Period #1)
21:57	57.0	Diverted flow through steam exchanger.
22:09	57.2	Bled annulus to 1300psi.
22:29	57.5	Switched flow through 36/64" fixed choke.
22:38	57.6	CO2 = 0.3%, H2S = 0ppm
22:46	57.8	Bled annulus to 1300psi.
23:00	58.0	Diverted flow through separator on 36/64" fixed choke.
23:12	58.2	Lowered 3" orifice plate.
23:26	58.4	Bled annulus to 1300psi.
23:30	58.5	Stopped methanol injection into data header.
09-Nov-03		
00:57	60.0	Bled annulus to 1400psi.
02:49	61.8	Bled annulus to 1400psi.
03:35	62.6	Commenced samples 1.06 & 1.07, PVT condensate (bottle 6808-MA) & PVT gas (bottle 42106).
03:58	63.0	Finished taking samples 1.06 & 1.07.
04:30	63.5	Raised 3" orifice plate.
04:30	63.5	Commenced sample 1.08, dead condensate sample.
04:33	63.6	Switched flow through 40/64" adjustable choke.
04:34	63.6	Bled annulus to 1200psi.
04:35	63.6	Finished taking sample 1.08.
04:41	63.7	Increased to 48/64" adjustable choke.
04:43	63.7	Switched flow through 48/64" fixed choke. (Multi Flow Period #2)
04:51	63.8	Lowered 3.25" orifice plate.
04:52	63.9	Raised 3.25" orifice plate.
04:59	64.0	Lowered 3.75" orifice plate.
09:32	68.5	Commenced sample 1.09, PVT gas (bottle 1657A).
09:58	69.0	Finished taking sample 1.09.
10:31	69.5	Raised orifice plate.
10:32	69.5	Switched flow through 48/64" adjustable choke. (Multi Flow Period #3)
10:33	69.6	Increased to 64/64" adjustable choke.
10:38	69.6	Switched flow through 64/64" fixed choke.
10:40	69.7	Lowered 4" orifice plate.

SEQUENCE OF EVENTS

Date/Time Elapse Time	Events
09-Nov-03	
10:44 69.7	Bypassed steam exchanger.
11:36 70.6	Bled annulus to 1300psi.
12:30 71.5	Finished taking sample 1.11 1 It drum from water sight glass on separator.
14:35 73.6	Finished taking sample 1.12 20 It drum from water line.
15:15 74.3	Commenced samples 1.13 & 1.14, PVT condensate (bottle 7276-MA) & PVT gas (bottle A2633).
15:37 74.6	Finished taking samples 1.13 & 1.14.
16:46 75.8	Shut in well at PCT and choke manifold for build up 3. (Build Up Period #3)
16:47 75.8	Closed choke manifold.
17:00 76.0	Finished taking sample 1.15 20 It drum from water sight glass on separator.
17:10 76.2	Finished taking sample 1.16 1 It drum from water line.
17:12 76.2	Finished taking sample 1.17 1 It drum from water line.
17:13 76.2	Finished taking sample 1.18 1 It drum from water sight glass on separator.
17:14 76.2	Finished taking sample 1.19 1 It drum from water sight glass on separator.
19:00 78.0	Emptied separator fluids into the surge tank to calculate BSW for Multi Flow Period.
19:35 78.6	BSW = 57% water. Condensate = 10.91bbbls, water = 14.43bbbls.
19:45 78.8	Commenced pumping out of surge tank to starboard flare.
20:00 79.0	Finished pumping, contents of surge tank empty.
10-Nov-03	
02:30 85.5	Held JSA on rig floor prior to killing the well.
03:08 86.1	Opened kill wing valve.
03:13 86.2	Applied 1500psi to annulus to open the PCT.
03:16 86.3	Good indication PCT opened.
03:17 86.3	Commenced bullheading brine into formation at 10bbbls/min.
03:35 86.6	Commenced flow check. 101.8bbbls brine pumped.
03:49 86.8	Bled off tubing pressure at choke manifold.
03:52 86.9	Closed choke manifold.
04:08 87.1	Opened choke manifold to starboard burner while reverse circulating tubing volume.
04:12 87.2	Closed choke manifold.
04:14 87.2	Commenced cycling PCT to lock open position.
04:18 87.3	Opened LPR
04:19 87.3	Opened choke manifold.
04:20 87.3	Picked up string by 8 m.
04:30 87.5	Closed LPR
04:43 87.7	Commenced cycling PCT into hold open.
05:25 88.4	PCT in hold open.
05:52 88.9	Finished reversing from annulus to burner.
05:56 88.9	Commenced flushing across the flow head.
06:08 89.1	Finished flushing surface equipment.
06:12 89.2	Commenced reverse circulation
08:13 91.2	Finished reverse circulation. 130 bbls pump
08:30 91.5	Good inflow test.
08:33 91.5	Commenced circulation
09:21 92.3	Finished circulation.
09:27 92.5	Stung back into packer for cycling SHORT. To pull string dry.
09:28 92.5	Pressure up annulus to cycle SHORT
09:29 92.5	Closed LPR
09:31 92.5	Bled off pressure to annulus.

SEQUENCE OF EVENTS

Date/Time	Elapse Time	Events
10-Nov-03		
09:33	92.6	Opened LPR.
09:35	92.6	Raised string out of packer.
09:45	92.8	STAN system turn off.
09:50	92.8	Finished rig down of Colflex hoses off FH.
10:30	93.5	Finished rig down of FH
11:15	94.3	Finished rig down of bails.
12:00	95.0	Finished rig down of lubricator valve.
12:42	95.7	Finished rig down of SSTT.
12:50	95.8	Continued to pull out oh hole with 4 1/2" tubing.
19:40	102.7	Commenced to lay out BHA.
21:00	104.0	Finished lay out of BHA.
21:01	104.0	End of test.



WELL TESTING REPORT

MAIN RESULTS

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

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Schlumberger representative : E. Caina



Santos VIC/P44 / Casino 3 / Appraisal	MAIN RESULTS	MAIN RESULT 1 2003-017
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Test Interval : Waarre Sandstone
Gauge name / type : 3818-P / WCQR

Perforated Interval : 2004 - 2013m MDRT
Gauge data : 1967.73m MDRT

FP#	Operation	Duration Time hrs	Choke Size		Bottomhole Conditions		Wellhead Conditions		Cond Rate stbd	Water Rate bwpcd	Gas Rate MMscfd	WGR bbl/Mscf	Cond API API60	Gas s.g. Air=1	BSW %	pH	Chloride mg/l	CO2 %	H2S ppm
			size	Equiv.	Press	Temp.	Press	Temp.											
			64th	64th	psiA	degC	psiA	degC											
1	Intial flow	0.15	24		2849	86	593	18											
	Intial Shut in	2.02			2864	86	117	15											
	Clean up Flow	7.53	64		2722	91	1839	46		44.93			0.608				0.3	0	
2	Build Up 2	6.17			2831	90	2387	25											
3	Multi Rate Test**																		
	Multi Rate #1	6.67	36		2830	93	2382	38	4	5.80	19.54		46.373	0.604	57			0.25	0
	Multi Rate #2	5.92	48		2797	93	2216	47	9	11.30	27.41		33.232	0.604	57			0.32	0
	Multi Rate #3	6.25	64		2729	92	1863	52	21	27.70	44.51		33.232	0.608	57			0.65	0
4	Final Shut in	10.25			2859	90	1627	13											

Remarks :

* Values are taken at end of each flow period or the nearest available value where applicable.

** Condensate and Water rates were calculated based on an average BSW from Multi Rate Test period.

Main Results



Santos VIC/P44 / Casino 3 / Appraisal	WELL TESTING DATA SHEET	Main Data 1 2003-017
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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio	
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR		
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp	
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bb/MM	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
08-Nov-03																									
05:00			3173	85	23	16	18		10																
05:35			3173	85	23	16	18		9	Held JSA on the rig floor prior to perforating the well.															
05:44			2490	85	23	15	18		467	Pressured annulus to 1500psi to open the PCT.															
05:45			2344	85	31	15	18		1512	Pressured tubing to 4000 psi from cement unit.															
05:46			2343	86	32	15	18		1503																
05:47			2343	86	32	15	18		1494																
05:48			2343	86	32	15	18		1488																
05:49			2809	86	216	15	18		1490																
05:50			4072	86	1392	15	18		1529																
05:51			5137	86	2598	15	18		1569																
05:52			6338	86	4004	15	18		1629																
05:53			6321	86	3981	15	18		1630	Pressure bled off at choke manifold to activated HDF firing head.															
05:53			6321	86	3981	15	18		1630																
05:54			4798	86	3049	16	23		1597																
05:55			2415	85	635	16	75		1499																
05:56			2352	86	38	17	33		1476																
05:57			2361	86	47	17	19		1475																
05:58			2368	86	53	16	18		1472																
05:59			2373	86	59	16	18		1472																
06:00			2377	86	62	16	18		1470																
06:01			2381	86	67	16	18		1470																
06:02			2384	86	70	16	18		1467	Good indication guns fired.															
06:03	16		2813	86	427	16	18		1479	Opened well on 16/64" adjustable choke to surge tank. (Initial Flow Period)															
06:03	16		2813	86	427	16	18		1479																
06:04	16		2816	86	491	16	21		1480																



Santos VIC/P44 / Casino 3 / Appraisal	WELL TESTING DATA SHEET	Main Data 2003-017	2
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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio	
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR		
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp	
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
08-Nov-03																									
06:05	16		2822	86	497	16	21		1479																
06:06	20		2823	86	494	16	21		1481	Increased to 20/64" adjustable choke.															
06:07	24		2823	86	491	16	30		1482	Increased to 24/64" adjustable choke.															
06:08	24		2831	86	496	15	81		1485																
06:09	24		2837	86	517	15	150		1494																
06:10	24		2841	86	538	15	154		1503																
06:11	24		2845	86	562	17	159		1514																
06:12	24		2849	86	593	18	169		1523	14 bbls return to Surge tank.															
06:13			2853	86	631	19	179		1537	Shut in well at PCT and choke manifold for initial build up. (Initial Shut-In Period)															
06:14			2862	86	532	19	61		16																
06:15			2863	86	523	19	21		16																
06:20			2864	86	497	17	18		15																
06:25			2864	86	474	17	21		15																
06:30			2864	86	453	17	21		18																
06:45			2864	86	394	16	21		15																
07:00			2864	86	341	16	19		15																
07:15			2864	86	294	15	18		15																
07:30			2864	86	249	15	15		15																
07:45			2864	86	202	15	12		15																
08:00			2864	86	153	15	12		15																
08:10			2864	86	123	15	12		15																
08:11			2864	86	120	15	12		15																
08:12			2864	86	117	15	12		15																
08:13			2864	86	115	15	12		15	Pressured up annulus to 1500psi to open PCT.															
08:14	16		2864	86	113	15	12		164	Opened well on 16/64" adjustable choke to surge tank. (Clean-up Flow Period)															



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
08:15	16		2863	86	680	15	13		1449															
08:16	16		2863	86	689	15	12		1485															
08:17	16		2863	86	696	15	13		1478															
08:18	16		2862	86	703	14	20		1475															
08:19	16		2862	86	715	14	25		1473															
08:20	16		2861	86	726	15	27		1473															
08:21	16		2861	86	736	15	28		1473															
08:22	20		2861	86	748	14	28		1476	Increased to 20/64" adjustable choke.														
08:23	20		2861	86	751	14	32		1476															
08:24	20		2861	86	781	14	102		1480															
08:25	20		2861	86	812	15	107		1487															
08:26	20		2861	87	844	17	109		1493															
08:27	20		2861	87	876	17	112		1501															
08:28	20		2861	87	908	18	116		1508															
08:29	20		2861	87	941	19	120		1517															
08:30	20		2861	87	975	19	115		1525	Diverted flow from Surge tank to Burner.														
08:32	24		2861	87	1044	20	53		1542	Increased to 24/64" adjustable choke.														
08:35	24		2860	87	1183	21	71		1574															
08:37	24		2860	87	1302	22	74		1600	BSW 100% diesel.														
08:38	24		2859	87	1362	23	77		1612	Commenced methanol injection at upstream data header.														
08:40	24		2859	87	1489	24	77		1636															
08:45	24		2858	87	1832	25	80		1688															
08:48	32		2859	87	2002	24	258		1293	Increased to 32/64" adjustable choke.														
08:50	32		2850	87	2090	23	287		1311															
08:53			2846	87	2328	26	312		1336	Shut in well at choke manifold to allow re-ignition of pilots.														



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			Press	Temp	Press	Temp	Press		Press	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	psiA	degC	psiA	degC	psiA		psiA	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
08:55			2863	87	2438	26	13		1348															
09:00			2863	87	2438	25	12		1333															
09:05			2861	87	2441	25	12		1314															
09:09			2861	87	2441	24	12		1302	Commenced pumping from surge tank to burner.														
09:10			2860	87	2441	24	12		1300															
09:15	16		2859	87	2440	24	10		1286	Opened well on 16/64" adjustable choke to burner														
09:16	20		2861	87	2437	23	48		1285	Increased to 20/64" adjustable choke.														
09:19	24		2857	87	2426	19	91		1289	Increased to 24/64" adjustable choke.														
09:20	24		2854	87	2404	18	237		1292	Diverted flow through steam exchanger. Gas at surface														
09:21	24		2846	87	2366	18	310		1296	Increased to 28/64" adjustable choke.														
09:25	28		2845	87	2384	20	389		1333															
09:29	32		2843	88	2385	20	395		1372	Increased to 32/64" adjustable choke.														
09:30	32		2835	88	2346	20	589		1381										0.45	0				
09:33	32		2860	88	2483	22	127		1401	Exercised choke.														
09:35	32		2862	88	2485	21	65		1401															
09:36	36		2862	88	2485	21	65		1400	Increased to 36/64" adjustable choke.														
09:40	36		2845	88	2402	19	398		1405															
09:45	36		2842	88	2396	21	404		1453					225.9	7.30	115								
09:46	36		2841	88	2393	21	417		1462	BSW 95%														
09:50	36		2839	88	2394	22	387		1496															
09:55	36		2839	88	2389	22	410		1544															
10:00	36		2839	88	2391	23	423		1589											0.4	0			
10:15	40		2837	88	2402	24	420		1710	Increased to 40/64" adjustable choke.														
10:16	40		2828	89	2352	24	509		1717															
10:17	40		2826	89	2343	24	514		1726															

ms/cm millisiemens/ centimeter

ppk parts per 1000



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Time	Flowing Condition											Fluid Properties								Production Rate			Ratio	
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bb/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
10:18	40		2826	89	2338	25	527		1736															
10:19	40		2826	89	2338	26	528		1747															
10:20	40		2826	89	2338	26	528		1758															
10:21	40		2826	89	2338	26	533		1390															
10:22	40		2826	89	2340	26	535		1304	Bled off annulus pressure to 1300														
10:23	40		2826	89	2340	26	539		1318															
10:24	40		2826	89	2341	26	537		1331															
10:25	40		2826	89	2343	26	540		1342															
10:30	40		2825	89	2344	26	552		1394															
10:45	44		2826	89	2349	27	577		1533	Increased to 44/64" adjustable choke.														
10:46	44		2819	89	2320	27	687		1541															
10:47	44		2817	89	2314	27	758		1550															
10:48	44		2817	89	2314	28	821		1559															
10:49	44		2817	89	2311	28	728		1569	Exercised choke.														
10:49	44		2817	89	2311	28	728		1569															
10:50	44		2813	89	2297	28	845		1579															
10:51	44		2819	89	2324	29	693		1590	Increased to 42/64" adjustable choke.														
10:51	42		2819	89	2324	29	693		1590															
10:52	42		2816	89	2300	29	742		1599															
10:53	42		2816	89	2299	29	792		1609															
10:54	42		2816	89	2302	29	795		1619															
10:55	42		2816	89	2302	29	874		1629															
10:56	42		2816	89	2304	29	879		1639	Bled off annulus pressure to 1300.														
11:00	42		2817	89	2308	29	777		1355										0.45	0				
11:06	42		2821	89	2335	29	746		1413	Opened steam exchanger bypass by a couple of turns to reduce unstable WHDCP.(possible hydrate)														



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
11:10	42		2822	89	2338	29	636		1445															
11:15	42		2822	89	2341	30	710		1483															
11:18	42		2822	89	2340	30	673		1505	Closed steam exchanger bypass.														
11:20	42		2822	90	2343	29	682		1520															
11:25	42		2822	90	2344	30	678		1555															
11:30	44		2822	90	2343	30	664		1589	Increased to 44/64" adjustable choke.														
11:31	44		2808	90	2277	30	817		1594															
11:32	44		2799	90	2239	30	875		1601															
11:33	44		2796	90	2221	31	823		1609															
11:34	44		2797	90	2216	32	791		1618															
11:35	44		2797	90	2213	32	785		1628															
11:38	44		2798	90	2207	32	766		1659	Bled off annulus pressure to 1300.														
11:40	44		2798	90	2207	32	775		1313															
12:00	44		2799	90	2240	34	770		1496										0.35	0				
12:15	44		2799	90	2251	35	771		1608															
12:17	44		2793	90	2229	35	799		1622	Bled off annulus pressure to 1300.														
12:22	52		2766	90	2057	36	926		1298	Increased to 52/64" adjustable choke.														
12:23	52		2766	90	2048	36	918		1308															
12:24	52		2766	90	2045	36	916		1318															
12:25	52		2766	90	2048	36	918		1327															
12:30	52		2767	90	2057	37	922		1372															
12:37	52		2766	90	2069	37	917		1430	Finished pumping methanol to data header.														
12:54	52		2766	90	2086	39	921		1554	Opened inlet valve to separator.														
13:01	58		2767	91	2099	39	908		1445	Increased to 58/64" adjustable choke.														
13:02	58		2751	91	2010	39	1007		1308										0.35	0				



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
13:03	58		2740	91	1947	39	1056		1308															
13:04	58		2736	90	1918	39	1069		1315															
13:05	58		2738	90	1912	39	1063		1322															
13:10	58		2739	90	1904	41	1066		1356															
13:15	58		2738	91	1913	41	1063		1388															
13:20	58		2737	91	1921	41	1069		1419															
13:25	58		2737	91	1927	42	1065		1447															
13:30	58		2737	91	1930	42	1029		1473															
13:34	64		2714	91	1780	42	1063		1487	Diverted flow from adjustable choke 58/64" to fixed choke 64/64".														
13:35	64		2702	91	1676	42	1149		1490															
13:36	64		2719	91	1788	42	1024		1496															
13:37	64		2722	91	1798	42	1030		1502															
13:38	64		2722	91	1798	42	1030		1506															
13:39	64		2722	91	1801	43	1025		1511															
13:40	64		2722	91	1803	43	782		1516															
13:45	64		2720	91	1812	42	786		1538															
13:50	64		2720	91	1821	43	791		1561															
13:55	64		2719	91	1827	43	794		1582															
14:00	64		2719	91	1827	43	901		1602										0.3	0				
14:03	64		2720	91	1829	43	914		1614	Bled off annulus pressure to 1300.														
14:14	64		2721	91	1824	44	912		1351	Lowered 4" orifice plate.														
14:15	64		2722	91	1821	44	914		1354	709	35	18						0.604	0.3	0		44.83		
14:30	64		2723	91	1818	44	913		1397	709	36	18						0.604	0.3	0		44.80		
14:45	64		2722	91	1830	45	913		1435	708	36	19						0.604	0.3	0		45.03		
15:00	64		2722	91	1827	45	913		1469	708	35	19						0.604	0.3	0		44.97		



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
15:15	64		2722	91	1836	46	912		1499	709	31	20						0.608	0.3	0		44.96		
15:30	64		2722	91	1839	46	910		1529	708	31	26						0.608	0.3	0		44.89		
15:43	64		2722	91	1839	46	909		1551	707	30	23						0.608	0.3	0		44.93		
15:44	64		2722	91	1839	46	909		1552	Raised orifice plate.														
15:45			2722	91	1839	47	906		1555	Shut in well at PCT and choke manifold for build up 2. (Build Up Period #2)														
15:46			2854	91	1692	46	762		17	Closed choke manifold.														
15:47			2855	91	1703	46	24		13															
15:48			2855	91	1692	46	15		13															
15:49			2856	91	1683	45	15		13															
15:50			2856	90	1677	45	15		13															
15:51			2856	90	1673	44	15		13															
15:52			2857	90	1668	44	15		13															
15:53			2857	90	1665	44	15		13															
15:54			2857	90	1662	43	15		13															
15:55			2857	90	1659	43	15		12															
15:56			2857	90	1656	43	15		12															
15:57			2857	90	1653	43	15		12															
15:58			2858	90	1651	42	15		10															
15:59			2858	90	1650	42	15		9															
16:00			2858	90	1647	42	15		10															
16:15			2859	90	1621	37	15		7															
16:30			2859	90	1600	34	15		22															
16:45			2860	90	1576	31	15		13															
17:00			2860	90	1553	28	15		45															
17:03			2860	90	1559	28	15		42	Opened SSV and PWV on FH after repairs to ESD panel.														



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bb/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
17:30			2860	90	1656	25	15		66															
18:00			2861	89	1647	22	15		36															
18:30			2861	89	1639	21	15		60															
19:00			2861	89	1632	19	15		57															
19:30			2861	89	1626	18	15		78															
20:00			2861	89	1621	17	15		33															
20:30			2861	89	1618	17	15		71															
21:00			2862	89	1615	16	15		60															
21:30			2862	89	1609	16	15		83	Held JSA on rig floor for Multi-flow period prior to opening well.														
21:36			2862	89	1609	16	15		80	Started methanol injection into data header, 60gallons/day.														
21:45			2862	89	1609	16	15		77															
21:48			2862	89	1609	16	15		77	Pressured annulus to 1500 psi to open PCT.														
21:52			2860	89	2458	17	15		1475															
21:55	36		2854	89	2505	19	95		1532	Opened well on 36/64" adjustable choke to gas flare. (Multi Flow Period #1)														
22:00	36		2831	90	2387	25	521		1571															
22:09	36		2841	91	2432	24	338		1313	Bled annulus to 1300psi.														
22:15	36		2841	91	2432	26	422		1368															
22:29	36		2838	91	2439	27	416		1472	Switched flow through 36/64" fixed choke.														
22:30	36		2832	91	2385	27	531		1478															
22:38	36		2830	91	2376	30	535		1552	CO2 = 0.3%, H2S = 0ppm														
22:45	36		2830	91	2375	31	540		1322															
22:46	36		2831	91	2373	31	539		1331	Bled annulus to 1300psi.														
23:00	36		2830	92	2373	32	607		1437	Diverted flow through separator on 36/64" fixed choke.														
23:12	36		2830	92	2373	33	613		1514	Lowered 3" orifice plate.														
23:15	36		2830	92	2376	33	615		1532	398	26	16						0.604	0.3	0		20.02		



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	Press	Temp	Temp	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpc	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
08-Nov-03																								
23:26	36		2830	92	2376	33	615		1326	Bled annulus to 1300psi.														
23:30	36		2831	92	2378	33	620		1348	Stopped methanol injection into data header.														
23:45	36		2831	92	2378	33	627		1422	394	28	18						0.604	0.3	0		19.51		
09-Nov-03	36		2831	92	2378	34	628		1486	396	30	17						0.604	0.3	0		19.56		
00:15	36		2831	92	2381	34	624		1543	395	28	17						0.604	0.3	0		19.66		
00:30	36		2831	92	2381	34	623		1596	393	28	17						0.604	0.3	0		19.57		
00:45	36		2831	92	2381	35	622		1644	393	29	16						0.604	0.3	0		19.54		
00:57	36		2831	92	2381	35	623		1427	Bled annulus to 1400psi.														
01:00	36		2831	92	2381	35	620		1436	391	29	17						0.604	0.3	0		19.55		
01:15	36		2831	92	2381	36	629		1475	393	29	17						0.604	0.3	0		19.57		
01:30	36		2831	92	2381	36	623		1511	394	31	16						0.604	0.3	0		19.55		
01:45	36		2830	92	2381	36	625		1543	394	29	17						0.604	0.3	0		19.60		
02:00	36		2831	92	2381	37	624		1575	392	31	18						0.604	0.3	0		19.58		
02:15	36		2830	92	2381	36	624		1602	391	30	18						0.612	0.3	0		19.47		
02:30	36		2830	92	2382	37	625		1629	391	32	17						0.604	0.3	0		19.54		
02:45	36		2830	92	2382	37	628		1396	392	32	18						0.604	0.3	0		19.54		
02:49	36		2830	92	2381	37	626		1402	Bled annulus to 1400psi.														
03:00	36		2830	92	2382	37	624		1419	393	32	20						0.604	0.3	0		19.55		
03:15	36		2830	92	2381	37	626		1440	393	32	19						0.604	0.3	0		19.53		
03:30	36		2830	92	2382	38	625		1458	391	32	19						0.604	0.3	0		19.53		
03:35	36		2830	92	2382	37	628		1464	Began samples 1.06 & 1.07, PVT condensate (bottle 6808-MA) & PVT gas (bottle 42106).														
03:45	36		2830	93	2382	38	627		1475	391	31	18						0.604	0.3	0		19.56		
03:58	36		2830	93	2382	38	630		1487	Finished taking samples 1.06 & 1.07.														
04:00	36		2830	93	2382	37	629		1490	392	33	18						0.604	0.3	0		19.54		
04:15	36		2830	93	2382	38	630		1505	392	32	22						0.604	0.3	0		19.54		



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio	
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR		
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp	
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
09-Nov-03																									
04:30	36		2830	92	2381	39	629		1198	Raised 3" orifice plate.															
04:30	36		2830	92	2381	39	629		1198	Raised 3" orifice plate.															
04:33	40		2830	93	2381	39	625		1203	Switched flow through 40/64" adjustable choke.															
04:34	40		2828	93	2382	39	629		1204	Bled annulus to 1200psi.															
04:35	40		2830	93	2384	38	614		1204	Finished taking sample 1.08.															
04:41	48		2832	93	2396	38	637		1210	Increased to 48/64" adjustable choke.															
04:43	48		2793	93	2224	39	853		1209	Switched flow through 48/64" fixed choke. (Multi Flow Period #2)															
04:45	48		2797	92	2216	41	835		1215																
04:51	48		2797	92	2215	42	826		1242	Lowered 3.25" orifice plate.															
04:52	48		2797	92	2213	42	830		1247	Raised 3.25" orifice plate.															
04:59	48		2797	92	2213	42	822		1272	Lowered 3.75" orifice plate.															
05:00	48		2797	92	2213	42	824		1274	406	43	21						0.604	0.0	0		26.96			
05:15	48		2797	92	2213	43	806		1319	404	29	22						0.604	0.0	0		27.68			
05:30	48		2797	92	2216	44	797		1356	402	29	21						0.604	0.0	0		27.68			
05:45	48		2797	92	2216	44	794		1387	402	28	20						0.604	0.0	0		27.72			
06:00	48		2797	92	2216	44	796		1411	401	29	19						0.604	0.0	0		27.68			
06:15	48		2797	92	2216	44	794		1434	402	29	19						0.604	0.0	0		27.70			
06:30	48		2798	92	2219	45	797		1452	402	30	23						0.604	0.0	0		27.63			
06:45	48		2797	92	2219	45	796		1469	401	30	21						0.604	0.0	0		27.66			
07:00	48		2797	92	2219	45	795		1481	401	30	21						0.606	0.3	0		27.62			
07:15	48		2797	92	2219	45	794		1494	400	30	23						0.606	0.3	0		27.58			
07:30	48		2797	93	2219	46	796		1505	400	31	23						0.606	0.3	0		27.56			
07:45	48		2798	93	2219	46	797		1514	402	32	21						0.606	0.3	0		27.49			
08:00	48		2797	93	2216	46	794		1523	403	32	20						0.602	0.3	0		27.58			
08:15	48		2797	93	2216	46	793		1532	403	29	20						0.602	0.3	0		27.64			



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	Press	Temp	Temp	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpc	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
09-Nov-03																								
08:30	48		2797	93	2216	46	794		1537	403	29	19						0.602	0.3	0		27.52		
08:45	48		2797	93	2216	46	794		1546	403	30	22						0.602	0.3	0		27.46		
09:00	48		2797	93	2213	47	793		1549	403	30	23						0.602	0.3	0		27.50		
09:15	48		2797	93	2213	47	791		1555	403	29	21						0.602	0.3	0		27.50		
09:30	48		2797	93	2214	46	791		1561	403	29	21						0.602	0.3	0		27.49		
09:32	48		2797	93	2213	46	795		1561	Commenced sample 1.09, PVT gas (bottle 1657A).														
09:45	48		2797	93	2213	47	794		1567	405	30	20						0.602	0.3	0		27.48		
09:58	48		2797	93	2213	46	794		1570	Finished taking sample 1.09.														
10:00	48		2797	93	2213	46	792		1570	405	29	19						0.604	0.3	0		27.47		
10:15	48		2797	93	2213	46	792		1576	406	29	21						0.604	0.3	0		27.47		
10:30	48		2797	93	2216	47	794		1579	405	29	23						0.604	0.3	0		27.41		
10:31	48		2788	93	2161	47	867		1579	Raised orifice plate.														
10:32	48		2747	93	1922	46	1117		1573	Switched flow through 48/64" adjustable choke. (Multi Flow Period #3)														
10:33	64		2724	93	1763	46	1240		1564	Increased to 64/64" adjustable choke.														
10:38	64		2734	92	1811	49	1156		1565	Switched flow through 64/64" fixed choke.														
10:40	64		2735	92	1824	48	1162		1570	Lowered 4" orifice plate.														
10:44	64		2734	92	1833	49	1173		1575	Bypassed steam exchanger.														
10:45	64		2733	92	1836	49	831		1575	572	26	22						0.604	0.3	0		44.08		
11:00	64		2732	92	1842	49	811		1588	572	22	24						0.604	0.3	0		44.40		
11:15	64		2731	92	1854	50	814		1598	572	22	23						0.604	0.3	0		44.48		
11:30	64		2730	92	1860	50	815		1606	573	22	21						0.604	0.3	0		44.66		
11:36	64		2730	92	1860	50	815		1608	Bled annulus to 1300psi.														
11:45	64		2730	92	1860	50	815		1325	573	22	21						0.604	0.3	0		44.66		
12:00	64		2730	92	1860	51	815		1330	573	23	21						0.605	0.3	0		44.61		
12:15	64		2730	92	1860	50	815		1336	573	22	21						0.605	0.3	0		44.61		



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio		
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR			
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp		
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	Press	Temp	Temp	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
09-Nov-03																										
12:30	64		2730	92	1860	50	815		1337	Finished taking sample 1.11 1 lt drum from water sight glass on separator.																
12:30	64		2730	92	1860	50	815		1337	573	23	21						0.605	0.3	0		44.64				
12:45	64		2729	92	1863	51	815		1339	572	23	22						0.605	0.3	0		44.61				
13:00	64		2729	92	1860	51	815		1342	573	23	22						0.605	0.3	0		44.63				
13:15	64		2729	92	1860	50	815		1345	573	23	22						0.606	0.3	0		44.60				
13:30	64		2729	92	1863	51	815		1347	572	23	22						0.606	0.3	0		44.58				
13:45	64		2729	92	1863	51	816		1348	573	23	22						0.606	0.3	0		44.58				
14:00	64		2729	92	1863	51	815		1351	572	23	23						0.606	0.3	0		44.58				
14:15	64		2729	92	1863	51	815		1354	572	23	23						0.606	0.7	0		44.59				
14:30	64		2729	92	1863	51	814		1354	573	23	22						0.609	0.7	0		44.46				
14:35	64		2729	92	1863	51	815		1354	Finished taking sample 1.12 20 lt drum from water line.																
14:45	64		2729	92	1863	51	815		1356	572	23	23						0.609	0.7	0		44.46				
15:00	64		2729	92	1863	52	815		1357	572	23	23						0.609	0.7	0		44.49				
15:15	64		2729	92	1863	52	815		1360	Commenced samples 1.13 & 1.14, PVT condensate (bottle 7276-MA) & PVT gas (bottle A2633).																
15:15	64		2729	92	1863	52	815		1360	572	24	24						0.609	0.7	0		44.48				
15:30	64		2729	92	1863	51	817		1363	573	23	24						0.608	0.7	0		44.50				
15:37	64		2729	92	1863	51	818		1363	Finished taking samples 1.13 & 1.14.																
15:45	64		2729	92	1863	52	815		1363	574	24	26						0.608	0.7	0		44.45				
16:00	64		2729	92	1863	52	815		1366	572	24	26						0.608	0.7	0		44.51				
16:15	64		2729	92	1865	51	815		1366	572	24	24						0.608	0.7	0		44.52				
16:30	64		2729	92	1863	51	815		1369	572	24	23						0.608	0.7	0		44.62				
16:45	64		2728	92	1863	51	814		1372	572	24	22						0.608	0.7	0		43.81				
16:46			2849	92	1748	50	537		13	Shut in well at PCT and choke manifold for build up 3. (Build Up Period #3)																
16:47			2850	92	1748	50	537		13	Closed choke manifold.																
16:48			2850	92	1748	50	537		13																	



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bb/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
09-Nov-03																								
16:49			2851	91	1748	50	537		13															
16:50			2851	91	1748	50	537		13															
16:51			2852	91	1748	49	537		13															
16:52			2852	91	1748	49	537		12															
16:53			2852	91	1745	49	537		13															
16:54			2852	91	1745	48	537		13															
16:55			2852	91	1745	48	534		13															
16:56			2852	91	1745	48	534		13															
16:57			2853	91	1745	47	532		13															
16:58			2853	91	1742	47	531		13															
16:59			2853	91	1742	47	531		13															
17:00			2853	91	1742	47	531		13	Finished taking sample 1.15 20 lt drum from water sight glass on separator.														
17:05			2853	91	1739	45	531		13															
17:10			2854	91	1736	44	523		13	Finished taking sample 1.16 1 lt drum from water line.														
17:12			2854	91	1733	44	523		13	Finished taking sample 1.17 1 lt drum from water line.														
17:13			2854	91	1733	43	523		13	Finished taking sample 1.18 1 lt drum from water sight glass on separator.														
17:14			2854	91	1733	43	523		13	Finished taking sample 1.19 1 lt drum from water sight glass on separator.														
17:15			2854	91	1733	43	523		13															
17:20			2854	91	1730	42	520		13															
17:25			2854	91	1727	41	403		13															
17:30			2854	91	1724	40	324		13															
17:45			2855	91	1718	37	12		11															
18:00			2855	91	1713	34	12		10															
18:15			2855	91	1707	32	12		10															
18:30			2856	91	1700	30	12		9															



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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpc	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
09-Nov-03																								
18:45			2856	91	1697	28	12		9															
19:00			2856	91	1691	26	12		10															
19:35			2857	91	1683	23	12		10	BSW = 57% water. Condensate = 10.91bbls, water = 14.43bbls.														
19:45			2857	91	1680	22	12		10	Commenced pumping out of surge tank to starboard flare.														
20:00			2857	91	1677	21	12		10	Finished pumping, contents of surge tank empty.														
20:00			2857	91	1677	21	12		10															
21:00			2857	90	1666	19	18		10															
22:00			2858	90	1656	17	12		9															
23:00			2858	90	1647	15	12		11															
00:00			2858	90	1641	15	12		10															
01:00			2858	90	1635	14	12		9															
02:00			2859	90	1632	14	12		9															
02:30			2859	90	1630	13	12		9	Held JSA on rig floor prior to killing the well.														
03:00			2859	90	1627	13	12		9															
03:08			2859	90	1627	13	12		9	Opened kill wing valve.														
03:13			2859	90	1627	13	12		10	Applied 1500psi to annulus to open the PCT.														
03:16			2806	90	2052	14	12		1267	Good indication PCT opened.														
03:17			2858	90	2520	17	12		1542	Commenced bullheading brine into formation at 10bbls/min.														
03:35			2875	90	736	11	12		1509	Commenced flow check. 101.8bbls brine pumped.														
03:49			4086	89	1027	13	12		1482	Bled off tubing pressure at choke manifold.														
03:52			2976	89	50	14	53		1464	Closed choke manifold.														
04:00			3001	89	68	14	21		1514															
04:08					103	14	19		1550	Opened choke manifold to starboard burner while reverse circulating tubing volume.														
04:12					29	13	29		1561	Closed choke manifold.														
04:14					34	14	18		1569	Commenced cycling PCT to lock open position.														



Santos VIC/P44 / Casino 3 / Appraisal	WELL TESTING DATA SHEET	Main Data 16 2003-017
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Time	Flowing Condition												Fluid Properties								Production Rate			Ratio
	Choke Size		Bottomhole		Wellhead				Separator			BSW	Conductivity	pH	Chloride	Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR	
			BHP	BHT	WHP	WHT	WHDCP		Casing	Sep. Press	Gas Temp													Oil Temp
hr:min	Size	Equiv.	Press	Temp	Press	Temp	Press		Press	psiA	degC	degC	%	ms/cm		ppk	API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
10-Nov-03																								
04:18					50	14	18		29	Opened LPR														
04:19					56	14	18		12	Opened choke manifold.														
04:20					35	14	36		13	Picked up string by 8 m.														
04:30					35	14	36		13	Closed LPR														
04:43					41	14	39		16	Commenced cycling PCT into hold open.														
05:00					149	14	38		893															
05:25					580	20	164		711	PCT in hold open.														
05:52					229	23	223		491	Finished reversing from annulus to burner.														
05:56					41	22	39		12	Commenced flushing across the flow head.														
06:00					47	19	46		13															
06:08					41	26	19		10	Finished flushing surface equipment.														
06:12					35	26	12		13	Commenced reverse circulation														
07:00					276	22	12		355															
08:00					218	19	9		299															
08:13					226	18	9		298	Finished reverse circulation. 130 bbls pump														
08:30					32	18	9		30	Good inflow test.														
08:33					29	18	9		30	Commenced circulation														
09:21					377	18	11		957	Finished circulation.														
09:27					27	18	12		10	Stung back into packer for cycling SHORT. To pull string dry.														
09:28					27	18	12		149	Pressure up annulus to cycle SHORT														
09:29					27	18	12		1176	Closed LPR														
09:31					79	18	12		218	Bled off pressure to annulus.														
09:33					27	18	12		10	Opened LPR.														
09:35					27	18	12		10	Raised string out of packer.														
09:45										STAN system turn off.														



WELL TESTING REPORT

LIQUID COMPUTATION RESULTS - by Tank

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina



Santos VIC/P44 / Casino 3 / Appraisal	OIL/CONDENSATE CALCULATION SHEET TANK	CONDENSATE 1 2003-017
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Date - Time		Tank		Tank	Tank Volume		Oil Gravity						Net STO	Nets STO	Cumulative	Water	Cumulative
Time	Interval	Left	Right	Factor	Vol V	Temp	Gravity	Temp.	Gravity	Gravity	K	BSW	Vol (Vo)	Prod. Rate	Production	Rate	H2O Prod.
	mins	cm	cm		bbl	degC	SG/API	degC	Sg60	API60		%	bbl	stbd	bbl	bbl/d	bbl
08-Nov-03																	
21:55	Commenced Multi Flow Periods, 36/64", 48/64" & 64/64" fixed choke.																
21:55	0		21.0												0.0		0.0
09-Nov-03																	
4:35	400		37	0.176	2.82	18	0.793	19	0.796	46.4	0.9974	57	1.21	4.3	1.2	5.8	1.6
10:32	357		65.0	0.176	4.93	18	0.855	21	0.859	33.2	0.9978	57	2.11	8.5	3.3	11.3	4.4
12:00	88		80.0	0.176	2.64	19	0.855	21	0.859	33.2	0.9969	57	1.13	18.5	4.5	24.6	5.9
12:01	Pumped 10 cm to burners.																
12:18	18		70.0														
16:42	370		144.0	0.176	13.90	26	0.855	21	0.859	33.2	0.9907	57	5.92	23.1	9.2	30.8	13.8

Due to the dry nature of the gas, BSW and liquid production rates could not be measured during the flow periods. All liquid was captured in the surge tank. Total liquid production for each choke was measured based on tank levels. The value for BSW was measured based on the percentage of water and condensate in the tank at the end of the test. The BSW is therefore an average for the whole test.



WELL TESTING REPORT

GAS COMPUTATION RESULTS

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina

Gas Production Rate Measurement by Orifice Meter

Reference is made to the rules and coefficients given in AGA gas measurement Committee Report No. 3 for orifice metering.

I) EQUATIONS

$$Q = C \sqrt{Hw \times Pf}$$

- Q : Production rate at reference conditions
- C : Orifice flow coefficient*
- Hw : Differential pressure in inches of water
- Pf : Flowing pressure in psiA

$$C = Fu \times Fb \times Fg \times Y \times Ftf \times Fpv$$

- Fu : Unit conversion factor in desired reference conditions
- Fb : Basic orifice factor (Q in Cu. ft/day)
- Fg : Specific gravity factor
- Y : Expansion factor
- Ftf : Flowing temperature factor
- Fpv : Supercompressibility factor (estimated)

*C is computed with 6 decimal points and could differ slightly from hand calculator results

Remarks

- Fm : Manometer factor is equal one since only bellows type meter are used.
- Fr : Reynolds factor is considered to be one.

TABLE of Fu FACTOR				
UNITS	REFERENCE CONDITIONS			
	60 degF 14.73 psia	0 degC 760 mm Hg*	15 degC 760 mm Hg*	15 degC 750 mm Hg*
Cu. ft/hr	1	0.9483	1.0004	1.0137
Cu. ft/D	24	22.76	24.009	24.329
m3/hr	0.02832	0.02685	0.02833	0.0287
m3/D	0.6796	0.6445	0.6799	0.6889

* mercury at 32 F

II) METER DATA

ID of meter tube : 5.761"

III) SUPERCOMPRESSIBILITY FACTOR Fpv

The coefficient is calculated from AGA NX 19 manual for natural gas free of air, CO2 and H2S. The method used to correct Fpv for CO2 and H2S is based on Wichert and Aziz data (Hydrocarbon Processing - May 1972).

Pressure and Specific gravity are adjusted according to percentages.



Santos VIC/P44 / Casino 3 / Appraisal	GAS CALCULATION SHEET	GAS 1 2003-017
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Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute	(Pf x Hw)	Diameter	Gravity										Rate : Q	Production
	mins	degC	psiA	" of H2O	Inches	Air=1	%	ppm								MMscfd	MMscf
08-Nov-03																	
12:54		Pass flow through Separator on 48/64" fixed choke															
13:34		Diverted flow from adjustable choke 58/64" to fix choke 64/64".															
14:14		Lower 4 " orifice plate.										CO 2 & H2S not included in the computation.					0.000
14:15	1	35	709	209	384.94	4.00	0.604	0.3	0	3718.20	1.2867	1.0013	0.9680	1.0464	116447	44.825	0.031
14:30	15	36	709	210	385.46	4.00	0.604	0.3	0	3718.20	1.2867	1.0013	0.9665	1.0458	116217	44.797	0.498
14:45	15	36	708	212	387.81	4.00	0.604	0.3	0	3718.20	1.2867	1.0013	0.9659	1.0456	116116	45.031	0.967
15:00	15	35	708	211	386.07	4.00	0.604	0.3	0	3718.20	1.2867	1.0013	0.9683	1.0464	116491	44.974	1.435
15:15	15	31	709	208	383.67	4.00	0.608	0.3	0	3718.20	1.2825	1.0013	0.9745	1.0495	117196	44.964	1.904
15:30	15	31	708	207	382.90	4.00	0.608	0.3	0	3718.20	1.2825	1.0013	0.9748	1.0496	117241	44.891	2.371
15:43	13	30	707	207	383.02	4.00	0.608	0.3	0	3718.20	1.2825	1.0013	0.9753	1.0497	117313	44.933	2.777
15:44	1	Raised orifice plate															
15:45	1	Shut in well at PCT and choke manifold for build up 2. (Clean -up Period)															
15:46	1	Closed choke manifold.															
23:00		Pass flow through Separator on 36/64" fixed choke															
23:12	12	Lowered 3" orifice plate															0.000
23:13	1	26	398	282	335.02	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9824	1.0283	59767	20.023	0.014
23:15	2	26	398	282	335.02	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9824	1.0283	59767	20.023	0.042
23:30	15	26	398	282	335.02	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9824	1.0283	59767	20.023	0.250
23:45	32	28	394	273	327.90	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9791	1.0273	59505	19.512	0.684
09-Nov-03																	
0:00	15	30	396	275	330.18	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9753	1.0267	59237	19.559	0.888
0:15	15	28	395	277	330.66	3.00	0.604	0.3	0	1907.81	1.2867	1.0042	0.9785	1.0273	59468	19.664	1.092
0:30	15	28	393	275	328.93	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9791	1.0273	59508	19.574	1.296
0:45	15	29	393	275	328.91	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9777	1.0270	59401	19.538	1.500
1:00	15	29	391	277	329.01	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9782	1.0269	59431	19.553	1.704



Santos VIC/P44 / Casino 3 / Appraisal	GAS CALCULATION SHEET	GAS 2 2003-017
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Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute		(Pf x Hw)	Diameter	Gravity									Rate : Q	Production
	mins	degC	psiA	" of H2O		Inches	Air=1	%	ppm							MMscfd	MMscf
09-Nov-03																	
1:15	15	29	393	276	329.45	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9775	1.0269	59390	19.566	1.907
1:30	15	31	394	277	330.07	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9751	1.0265	59220	19.547	2.111
1:45	15	29	394	276	330.09	3.00	0.604	0.25	0	1907.81	1.2867	1.0042	0.9770	1.0269	59361	19.595	2.315
2:00	15	31	392	280	331.01	3.00	0.612	0.25	0	1907.81	1.2783	1.0043	0.9740	1.0268	58786	19.459	2.518
2:15	15	30	391	280	330.53	3.00	0.612	0.25	0	1907.81	1.2783	1.0043	0.9754	1.0271	58886	19.464	2.721
2:30	15	32	391	280	330.65	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9735	1.0260	59098	19.541	2.924
2:45	15	32	392	279	330.82	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9729	1.0260	59057	19.537	3.128
3:00	15	32	393	279	330.86	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9733	1.0261	59091	19.551	3.331
3:15	15	32	393	279	330.92	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9721	1.0259	59000	19.524	3.535
3:30	15	32	391	280	330.78	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9724	1.0258	59019	19.522	3.738
3:45	15	31	391	280	330.86	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9737	1.0261	59110	19.557	3.942
4:00	15	33	392	280	331.25	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9719	1.0258	58987	19.539	4.145
4:15	15	32	392	279	330.61	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9732	1.0261	59079	19.532	4.349
4:30	15	31	391	281	331.30	3.00	0.604	0.25	0	1907.81	1.2867	1.0043	0.9738	1.0261	59123	19.588	4.553
4:31	1	Raised orifice plate.															
4:33	2	Switched flow through 40/64" adjustable choke.															
4:41	8	Increased to 48/64" adjustable choke.															
4:43	2	Switched flow through 48/64" fixed choke.															
4:59	16	Lowered 3.75" orifice plate															
5:00	1	43	406	194	280.41	3.75	0.604			3172.09	1.2867	1.0024	0.9562	1.0240	96142	26.959	4.571
5:15	15	29	404	195	280.73	3.75	0.604			3172.09	1.2867	1.0024	0.9770	1.0278	98606	27.682	4.860
5:30	15	29	402	196	280.74	3.75	0.604			3172.09	1.2867	1.0024	0.9770	1.0277	98595	27.679	5.148
5:45	15	28	402	196	280.68	3.75	0.604			3172.09	1.2867	1.0024	0.9785	1.0280	98769	27.722	5.437
6:00	15	29	401	196	280.46	3.75	0.604			3172.09	1.2867	1.0024	0.9780	1.0278	98704	27.682	5.725
6:15	15	29	402	196	280.76	3.75	0.604			3172.09	1.2867	1.0024	0.9775	1.0278	98650	27.697	6.014
6:30	15	30	402	196	280.62	3.75	0.604			3172.09	1.2867	1.0024	0.9759	1.0274	98454	27.628	6.302



Santos VIC/P44 / Casino 3 / Appraisal	GAS CALCULATION SHEET	GAS 3 2003-017
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Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute		(Pf x Hw)	Diameter	Gravity									Rate : Q	Production
	mins	degC	psiA	" of H2O		Inches	Air=1	%	ppm							MMscfd	MMscf
09-Nov-03																	
6:45	15	30	401	197	281.09	3.75	0.604			3172.09	1.2867	1.0024	0.9754	1.0273	98394	27.658	6.590
7:00	15	30	401	197	281.08	3.75	0.606	0.32	0	3172.09	1.2846	1.0024	0.9757	1.0273	98268	27.622	6.877
7:15	15	30	400	197	280.84	3.75	0.606	0.32	0	3172.09	1.2846	1.0024	0.9753	1.0271	98204	27.580	7.165
7:30	15	31	400	197	280.81	3.75	0.606	0.32	0	3172.09	1.2846	1.0024	0.9748	1.0271	98147	27.561	7.452
7:45	15	32	402	196	280.72	3.75	0.606	0.32	0	3172.09	1.2846	1.0024	0.9729	1.0268	97925	27.489	7.738
8:00	15	32	403	195	280.58	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9733	1.0266	98283	27.576	8.025
8:15	15	29	403	194	279.81	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9774	1.0274	98764	27.635	8.313
8:30	15	29	403	193	278.83	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9769	1.0273	98703	27.521	8.600
8:45	15	30	403	193	278.68	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9756	1.0271	98549	27.464	8.886
9:00	15	30	403	193	278.74	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9765	1.0273	98665	27.502	9.172
9:15	15	29	403	192	278.36	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9775	1.0275	98780	27.497	9.459
9:30	15	29	403	192	278.33	3.75	0.602	0.32	0	3172.09	1.2888	1.0024	0.9774	1.0274	98760	27.487	9.745
9:45	15	30	405	192	278.54	3.75	0.602	0.32	0	3172.09	1.2888	1.0023	0.9764	1.0274	98654	27.479	10.031
10:00	15	29	405	191	278.47	3.75	0.604	0.32	0	3172.09	1.2867	1.0023	0.9774	1.0278	98628	27.465	10.318
10:15	15	29	406	191	278.20	3.75	0.604	0.32	0	3172.09	1.2867	1.0023	0.9782	1.0280	98726	27.466	10.604
10:30	15	29	405	191	277.91	3.75	0.604	0.32	0	3172.09	1.2867	1.0023	0.9775	1.0278	98645	27.414	10.889
10:31	1	Raised orifice plate.															
10:32	1	Switched flow through 48/64" adjustable choke.															
10:32	0	Increased to 64/64" adjustable choke.															
10:38	6	Switched flow through 64/64" fixed choke.															
10:40	2	Lowered 4" orifice plate															
10:45	5	26	572	245	374.35	4.00	0.604	0.25	0	3718.20	1.2867	1.0019	0.9824	1.0416	117714	44.066	11.042
11:00	15	22	572	244	373.73	4.00	0.604	0.25	0	3718.20	1.2867	1.0019	0.9892	1.0438	118778	44.391	11.505
11:15	15	22	572	245	374.40	4.00	0.604	0.25	0	3718.20	1.2867	1.0019	0.9892	1.0438	118778	44.470	11.968
11:30	15	22	573	247	375.92	4.00	0.604	0.25	0	3718.20	1.2867	1.0019	0.9890	1.0438	118760	44.644	12.433
11:45	15	22	573	247	376.20	4.00	0.604	0.25	0	3718.20	1.2867	1.0019	0.9887	1.0437	118707	44.657	12.898



Santos VIC/P44 / Casino 3 / Appraisal	GAS CALCULATION SHEET	GAS 4 2003-017
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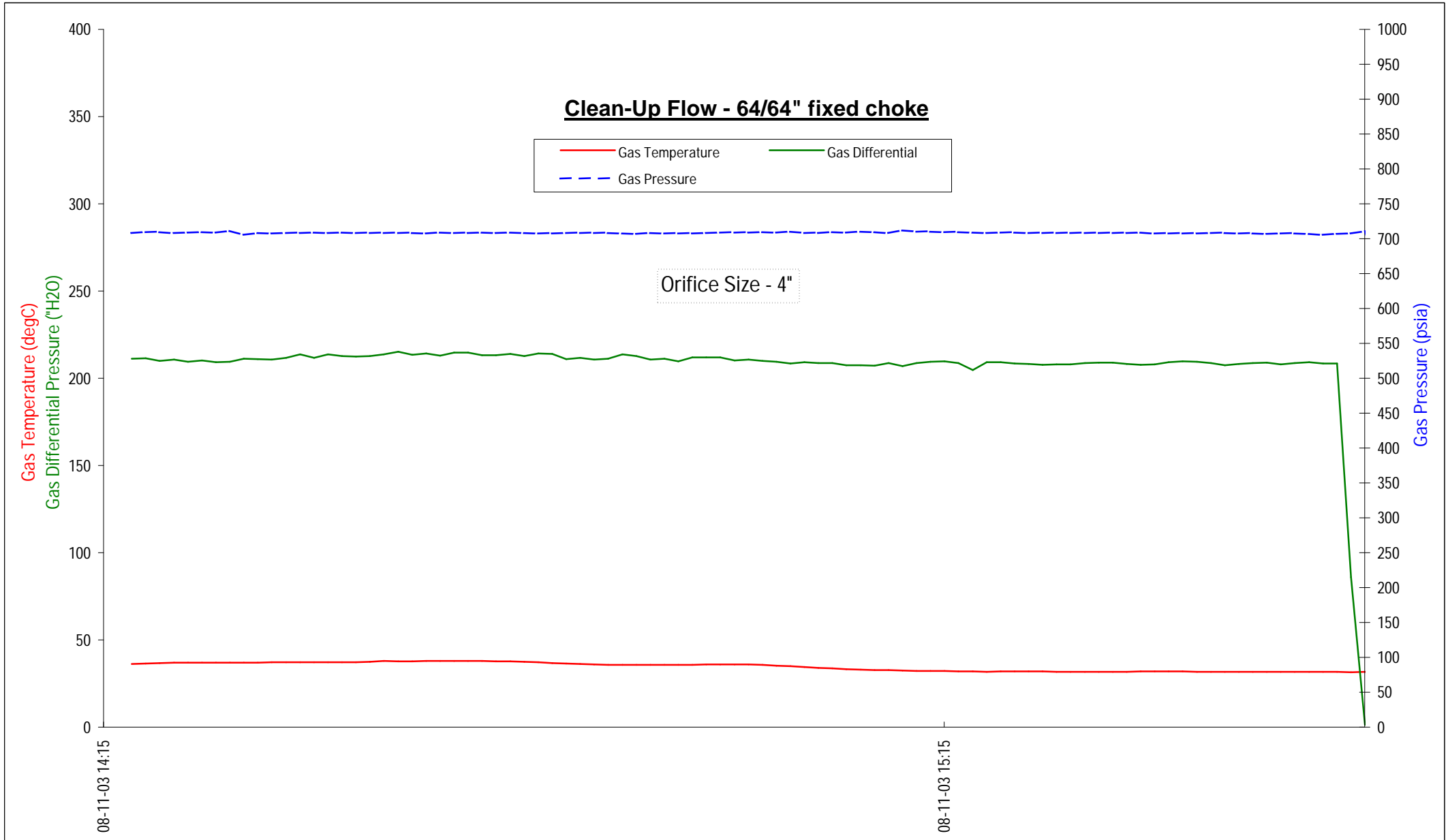
Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute		(Pf x Hw)	Diameter	Gravity									Rate : Q	Production
	mins	degC	psiA	" of H2O		Inches	Air=1	%	ppm							MMscfd	MMscf
09-Nov-03																	
12:00	15	23	573	247	376.34	4.00	0.605	0.25	0	3718.20	1.2856	1.0019	0.9882	1.0436	118548	44.614	13.363
12:15	15	22	573	247	376.21	4.00	0.605	0.25	0	3718.20	1.2856	1.0019	0.9884	1.0437	118574	44.609	13.828
12:30	15	23	573	248	376.65	4.00	0.605	0.25	0	3718.20	1.2856	1.0019	0.9880	1.0436	118523	44.641	14.293
12:45	15	23	572	248	376.59	4.00	0.605	0.25	0	3718.20	1.2856	1.0019	0.9877	1.0435	118467	44.613	14.757
13:00	15	23	573	248	376.80	4.00	0.605	0.25	0	3718.20	1.2856	1.0019	0.9875	1.0434	118443	44.629	15.222
13:15	15	23	573	248	376.67	4.00	0.606	0.25	0	3718.20	1.2846	1.0019	0.9879	1.0437	118413	44.602	15.687
13:30	15	23	572	248	376.63	4.00	0.606	0.25	0	3718.20	1.2846	1.0019	0.9875	1.0435	118359	44.577	16.151
13:45	15	23	573	247	376.59	4.00	0.606	0.25	0	3718.20	1.2846	1.0019	0.9875	1.0436	118367	44.576	16.615
14:00	15	23	572	248	376.60	4.00	0.606	0.25	0	3718.20	1.2846	1.0019	0.9877	1.0436	118384	44.584	17.080
14:15	15	23	572	248	376.93	4.00	0.606	0.65	0	3718.20	1.2846	1.0019	0.9875	1.0431	118310	44.595	17.544
14:30	15	23	573	248	376.74	4.00	0.609	0.65	0	3718.20	1.2814	1.0019	0.9872	1.0435	118023	44.464	18.008
14:45	15	23	572	248	376.92	4.00	0.609	0.65	0	3718.20	1.2814	1.0019	0.9869	1.0433	117959	44.461	18.471
15:00	15	23	572	249	377.26	4.00	0.609	0.65	0	3718.20	1.2814	1.0019	0.9867	1.0433	117938	44.493	18.934
15:15	15	24	572	249	377.29	4.00	0.609	0.65	0	3718.20	1.2814	1.0019	0.9864	1.0432	117887	44.478	19.397
15:30	15	23	573	248	377.06	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9867	1.0432	118026	44.502	19.861
15:45	15	24	574	247	376.65	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9865	1.0432	118005	44.446	20.324
16:00	15	24	572	249	377.36	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9862	1.0430	117941	44.506	20.788
16:15	15	24	572	249	377.29	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9865	1.0431	117993	44.517	21.251
16:30	15	24	572	250	378.24	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9864	1.0430	117966	44.620	21.716
16:45	15	24	572	241	371.30	4.00	0.608	0.65	0	3718.20	1.2825	1.0019	0.9865	1.0431	117986	43.808	22.172
16:46	1	Shut in well at PCT and choke manifold for build up 3. (Build Up Period #3)															
16:47	1	Closed choke manifold.															

Santos VIC/P44 / Casino 3 / Appraisal	Separator Plot	Gas 2003-017	1
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From Date Time : 08-Nov-03 14:15

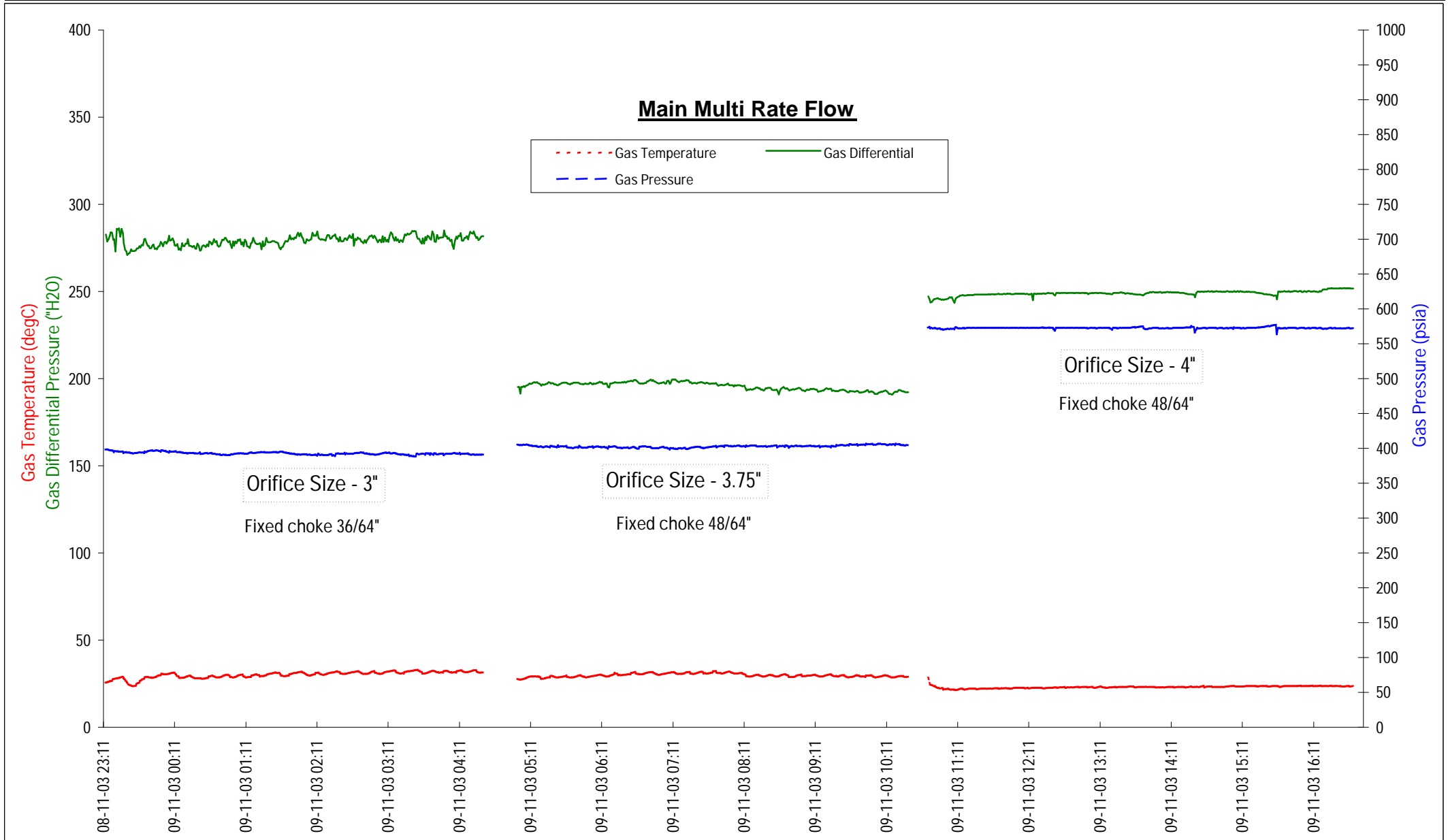
To Date Time : 08-Nov-03 15:45



Gas Plot

From Date Time : 08-Nov-03 23:11

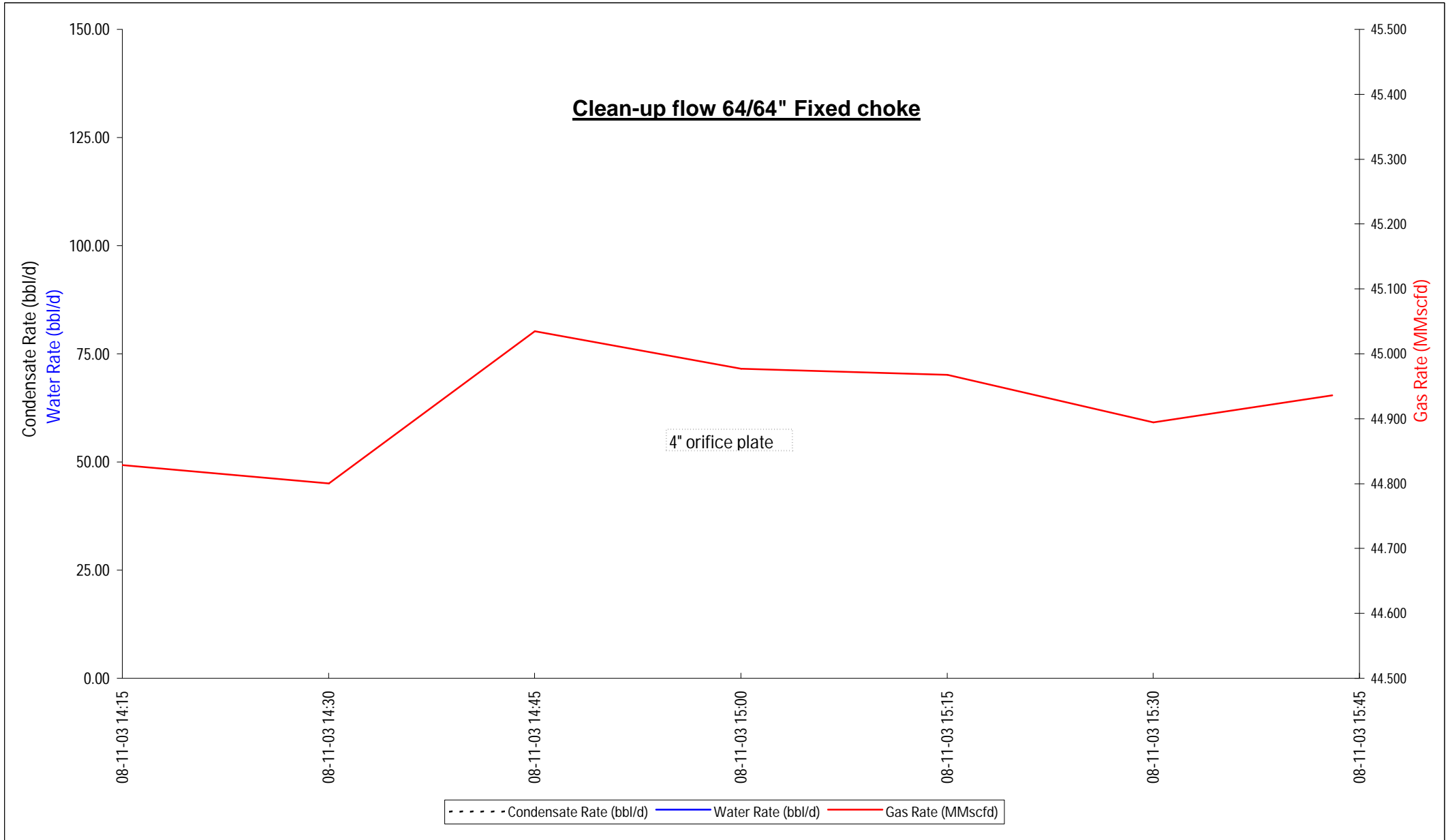
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Gas Plot

From Date Time : 08-Nov-03 14:15

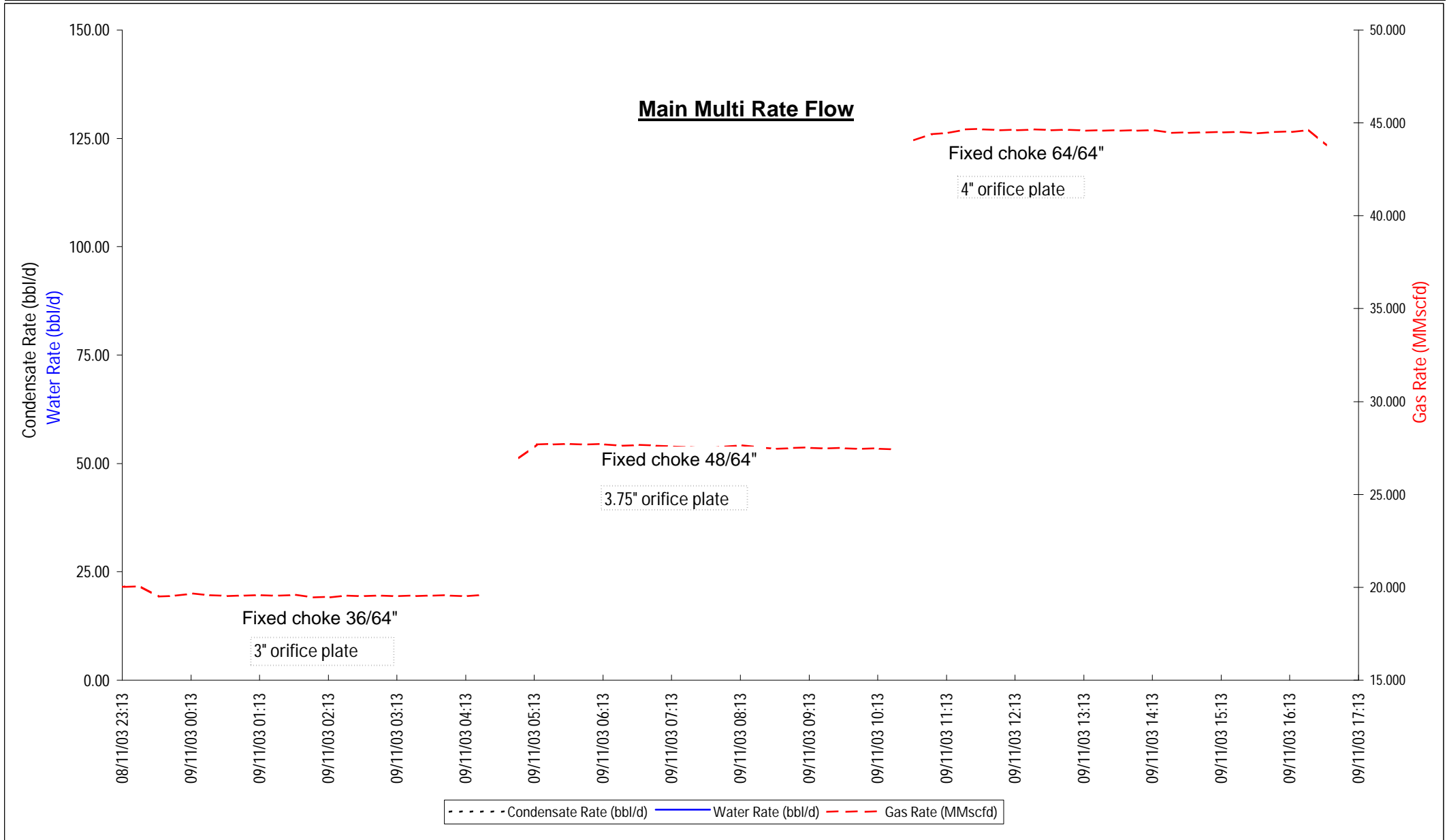
To Date Time : 08-Nov-03 15:45



Flow Rate Plot

From Date Time : 08-Nov-03 23:13

To Date Time : 09-Nov-03 16:49



Flow Rate Plot



WELL TESTING REPORT

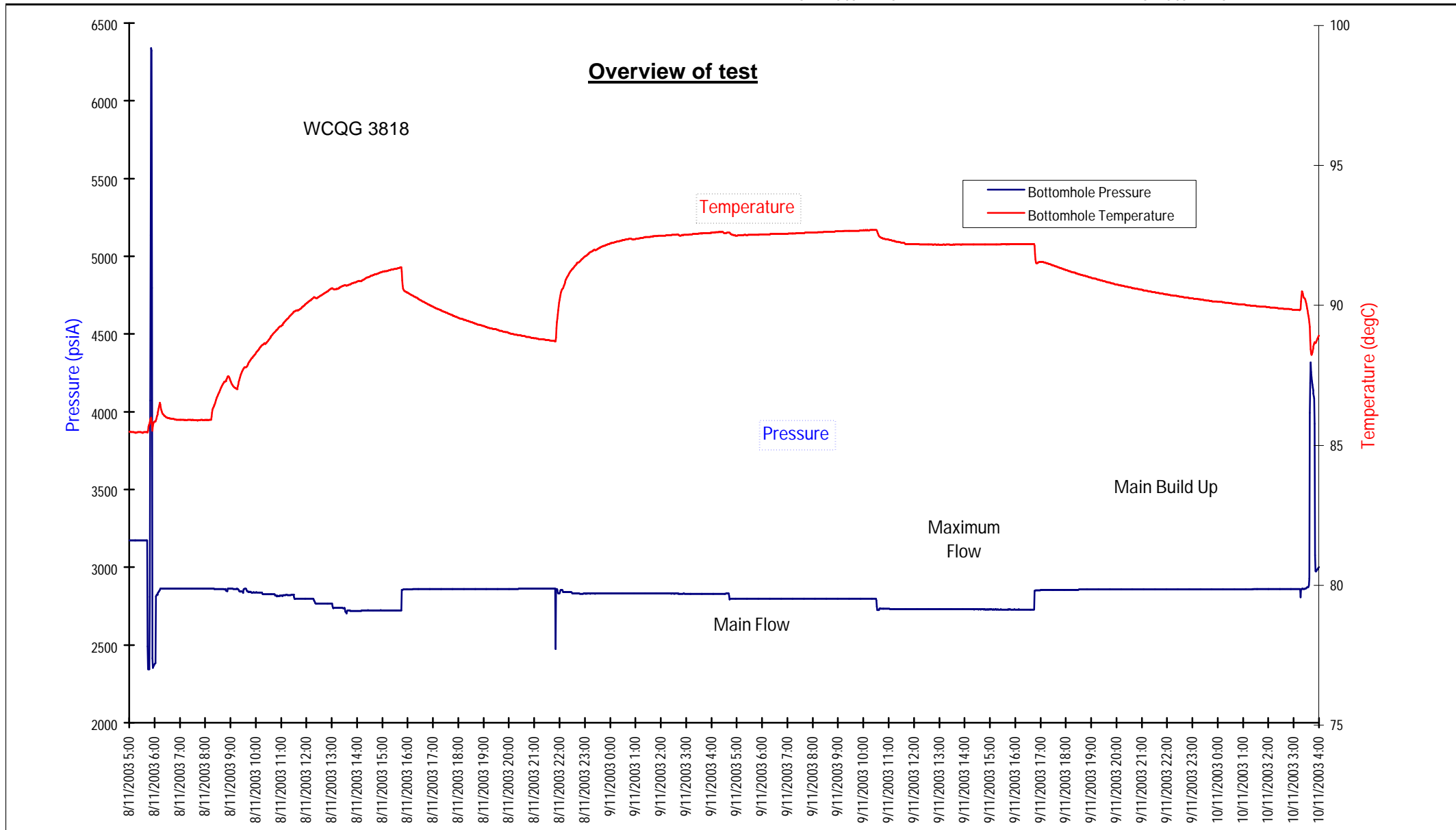
PRESSURE AND TEMPERATURE RESULTS

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina

From Date Time : 08-Nov-03 05:00

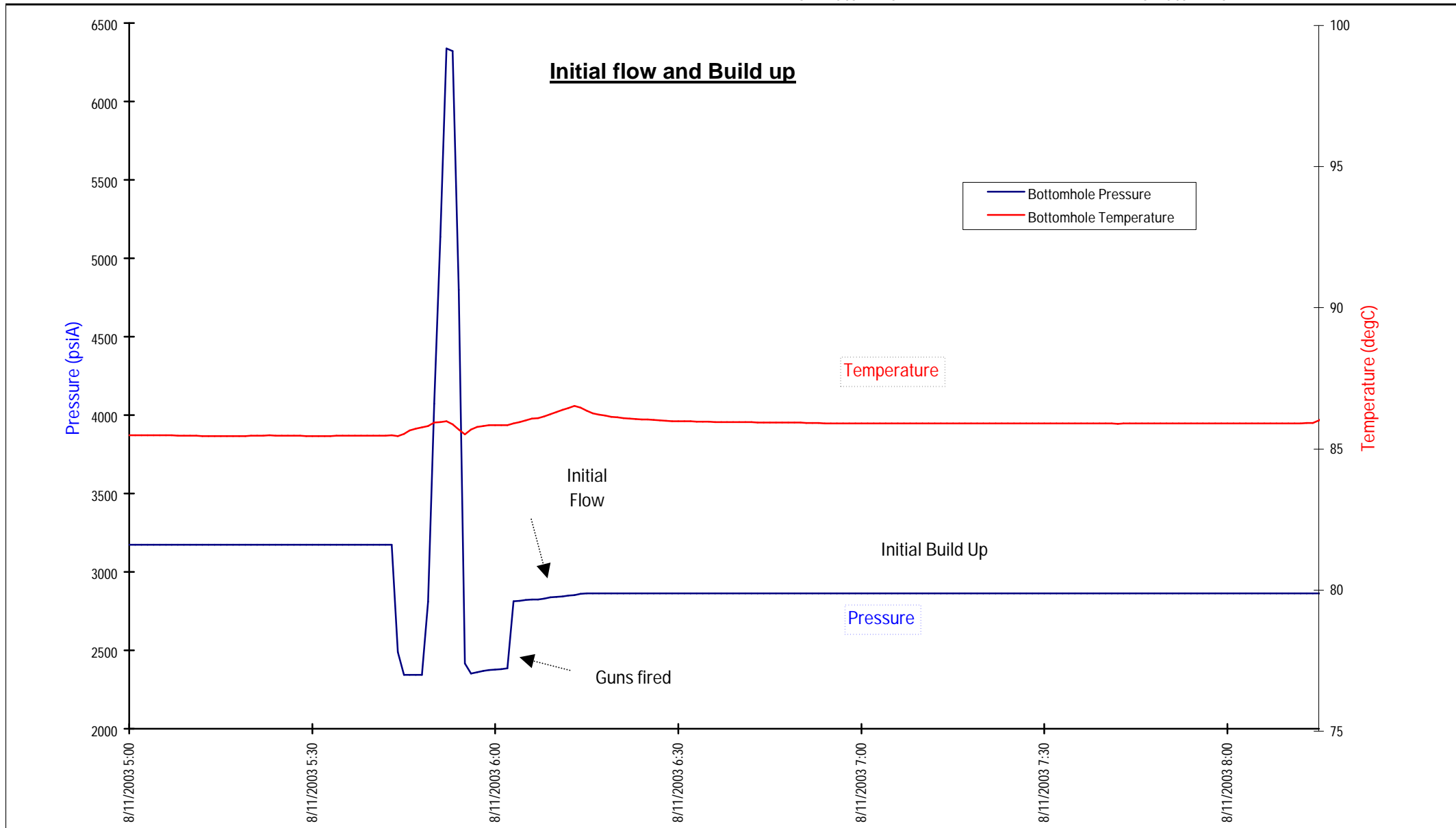
To Date Time : 10-Nov-03 04:00



Bottomhole Pressure and Temperature Plot

From Date Time : 08-Nov-03 05:00

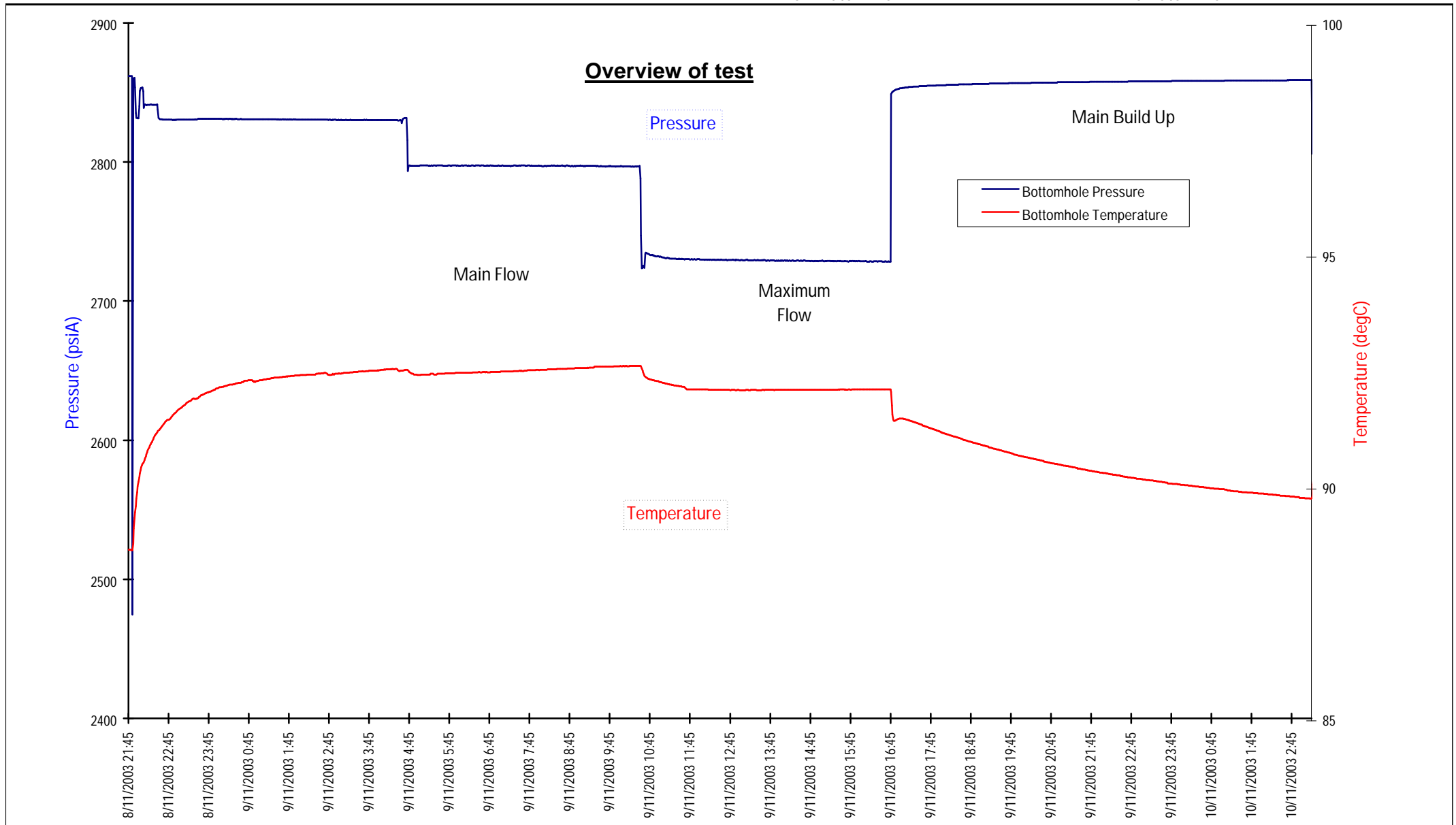
To Date Time : 08-Nov-03 08:15



Bottomhole Pressure and Temperature Plot

From Date Time : 08-Nov-03 21:45

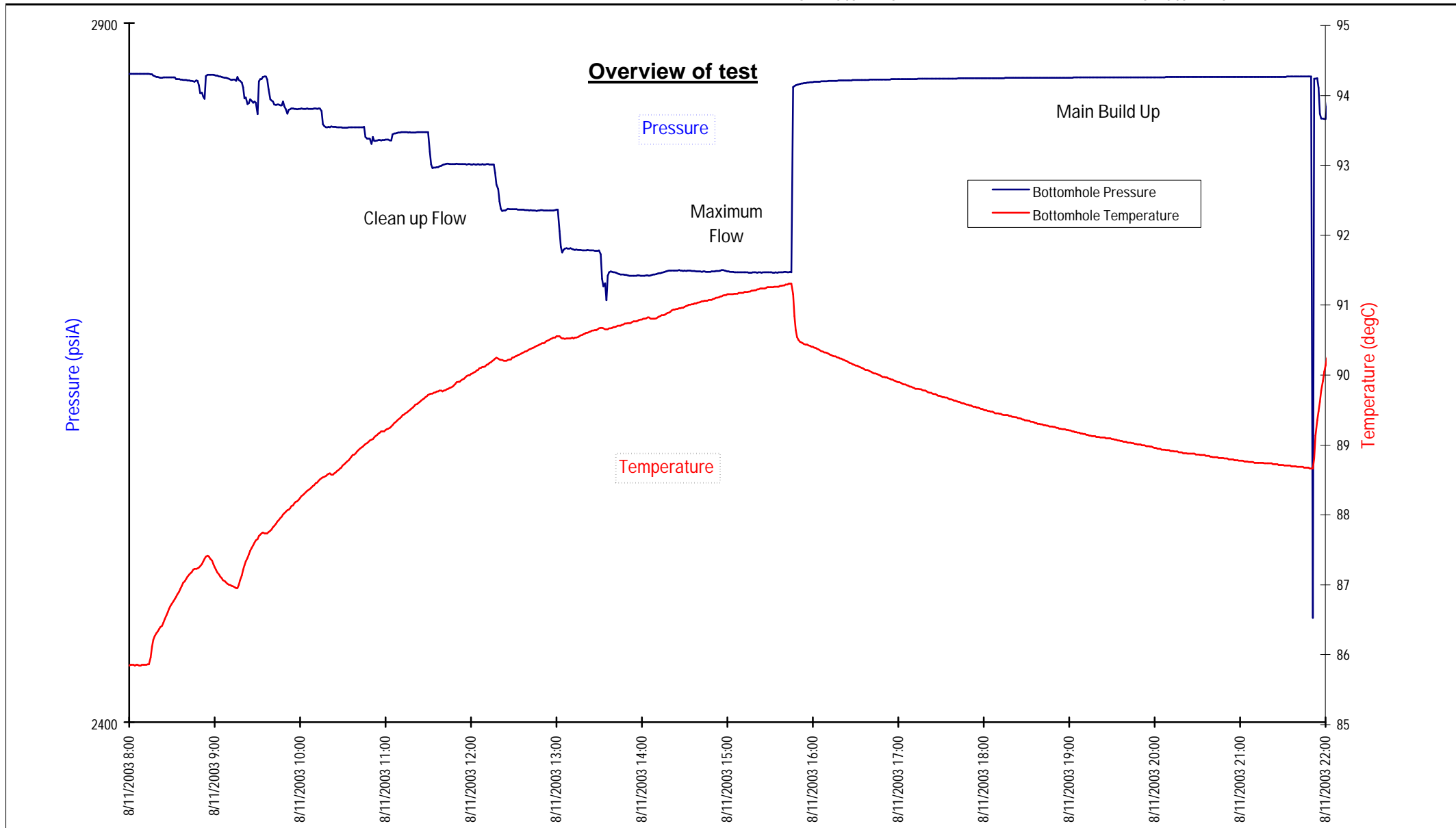
To Date Time : 10-Nov-03 03:15



Bottomhole Pressure and Temperature Plot

From Date Time : 08-Nov-03 08:00

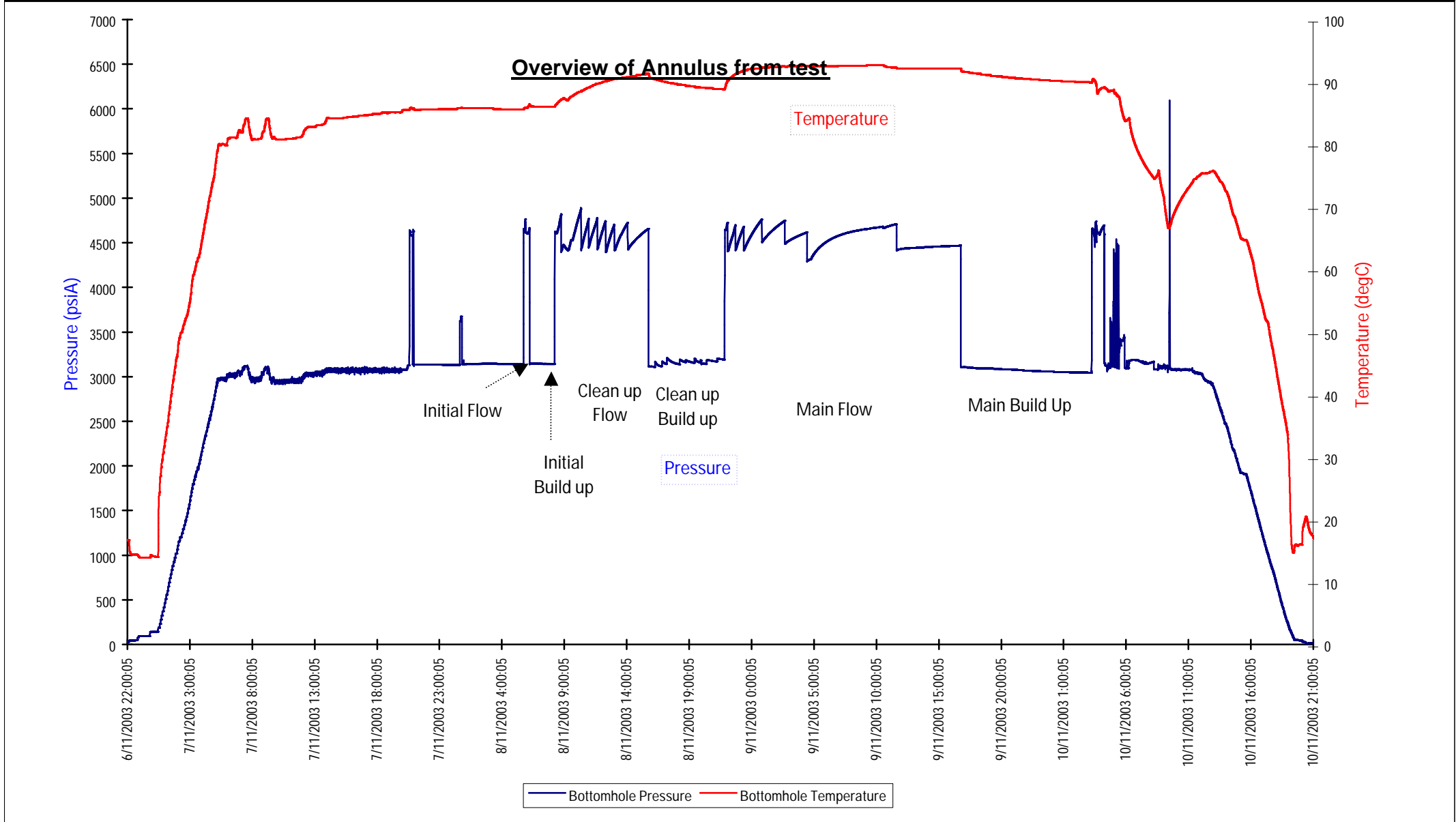
To Date Time : 08-Nov-03 22:00



Bottomhole Pressure and Temperature Plot

From Date Time : 06-Nov-03 22:00

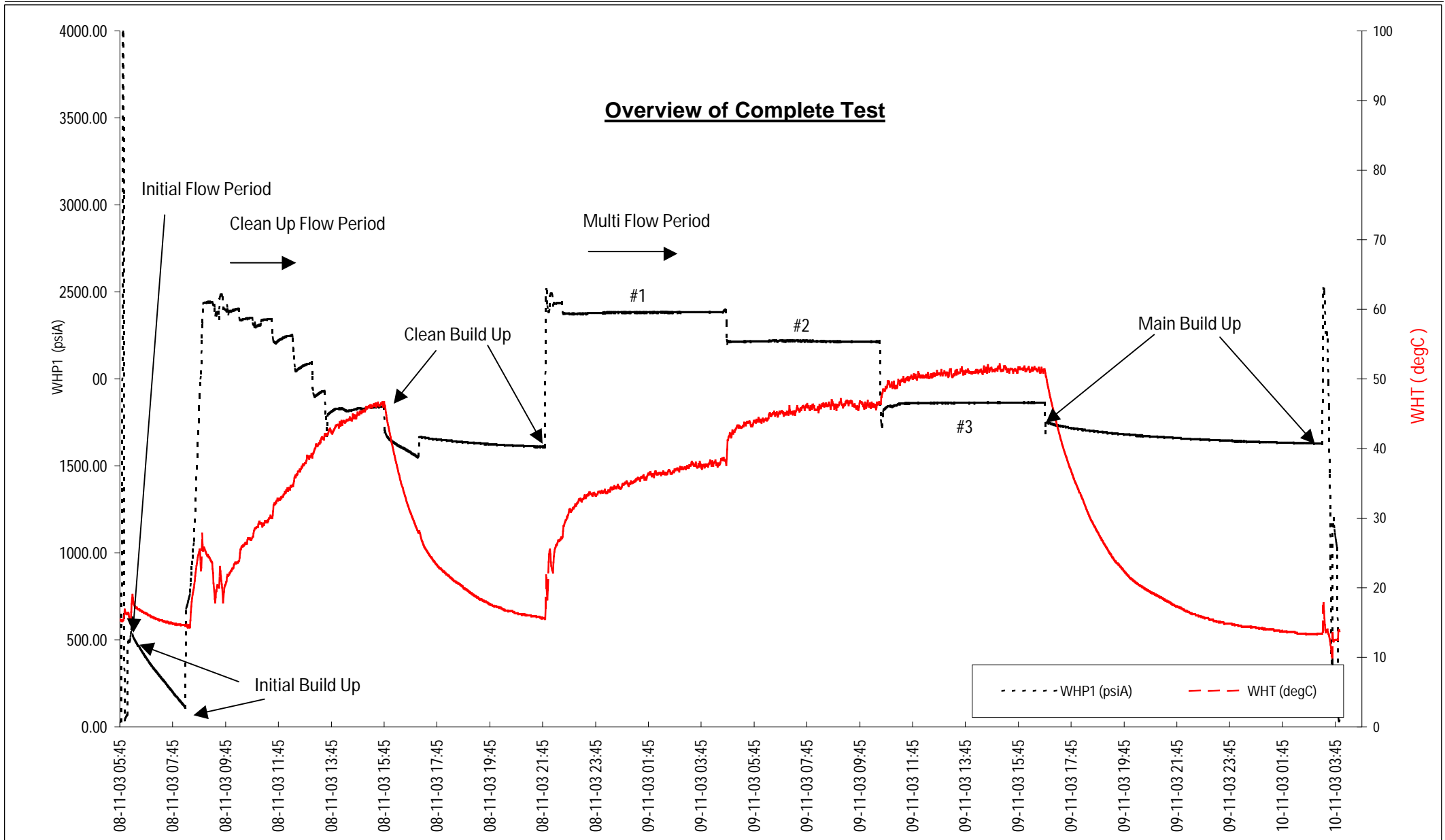
To Date Time : 10-Nov-03 21:00



Bottomhole Pressure and Temperature Plot

From Date Time : 08-Nov-03 05:45

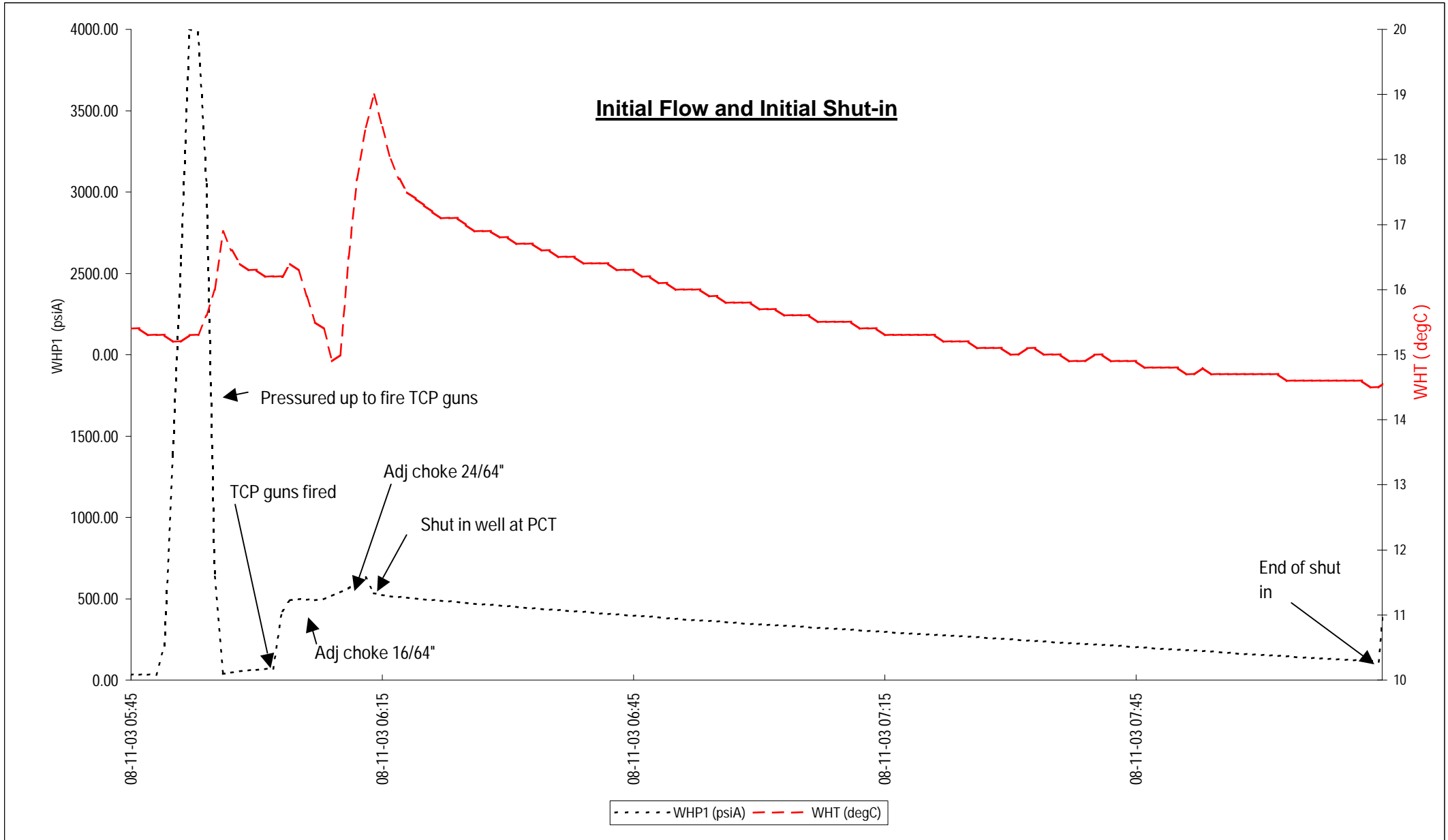
To Date Time : 10-Nov-03 04:45



Wellhead Pressure and Temperature Plot

From Date Time : 08-Nov-03 05:45

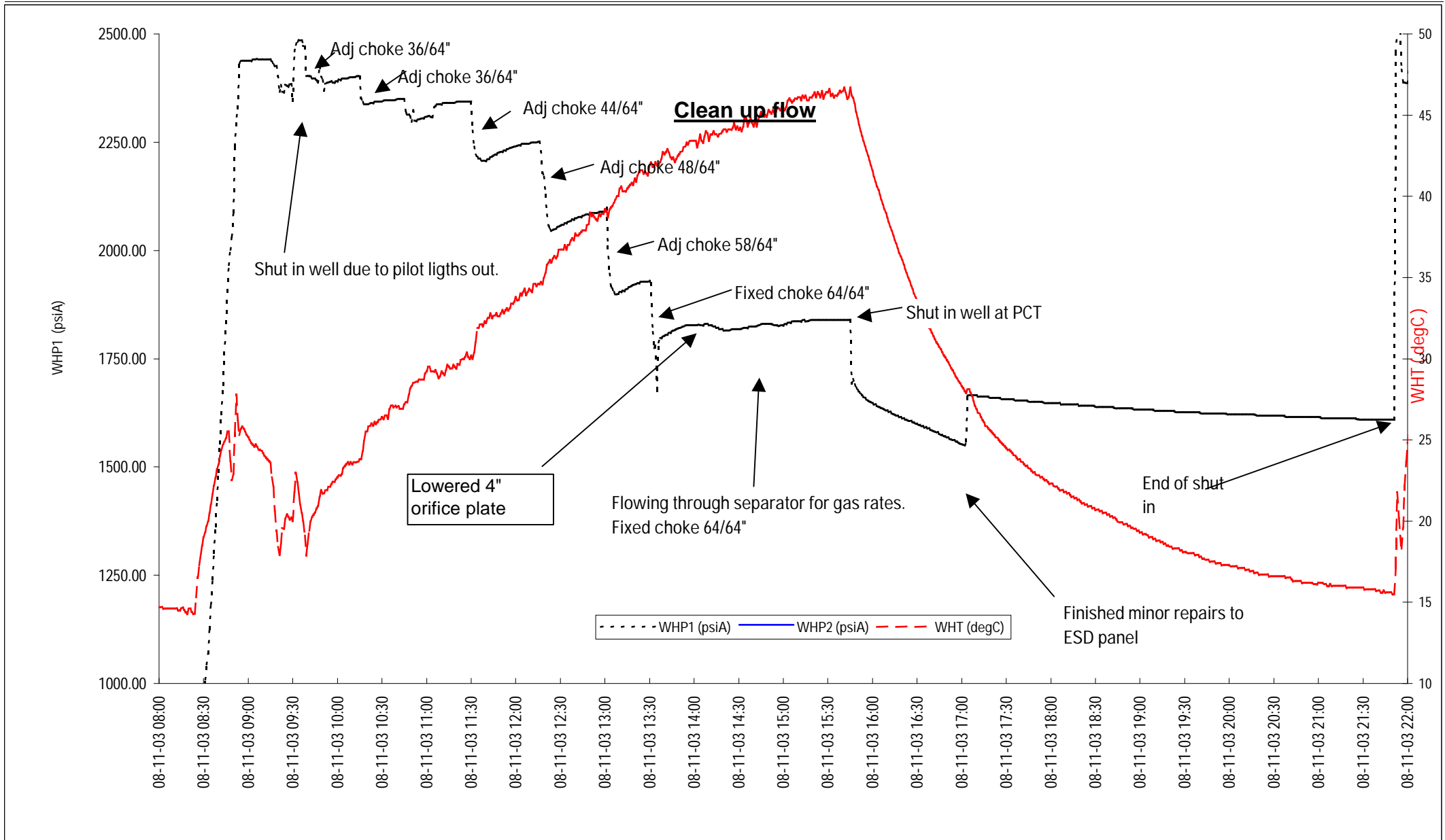
To Date Time : 08-Nov-03 08:14



Wellhead Pressure and Temperature Plot

From Date Time : 08-Nov-03 08:00

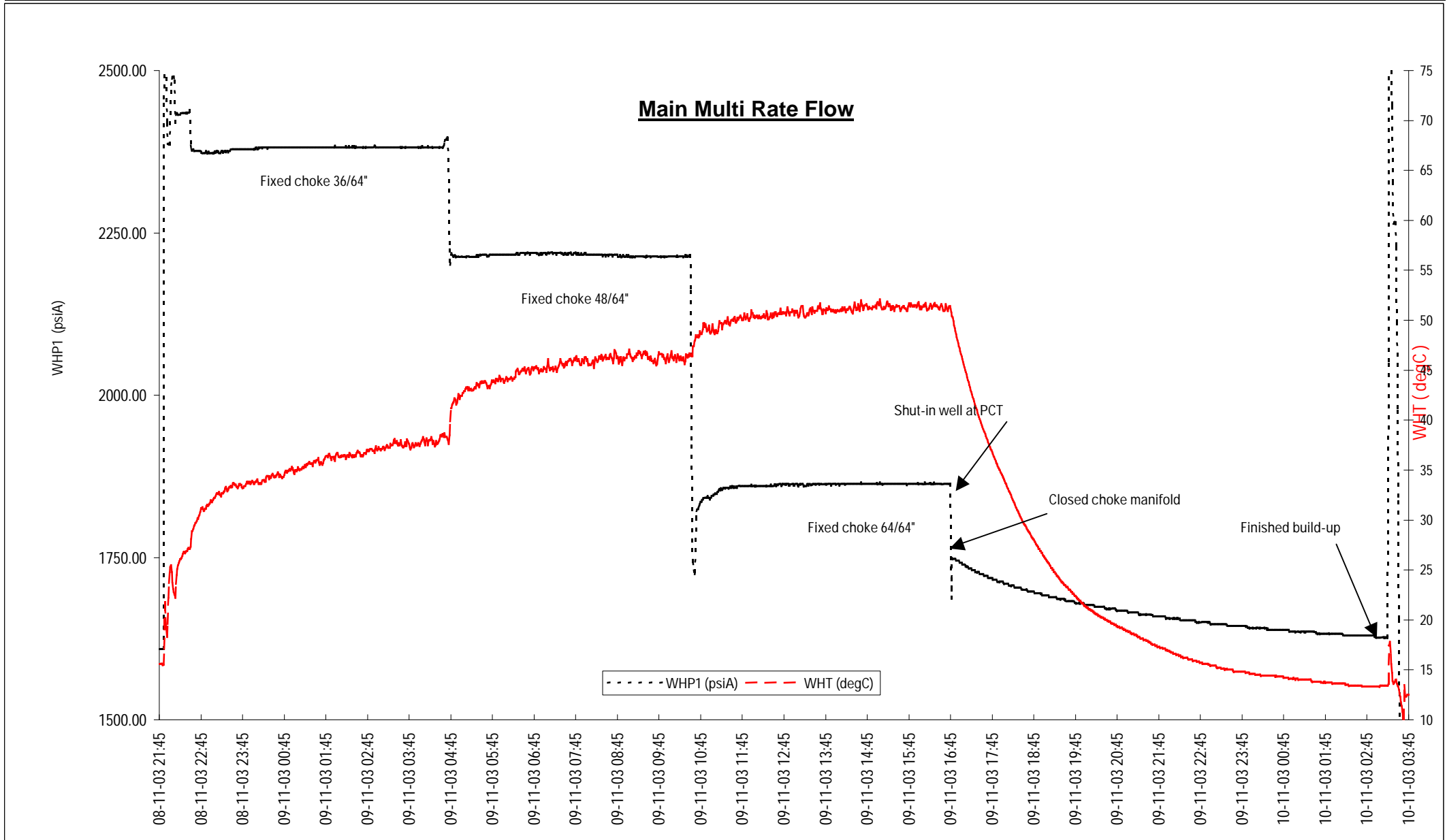
To Date Time : 08-Nov-03 22:00



Wellhead Pressure and Temperature Plot

From Date Time : 08-Nov-03 21:45

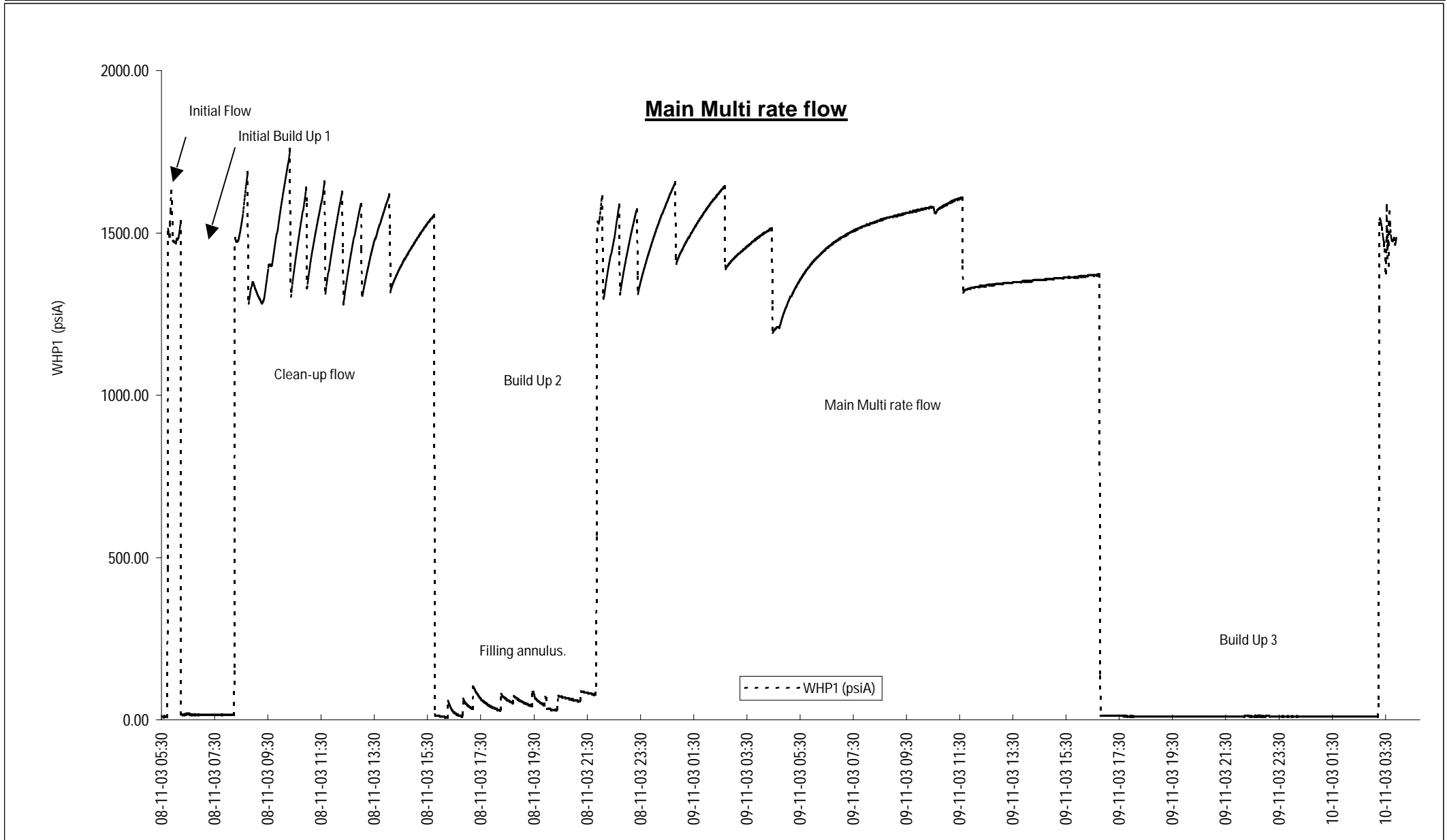
To Date Time : 10-Nov-03 03:45



Wellhead Pressure and Temperature Plot

From Date Time : 08-Nov-03 05:30

To Date Time : 10-Nov-03 02:30



Wellhead Pressure and Temperature Plot

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
08-Nov-03	05:00:00	3172.721	85.4	3172.514	85.1	3172.404	85.1	3140.687	85.6
08-Nov-03	05:00:00	Increased recording rate of WHP and CSGP to 1sec prior to perforating well.							
08-Nov-03	05:05:00	3172.741	85.4	3172.537	85.1	3172.417	85.1	3141.153	85.6
08-Nov-03	05:10:00	3172.775	85.4	3172.569	85.1	3172.44	85.1	3141.353	85.6
08-Nov-03	05:15:00	3172.798	85.4	3172.59	85.1	3172.474	85.1	3140.945	85.6
08-Nov-03	05:20:00	3172.839	85.4	3172.638	85.1	3172.513	85.1	3141.422	85.6
08-Nov-03	05:25:00	3172.875	85.4	3172.672	85.1	3172.546	85.1	3141.264	85.6
08-Nov-03	05:30:00	3172.922	85.4	3172.729	85.1	3172.588	85.1	3141.131	85.6
08-Nov-03	05:35:00	3172.978	85.4	3172.781	85.1	3172.647	85.1	3141.227	85.6
08-Nov-03	05:35:00	Held JSA on the rig floor prior to perforating the well.							
08-Nov-03	05:40:00	3173.033	85.4	3172.825	85.1	3172.695	85.1	3140.775	85.6
08-Nov-03	05:44:00	Pressured annulus to 1500psi to open the PCT.							
08-Nov-03	05:45:00	2343.562	85.4	2342.635	85.2	2341.983	85.1	4651.674	85.8
08-Nov-03	05:45:00	Pressured tubing to 4000 psi.							
08-Nov-03	05:50:00	4071.75	85.8	3989.365	85.6	3976.92	85.6	4669.868	85.9
08-Nov-03	05:53:00	Pressure bled off at choke manifold to set HDF firing head.							
08-Nov-03	05:56:00	2352.137	85.6	2353.056	85.3	2352.689	85.3	4609.59	85.8
08-Nov-03	05:57:00	2360.9	85.7	2361.087	85.4	2360.682	85.4	4607.861	85.9
08-Nov-03	05:58:00	2367.509	85.7	2367.14	85.5	2366.855	85.4	4606.271	85.9
08-Nov-03	05:59:00	2372.924	85.7	2372.51	85.5	2372.11	85.5	4604.677	85.9
08-Nov-03	06:00:10	2377.924	85.8	2377.837	85.5	2377.514	85.5	4602.892	
08-Nov-03	06:00:20	2378.556	85.8	2378.461	85.5	2378.129	85.5		
08-Nov-03	06:00:30	2379.335	85.8	2378.985		2378.64	85.5	4602.527	
08-Nov-03	06:00:40	2379.962	85.8	2379.471	85.5	2379.156	85.5	4602.327	85.9
08-Nov-03	06:00:50	2380.218	85.8	2380.26	85.5	2379.952			
08-Nov-03	06:01:00	2380.854		2380.973		2380.632		4601.858	
08-Nov-03	06:01:10	2381.596	85.8	2381.442	85.5	2381.083	85.5	4601.637	85.9
08-Nov-03	06:01:20	2382.149	85.8	2381.905	85.5	2381.558			
08-Nov-03	06:01:30	2382.715	85.8	2382.389	85.5	2382.093	85.5	4601.323	85.9
08-Nov-03	06:01:40	2382.993	85.8	2383.041		2382.743	85.5	4601.167	85.9
08-Nov-03	06:01:50	2383.663	85.8	2383.599		2383.271			
08-Nov-03	06:02:00	2384.415	85.8	2384.067	85.5	2383.721	85.5	4600.792	85.9
08-Nov-03	06:02:00	Good indication guns fired.							
08-Nov-03	06:02:10	2384.561	85.8	2384.426	85.5	2384.073	85.5	4600.57	85.9
08-Nov-03	06:02:20	2384.812	85.8	2385.017	85.5	2384.708			
08-Nov-03	06:02:30	2385.462	85.8	2385.725		2385.492		4600.137	85.9
08-Nov-03	06:02:40	2468.082	85.8	2386.199		2386.031		4605.955	85.9
08-Nov-03	06:02:50	2809.134	85.8	2829.295	85.6	2823.179	85.5		
08-Nov-03	06:03:00	2812.786	85.8	2808.82	85.6	2807.906	85.5	4615.792	85.9
08-Nov-03	06:03:00	Opened well on 16/64" adjustable choke to surge tank. (Initial Flow Period)							
08-Nov-03	06:03:10	2811.409	85.8	2811.276	85.6	2811.026	85.5	4614.195	85.9
08-Nov-03	06:03:20	2813.438	85.8	2812.358	85.6	2812.054	85.5		
08-Nov-03	06:03:30	2813.574	85.8	2813.418	85.6	2813.059	85.5	4613.395	85.9
08-Nov-03	06:03:40	2814.665	85.8	2814.157		2813.838	85.5	4613.56	86
08-Nov-03	06:03:50	2815.496	85.8	2815.083	85.6	2814.766	85.6		
08-Nov-03	06:04:00	2816.343	85.9	2816.006	85.6	2815.686	85.6	4613.872	86
08-Nov-03	06:04:10	2817.237	85.9	2816.861	85.6	2816.529	85.6	4613.768	86
08-Nov-03	06:04:20	2818.183	85.9	2817.741	85.6	2817.435	85.6		

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
08-Nov-03	06:04:30	2819.169	85.9	2818.693	85.6	2818.351	85.6	4613.677	86
08-Nov-03	06:04:40	2820.052	85.9	2819.664	85.6	2819.297	85.6	4613.765	86
08-Nov-03	06:04:50	2821.076	85.9	2820.65	85.7	2820.323	85.6		
08-Nov-03	06:05:00								
08-Nov-03	06:06:00	2823.167	86	2822.809	85.7	2822.428	85.7	4614.295	86.1
08-Nov-03	06:06:00	Increased to 20/64" adjustable choke.							
08-Nov-03	06:07:00	2823.044	86	2822.514	85.8	2822.177	85.7	4615.625	86.1
08-Nov-03	06:07:00	Increased to 24/64" adjustable choke.							
08-Nov-03	06:08:00	2830.602	86.1	2829.913	85.9	2829.514	85.8	4619.954	86.2
08-Nov-03	06:09:00	2836.835	86.1	2836.54	86	2836.226	85.8	4627.497	86.2
08-Nov-03	06:10:00	2840.625	86.2	2840.548	86.1	2840.25	85.9	4636.909	86.3
08-Nov-03	06:11:00	2844.886	86.3	2844.639	86.1	2844.342	86	4647.554	86.4
08-Nov-03	06:12:00	2848.801	86.4	2848.599	86.2	2848.301	86	4659.187	86.4
08-Nov-03	06:12:00	14 bbls return to Surge tank.							
08-Nov-03	06:12:55								
08-Nov-03	06:12:56	2852.756	86.4						
08-Nov-03	06:12:57	2852.639	86.4	2852.975		2852.692			
08-Nov-03	06:12:58	2852.694	86.4						
08-Nov-03	06:12:59	2852.812	86.4						
08-Nov-03	06:13:00	2852.967	86.4						
08-Nov-03	06:13:00	Shut in well at PCT and choke manifold for initial build up. (Initial Shut-In Period)							
08-Nov-03	06:13:01	2853.188	86.4	2852.656	86.3	2852.334	86.1		
08-Nov-03	06:13:02	2853.492	86.4						
08-Nov-03	06:13:03	2856.159	86.4						
08-Nov-03	06:13:04	2858.776	86.4						
08-Nov-03	06:13:05	2859.535		2853.743	86.3	2853.204	86.1		
08-Nov-03	06:13:06	2859.69	86.4					3789.425	86.4
08-Nov-03	06:13:07	2859.796							
08-Nov-03	06:13:08	2859.895							
08-Nov-03	06:13:09	2859.985		2859.302	86.3	2858.355	86.1		
08-Nov-03	06:13:10								
08-Nov-03	06:13:20	2860.406	86.4	2860.33	86.3	2860.075	86.1		
08-Nov-03	06:13:30	2860.479	86.4	2860.359	86.3	2860.127	86.1	3137.202	86.3
08-Nov-03	06:13:40	2860.844	86.4	2860.531	86.3	2860.304	86.1	3140.162	86.3
08-Nov-03	06:13:50	2861.221	86.4	2860.874	86.3	2860.64	86		
08-Nov-03	06:14:00								
08-Nov-03	06:15:00	2863.278	86.3	2863.03	86.1	2862.822	85.9	3144.705	86.3
08-Nov-03	06:16:00	2863.466	86.2	2863.273	86	2863.043	85.8	3144.983	86.2
08-Nov-03	06:17:00	2863.521	86.1	2863.331	85.9	2863.109	85.8	3144.382	86.2
08-Nov-03	06:18:00	2863.549	86.1	2863.384	85.9	2863.148	85.7	3144.485	86.2
08-Nov-03	06:19:00	2863.572	86.1	2863.411	85.8	2863.168	85.7	3144.645	86.1
08-Nov-03	06:25:00	2863.641	86	2863.486	85.7	2863.221	85.6	3143.963	86.1
08-Nov-03	06:30:00	2863.656	85.9	2863.497	85.7	2863.237	85.6	3144.484	86.1
08-Nov-03	06:35:00	2863.662	85.9	2863.543	85.6	2863.233	85.6	3144.073	86
08-Nov-03	06:40:00	2863.666	85.9	2863.56	85.6	2863.242	85.6	3143.538	86
08-Nov-03	06:45:00	2863.682	85.8	2863.571	85.6	2863.247	85.6	3143.913	86
08-Nov-03	06:50:00	2863.684	85.8	2863.576	85.6	2863.254	85.6	3143.672	86
08-Nov-03	06:55:00	2863.686	85.8	2863.576	85.6	2863.254	85.5	3142.919	86

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
08-Nov-03	07:00:00	2863.691	85.8	2863.585	85.6	2863.262	85.5	3143.335	86
08-Nov-03	07:05:00	2863.695	85.8	2863.58	85.6	2863.266	85.5	3143.106	86
08-Nov-03	07:10:00	2863.697	85.8	2863.589	85.6	2863.268	85.5	3142.993	86
08-Nov-03	07:15:00	2863.699	85.8	2863.586	85.6	2863.267	85.5	3142.705	86
08-Nov-03	07:20:00	2863.704	85.8	2863.592	85.6	2863.264	85.5	3142.559	86
08-Nov-03	07:25:00	2863.703	85.8	2863.589	85.6	2863.269	85.5	3142.669	86
08-Nov-03	07:30:00	2863.704	85.8	2863.599	85.6	2863.271	85.5	3142.005	86
08-Nov-03	07:35:00	2863.704	85.8	2863.584	85.6	2863.269	85.5	3142.397	86
08-Nov-03	07:40:00	2863.708	85.8	2863.587	85.6	2863.273	85.5	3142.802	86
08-Nov-03	07:45:00	2863.712	85.8	2863.593	85.6	2863.267	85.5	3142.803	86
08-Nov-03	07:50:00	2863.711	85.8	2863.596	85.6	2863.274	85.5	3142.402	86
08-Nov-03	07:55:00	2863.713	85.8	2863.597	85.6	2863.276	85.5	3142.199	86
08-Nov-03	08:00:00	2863.716	85.8	2863.593	85.6	2863.281	85.5	3142.395	86
08-Nov-03	08:05:00	2863.713	85.8	2863.593	85.6	2863.277	85.5	3142.064	86
08-Nov-03	08:10:00	2863.714	85.8	2863.597	85.6	2863.279	85.5	3142.016	86
08-Nov-03	08:13:00	Pressured up annulus to 1500psi to open PCT.							
08-Nov-03	08:14:00	Opened well on 16/64" adjustable choke to surge tank. (Clean-up Flow Period)							
08-Nov-03	08:15:00	2863.332	85.9	2863.501	85.7	2863.204	85.7	4624.565	86.2
08-Nov-03	08:20:00	2861.425	86.3	2861.428	86.1	2861.161	86	4604.167	86.4
08-Nov-03	08:22:00	Increased to 20/64" adjustable choke.							
08-Nov-03	08:25:00	2861.219	86.5	2861.216	86.3	2860.927	86.2	4619.355	86.6
08-Nov-03	08:30:00	2861.284	86.7	2861.269	86.5	2860.993	86.4	4658.547	86.8
08-Nov-03	08:30:00	Diverted flow from Surge tank to Burner.							
08-Nov-03	08:32:00	Increased to 24/64" adjustable choke.							
08-Nov-03	08:35:00	2859.75	86.9	2859.754	86.7	2859.467	86.5	4709.115	86.9
08-Nov-03	08:37:00	BSW 100% diesel.							
08-Nov-03	08:38:00	Commenced methanol injection at upstream data header.							
08-Nov-03	08:40:00	2859.181	87	2859.173	86.8	2858.896	86.7	4769.615	87.1
08-Nov-03	08:44:00	Bled down annulus pressure 1250 psi							
08-Nov-03	08:45:00	2858.456	87.2	2858.447	87	2858.18	86.8	4819.271	87.2
08-Nov-03	08:48:00	Increased to 32/64" adjustable choke.							
08-Nov-03	08:50:00	2849.719	87.2	2849.871	87	2849.575	86.9	4443.597	87.3
08-Nov-03	08:51:00	Diverted flow through steam exchanger.							
08-Nov-03	08:53:00	Shut in well at choke manifold due pilot lights on burner went out.							
08-Nov-03	08:55:00	2862.985	87.4	2862.904	87.1	2862.643	87	4477.512	87.4
08-Nov-03	09:00:00	2862.771	87.2	2862.642	87	2862.371	86.9	4460.447	87.3
08-Nov-03	09:05:00	2861.482	87.1	2861.358	86.8	2861.055	86.8	4442.605	87.2
08-Nov-03	09:09:00	Commenced pumping from surge tank to burner.							
08-Nov-03	09:10:00	2860.178	87	2860.062	86.7	2859.76	86.7	4428.019	87.1
08-Nov-03	09:15:00	2858.788	86.9	2859.161	86.7	2858.923	86.7	4415.583	87.1
08-Nov-03	09:15:00	Opened well on 16/64" adjustable choke to burner							
08-Nov-03	09:16:00	Increased to 20/64" adjustable choke.							
08-Nov-03	09:19:00	Increased to 24/64" adjustable choke.							
08-Nov-03	09:20:00	2853.812	87.2	2853.93	86.9	2853.633	86.8	4422.336	87.3
08-Nov-03	09:20:00	Diverted flow through steam exchanger. Gas at surface							
08-Nov-03	09:21:00	Increased to 28/64" adjustable choke.							
08-Nov-03	09:25:00	2845.365	87.5	2844.95	87.2	2844.602	87.1	4465.164	87.5
08-Nov-03	09:29:00	Increased to 32/64" adjustable choke.							

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
08-Nov-03	09:30:00	2834.94	87.6	2835.075	87.4	2834.809	87.3	4512.53	87.6
08-Nov-03	09:33:00	Excised choke.							
08-Nov-03	09:35:00	2861.774	87.7	2861.742	87.4	2861.45	87.4	4529.342	87.7
08-Nov-03	09:36:00	Increased to 36/64" adjustable choke.							
08-Nov-03	09:40:00	2844.539	87.8	2844.552	87.5	2844.276	87.4	4536.426	87.8
08-Nov-03	09:45:00	2841.706	87.9	2841.697	87.6	2841.418	87.5	4583.372	87.9
08-Nov-03	09:46:00	BSW 95%							
08-Nov-03	09:49:00	Excised choke.							
08-Nov-03	09:50:00	2838.6	88	2838.409	87.7	2838.127	87.6	4626.424	88
08-Nov-03	09:55:00	2838.906	88.1	2838.899	87.8	2838.617	87.7	4673.674	88.1
08-Nov-03	10:00:00	2838.745	88.2	2838.738	87.9	2838.458	87.8	4717.865	88.2
08-Nov-03	10:05:00	2838.766	88.3	2838.761	88	2838.487	87.9	4759.344	88.3
08-Nov-03	10:10:00	2838.773	88.4	2838.781	88.1	2838.508	88	4799.324	88.4
08-Nov-03	10:15:00	2837.059	88.5	2837.829	88.2	2837.636	88.1	4837.602	88.5
08-Nov-03	10:15:00	Increased to 40/64" adjustable choke.							
08-Nov-03	10:20:00	2825.763	88.6	2825.74	88.3	2825.469	88.2	4886.5	88.6
08-Nov-03	10:22:00	Bled off annulus pressure to 1300							
08-Nov-03	10:25:00	2825.632	88.6	2825.645	88.3	2825.357	88.2	4470.074	88.6
08-Nov-03	10:30:00	2825.181	88.7	2825.208	88.4	2824.952	88.3	4521.552	88.7
08-Nov-03	10:35:00	2825.282	88.8	2825.291	88.5	2825.047	88.4	4569.429	88.8
08-Nov-03	10:40:00	2825.483	88.9	2825.499	88.6	2825.245	88.5	4614.914	88.9
08-Nov-03	10:45:00	2825.634	89	2825.648	88.7	2825.387	88.6	4658.573	89
08-Nov-03	10:45:00	Increased to 44/64" adjustable choke.							
08-Nov-03	10:49:00	Excised choke.							
08-Nov-03	10:50:00	2813.428	89	2814.014	88.7	2813.851	88.7	4703.968	89
08-Nov-03	10:51:00	Increased to 42/64" adjustable choke.							
08-Nov-03	10:55:00	2816.233	89.1	2816.237	88.8	2815.985	88.8	4753.918	89.1
08-Nov-03	10:56:00	Bled off annulus pressure to 1300.							
08-Nov-03	11:00:00	2816.731	89.2	2816.758	88.9	2816.465	88.8	4479.565	89.2
08-Nov-03	11:05:00	2820.553	89.3	2820.472	89	2820.174	88.9	4527.784	89.3
08-Nov-03	11:06:00	Opened steam exchanger bypass by a couple of turns to reduce unstable WHDCP.							
08-Nov-03	11:10:00	2821.753	89.4	2821.769	89.1	2821.497	89	4567.896	89.3
08-Nov-03	11:15:00	2821.869	89.4	2821.93	89.1	2821.671	89	4605.578	89.4
08-Nov-03	11:18:00	Closed steam exchanger bypass.							
08-Nov-03	11:20:00	2821.772	89.5	2821.851	89.2	2821.577	89.1	4641.791	89.5
08-Nov-03	11:25:00	2821.938	89.6	2821.961	89.3	2821.682	89.2	4676.487	89.6
08-Nov-03	11:30:00	2821.96	89.7	2822.062	89.4	2821.802	89.3	4710.078	89.6
08-Nov-03	11:30:00	Increased to 44/64" adjustable choke.							
08-Nov-03	11:35:00	2796.626	89.7	2796.616	89.4	2796.276	89.3	4750.449	89.7
08-Nov-03	11:38:00	Bled off annulus pressure to 1300.							
08-Nov-03	11:40:00	2798.464	89.7	2798.48	89.4	2798.108	89.3	4434.734	89.7
08-Nov-03	11:45:00	2799.233	89.8	2799.275	89.5	2798.913	89.4	4487.225	89.8
08-Nov-03	11:50:00	2799.292	89.9	2799.325	89.6	2799.001	89.5	4532.143	89.8
08-Nov-03	11:55:00	2798.982	89.9	2799.042	89.6	2798.729	89.5	4574.416	89.9
08-Nov-03	12:00:00	2798.916	90	2798.975	89.7	2798.667	89.6	4614.781	90
08-Nov-03	12:05:00	2798.996	90	2799.082	89.8	2798.772	89.6	4653.52	90
08-Nov-03	12:10:00	2798.751	90.1	2798.824	89.8	2798.499	89.7	4690.4	90.1
08-Nov-03	12:15:00	2798.811	90.2	2798.882	89.9	2798.564	89.8	4725.881	90.1

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
08-Nov-03	12:17:00	Bled off annulus pressure to 1300.							
08-Nov-03	12:20:00	2772.411	90.2	2772.733	89.9	2772.473	89.8	4396.657	90.1
08-Nov-03	12:22:00	Increased to 52/64" adjustable choke.							
08-Nov-03	12:25:00	2766.483	90.2	2766.576	89.9	2766.279	89.8	4444.758	90.2
08-Nov-03	12:30:00	2766.795	90.2	2766.835	89.9	2766.57	89.8	4489.01	90.2
08-Nov-03	12:35:00	2766.554	90.3	2766.625	90	2766.355	89.9	4530.02	90.3
08-Nov-03	12:37:00	Finished pumping methanol to data header.							
08-Nov-03	12:40:00	2766.19	90.3	2766.304	90	2766.025	89.9	4568.89	90.3
08-Nov-03	12:45:00	2765.923	90.4	2765.998	90.1	2765.737	90	4605.858	90.4
08-Nov-03	12:50:00	2766.128	90.4	2766.264	90.1	2765.995	90	4641.118	90.4
08-Nov-03	12:54:00	Opened inlet valve to separator.							
08-Nov-03	12:55:00	2765.943	90.5	2766.015	90.2	2765.751	90.1	4674.459	90.5
08-Nov-03	13:00:00	2766.669	90.5	2766.629	90.2	2766.337	90.1	4662.087	90.5
08-Nov-03	13:01:00	Increased to 58/64" adjustable choke.							
08-Nov-03	13:05:00	2737.594	90.5	2737.5	90.2	2737.222	90.1	4433.94	90.5
08-Nov-03	13:10:00	2738.875	90.5	2739.031	90.2	2738.767	90.1	4468.046	90.5
08-Nov-03	13:15:00	2737.83	90.5	2737.912	90.2	2737.654	90.1	4499.644	90.5
08-Nov-03	13:20:00	2737.349	90.6	2737.477	90.3	2737.22	90.2	4529.339	90.6
08-Nov-03	13:25:00	2737.418	90.6	2737.525	90.3	2737.26	90.2	4557.292	90.6
08-Nov-03	13:30:00	2737.493	90.6	2737.559	90.3	2737.291	90.3	4583.637	90.6
08-Nov-03	13:34:00	Diverted flow from adjustable choke 58/64" to fix choke 64/64".							
08-Nov-03	13:35:00	2701.63	90.6	2703.225	90.3	2703.114	90.2	4598.597	90.6
08-Nov-03	13:40:00	2721.87	90.6	2722.034	90.4	2721.737	90.3	4625.352	90.7
08-Nov-03	13:40:00	Bypass steam exchanger.							
08-Nov-03	13:45:00	2720.082	90.7	2720.268	90.4	2719.971	90.3	4647.962	90.7
08-Nov-03	13:50:00	2719.636	90.7	2719.767	90.4	2719.467	90.3	4669.634	90.7
08-Nov-03	13:55:00	2719.178	90.7	2719.322	90.5	2719.033	90.4	4690.743	90.8
08-Nov-03	14:00:00	2719.302	90.8	2719.489	90.5	2719.21	90.4	4710.537	90.8
08-Nov-03	14:03:00	Bled off annulus pressure to 1300.							
08-Nov-03	14:05:00	2719.355	90.8	2719.521	90.5	2719.2	90.4	4519.381	90.8
08-Nov-03	14:10:00	2720.366	90.8	2720.453	90.5	2720.107	90.4	4444.917	90.8
08-Nov-03	14:14:00	Lowered 4" orifice plate.							
08-Nov-03	14:15:00	2721.622	90.8	2721.805	90.5	2721.497	90.4	4461.998	90.8
08-Nov-03	14:20:00	2722.901	90.9	2723.051	90.6	2722.743	90.5	4476.683	90.9
08-Nov-03	14:25:00	2723.024	90.9	2723.194	90.6	2722.886	90.5	4490.763	90.9
08-Nov-03	14:30:00	2722.853	90.9	2722.968	90.7	2722.657	90.6	4504.045	91
08-Nov-03	14:35:00	2722.643	91	2722.79	90.7	2722.519	90.6	4517.091	91
08-Nov-03	14:40:00	2722.381	91	2722.491	90.7	2722.21	90.6	4529.75	91
08-Nov-03	14:45:00	2722.09	91	2722.261	90.7	2721.987	90.6	4542.197	91
08-Nov-03	14:50:00	2722.497	91.1	2722.624	90.8	2722.357	90.7	4553.874	91.1
08-Nov-03	14:55:00	2723.016	91.1	2723.125	90.8	2722.848	90.7	4564.531	91.1
08-Nov-03	15:00:00	2722.494	91.1	2722.684	90.8	2722.406	90.7	4575.141	91.1
08-Nov-03	15:00:00	Sample 1.03 water from water sight glass on separator.							
08-Nov-03	15:05:00	2721.76	91.1	2721.948	90.8	2721.681	90.7	4585.879	91.1
08-Nov-03	15:10:00	2721.603	91.1	2721.796	90.9	2721.525	90.8	4596.351	91.2
08-Nov-03	15:10:00	Commenced samples 1.04 & 1.05; PVT condensate (bottle 7597-MA), & PVT gas (bottle 5072A).							
08-Nov-03	15:15:00	2721.581	91.2	2721.683	90.9	2721.392	90.8	4606.438	91.2
08-Nov-03	15:20:00	2721.778	91.2	2721.914	90.9	2721.642	90.8	4616.178	91.2

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
08-Nov-03	15:25:00	2721.865	91.2	2721.998	90.9	2721.712	90.8	4625.453	91.2
08-Nov-03	15:31:00	2721.729	91.2	2721.896	90.9	2721.599	90.8	4636.181	91.3
08-Nov-03	15:32:00	2721.584	91.2	2721.68	90.9	2721.396	90.8	4637.885	91.3
08-Nov-03	15:33:00	2721.575	91.2	2721.794	91	2721.518	90.9	4639.643	91.3
08-Nov-03	15:34:00	2721.616	91.2	2721.726	91	2721.45	90.9	4641.356	91.3
08-Nov-03	15:35:00	2721.582	91.2	2721.729	91	2721.454	90.9	4643.066	91.3
08-Nov-03	15:35:00	Finished taking samples 1.04 & 1.05.							
08-Nov-03	15:36:00	2721.702	91.2	2721.834	91	2721.552	90.9	4644.813	91.3
08-Nov-03	15:37:00	2721.887	91.2	2721.985	91	2721.711	90.9	4646.557	91.3
08-Nov-03	15:38:00	2721.798	91.2	2721.934	91	2721.667	90.9	4648.295	91.3
08-Nov-03	15:39:00	2721.823	91.2	2721.958	91	2721.677	90.9	4649.913	91.3
08-Nov-03	15:40:00	2722.019	91.3	2722.156	91	2721.868	90.9	4651.653	91.3
08-Nov-03	15:41:00	2721.937	91.3	2722.048	91	2721.752	90.9	4653.271	91.3
08-Nov-03	15:42:00	2721.659	91.3	2721.83	91	2721.55	90.9	4654.925	91.3
08-Nov-03	15:43:00	2721.705	91.3	2721.851	91	2721.564	90.9	4656.544	91.3
08-Nov-03	15:44:00	2721.926	91.3	2722.02	91	2721.732	90.9	4658.182	91.3
08-Nov-03	15:44:00	Raised orifice plate							
08-Nov-03	15:44:51	2722.233	91.3					4617.065	91.3
08-Nov-03	15:44:52	2722.226	91.3						
08-Nov-03	15:44:53	2722.237		2722.383	91	2722.12	90.9		
08-Nov-03	15:44:54	2722.242	91.3						
08-Nov-03	15:44:55	2722.208							
08-Nov-03	15:44:56	2722.135							
08-Nov-03	15:44:57	2722.031	91.3	2722.301	91	2722.044	90.9		
08-Nov-03	15:44:58	2721.943							
08-Nov-03	15:44:59	2721.84							
08-Nov-03	15:45:00	2721.682							
08-Nov-03	15:45:00	Shut in well at PCT and choke manifold for build up 2. (Build Up Period #2)							
08-Nov-03	15:45:01	2721.33		2722.326	91	2721.814	90.9		
08-Nov-03	15:45:02	2723.578							
08-Nov-03	15:45:03	2770.169	91.3						
08-Nov-03	15:45:04	2831.472	91.3						
08-Nov-03	15:45:05	2851.747	91.3	2737.491	91	2734.091	90.9		
08-Nov-03	15:45:06	2851.548	91.3					3916.386	91.3
08-Nov-03	15:45:07	2851.82							
08-Nov-03	15:45:08	2852.028							
08-Nov-03	15:45:09	2852.212	91.3	2846.908	91	2841.445	90.9		
08-Nov-03	15:45:20	2853.035	91.3	2853.066	91	2852.804	90.9		
08-Nov-03	15:45:30	2853.392	91.2	2853.365	91	2853.116	90.9	3112.94	91.1
08-Nov-03	15:45:40	2853.703	91.2	2853.54	90.9	2853.281	90.8	3113.628	91.1
08-Nov-03	15:45:50	2853.974	91.2	2853.751	90.9	2853.475	90.8		
08-Nov-03	15:46:00	Closed choke manifold.							
08-Nov-03	15:47:00	2854.957	90.8	2854.862	90.5	2854.528	90.5	3113.929	90.9
08-Nov-03	15:48:00	2855.488	90.6	2855.515	90.3	2855.115	90.4	3113.67	90.8
08-Nov-03	15:49:00	2855.892	90.5	2855.977	90.2	2855.55	90.3	3112.781	90.7
08-Nov-03	15:50:00	2856.221	90.5	2856.302	90.2	2855.88	90.3	3112.363	90.7
08-Nov-03	15:51:00	2856.495	90.4	2856.582	90.2	2856.146	90.2	3112.964	90.7

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
08-Nov-03	15:52:00	2856.714	90.4	2856.801	90.2	2856.367	90.2	3112.903	90.6
08-Nov-03	15:53:00	2856.906	90.4	2856.997	90.2	2856.559	90.2	3113.258	90.6
08-Nov-03	15:54:00	2857.077	90.4	2857.174	90.1	2856.733	90.2	3112.967	90.6
08-Nov-03	15:55:00	2857.224	90.4	2857.322	90.1	2856.88	90.2	3113.603	90.6
08-Nov-03	15:56:00	2857.362	90.4	2857.459	90.1	2857.019	90.2	3113.124	90.6
08-Nov-03	15:57:00	2857.48	90.4	2857.576	90.1	2857.135	90.1	3112.975	90.6
08-Nov-03	15:58:00	2857.592	90.4	2857.688	90.1	2857.245	90.1	3113.091	90.6
08-Nov-03	15:59:00	2857.697	90.4	2857.789	90.1	2857.344	90.1	3113.531	90.6
08-Nov-03	16:05:00	2858.176	90.3	2858.257	90.1	2857.812	90	3111.756	90.5
08-Nov-03	16:10:00	2858.467	90.3	2858.547	90	2858.099	90	3109.195	90.5
08-Nov-03	16:15:00	2858.69	90.2	2858.764	90	2858.323	89.9	3108.916	90.4
08-Nov-03	16:20:00	2858.886	90.2	2858.961	90	2858.513	89.9	3147.597	90.4
08-Nov-03	16:25:00	2859.048	90.1	2859.117	89.9	2858.667	89.9	3134.553	90.3
08-Nov-03	16:30:00	2859.193	90.1	2859.257	89.9	2858.809	89.8	3127.148	90.3
08-Nov-03	16:35:00	2859.32	90.1	2859.377	89.8	2858.933	89.8	3122.871	90.3
08-Nov-03	16:40:00	2859.434	90	2859.491	89.8	2859.043	89.7	3119.167	90.2
08-Nov-03	16:45:00	2859.545	90	2859.634	89.7	2859.149	89.7	3117.514	90.2
08-Nov-03	16:50:00	2859.66	89.9	2859.74	89.7	2859.276	89.7	3169.913	90.1
08-Nov-03	16:55:00	2859.744	89.9	2859.815	89.7	2859.357	89.6	3157.78	90.1
08-Nov-03	17:00:00	2859.829	89.9	2859.89	89.6	2859.431	89.6	3150.972	90.1
08-Nov-03	17:03:00	Opened SSV and PWV on FH after repairs to ESD panel.							
08-Nov-03	17:05:00	2859.904	89.8	2859.966	89.6	2859.512	89.5	3145.33	90
08-Nov-03	17:10:00	2859.97	89.8	2860.031	89.5	2859.584	89.5	3140.953	90
08-Nov-03	17:15:00	2860.06	89.8	2860.124	89.5	2859.69	89.5	3202.813	90
08-Nov-03	17:20:00	2860.12	89.7	2860.177	89.5	2859.747	89.4	3190.823	89.9
08-Nov-03	17:25:00	2860.18	89.7	2860.233	89.4	2859.797	89.4	3181.525	89.9
08-Nov-03	17:30:00	2860.242	89.7	2860.297	89.4	2859.867	89.4	3172.856	89.9
08-Nov-03	17:35:00	2860.297	89.6	2860.342	89.4	2859.923	89.3	3166.223	89.8
08-Nov-03	17:40:00	2860.351	89.6	2860.393	89.3	2859.979	89.3	3160.425	89.8
08-Nov-03	17:45:00	2860.401	89.6	2860.441	89.3	2860.028	89.3	3154.647	89.8
08-Nov-03	17:50:00	2860.449	89.5	2860.489	89.3	2860.083	89.2	3150.29	89.7
08-Nov-03	17:55:00	2860.497	89.5	2860.536	89.3	2860.133	89.2	3148.186	89.7
08-Nov-03	18:00:00	2860.543	89.5	2860.575	89.2	2860.178	89.2	3144.753	89.7
08-Nov-03	18:05:00	2860.585	89.4	2860.62	89.2	2860.223	89.2	3141.319	89.6
08-Nov-03	18:10:00	2860.634	89.4	2860.662	89.2	2860.276	89.1	3139.094	89.6
08-Nov-03	18:15:00	2860.694	89.4	2860.725	89.1	2860.342	89.1	3178.726	89.6
08-Nov-03	18:20:00	2860.713	89.4	2860.742	89.1	2860.365	89.1	3181.445	89.6
08-Nov-03	18:25:00	2860.754	89.3	2860.768	89.1	2860.391	89.1	3176.352	89.5
08-Nov-03	18:30:00	2860.788	89.3	2860.807	89.1	2860.431	89	3170.955	89.5
08-Nov-03	18:35:00	2860.824	89.3	2860.836	89	2860.465	89	3167.202	89.5
08-Nov-03	18:40:00	2860.854	89.3	2860.865	89	2860.495	89	3162.702	89.5
08-Nov-03	18:45:00	2860.896	89.2	2860.91	89	2860.543	89	3181.817	89.4
08-Nov-03	18:50:00	2860.923	89.2	2860.931	89	2860.564	88.9	3176.761	89.4
08-Nov-03	18:55:00	2860.949	89.2	2860.957	88.9	2860.591	88.9	3171.762	89.4
08-Nov-03	19:00:00	2860.977	89.2	2860.986	88.9	2860.622	88.9	3167.703	89.4
08-Nov-03	19:05:00	2861.009	89.1	2861.013	88.9	2860.651	88.9	3164.342	89.3
08-Nov-03	19:10:00	2861.032	89.1	2861.038	88.9	2860.676	88.8	3160.484	89.3
08-Nov-03	19:15:00	2861.067	89.1	2861.068	88.9	2860.7	88.8	3157.976	89.3

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
08-Nov-03	19:20:00	2861.095	89.1	2861.094	88.8	2860.724	88.8	3155.656	89.3
08-Nov-03	19:25:00	2861.118	89.1	2861.117	88.8	2860.746	88.8	3153.941	89.3
08-Nov-03	19:30:00	2861.158	89.1	2861.148	88.8	2860.793	88.8	3190.182	89.2
08-Nov-03	19:35:00	2861.171	89	2861.169	88.8	2860.802	88.7	3174.146	89.2
08-Nov-03	19:40:00	2861.191	89	2861.187	88.8	2860.816	88.7	3168.631	89.2
08-Nov-03	19:45:00	2861.222	89	2861.21	88.7	2860.845	88.7	3163.686	89.2
08-Nov-03	19:50:00	2861.234	89	2861.225	88.7	2860.862	88.7	3159.43	89.2
08-Nov-03	19:55:00	2861.275	88.9	2861.268	88.7	2860.901	88.7	3182.606	89.1
08-Nov-03	20:00:00	2861.281	88.9	2861.274	88.7	2860.907	88.6	3146.765	89.1
08-Nov-03	20:05:00	2861.301	88.9	2861.292	88.7	2860.927	88.6	3144.687	89.1
08-Nov-03	20:10:00	2861.321	88.9	2861.305	88.6	2860.938	88.6	3143.695	89.1
08-Nov-03	20:15:00	2861.341	88.9	2861.329	88.6	2860.96	88.6	3142.895	89.1
08-Nov-03	20:20:00	2861.357	88.9	2861.347	88.6	2860.982	88.6	3140.74	89
08-Nov-03	20:25:00	2861.403	88.8	2861.39	88.6	2861.02	88.6	3185.505	89
08-Nov-03	20:30:00	2861.417	88.8	2861.403	88.6	2861.033	88.5	3183.087	89
08-Nov-03	20:35:00	2861.438	88.8	2861.413	88.6	2861.047	88.5	3182.884	89
08-Nov-03	20:40:00	2861.45	88.8	2861.427	88.6	2861.057	88.5	3180.691	89
08-Nov-03	20:45:00	2861.469	88.8	2861.44	88.5	2861.072	88.5	3178.704	89
08-Nov-03	20:50:00	2861.48	88.8	2861.458	88.5	2861.089	88.5	3176.568	89
08-Nov-03	20:55:00	2861.493	88.8	2861.479	88.5	2861.105	88.5	3174.476	88.9
08-Nov-03	21:00:00	2861.509	88.7	2861.496	88.5	2861.121	88.5	3172.568	88.9
08-Nov-03	21:00:00	Annulus during shut was top up.							
08-Nov-03	21:05:00	2861.531	88.7	2861.51	88.5	2861.138	88.4	3173.007	88.9
08-Nov-03	21:10:00	2861.554	88.7	2861.526	88.5	2861.157	88.4	3170.874	88.9
08-Nov-03	21:15:00	2861.584	88.7	2861.562	88.5	2861.192	88.4	3194.054	88.9
08-Nov-03	21:20:00	2861.594	88.7	2861.566	88.5	2861.199	88.4	3199.414	88.9
08-Nov-03	21:25:00	2861.603	88.7	2861.578	88.4	2861.211	88.4	3197.058	88.9
08-Nov-03	21:30:00	2861.62	88.7	2861.597	88.4	2861.223	88.4	3194.463	88.9
08-Nov-03	21:30:00	Held JSA on rig floor for Multi-flow period prior to opening well.							
08-Nov-03	21:35:00	2861.633	88.7	2861.606	88.4	2861.234	88.4	3193.453	88.9
08-Nov-03	21:36:00	Started methanol injection into data header, 60gallons/day.							
08-Nov-03	21:40:00	2861.647	88.7	2861.62	88.4	2861.248	88.4	3192.092	88.9
08-Nov-03	21:45:00								
08-Nov-03	21:46:00	2861.669	88.6	2861.636	88.4	2861.264	88.4	3191.131	
08-Nov-03	21:47:00	2861.664	88.6	2861.638	88.4	2861.265	88.4	3189.844	88.8
08-Nov-03	21:48:00	2861.671	88.6	2861.646	88.4	2861.274	88.4	3190.018	88.8
08-Nov-03	21:48:00	Pressured annulus to 1500 psi to open PCT.							
08-Nov-03	21:49:00	2861.675	88.6	2861.651	88.4	2861.277		3192.972	88.8
08-Nov-03	21:50:00	2861.698	88.6	2861.684	88.4	2861.313	88.4	3254.222	88.8
08-Nov-03	21:51:00	2474.434	88.6	2514.656	88.4	2524.37	88.4	4033.96	88.9
08-Nov-03	21:52:00	2860.288	88.8	2860.127	88.5	2859.534	88.5	4639.736	89
08-Nov-03	21:53:00	2860.074	89.1	2860.319	88.8	2859.823	88.7	4646.582	89.2
08-Nov-03	21:54:00	2860.471	89.3	2860.671	89.1	2860.251	88.9	4644.938	89.4
08-Nov-03	21:55:00	2853.516	89.5	2854.773	89.2	2854.412	89	4641.28	89.5
08-Nov-03	21:55:00	Opened well on 36/64" adjustable choke to gas flare. (Multi Flow Period #1)							
08-Nov-03	21:56:00	2835.29	89.6	2836.404	89.3	2836.033	89.1	4641.296	89.5
08-Nov-03	21:57:00	2831.76	89.7	2832.018	89.5	2831.573	89.3	4649.377	89.7
08-Nov-03	21:57:00	Diverted flow through steam exchanger.							

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818		WCQR-B #1937		WCQR-B 2805		WCQR-B 2855	
		WTP1	WCT1	WTP3	WCT3	WTP4	WCT4	WTP2	WCT2
		m.p.@ 1967.73 m MDRT		m.p.@ 1967.73 m MDRT		m.p.@ 1967.73 m MDRT		Annulus	
		psiA	degC	psiA	degC	psiA	degC	psiA	degC
08-Nov-03	21:58:00	2831.567	89.9	2831.883	89.7	2831.431	89.4	4661.267	89.8
08-Nov-03	21:59:00	2831.271	90	2831.594	89.8	2831.172	89.5	4674.141	89.9
08-Nov-03	22:05:00	2853.434	90.5	2853.671	90.2	2853.289	89.9	4661.75	90.2
08-Nov-03	22:09:00	Bled annulus to 1300psi.							
08-Nov-03	22:10:00	2841.526	90.6	2841.793	90.4	2841.376	90	4436.547	90.4
08-Nov-03	22:15:00	2841.056	90.8	2841.323	90.5	2840.943	90.2	4480.886	90.6
08-Nov-03	22:20:00	2841.18	91	2841.449	90.7	2841.092	90.4	4520.268	90.7
08-Nov-03	22:25:00	2841.153	91.1	2841.412	90.8	2841.037	90.5	4556.64	90.9
08-Nov-03	22:29:00	Switched flow through 36/64" fixed choke.							
08-Nov-03	22:30:00	2831.656	91.2	2831.928	90.9	2831.566	90.7	4589.893	91
08-Nov-03	22:35:00	2830.678	91.3	2830.899	91	2830.536	90.8	4636.688	91.1
08-Nov-03	22:38:00	CO2 = 0.3%, H2S = 0ppm							
08-Nov-03	22:40:00	2830.366	91.4	2830.592	91.1	2830.235	90.9	4681.029	91.2
08-Nov-03	22:45:00	2830.454	91.4	2830.692	91.2	2830.298	90.9	4434.443	91.3
08-Nov-03	22:46:00	Bled annulus to 1300psi.							
08-Nov-03	22:50:00	2830.348	91.5	2830.557	91.2	2830.192	91	4475.65	91.4
08-Nov-03	22:55:00	2830.306	91.6	2830.551	91.3	2830.193	91.1	4512.666	91.5
08-Nov-03	23:00:00	2830.377	91.7	2830.579	91.4	2830.246	91.2	4547.273	91.5
08-Nov-03	23:00:00	Diverted flow through separator on 36/64" fixed choke.							
08-Nov-03	23:05:00	2830.487	91.7	2830.693	91.4	2830.333	91.2	4580.117	91.6
08-Nov-03	23:10:00	2830.398	91.8	2830.673	91.5	2830.335	91.3	4611.335	91.7
08-Nov-03	23:12:00	Lowered 3" orifice plate.							
08-Nov-03	23:15:00	2830.402	91.8	2830.603	91.5	2830.258	91.4	4641.29	91.7
08-Nov-03	23:20:00	2830.495	91.9	2830.7	91.6	2830.363	91.4	4670.013	91.8
08-Nov-03	23:25:00	2830.765	91.9	2830.952	91.6	2830.549	91.4	4429.57	91.8
08-Nov-03	23:26:00	Bled annulus to 1300psi.							
08-Nov-03	23:30:00	2830.973	91.9	2831.189	91.6	2830.799	91.5	4458.093	91.9
08-Nov-03	23:30:00	Stopped methanol injection into data header.							
08-Nov-03	23:35:00	2830.959	92	2831.206	91.7	2830.835	91.5	4483.167	91.9
08-Nov-03	23:40:00	2831.015	92	2831.242	91.7	2830.88	91.6	4507.104	92
08-Nov-03	23:45:00	2830.978	92	2831.157	91.7	2830.817	91.6	4529.957	92
08-Nov-03	23:50:00	2831.06	92.1	2831.265	91.8	2830.929	91.6	4551.925	92
08-Nov-03	23:55:00	2831.028	92.1	2831.234	91.8	2830.891	91.7	4573.094	92.1
09-Nov-03	00:00:00	2830.974	92.1	2831.171	91.8	2830.824	91.7	4593.559	92.1
09-Nov-03	00:05:00	2831.035	92.1	2831.234	91.9	2830.906	91.7	4613.364	92.1
09-Nov-03	00:10:00	2830.96	92.2	2831.146	91.9	2830.821	91.7	4632.426	92.1
09-Nov-03	00:15:00	2830.965	92.2	2831.156	91.9	2830.816	91.8	4650.936	92.2
09-Nov-03	00:20:00	2830.933	92.2	2831.135	91.9	2830.794	91.8	4668.816	92.2
09-Nov-03	00:25:00	2830.957	92.2	2831.14	91.9	2830.809	91.8	4686.226	92.2
09-Nov-03	00:30:00	2830.887	92.2	2831.092	91.9	2830.753	91.8	4702.941	92.2
09-Nov-03	00:35:00	2830.92	92.3	2831.103	92	2830.769	91.8	4719.252	92.2
09-Nov-03	00:40:00	2830.834	92.3	2831.041	92	2830.709	91.9	4735.063	92.3
09-Nov-03	00:45:00	2830.919	92.3	2831.084	92	2830.752	91.9	4750.334	92.3
09-Nov-03	00:50:00	2830.692	92.3	2830.857	92	2830.483	91.9	4505.762	92.3
09-Nov-03	00:55:00	2830.78	92.3	2830.966	92	2830.58	91.9	4527.002	92.3
09-Nov-03	00:57:00	Bled annulus to 1400psi.							
09-Nov-03	01:00:00	2830.773	92.3	2830.982	92	2830.594	91.9	4541.796	92.3
09-Nov-03	01:05:00	2830.675	92.3	2830.872	92	2830.49	91.9	4555.709	92.3

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
09-Nov-03	01:10:00	2830.828	92.3	2830.993	92	2830.619	91.9	4568.895	92.3
09-Nov-03	01:15:00	2830.616	92.3	2830.828	92	2830.464	91.9	4581.582	92.3
09-Nov-03	01:20:00	2830.61	92.3	2830.813	92.1	2830.444	91.9	4593.819	92.3
09-Nov-03	01:25:00	2830.664	92.3	2830.859	92.1	2830.494	91.9	4605.7	92.4
09-Nov-03	01:30:00	2830.591	92.4	2830.783	92.1	2830.419	92	4617.167	92.4
09-Nov-03	01:35:00	2830.649	92.4	2830.845	92.1	2830.503	92	4628.304	92.4
09-Nov-03	01:40:00	2830.708	92.4	2830.894	92.1	2830.547	92	4639.063	92.4
09-Nov-03	01:45:00	2830.498	92.4	2830.683	92.1	2830.343	92	4649.494	92.4
09-Nov-03	01:50:00	2830.519	92.4	2830.675	92.1	2830.34	92	4659.713	92.4
09-Nov-03	01:55:00	2830.62	92.4	2830.787	92.1	2830.457	92	4669.645	92.4
09-Nov-03	02:00:00	2830.584	92.4	2830.76	92.1	2830.426	92	4679.353	92.4
09-Nov-03	02:05:00	2830.404	92.4	2830.62	92.1	2830.292	92	4688.758	92.4
09-Nov-03	02:10:00	2830.529	92.4	2830.722	92.1	2830.391	92	4697.95	92.4
09-Nov-03	02:15:00	2830.409	92.4	2830.601	92.1	2830.265	92	4706.843	92.4
09-Nov-03	02:20:00	2830.455	92.4	2830.641	92.1	2830.316	92	4715.396	92.4
09-Nov-03	02:25:00	2830.321	92.4	2830.484	92.1	2830.146	92	4723.783	92.5
09-Nov-03	02:30:00	2830.361	92.4	2830.55	92.2	2830.222	92.1	4731.997	92.5
09-Nov-03	02:35:00	2830.435	92.4	2830.638	92.2	2830.302	92.1	4739.963	92.5
09-Nov-03	02:40:00	2830.323	92.4	2830.512	92.2	2830.18	92.1	4747.519	92.5
09-Nov-03	02:45:00	2830.301	92.4	2830.48	92.1	2830.093	92	4500.473	92.4
09-Nov-03	02:49:00	Bled annulus to 1400psi.							
09-Nov-03	02:50:00	2830.318	92.4	2830.497	92.1	2830.116	92	4509.004	92.5
09-Nov-03	02:55:00	2830.381	92.4	2830.592	92.1	2830.209	92.1	4516.618	92.5
09-Nov-03	03:00:00	2830.248	92.4	2830.447	92.2	2830.069	92.1	4523.702	92.5
09-Nov-03	03:05:00	2830.244	92.4	2830.434	92.2	2830.05	92.1	4530.499	92.5
09-Nov-03	03:10:00	2830.352	92.4	2830.524	92.2	2830.15	92.1	4537.112	92.5
09-Nov-03	03:15:00	2830.233	92.5	2830.427	92.2	2830.052	92.1	4543.424	92.5
09-Nov-03	03:20:00	2830.224	92.5	2830.42	92.2	2830.045	92.1	4549.521	92.5
09-Nov-03	03:25:00	2830.214	92.5	2830.426	92.2	2830.055	92.1	4555.492	92.5
09-Nov-03	03:30:00	2830.219	92.5	2830.382	92.2	2830.011	92.1	4561.357	92.5
09-Nov-03	03:35:00	2830.249	92.5	2830.406	92.2	2830.042	92.1	4566.965	92.5
09-Nov-03	03:35:00	Commenced samples 1.06 & 1.07, PVT condensate (bottle 6808-MA) & PVT gas (bottle 42106).							
09-Nov-03	03:40:00	2830.258	92.5	2830.432	92.2	2830.064	92.1	4572.396	92.5
09-Nov-03	03:45:00	2830.115	92.5	2830.307	92.2	2829.95	92.1	4577.754	92.5
09-Nov-03	03:50:00	2830.13	92.5	2830.298	92.2	2829.938	92.1	4582.989	92.5
09-Nov-03	03:55:00	2830.095	92.5	2830.284	92.2	2829.921	92.1	4588.123	92.5
09-Nov-03	03:58:00	Finished taking samples 1.06 & 1.07.							
09-Nov-03	04:00:00	2830.176	92.5	2830.351	92.2	2829.991	92.1	4593.065	92.6
09-Nov-03	04:05:00	2830.042	92.5	2830.225	92.2	2829.874	92.1	4597.797	92.6
09-Nov-03	04:10:00	2830.094	92.5	2830.289	92.2	2829.93	92.2	4602.604	92.6
09-Nov-03	04:15:00	2830.195	92.5	2830.378	92.3	2830.033	92.2	4607.247	92.6
09-Nov-03	04:20:00	2829.985	92.5	2830.145	92.3	2829.798	92.2	4611.791	92.6
09-Nov-03	04:25:00	2830.092	92.5	2830.271	92.3	2829.922	92.2	4616.291	92.6
09-Nov-03	04:30:00	2829.938	92.5	2830.117	92.2	2829.72	92.1	4300.992	92.5
09-Nov-03	04:30:00	Raised 3" orifice plate.							
09-Nov-03	04:30:00	Commenced sample 1.08, dead condensate sample.							
09-Nov-03	04:33:00	Switched flow through 40/64" adjustable choke.							
09-Nov-03	04:34:00	Bled annulus to 1200psi.							

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
09-Nov-03	04:35:00	2830.419	92.5	2830.491	92.2	2830.094	92.1	4307.936	92.5
09-Nov-03	04:35:00	Finished taking sample 1.08.							
09-Nov-03	04:40:00	2831.662	92.5	2831.846	92.2	2831.451	92.1	4312.898	92.6
09-Nov-03	04:41:00	Increased to 48/64" adjustable choke.							
09-Nov-03	04:43:00	Switched flow through 48/64" fixed choke. (Multi Flow Period #2)							
09-Nov-03	04:45:00	2797.458	92.5	2797.6	92.2	2797.281	92.1	4318.801	92.5
09-Nov-03	04:50:00	2797.209	92.4	2797.384	92.2	2797.053	92.1	4341.571	92.5
09-Nov-03	04:51:00	Lowered 3.25" orifice plate.							
09-Nov-03	04:52:00	Raised 3.25" orifice plate.							
09-Nov-03	04:55:00	2797.358	92.4	2797.487	92.2	2797.161	92.1	4361.005	92.5
09-Nov-03	04:59:00	Lowered 3.75" orifice plate.							
09-Nov-03	05:00:00	2797.364	92.4	2797.523	92.1	2797.203	92.1	4378.24	92.5
09-Nov-03	05:05:00	2797.461	92.4	2797.559	92.2	2797.24	92.1	4393.813	92.5
09-Nov-03	05:10:00	2797.568	92.4	2797.75	92.2	2797.431	92.1	4408.289	92.5
09-Nov-03	05:15:00	2797.409	92.4	2797.558	92.2	2797.239	92.1	4421.737	92.5
09-Nov-03	05:20:00	2797.395	92.4	2797.534	92.2	2797.215	92.1	4434.29	92.5
09-Nov-03	05:25:00	2797.371	92.4	2797.565	92.2	2797.243	92.1	4446.042	92.5
09-Nov-03	05:30:00	2797.401	92.4	2797.566	92.2	2797.241	92.1	4457.13	92.5
09-Nov-03	05:35:00	2797.438	92.4	2797.632	92.2	2797.304	92.1	4467.54	92.5
09-Nov-03	05:40:00	2797.299	92.4	2797.447	92.2	2797.125	92.1	4477.364	92.5
09-Nov-03	05:45:00	2797.43	92.4	2797.582	92.2	2797.263	92.1	4486.719	92.5
09-Nov-03	05:50:00	2797.429	92.4	2797.588	92.2	2797.263	92.1	4495.532	92.5
09-Nov-03	05:55:00	2797.652	92.4	2797.81	92.2	2797.483	92.1	4503.94	92.5
09-Nov-03	06:00:00	2797.332	92.4	2797.541	92.2	2797.211	92.1	4511.871	92.5
09-Nov-03	06:05:00	2797.448	92.4	2797.631	92.2	2797.305	92.1	4519.349	92.5
09-Nov-03	06:10:00	2797.441	92.5	2797.603	92.2	2797.28	92.1	4526.521	92.5
09-Nov-03	06:15:00	2797.295	92.5	2797.464	92.2	2797.134	92.1	4533.28	92.5
09-Nov-03	06:20:00	2797.58	92.5	2797.76	92.2	2797.435	92.1	4539.81	92.5
09-Nov-03	06:25:00	2797.545	92.5	2797.716	92.2	2797.394	92.1	4545.886	92.5
09-Nov-03	06:30:00	2797.605	92.5	2797.796	92.2	2797.473	92.1	4551.792	92.5
09-Nov-03	06:35:00	2797.431	92.5	2797.586	92.2	2797.261	92.1	4557.374	92.5
09-Nov-03	06:40:00	2797.381	92.5	2797.525	92.2	2797.2	92.1	4562.693	92.5
09-Nov-03	06:45:00	2797.357	92.5	2797.531	92.2	2797.217	92.1	4567.774	92.5
09-Nov-03	06:50:00	2797.41	92.5	2797.591	92.2	2797.266	92.1	4572.648	92.5
09-Nov-03	06:55:00	2797.343	92.5	2797.485	92.2	2797.158	92.1	4577.265	92.6
09-Nov-03	07:00:00	2797.356	92.5	2797.524	92.2	2797.198	92.1	4581.746	92.6
09-Nov-03	07:05:00	2797.463	92.5	2797.665	92.2	2797.338	92.1	4586.031	92.6
09-Nov-03	07:10:00	2797.265	92.5	2797.445	92.2	2797.116	92.1	4590.117	92.6
09-Nov-03	07:15:00	2797.342	92.5	2797.51	92.2	2797.187	92.1	4594.091	92.6
09-Nov-03	07:20:00	2797.362	92.5	2797.563	92.2	2797.24	92.1	4597.907	92.6
09-Nov-03	07:25:00	2797.389	92.5	2797.55	92.2	2797.221	92.1	4601.501	92.6
09-Nov-03	07:30:00	2797.492	92.5	2797.644	92.2	2797.322	92.2	4604.941	92.6
09-Nov-03	07:35:00	2797.593	92.5	2797.74	92.2	2797.415	92.1	4608.279	92.6
09-Nov-03	07:40:00	2797.371	92.5	2797.484	92.2	2797.158	92.2	4611.413	92.6
09-Nov-03	07:45:00	2797.527	92.5	2797.698	92.2	2797.368	92.2	4614.444	92.6
09-Nov-03	07:50:00	2797.283	92.5	2797.444	92.2	2797.124	92.2	4617.418	92.6
09-Nov-03	07:55:00	2797.278	92.5	2797.441	92.3	2797.116	92.2	4620.261	92.6
09-Nov-03	08:00:00	2797.212	92.5	2797.353	92.2	2797.028	92.2	4623.092	92.6

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
09-Nov-03	08:05:00	2797.079	92.5	2797.238	92.3	2796.921	92.2	4625.78	92.6
09-Nov-03	08:10:00	2796.987	92.5	2797.196	92.3	2796.87	92.2	4628.33	92.6
09-Nov-03	08:15:00	2797.202	92.5	2797.357	92.3	2797.033	92.2	4630.86	92.6
09-Nov-03	08:20:00	2797.248	92.5	2797.442	92.3	2797.119	92.2	4633.284	92.6
09-Nov-03	08:25:00	2797.363	92.5	2797.492	92.3	2797.17	92.2	4635.556	92.6
09-Nov-03	08:30:00	2797.321	92.5	2797.456	92.3	2797.13	92.2	4637.702	92.6
09-Nov-03	08:35:00	2797.256	92.5	2797.435	92.3	2797.113	92.2	4639.891	92.6
09-Nov-03	08:40:00	2797.441	92.5	2797.565	92.3	2797.245	92.2	4642.11	92.6
09-Nov-03	08:45:00	2797.104	92.6	2797.257	92.3	2796.937	92.2	4644.011	92.6
09-Nov-03	08:50:00	2797.014	92.6	2797.209	92.3	2796.886	92.2	4645.791	92.6
09-Nov-03	08:55:00	2797.095	92.6	2797.243	92.3	2796.919	92.2	4647.676	92.6
09-Nov-03	09:00:00	2797.258	92.6	2797.403	92.3	2797.076	92.2	4649.423	92.6
09-Nov-03	09:05:00	2797.122	92.6	2797.292	92.3	2796.973	92.2	4651.07	92.6
09-Nov-03	09:10:00	2797.207	92.6	2797.37	92.3	2797.045	92.2	4652.812	92.6
09-Nov-03	09:15:00	2797.382	92.6	2797.583	92.3	2797.256	92.2	4654.53	92.7
09-Nov-03	09:20:00	2797.17	92.6	2797.297	92.3	2796.969	92.2	4656.104	92.7
09-Nov-03	09:25:00	2797.006	92.6	2797.165	92.3	2796.836	92.2	4657.871	92.7
09-Nov-03	09:30:00	2797.039	92.6	2797.212	92.3	2796.883	92.2	4659.597	92.7
09-Nov-03	09:32:00	Commenced sample 1.09, PVT gas (bottle 1657A).							
09-Nov-03	09:35:00	2797.002	92.6	2797.158	92.3	2796.834	92.2	4661.334	92.7
09-Nov-03	09:40:00	2796.859	92.6	2796.997	92.3	2796.675	92.2	4663.139	92.7
09-Nov-03	09:45:00	2797.079	92.6	2797.239	92.3	2796.914	92.2	4665.017	92.7
09-Nov-03	09:50:00	2797.054	92.6	2797.21	92.3	2796.881	92.2	4666.592	92.7
09-Nov-03	09:55:00	2796.886	92.6	2797.021	92.3	2796.695	92.2	4668.25	92.7
09-Nov-03	09:58:00	Finished taking sample 1.09.							
09-Nov-03	10:00:00	2796.847	92.6	2797.024	92.3	2796.693	92.2	4669.971	92.7
09-Nov-03	10:05:00	2796.771	92.6	2796.925	92.3	2796.602	92.3	4671.598	92.7
09-Nov-03	10:10:00	2796.85	92.6	2796.997	92.3	2796.671	92.3	4673.25	92.7
09-Nov-03	10:15:00	2796.864	92.6	2797.035	92.3	2796.706	92.3	4674.786	92.7
09-Nov-03	10:20:00	2796.732	92.6	2796.894	92.3	2796.57	92.3	4676.271	92.7
09-Nov-03	10:25:00	2796.753	92.6	2796.91	92.3	2796.58	92.3	4677.82	92.7
09-Nov-03	10:30:00	2797.098	92.6	2797.199	92.3	2796.874	92.3	4679.356	92.7
09-Nov-03	10:31:00	Raised orifice plate.							
09-Nov-03	10:32:00	Switched flow through 48/64" adjustable choke. (Multi Flow Period #3)							
09-Nov-03	10:33:00	Increased to 64/64" adjustable choke.							
09-Nov-03	10:35:00	2725.482	92.5	2725.531	92.2	2725.2	92.2	4660.061	92.6
09-Nov-03	10:38:00	Switched flow through 64/64" fixed choke.							
09-Nov-03	10:40:00	2734.638	92.3	2734.766	92.1	2734.379	92.1	4669.379	92.5
09-Nov-03	10:40:00	Lowered 4" orifice plate.							
09-Nov-03	10:44:00	Bypass steam exchanger.							
09-Nov-03	10:45:00	2733.342	92.3	2733.479	92.1	2733.095	92	4674.797	92.5
09-Nov-03	10:50:00	2732.805	92.3	2732.977	92	2732.591	92	4679.512	92.4
09-Nov-03	10:55:00	2732.085	92.3	2732.242	92	2731.851	92	4683.443	92.4
09-Nov-03	11:00:00	2731.919	92.3	2732.023	92	2731.626	91.9	4686.858	92.4
09-Nov-03	11:05:00	2731.304	92.2	2731.403	92	2731.009	91.9	4690.509	92.4
09-Nov-03	11:10:00	2730.84	92.2	2730.969	92	2730.578	91.9	4694.024	92.4
09-Nov-03	11:15:00	2730.556	92.2	2730.669	92	2730.283	91.9	4697.373	92.3
09-Nov-03	11:20:00	2730.603	92.2	2730.731	91.9	2730.338	91.9	4700.378	92.3

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 m.p.@ 1967.73 m MDRT	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
09-Nov-03	11:25:00	2730.314	92.2	2730.408	91.9	2730.017	91.9	4702.911	92.3
09-Nov-03	11:30:00	2730.452	92.2	2730.637	91.9	2730.242	91.8	4705.188	92.3
09-Nov-03	11:35:00	2730.144	92.2	2730.278	91.9	2729.882	91.8	4707.219	92.3
09-Nov-03	11:36:00	Bled annulus to 1300psi.							
09-Nov-03	11:40:00	2730.105	92.1	2730.249	91.8	2729.854	91.8	4420.56	92.2
09-Nov-03	11:45:00	2729.968	92.1	2730.136	91.8	2729.72	91.8	4424.504	92.2
09-Nov-03	11:50:00	2729.959	92.1	2730.109	91.8	2729.678	91.8	4427.075	92.2
09-Nov-03	11:55:00	2729.873	92.1	2730.055	91.8	2729.617	91.8	4429.102	92.2
09-Nov-03	12:00:00	2730.031	92.1	2730.185	91.8	2729.757	91.8	4430.776	92.2
09-Nov-03	12:05:00	2729.914	92.1	2730.08	91.8	2729.666	91.8	4432.222	92.2
09-Nov-03	12:10:00	2729.816	92.1	2729.871	91.8	2729.47	91.8	4433.518	92.2
09-Nov-03	12:15:00	2729.995	92.1	2730.129	91.8	2729.728	91.8	4434.784	92.2
09-Nov-03	12:20:00	2729.884	92.1	2730.062	91.8	2729.655	91.8	4435.861	92.2
09-Nov-03	12:25:00	2729.694	92.1	2729.865	91.8	2729.471	91.8	4436.787	92.2
09-Nov-03	12:30:00	2729.6	92.1	2729.785	91.8	2729.383	91.8	4437.697	92.2
09-Nov-03	12:30:00	Finished taking sample 1.11 1 lt drum from water sight glass on separator.							
09-Nov-03	12:35:00	2729.688	92.1	2729.871	91.8	2729.443	91.8	4438.624	92.2
09-Nov-03	12:40:00	2729.722	92.1	2729.894	91.8	2729.471	91.8	4439.559	92.2
09-Nov-03	12:45:00	2729.471	92.1	2729.636	91.8	2729.217	91.8	4440.148	92.2
09-Nov-03	12:50:00	2729.645	92.1	2729.83	91.8	2729.408	91.8	4441.055	92.2
09-Nov-03	12:55:00	2729.534	92.1	2729.704	91.8	2729.284	91.8	4441.693	92.2
09-Nov-03	13:00:00	2729.381	92.1	2729.527	91.8	2729.119	91.8	4442.387	92.2
09-Nov-03	13:05:00	2729.194	92.1	2729.373	91.8	2728.968	91.8	4443.11	92.2
09-Nov-03	13:10:00	2729.784	92.1	2729.967	91.8	2729.567	91.8	4443.958	92.2
09-Nov-03	13:15:00	2729.147	92.1	2729.3	91.8	2728.9	91.8	4444.425	92.2
09-Nov-03	13:20:00	2729.271	92.1	2729.385	91.8	2728.989	91.8	4445.153	92.2
09-Nov-03	13:25:00	2729.325	92.1	2729.405	91.8	2729.014	91.8	4445.828	92.2
09-Nov-03	13:30:00	2729.363	92.1	2729.517	91.8	2729.128	91.8	4446.504	92.2
09-Nov-03	13:35:00	2729.456	92.1	2729.521	91.8	2729.133	91.8	4447.238	92.2
09-Nov-03	13:40:00	2728.997	92.1	2729.179	91.8	2728.786	91.8	4447.727	92.2
09-Nov-03	13:45:00	2729.273	92.1	2729.364	91.8	2728.973	91.8	4448.43	92.2
09-Nov-03	13:50:00	2729.246	92.1	2729.356	91.8	2728.965	91.8	4449.147	92.2
09-Nov-03	13:55:00	2729.256	92.1	2729.369	91.8	2728.991	91.8	4449.737	92.2
09-Nov-03	14:00:00	2729.044	92.1	2729.176	91.8	2728.782	91.8	4450.338	92.2
09-Nov-03	14:05:00	2729.027	92.1	2729.213	91.8	2728.821	91.8	4451.001	92.2
09-Nov-03	14:10:00	2729.076	92.1	2729.183	91.8	2728.793	91.8	4451.699	92.2
09-Nov-03	14:15:00	2729.104	92.1	2729.265	91.8	2728.882	91.8	4452.296	92.2
09-Nov-03	14:20:00	2729.094	92.1	2729.228	91.8	2728.84	91.8	4452.915	92.2
09-Nov-03	14:25:00	2729.19	92.1	2729.341	91.8	2728.956	91.8	4453.431	92.2
09-Nov-03	14:30:00	2728.935	92.1	2729.092	91.8	2728.711	91.8	4454.001	92.2
09-Nov-03	14:35:00	2729.225	92.1	2729.379	91.8	2728.987	91.8	4454.711	92.2
09-Nov-03	14:35:00	Finished taking sample 1.12 20 lt drum from water line.							
09-Nov-03	14:40:00	2729.009	92.1	2729.174	91.8	2728.794	91.8	4455.197	92.2
09-Nov-03	14:45:00	2728.739	92.1	2728.909	91.8	2728.516	91.8	4455.747	92.2
09-Nov-03	14:50:00	2728.772	92.1	2728.889	91.8	2728.495	91.8	4456.22	92.2
09-Nov-03	14:55:00	2728.648	92.1	2728.858	91.8	2728.46	91.8	4456.852	92.2
09-Nov-03	15:00:00	2728.991	92.1	2729.154	91.8	2728.759	91.8	4457.592	92.2
09-Nov-03	15:05:00	2728.657	92.1	2728.819	91.8	2728.43	91.8	4458.153	92.2

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
09-Nov-03	15:10:00	2728.837	92.1	2728.961	91.8	2728.573	91.8	4458.779	92.2
09-Nov-03	15:15:00	2728.824	92.1	2728.984	91.8	2728.59	91.8	4459.425	92.2
09-Nov-03	15:15:00	Commenced samples 1.13 & 1.14, PVT condensate (bottle 7276-MA) & PVT gas (bottle A2633).							
09-Nov-03	15:20:00	2728.724	92.1	2728.89	91.8	2728.497	91.8	4459.921	92.2
09-Nov-03	15:25:00	2728.724	92.1	2728.853	91.8	2728.471	91.8	4460.522	92.2
09-Nov-03	15:30:00	2728.822	92.1	2728.973	91.8	2728.578	91.8	4461.075	92.2
09-Nov-03	15:35:00	2728.739	92.1	2728.878	91.8	2728.49	91.8	4461.64	92.2
09-Nov-03	15:37:00	Finished taking samples 1.13 & 1.14.							
09-Nov-03	15:40:00	2728.656	92.1	2728.789	91.8	2728.402	91.8	4462.19	92.2
09-Nov-03	15:45:00	2728.842	92.1	2728.978	91.8	2728.596	91.8	4462.744	92.2
09-Nov-03	15:50:00	2728.662	92.1	2728.754	91.8	2728.366	91.8	4463.258	92.2
09-Nov-03	15:55:00	2728.727	92.1	2728.88	91.8	2728.498	91.8	4463.841	92.2
09-Nov-03	16:00:00	2728.609	92.1	2728.743	91.8	2728.363	91.8	4464.39	92.2
09-Nov-03	16:05:00	2728.747	92.1	2728.848	91.8	2728.464	91.8	4464.928	92.2
09-Nov-03	16:10:00	2728.467	92.1	2728.636	91.8	2728.246	91.8	4465.447	92.2
09-Nov-03	16:15:00	2728.699	92.1	2728.852	91.8	2728.457	91.8	4466.054	92.2
09-Nov-03	16:20:00	2728.639	92.1	2728.798	91.8	2728.408	91.8	4466.551	92.2
09-Nov-03	16:25:00	2728.653	92.1	2728.812	91.8	2728.427	91.8	4467.144	92.2
09-Nov-03	16:30:00								
09-Nov-03	16:31:00	2728.673	92.1	2728.807	91.8	2728.427	91.8	4467.735	92.2
09-Nov-03	16:32:00	2728.625	92.1	2728.766	91.8	2728.385	91.8	4467.733	92.2
09-Nov-03	16:33:00	2728.42	92.1	2728.614	91.8	2728.223	91.8	4467.881	92.2
09-Nov-03	16:34:00	2728.198	92.1	2728.351	91.8	2727.958	91.8	4467.928	
09-Nov-03	16:35:00	2728.266	92.1	2728.458	91.8	2728.065	91.8	4468.017	92.2
09-Nov-03	16:36:00	2728.337	92.1	2728.488	91.8	2728.094	91.8	4468.171	92.2
09-Nov-03	16:37:00	2728.51	92.1	2728.675	91.8	2728.281	91.8	4468.402	92.2
09-Nov-03	16:38:00	2728.488	92.1	2728.68	91.8	2728.295	91.8	4468.532	92.2
09-Nov-03	16:39:00	2728.338	92.1	2728.537	91.8	2728.153	91.8	4468.618	92.2
09-Nov-03	16:40:00	2728.351	92.1	2728.545	91.8	2728.159	91.8	4468.603	92.2
09-Nov-03	16:41:00	2728.323	92.1	2728.447	91.8	2728.064	91.8	4468.771	92.2
09-Nov-03	16:42:00	2728.511	92.1	2728.659	91.8	2728.279	91.8	4468.899	92.2
09-Nov-03	16:43:00	2728.447	92.1	2728.568	91.8	2728.185	91.8	4469.009	
09-Nov-03	16:44:00	2728.446	92.1	2728.559	91.8	2728.178	91.8	4469.145	92.2
09-Nov-03	16:45:00	2728.323	92.1	2728.44	91.8	2728.06	91.8	4468.696	
09-Nov-03	16:45:11	2728.356							
09-Nov-03	16:45:12	2728.396	92.1						
09-Nov-03	16:45:13	2728.435	92.1	2728.5		2728.135			
09-Nov-03	16:45:14	2728.365	92.1						
09-Nov-03	16:45:15	2728.311	92.1						
09-Nov-03	16:45:16	2728.283							
09-Nov-03	16:45:17	2728.213		2728.408		2728.02			
09-Nov-03	16:45:18	2728.087							
09-Nov-03	16:45:19	2727.967							
09-Nov-03	16:45:20	2727.731							
09-Nov-03	16:45:21	2729.166		2732.301	91.8	2732.542	91.8	4248.923	92.2
09-Nov-03	16:45:22	2768.628	92.1						
09-Nov-03	16:45:23	2826.4							
09-Nov-03	16:45:24	2847.058	92.1						

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
09-Nov-03	16:45:25	2846.748		2778.036	91.8	2784.595	91.8		
09-Nov-03	16:45:26	2847.031							
09-Nov-03	16:45:27	2847.228							
09-Nov-03	16:45:28	2847.382	92.1						
09-Nov-03	16:45:29	2847.51		2846.966	91.8	2846.599	91.8		
09-Nov-03	16:45:40	2848.219	92.1	2848.29	91.8	2848	91.8	3111.489	92.1
09-Nov-03	16:45:50	2848.573	92.1	2848.565	91.8	2848.255	91.8		
09-Nov-03	16:46:00								
09-Nov-03	16:46:00	Shut in well at PCT and choke manifold for build up 3. (Build Up Period #3)							
09-Nov-03	16:47:00	2849.91	91.8	2849.787	91.5	2849.452	91.5	3106.843	91.9
09-Nov-03	16:47:00	Closed choke manifold.							
09-Nov-03	16:48:00	2850.485	91.5	2850.509	91.3	2850.115	91.4	3107.17	91.8
09-Nov-03	16:49:00	2850.924	91.5	2851.025	91.2	2850.584	91.3	3107.306	91.7
09-Nov-03	16:50:00	2851.275	91.4	2851.409	91.2	2850.949	91.3	3106.831	91.7
09-Nov-03	16:51:00	2851.556	91.4	2851.703	91.2	2851.238	91.2	3107.82	91.7
09-Nov-03	16:52:00	2851.801	91.4	2851.95	91.2	2851.481	91.2	3107.565	91.7
09-Nov-03	16:53:00	2852.01	91.4	2852.164	91.2	2851.689	91.2	3107.558	91.7
09-Nov-03	16:54:00	2852.193	91.4	2852.344	91.2	2851.87	91.2	3107.448	91.7
09-Nov-03	16:55:00	2852.354	91.5	2852.506	91.2	2852.036	91.2	3107.686	91.7
09-Nov-03	16:56:00	2852.499	91.5	2852.646	91.2	2852.177	91.2	3108.186	91.7
09-Nov-03	16:57:00	2852.628	91.5	2852.775	91.2	2852.312	91.2	3107.655	91.7
09-Nov-03	16:58:00	2852.743	91.5	2852.897	91.2	2852.433	91.2	3108.235	91.7
09-Nov-03	16:59:00	2852.857	91.5	2853.007	91.2	2852.546	91.2	3108.425	91.7
09-Nov-03	17:00:00	Finished taking sample 1.15 20 lt drum from water sight glass on separator.							
09-Nov-03	17:05:00	2853.373	91.5	2853.524	91.2	2853.065	91.1	3107.552	91.6
09-Nov-03	17:10:00	2853.681	91.4	2853.827	91.2	2853.378	91.1	3105.212	91.6
09-Nov-03	17:10:00	Finished taking sample 1.16 1 lt drum from water line.							
09-Nov-03	17:12:00	Finished taking sample 1.17 1 lt drum from water line.							
09-Nov-03	17:13:00	Finished taking sample 1.18 1 lt drum from water sight glass on separator.							
09-Nov-03	17:14:00	Finished taking sample 1.19 1 lt drum from water sight glass on separator.							
09-Nov-03	17:15:00	2853.949	91.4	2854.134	91.2	2853.643	91.1	3103.724	91.6
09-Nov-03	17:20:00	2854.151	91.4	2854.332	91.1	2853.844	91.1	3103.627	91.6
09-Nov-03	17:25:00	2854.326	91.4	2854.505	91.1	2854.016	91	3103.72	91.5
09-Nov-03	17:30:00	2854.485	91.3	2854.661	91.1	2854.171	91	3102.573	91.5
09-Nov-03	17:35:00	2854.624	91.3	2854.8	91.1	2854.308	91	3100.839	91.5
09-Nov-03	17:40:00	2854.734	91.3	2854.91	91	2854.423	91	3099.045	91.5
09-Nov-03	17:45:00	2854.853	91.3	2855.027	91	2854.537	90.9	3098.143	91.4
09-Nov-03	17:50:00	2854.967	91.2	2855.152	91	2854.652	90.9	3096.953	91.4
09-Nov-03	17:55:00	2855.085	91.2	2855.256	91	2854.765	90.9	3095.756	91.4
09-Nov-03	18:00:00	2855.193	91.2	2855.375	90.9	2854.868	90.9	3094.307	91.4
09-Nov-03	18:05:00	2855.292	91.2	2855.519	90.9	2854.967	90.8	3093.069	91.3
09-Nov-03	18:10:00	2855.388	91.1	2855.614	90.9	2855.06	90.8	3091.815	91.3
09-Nov-03	18:15:00	2855.477	91.1	2855.71	90.9	2855.149	90.8	3091.22	91.3
09-Nov-03	18:20:00	2855.568	91.1	2855.794	90.8	2855.234	90.8	3090.738	91.3
09-Nov-03	18:25:00	2855.653	91.1	2855.874	90.8	2855.313	90.7	3091.21	91.2
09-Nov-03	18:30:00	2855.728	91	2855.956	90.8	2855.393	90.7	3090.63	91.2
09-Nov-03	18:35:00	2855.804	91	2856.028	90.8	2855.465	90.7	3090.818	91.2
09-Nov-03	18:40:00	2855.879	91	2856.102	90.7	2855.536	90.7	3090.125	91.2

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

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		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
09-Nov-03	18:45:00	2855.948	91	2856.174	90.7	2855.607	90.7	3091.581	91.1
09-Nov-03	18:50:00	2856.017	90.9	2856.24	90.7	2855.673	90.6	3091.749	91.1
09-Nov-03	18:55:00	2856.084	90.9	2856.309	90.7	2855.735	90.6	3091.751	91.1
09-Nov-03	19:00:00	2856.147	90.9	2856.374	90.7	2855.796	90.6	3091.518	91.1
09-Nov-03	19:00:00	Emptied separator fluids into the surge tank to calculate BSW for Multi Flow Period.							
09-Nov-03	19:05:00	2856.212	90.9	2856.434	90.6	2855.852	90.6	3091.363	91.1
09-Nov-03	19:10:00	2856.272	90.9	2856.49	90.6	2855.909	90.6	3090.869	91
09-Nov-03	19:15:00	2856.331	90.8	2856.553	90.6	2855.969	90.5	3090.346	91
09-Nov-03	19:20:00	2856.381	90.8	2856.61	90.6	2856.019	90.5	3089.533	91
09-Nov-03	19:25:00	2856.442	90.8	2856.662	90.6	2856.07	90.5	3088.743	91
09-Nov-03	19:30:00	2856.495	90.8	2856.716	90.5	2856.121	90.5	3088.066	91
09-Nov-03	19:35:00	2856.546	90.8	2856.771	90.5	2856.171	90.5	3086.774	91
09-Nov-03	19:35:00	BSW = 57% water. Condensate = 10.91bbbls, water = 14.43bbbls.							
09-Nov-03	19:40:00	2856.592	90.7	2856.819	90.5	2856.22	90.4	3086.657	90.9
09-Nov-03	19:45:00	2856.641	90.7	2856.868	90.5	2856.267	90.4	3085.769	90.9
09-Nov-03	19:45:00	Commenced pumping out of surge tank to starboard flare.							
09-Nov-03	19:50:00	2856.694	90.7	2856.909	90.5	2856.314	90.4	3085.262	90.9
09-Nov-03	19:55:00	2856.744	90.7	2856.964	90.4	2856.358	90.4	3084.294	90.9
09-Nov-03	20:00:00	2856.785	90.7	2857.005	90.4	2856.402	90.4	3084.011	90.9
09-Nov-03	20:00:00	Finished pumping, contents of surge tank empty.							
09-Nov-03	20:05:00	2856.844	90.6	2857.057	90.4	2856.454	90.4	3083.298	90.8
09-Nov-03	20:10:00	2856.881	90.6	2857.095	90.4	2856.492	90.3	3082.053	90.8
09-Nov-03	20:15:00	2856.921	90.6	2857.138	90.4	2856.524	90.3	3082.017	90.8
09-Nov-03	20:20:00	2856.965	90.6	2857.177	90.3	2856.562	90.3	3081.931	90.8
09-Nov-03	20:25:00	2857.004	90.6	2857.216	90.3	2856.603	90.3	3081.431	90.8
09-Nov-03	20:30:00	2857.044	90.6	2857.256	90.3	2856.636	90.3	3080.744	90.8
09-Nov-03	20:35:00	2857.081	90.5	2857.299	90.3	2856.677	90.3	3080.308	90.7
09-Nov-03	20:40:00	2857.123	90.5	2857.334	90.3	2856.714	90.2	3080.11	90.7
09-Nov-03	20:45:00	2857.174	90.5	2857.383	90.3	2856.76	90.2	3080.059	90.7
09-Nov-03	20:50:00	2857.204	90.5	2857.415	90.2	2856.79	90.2	3079.539	90.7
09-Nov-03	20:55:00	2857.238	90.5	2857.448	90.2	2856.822	90.2	3078.598	90.7
09-Nov-03	21:00:00	2857.273	90.5	2857.482	90.2	2856.854	90.2	3078.127	90.7
09-Nov-03	21:05:00	2857.302	90.5	2857.515	90.2	2856.888	90.2	3077.214	90.7
09-Nov-03	21:10:00	2857.343	90.4	2857.549	90.2	2856.921	90.2	3075.879	90.6
09-Nov-03	21:15:00	2857.372	90.4	2857.58	90.2	2856.954	90.1	3074.873	90.6
09-Nov-03	21:20:00	2857.402	90.4	2857.613	90.2	2856.983	90.1	3074.023	90.6
09-Nov-03	21:25:00	2857.442	90.4	2857.649	90.1	2857.013	90.1	3073	90.6
09-Nov-03	21:30:00	2857.465	90.4	2857.669	90.1	2857.041	90.1	3071.967	90.6
09-Nov-03	21:35:00	2857.499	90.4	2857.707	90.1	2857.074	90.1	3071.332	90.6
09-Nov-03	21:40:00	2857.535	90.4	2857.737	90.1	2857.111	90.1	3070.132	90.6
09-Nov-03	21:45:00	2857.571	90.3	2857.776	90.1	2857.144	90.1	3070.008	90.5
09-Nov-03	21:50:00	2857.602	90.3	2857.802	90.1	2857.169	90	3069.034	90.5
09-Nov-03	21:55:00	2857.625	90.3	2857.834	90.1	2857.198	90	3068.104	90.5
09-Nov-03	22:00:00	2857.656	90.3	2857.856	90.1	2857.221	90	3067.327	90.5
09-Nov-03	22:05:00	2857.682	90.3	2857.89	90	2857.252	90	3066.36	90.5
09-Nov-03	22:10:00	2857.713	90.3	2857.915	90	2857.274	90	3065.591	90.5
09-Nov-03	22:15:00	2857.735	90.3	2857.936	90	2857.3	90	3066.889	90.5
09-Nov-03	22:20:00	2857.76	90.2	2857.966	90	2857.326	90	3065.987	90.5

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

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		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
								Annulus	
09-Nov-03	22:25:00	2857.783	90.2	2857.987	90	2857.345	90	3065.4	90.4
09-Nov-03	22:30:00	2857.812	90.2	2858.013	90	2857.373	89.9	3064.603	90.4
09-Nov-03	22:35:00	2857.839	90.2	2858.046	90	2857.4	89.9	3063.741	90.4
09-Nov-03	22:40:00	2857.863	90.2	2858.064	90	2857.423	89.9	3062.941	90.4
09-Nov-03	22:45:00	2857.896	90.2	2858.086	89.9	2857.447	89.9	3062.172	90.4
09-Nov-03	22:50:00	2857.921	90.2	2858.127	89.9	2857.48	89.9	3061.421	90.4
09-Nov-03	22:55:00	2857.952	90.2	2858.148	89.9	2857.508	89.9	3060.804	90.4
09-Nov-03	23:00:00	2857.973	90.2	2858.169	89.9	2857.531	89.9	3060.364	90.4
09-Nov-03	23:05:00	2857.992	90.1	2858.195	89.9	2857.552	89.9	3059.982	90.3
09-Nov-03	23:10:00	2858.019	90.1	2858.216	89.9	2857.579	89.9	3059.575	90.3
09-Nov-03	23:15:00	2858.041	90.1	2858.245	89.9	2857.594	89.8	3059.071	90.3
09-Nov-03	23:20:00	2858.067	90.1	2858.263	89.9	2857.621	89.8	3058.729	90.3
09-Nov-03	23:25:00	2858.088	90.1	2858.281	89.9	2857.64	89.8	3058.358	90.3
09-Nov-03	23:30:00	2858.115	90.1	2858.307	89.9	2857.669	89.8	3057.929	90.3
09-Nov-03	23:35:00	2858.128	90.1	2858.324	89.8	2857.684	89.8	3057.659	90.3
09-Nov-03	23:40:00	2858.159	90.1	2858.355	89.8	2857.711	89.8	3057.194	90.3
09-Nov-03	23:45:00	2858.176	90.1	2858.375	89.8	2857.732	89.8	3056.865	90.3
09-Nov-03	23:50:00	2858.201	90.1	2858.385	89.8	2857.753	89.8	3056.384	90.3
09-Nov-03	23:55:00	2858.212	90.1	2858.404	89.8	2857.77	89.8	3056.027	90.2
10-Nov-03	00:00:00	2858.239	90	2858.437	89.8	2857.798	89.8	3055.745	90.2
10-Nov-03	00:05:00	2858.261	90	2858.457	89.8	2857.818	89.8	3055.364	90.2
10-Nov-03	00:10:00	2858.28	90	2858.472	89.8	2857.834	89.7	3055.036	90.2
10-Nov-03	00:15:00	2858.307	90	2858.5	89.8	2857.864	89.7	3054.687	90.2
10-Nov-03	00:20:00	2858.323	90	2858.523	89.8	2857.882	89.7	3054.329	90.2
10-Nov-03	00:25:00	2858.348	90	2858.529	89.7	2857.894	89.7	3053.947	90.2
10-Nov-03	00:30:00	2858.359	90	2858.553	89.7	2857.918	89.7	3053.563	90.2
10-Nov-03	00:35:00	2858.384	90	2858.572	89.7	2857.939	89.7	3053.254	90.2
10-Nov-03	00:40:00	2858.398	90	2858.592	89.7	2857.956	89.7	3052.823	90.2
10-Nov-03	00:45:00	2858.423	90	2858.622	89.7	2857.975	89.7	3052.579	90.2
10-Nov-03	00:50:00	2858.436	90	2858.627	89.7	2857.991	89.7	3052.243	90.1
10-Nov-03	00:55:00	2858.459	89.9	2858.648	89.7	2858.018	89.7	3051.94	90.1
10-Nov-03	01:00:00	2858.473	89.9	2858.663	89.7	2858.033	89.7	3051.643	90.1
10-Nov-03	01:05:00	2858.494	89.9	2858.684	89.7	2858.049	89.6	3051.327	90.1
10-Nov-03	01:10:00	2858.51	89.9	2858.695	89.7	2858.064	89.6	3051.171	90.1
10-Nov-03	01:15:00	2858.529	89.9	2858.711	89.7	2858.085	89.6	3050.66	90.1
10-Nov-03	01:20:00	2858.54	89.9	2858.734	89.7	2858.101	89.6	3050.359	90.1
10-Nov-03	01:25:00	2858.562	89.9	2858.749	89.6	2858.116	89.6	3050.077	90.1
10-Nov-03	01:30:00	2858.575	89.9	2858.767	89.6	2858.139	89.6	3049.801	90.1
10-Nov-03	01:35:00	2858.597	89.9	2858.783	89.6	2858.157	89.6	3049.355	90.1
10-Nov-03	01:40:00	2858.612	89.9	2858.801	89.6	2858.172	89.6	3049.191	90.1
10-Nov-03	01:45:00	2858.628	89.9	2858.814	89.6	2858.185	89.6	3048.814	90.1
10-Nov-03	01:50:00	2858.642	89.9	2858.836	89.6	2858.204	89.6	3048.531	90.1
10-Nov-03	01:55:00	2858.658	89.9	2858.849	89.6	2858.22	89.6	3048.285	90
10-Nov-03	02:00:00	2858.675	89.8	2858.86	89.6	2858.235	89.6	3048.067	90
10-Nov-03	02:05:00	2858.69	89.8	2858.876	89.6	2858.251	89.6	3047.632	90
10-Nov-03	02:10:00	2858.703	89.8	2858.888	89.6	2858.267	89.5	3047.436	90
10-Nov-03	02:15:00	2858.716	89.8	2858.901	89.6	2858.281	89.5	3047.154	90
10-Nov-03	02:20:00	2858.73	89.8	2858.915	89.6	2858.293	89.5	3046.813	90

BOTTOMHOLE PRESSURE AND TEMPERATURE RESULTS

DATE	TIME	WCQR-B 3818 m.p.@ 1967.73 m MDRT		WCQR-B #1937 m.p.@ 1967.73 m MDRT		WCQR-B 2805 m.p.@ 1967.73 m MDRT		WCQR-B 2855 Annulus	
		WTP1 psiA	WCT1 degC	WTP3 psiA	WCT3 degC	WTP4 psiA	WCT4 degC	WTP2 psiA	WCT2 degC
10-Nov-03	02:25:00	2858.764	89.8	2858.951	89.6	2858.329	89.5	3046.56	90
10-Nov-03	02:30:00	2858.775	89.8	2858.963	89.6	2858.341	89.5	3046.363	90
10-Nov-03	02:30:00	Held JSA on rig floor prior to killing the well.							
10-Nov-03	02:35:00	2858.793	89.8	2858.973	89.5	2858.358	89.5	3045.96	90
10-Nov-03	02:40:00	2858.801	89.8	2858.99	89.5	2858.371	89.5	3045.859	90
10-Nov-03	02:45:00	2858.815	89.8	2859.001	89.5	2858.382	89.5	3045.437	90
10-Nov-03	02:50:00	2858.839	89.8	2859.02	89.5	2858.407	89.5	3045.171	90
10-Nov-03	02:55:00	2858.856	89.8	2859.036	89.5	2858.419	89.5	3044.911	90
10-Nov-03	03:00:00	2858.863	89.8	2859.042	89.5	2858.43	89.5	3044.721	90
10-Nov-03	03:05:00	2858.875	89.8	2859.062	89.5	2858.442	89.5	3044.395	89.9
10-Nov-03	03:08:00	Opened kill wing valve.							
10-Nov-03	03:10:00	2858.89	89.7	2859.071	89.5	2858.457	89.5	3044.137	89.9
10-Nov-03	03:13:00	Applied 1500psi to annulus to open the PCT.							
10-Nov-03	03:15:10	2859.026	89.8	2859.103	89.5	2858.489	89.5	3619.184	90
10-Nov-03	03:15:20	2848.684	89.8	2858.401	89.5	2856.934	89.5		
10-Nov-03	03:15:30	2548.698	89.7	2499.599	89.5	2507.728	89.5	4147.684	90
10-Nov-03	03:15:40	2660.927	89.7	2635.324	89.5	2638.704	89.5	4372.545	90.1
10-Nov-03	03:15:50	2743.87	89.8	2724.042	89.5	2726.464	89.5		
10-Nov-03	03:16:00	Good indication PCT opened.							
10-Nov-03	03:17:00	Commenced bullheading brine into formation at 10bbbls/min.							
10-Nov-03	03:20:00	2860.007	90.4	2860.162	90.2	2859.668	90.1	4647.356	90.5
10-Nov-03	03:25:00	2859.302	90.2	2859.334	89.9	2858.898	89.9	4591.769	90.3
10-Nov-03	03:30:00	2866.082	90	2865.85	89.7	2865.402	89.7	4483.21	90.1
10-Nov-03	03:35:00	2874.526	89.5	2874.35	89.3	2873.867	89.3	4589.208	89.7
10-Nov-03	03:35:00	Commenced flow check. 101.8bbbls brine pumped.							
10-Nov-03	03:40:00	4317.961	88.3	4306.917	88.1	4308.684	88	4649.004	88.3
10-Nov-03	03:45:00	4154.714	88.3	4155.73	88	4155.205	88.1	4603.027	88.4
10-Nov-03	03:49:00	Bled off tubing pressure at choke manifold.							
10-Nov-03	03:50:00	3922.96	88.6	3975.573	88.3	3967.913	88.4	4610.664	88.7
10-Nov-03	03:52:00	Closed choke manifold.							
10-Nov-03	03:55:00	2980.828	88.7	2980.705	88.4	2980.067	88.4	4614.938	88.8
10-Nov-03	04:00:00	3001.308	88.8	3001.191	88.6	3000.588	88.6	4642.47	89
10-Nov-03	04:08:00	Opened choke manifold to starboard burner while reverse circulating tubing volume.							



WELL TESTING REPORT

SAMPLING REPORT

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina

Santos SBU.Ltd.

Field Operations Report

Well: Casino - 3

Date: 31st Oct to 11th Nov 2003

Prepared By: Ben Leggo	Date: 11/11/03	Approved By: Chris Forde	Date:
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Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

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1. Summary
2. Sample Listing
3. Sequence of Events
4. Surface Sample Data Sheets
5. Water Analysis Results
6. Gas and Trace Element Sampling Sheet

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino - 3
Installation: Ocean Epoch

Summary

Schlumberger's specialist sampling division, Oilphase-DBR, were contracted by Santos to satisfy the sampling and analysis requirements during the Drill Stem Test (DST) on the Casino-3 well. In total, three PVT recombination sample sets (consisting of one condensate and one gas sample) and one stand alone gas sample were captured from the separator; along with four 20 Litre dead fluid samples and five 1 Litre dead fluid samples all taken during the clean up, main flow and main build up periods. In addition to this, fluid analysis was performed at the wellsite – basic water analysis, H₂S in gas by UOP and Mercury in gas by atomic fluorescence. Analysis was performed during the clean up and continuously throughout the main flow period. All onsite results are included within this report.

The DST test of Casino-3 targeted the reservoir Waarre Sandstone through perforations located between 2004 to 2013 mMDBRT. The well was opened for a clean up flow period, on a 16/64" adjustable choke. During this time one contingent PVT sample set was captured from the separator. Water salinity, conductivity and pH were monitored along with periodic H₂S and CO₂ gas detection from the separator inlet. Produced fluid rates were not recordable but were found to be mostly water - BS&W were measured at 95% and only trace amounts of condensate were seen in the flow. After this was a 6-hour shut in period to monitor reservoir build up.

On re-opening, the flow was diverted through the test separator for the multi-rate main flow period. During this flow period, choke size was increased three times. Firstly the well was flowed on 36/64" fixed choke. Again the liquid production rate was too low to be measured. One PVT recombination set was captured however; observations indicated that the pressurised liquid sample was mostly water. One 20 Litre produced fluid sample was collected from the separator oil line. Water salinity, conductivity and pH were monitored along with periodic H₂S and CO₂ gas detection from separator inlet. Trace element analysis for H₂S, RSH, COS and Mercury were performed once during this flow period.

Choke size was then increased to 48/64" fixed. Since liquid rates were still minimal it was decided by the client representative to capture only the PVT Gas sample from the separator gas line at the end of this flow period. One 20 Litre dead produced fluid sample was captured from the oil line. Water, CO₂ and H₂S analysis continued periodically. Mercury in gas was sampled once along with H₂S in gas sampling. UOP titrations were completed and the mercury gold trap was analysed.

The well was then allowed to flow on a fixed choke of 64/64". From observations it appeared the condensate production had increased, so it was decided by the client representative to collect a Condensate and Gas PVT set. The condensate PVT sample displayed no gas break out, indicating a dead sample. One 1 Litre condensate sample was collected from the top of the water sight glass (through manual separation of the hydrocarbon and water phases) and one 20 Litre produced fluid sample was collected from the oil line. Water salinity, conductivity and pH were monitored along with periodic H₂S and CO₂ gas detection from separator inlet. Trace element analysis of H₂S in gas by UOP and Mercury in gas was performed once during this flow period.

The well was then shut in for a 10-hour build up period to monitor the reservoir response. During this time, additional liquid samples were collected from the separator. One 20 Litre condensate sample was taken from the top of the water sight glass through manual separation of the hydrocarbon and water phases. Two 1 Litre produced fluid samples were captured from the water line and two 1 Litre produced fluid samples were taken from the bottom of the water sight glass.

All samples were labelled in accordance with Dangerous Goods Guidelines on site for later shipping from the rig. As directed by Santos, samples were packed into Oilphase equipment container and transported to Oilphase, Perth for onwards shipping to Petrolab, South Australia.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Sample Listing

Test No : DST#1

Clean Up

Sample No.	Sample Date	Sample Time	Sample Nature	Sample Point	Bottle Type	Bottle No.
1.01	3/11/03	10:00	Drilling Mud	Mud Pits	1 Ltr Plastic cont	N/A
1.02	7/11/03	16:30	Brine	Mud Pits	1 Ltr Plastic cont	N/A
1.03	8/11/03	15:03	Water sample	Separator Water Sight Glass	1 Ltr Plastic cont	N/A
1.04	8/11/03	15:10	Produced fluid sample	Separator Oil Sight Glass	Conventional (CSB)	7597-MA
1.05	8/11/03	15:10	PVT Gas	Separator Gas Line	20 Lt Luxfer (GSB)	5072A

Main Flow

Sample No.	Sample Date	Sample Time	Sample Nature	Sample Point	Bottle Type	Bottle No.
1.06	9/11/03	03:35	Produced fluid sample	Separator Oil Sight Glass	Conventional (CSB)	6808-MA
1.07	9/11/03	03:35	PVT Gas	Separator Gas Line	20 Lt Luxfer (GSB)	A2106
1.08	9/11/03	04:30	Produced fluid sample (Dead)	Separator Oil Line	20 Ltr IATA can	N/A
1.09	9/11/03	9:32	PVT Gas	Separator Gas Line	20 Lt Luxfer (GSB)	1657A
1.10	9/11/03	10:00	Produced fluid sample (Dead)	Separator Oil Line	20 Ltr IATA can	N/A
1.11	9/11/03	12:30	Dead Condensate Sample	Separator Water Sight Glass	1 Ltr IATA can	N/A
1.12	9/11/03	14:30	Produced fluid sample (Dead)	Separator Oil Line	20 Ltr IATA can	N/A
1.13	9/11/03	15:15	Produced fluid sample	Separator Oil Sight Glass	Conventional (CSB)	7276-MA
1.14	9/11/03	15:15	PVT Gas	Separator Gas Line	20 Lt Luxfer (GSB)	A2633
1.15	9/11/03	17:00	Dead Condensate Sample	Separator Water Sight Glass	20 Ltr IATA can	N/A
1.16	9/11/03	17:10	Produced fluid sample (Dead)	Separator Water Line	1 Ltr IATA can	N/A
1.17	9/11/03	17:12	Produced fluid sample (Dead)	Separator Water Line	1 Ltr IATA can	N/A
1.18	9/11/03	17:14	Produced fluid sample (Dead)	Separator Water Sight Glass	1 Ltr IATA can	N/A
1.19	9/11/03	17:16	Produced fluid sample (Dead)	Separator Water Sight Glass	1 Ltr IATA can	N/A

Client: Santos SBU (Australia) Ltd.
 Job No: AOH 428
 Date: 31st Oct – 11th Nov 2003

Field: Casino
 Well: Casino - 3
 Installation: Ocean Epoch

Sequence of Events

Date	Time	Event
<u>Clean Up Flow Period</u>		
31-Oct-03	12:30	Oilphase Sampling and Analysis Engineers arrive onboard Ocean Epoch.
	13:00	Assisted Testing with surface equipment rig up.
1-Nov-03	06:30	Assisted Testing with surface equipment rig up.
2-Nov-03	08:30	Assisted Testing with surface equipment rig up.
3-Nov-03	06:30	Assisted Testing with surface equipment rig up.
	10:00	Received drilling mud sample 1.01 from mud engineer.
4-Nov-03	07:00	Assisted Testing with surface equipment rig up.
5-Nov-03	06:00	Assisted Testing with surface equipment rig up.
	13:00	Oilphase container placed onboard Ocean Epoch.
	13:30	Commenced checks on sampling equipment all Ok.
	15:00	Assisted Testing with surface equipment rig up.
6-Nov-03	07:30	Commenced setup of Sir Galahad Mercury Analyser.
	09:45	Commenced Calibration of Sir Galahad Mercury Analyser.
	10:45	Commenced setup of UOP titration kit in Mud engineers lab.
	13:30	Assisted Testing with surface equipment rig up.
	17:20	Set packer with Wireline at 1977.56m MDRT.
	19:30	Held JSA on rig floor for running of TCP guns and BHA.
	19:45	Picked up TCP guns to rig floor.
	20:42	Picked up PCT and Gauge carrier.
	23:11	Commenced pressure test of BHA to 4500 psi
	7-Nov-03	00:15
06:40		Connected drill pipe to string.
07:23		String stab into packer assembly.
08:00		Commenced setup of sampling pressure letdown system.
10:30		Commenced setup of surface sampling equipment at separator.
11:05		Connected SenTree to test string.
14:00		Calibrated TDS salinity/conductivity meter.
14:40		Picked up Flow Head to rig floor.
16:30		Captured Brine sample 1.02 from mud pits.
17:00		Completed water analysis on Brine samples.
18:15		Commenced pressure testing Flow line against Choke manifold and TFTV.
20:51		Confirmed TFTV locked open and by-pass closed.
20:53		Pressured annulus to 1500psi to unlock PCT.
8-Nov-03	00:25	Held JSA on rig floor for displacing string with diesel cushion.
	01:00	Commenced diesel displacement.

Client: Santos SBU (Australia) Ltd.
 Job No: AOH 428
 Date: 31st Oct – 11th Nov 2003

Field: Casino
 Well: Casino - 3
 Installation: Ocean Epoch

Sequence of Events

Date	Time	Event
<u>Clean Up Flow Period</u>		
8-Nov-03	03:20	Finished displacing diesel cushion. 88bbls pumped.
	05:35	Held JSA on the rig floor prior to perforating the well.
	05:44	Pressured annulus to 1500psi to open the PCT.
	06:02	Indication on surface that guns fired.
		INITIAL FLOW PERIOD
	06:03	Well opened on 16/64" adjustable choke, flow diverted to surge tank.
	06:06	Increased to 20/64" adjustable choke.
	06:07	Increased to 24/64" adjustable choke.
	06:13	Shut in well at PCT and choke manifold for initial build up.
		INITIAL SHUT-IN PERIOD
	08:13	Pressured up annulus to 1500psi to open PCT.
		CLEAN UP FLOW PERIOD
	08:14	Opened well on 16/64" adjustable choke to surge tank.
	08:22	Increased to 20/64" adjustable choke.
	08:30	Diverted flow from Surge tank to Burner.
	08:32	Increased to 24/64" adjustable choke.
	08:37	BSW 100% diesel.
	08:38	Commenced methanol injection at upstream dataheader. Approx. 40gals/day.
	08:48	Increased to 32/64" adjustable choke.
	08:51	Diverted flow through steam exchanger.
	08:53	Shut in well at choke manifold due to pilot lights on burner going out.
	09:09	Commenced pumping from surge tank to burner.
	09:15	Opened well on 16/64" adjustable choke to burner
	09:16	Increased to 20/64" adjustable choke.
	09:19	Increased to 24/64" adjustable choke.
	09:20	Diverted flow through steam exchanger. Gas at surface
	09:21	Increased to 28/64" adjustable choke.
	09:29	Increased to 32/64" adjustable choke.
	09:30	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	09:36	Increased to 36/64" adjustable choke.
	09:46	BS&W 95%
	09:45	Water collected from choke manifold for analysis.
	09:49	Exercised choke.
	10:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	10:15	Increased to 40/64" adjustable choke.

Client: Santos SBU (Australia) Ltd.
 Job No: AOH 428
 Date: 31st Oct – 11th Nov 2003

Field: Casino
 Well: Casino - 3
 Installation: Ocean Epoch

Sequence of Events

Date	Time	Event
<u>Clean Up Flow Period</u>		
8-Nov-03	10:45	Increased to 44/64" adjustable choke.
	10:49	Exercised choke.
	10:51	Increased to 42/64" adjustable choke.
	11:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	11:10	Closed steam exchanger bypass.
	11:30	Increased to 44/64" adjustable choke.
	12:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	12:22	Increased to 52/64" adjustable choke.
	12:37	Stopped pumping methanol to dataheader.
	12:54	Opened inlet valve to separator.
	13:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	13:01	Increased to 58/64" adjustable choke.
	13:34	Diverted flow to fixed choke 64/64".
	13:40	Bypass steam exchanger.
	14:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	14:14	Lowered 4" orifice plate.
	15:03	Water sample 1.03 collected from water sight glass and analysed.
	15:10	Commenced taking first PVT Condensate and Gas set.
	15:35	Completed Produced fluid sample 1.04 (7597-MA, 600cc)
	15:35	Completed PVT Gas sample 1.05 (5072A, 20Litre)
15:44	Lifted orifice plate.	
15:45	Shut in well at PCT and choke manifold for build up	
BUILD UP PERIOD		
15:46	Closed choke manifold.	

Client: Santos SBU (Australia) Ltd.
 Job No: AOH 428
 Date: 31st Oct – 11th Nov 2003

Field: Casino
 Well: Casino - 3
 Installation: Ocean Epoch

Sequence of Events

Date	Time	Event	
<u>Multi-Rate Main Flow Period</u>			
8-Nov-03	21:30	Held JSA on rig floor for Multi-flow period prior to opening well.	
	21:36	Started methanol injection into dataheader, 60gallons/day	
	21:48	Pressured annulus to 1500 psi to open PCT.	
		MAIN FLOW PERIOD – Choke#1	
	21:55	Opened well on 36/64" adjustable choke to gas flare.	
	21:57	Diverted flow through steam exchanger.	
	22:29	Switched flow through 36/64" fixed choke.	
	22:30	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.	
	22:50	Commenced nitrogen purge of UOP sampling dreschels.	
	23:00	Diverted flow through separator on 36/64" fixed choke.	
	23:10	Completed nitrogen purge of UOP dreschles. Total 10 Litres.	
	23:12	Lowered 3" orifice plate.	
	23:30	Stopped methanol injection into dataheader.	
	23:30	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.	
	23:35	Commenced cleaning gold traps for mercury analyser.	
	9-Nov-03	00:30	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
		00:47	Commenced UOP gas flow through sampling dreschels from separator gas line.
		01:15	Commenced mercury in gas sampling from the separator at 0.5 Litres/min.
		01:35	Completed mercury in gas sampling, 10 Litres flowed through gold tube1.
		01:49	Analysed gold tube1 using Sir Galahad II.
01:51		Completed UOP gas flow through sampling dreschels. Total 30 Litres flowed.	
02:30		Commenced UOP H2S, RSH and COS titrations.	
03:35		Commenced taking second PVT Condensate and Gas set.	
03:58		Completed Produced fluid sample 1.06 (6808-MA, 600cc)	
03:58		Completed PVT Gas sample 1.07 (A2106, 20Litre)	
04:30		Raised 3" orifice plate.	
04:30		Collected 20Litre Dead produced fluid sample 1.08 from separator oil line.	
04:33		Switched flow through 40/64" adjustable choke.	
04:40		Completed UOP trace analysis titrations.	
04:41		Increased to 48/64" adjustable choke.	
04:43		Switched flow through 48/64" fixed choke.	
		MAIN FLOW PERIOD – Choke#2	
04:59		Lowered 3.75" orifice plate.	
05:00		CO2 and H2S levels measured using gas detection tubes at u/s choke manifold.	
05:00		Commenced nitrogen purge of UOP sampling dreschels.	

Client: Santos SBU (Australia) Ltd.
 Job No: AOH 428
 Date: 31st Oct – 11th Nov 2003

Field: Casino
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Sequence of Events

Date	Time	Event
<u>Multi-Rate Main Flow Period</u>		
9-Nov-03	05:20	Completed nitrogen purge of UOP dreschles. Total 10 Litres.
	06:00	Water collected from water line for analysis.
	06:48	Commenced UOP gas flow through sampling dreschels from separator gas line.
	07:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	07:15	Commenced mercury in gas sampling from the separator at 0.5 Litres/min.
	07:35	Completed mercury in gas sampling, 10 Litres flowed through gold tube2.
	07:40	Analysed gold tube2 using Sir Galahad II.
	08:02	Completed UOP gas flow through sampling dreschels. Total 30 Litres flowed.
	08:30	Commenced UOP H2S, RSH and COS titrations.
	09:00	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	09:00	Water collected from water line for analysis.
	09:32	Commenced taking solitary PVT Gas sample.
	09:58	Completed PVT Gas sample 1.09 (1657A, 20Litre)
	10:00	Collected 20Litre Dead produced fluid sample 1.10 from separator oil line.
	10:30	Completed UOP trace analysis titrations.
	10:31	Raised orifice plate.
	10:32	Switched flow through 48/64" adjustable choke.
		MAIN FLOW PERIOD – Choke#3
	10:33	Increased to 64/64" adjustable choke.
	10:38	Switched flow through 64/64" fixed choke.
	10:40	Lowered 4" orifice plate.
	10:44	Bypass steam exchanger.
	11:23	Commenced nitrogen purge of UOP sampling dreschels.
	11:30	CO2 and H2S levels measured using gas detection tubes at u/s choke manifold.
	11:30	Water collected from water line for analysis.
	11:43	Completed nitrogen purge of UOP dreschles. Total 10 Litres.
	12:30	Collected 1Litre condensate sample 1.11 from separator water sight glass.
	12:47	Commenced UOP gas flow through sampling dreschels from separator gas line.
	13:10	Commenced mercury in gas sampling from the separator at 0.5 Litres/min.
	13:30	Completed mercury in gas sampling, 10 Litres flowed through gold tube3.
	13:35	Analysed gold tube3 using Sir Galahad II.
	13:50	Completed UOP gas flow through sampling dreschels. Total 30 Litres flowed.
	14:10	Commenced UOP H2S, RSH and COS titrations.
	14:15	CO2 and H2S levels measured using gas detection tubes at d/s heat exchanger.
	14:15	Water collected from water line for analysis.

Client: Santos SBU (Australia) Ltd.
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino - 3
Installation: Ocean Epoch

Sequence of Events

Date	Time	Event
<u>Multi-Rate Main Flow Period</u>		
9-Nov-03	14:30	Collected 20Litre Dead produced fluid sample 1.12 from separator oil line.
	15:15	Commenced taking third PVT Condensate and Gas set.
	15:37	Completed Produced fluid sample 1.13 (7276-MA, 600cc)
	15:37	Completed PVT Gas sample 1.14 (A2633, 20Litre)
	16:15	Completed UOP trace analysis titrations.
	16:46	Shut in well at PCT and choke manifold. BUILD UP PERIOD
	16:47	Closed choke manifold.
	17:00	Collected 20Litre condensate sample 1.15 from separator water sight glass.
	17:10	Collected 1Litre Dead produced fluid sample 1.16 from water oil line.
	17:12	Collected 1Litre Dead produced fluid sample 1.17 from water oil line.
	17:14	Collected 1Litre Dead produced fluid sample 1.18 from water sight glass.
	17:16	Collected 1Litre Dead produced fluid sample 1.19 from water sight glass. END OF DST

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.01	Test No: 1	Sample Nature: Drilling Fluid Sample
Bottle No: N/A		Flow Period: N/A
Sampling Date: 3/11/03		Formation: N/A
Sampling Time	Start: 10:00 Finish: 10:05	
Sampling Point: Mud Pits		
Perforations : N/A		

Shipping Conditions

Sample Bottle Type: 1 Litre Plastic cont.	Gas Cap Created: N/A
Sample Bottle Volume: 1 Litre	Fluid Remaining: N/A
Sample Volume: 600 cc	Final Pressure: N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP: N/A	Sep pressure: N/A	Oil rate (std cond): N/A
BHT: N/A	Sep temp: N/A	Corrected by: N/A
At depth: N/A	Gas rate (std cond): N/A	Oil rate (sep cond): N/A
WHP: N/A	Gas gravity (air = 1): N/A	Oil gravity 60/60: N/A
WHT: N/A	Gas diff pressure: N/A	Oil line temp: N/A
Choke size: N/A	Gas pressure: N/A	Water rate: N/A
Stable since: N/A	Gas temp: N/A	GOR (total): N/A
H2S: N/A	FB factor: N/A	WOR: N/A
CO₂: N/A	FPV factor: N/A	BSW (choke): N/A

Remarks

Taken by Mud Engineer Chlorides = 32,000ppm

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.02	Test No: 1	Sample Nature:	Brine
Bottle No:	N/A	Flow Period:	N/A
Sampling Date:	7/11/03	Formation:	N/A
Sampling Time	Start: 16:30 Finish: 16:35		
Sampling Point:	Mud Pits		
Perforations :	N/A		

Shipping Conditions

Sample Bottle Type:	1 Litre Plastic cont.	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	600 cc	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Taken by Mud Engineer.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.03	Test No: 1	Sample Nature:	Stock Tank Water
Bottle No:	N/A	Flow Period:	Clean Up
Sampling Date:	8/11/03	Formation:	Waare Formation
Sampling Time	Start: 15:03 Finish: 15:05		
Sampling Point:	Separator Water Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre Plastic cont.	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	800 cc	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
Refer analysis results for measured water properties.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.04	Test No: 1	Sample Nature:	Produced Fluid (Water/Condensate)
Bottle No:	7597-MA	Flow Period:	Clean Up
Sampling Date:	8/11/03	Formation:	Waare Formation
Sampling Time	Start: 15:10 Finish: 15:35		
Sampling Point:	Separator Oil Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	Conventional (CSB)	Gas Cap Created:	20 cc
Sample Bottle Volume:	700 cc	Fluid Remaining:	80 cc (Water/ Glycol)
Sample Volume:	600 cc	Final Pressure:	0 psig @ 24 °C

Matched With Samples

Sample No: 1.05	In Bottle No: 5072A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2721.6 psia	Sep pressure:	709 psia	Oil rate (std cond):	N/A
BHT:	91.2 °C	Sep temp:	31 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	44.96 mmscf/d	Oil rate (sep cond):	N/A
WHP:	1836 psia	Gas gravity (air = 1):	0.608	Oil gravity 60/60:	N/A
WHT:	46 °C	Gas diff pressure:	208 "H2O	Oil line temp:	N/A
Choke size:	64/64" Fixed Choke	Gas pressure:	709 psia	Water rate:	N/A
Stable since:	14:15 on 8 Nov 03	Gas temp:	31 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	3718.2	WOR:	N/A
CO₂:	0.3%	FPV factor:	1.0495	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole Data from Schlumberger Gauge Data at 15:35 on 8/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.05	Test No: 1	Sample Nature:	PVT Gas
Bottle No:	5072A	Flow Period:	Clean Up
Sampling Date:	8/11/03	Formation:	Waare Formation
Sampling Time	Start: 15:10	Finish: 15:35	
Sampling Point:	Separator Gas Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre Luxfer	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	700 psig @ 24 °C

Matched With Samples

Sample No: 1.04	In Bottle No: 7597-MA	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2721.6 psia	Sep pressure:	709 psia	Oil rate (std cond):	N/A
BHT:	91.2 °C	Sep temp:	31 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	44.96 mmscf/d	Oil rate (sep cond):	N/A
WHP:	1836 psia	Gas gravity (air = 1):	0.608	Oil gravity 60/60:	N/A
WHT:	46 °C	Gas diff pressure:	208 "H2O	Oil line temp:	N/A
Choke size:	64/64" Fixed Choke	Gas pressure:	709 psia	Water rate:	N/A
Stable since:	14:15 on 8 Nov 03	Gas temp:	31 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	3718.2	WOR:	N/A
CO₂:	0.3%	FPV factor:	1.0495	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole Data from Schlumberger Gauge Data at 15:35 on 8/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.06	Test No: 1	Sample Nature:	Produced Fluid (Water/Condensate)
Bottle No:	6808-MA	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 03:35 Finish: 03:58		
Sampling Point:	Separator Oil Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	Conventional (CSB)	Gas Cap Created:	N/A
Sample Bottle Volume:	700 cc	Fluid Remaining:	N/A
Sample Volume:	600 cc	Final Pressure:	0 psig @ 20 °C

Matched With Samples

Sample No: 1.07	In Bottle No: A2106	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2830.1 psia	Sep pressure:	391 psia	Oil rate (std cond):	N/A
BHT:	92.5 °C	Sep temp:	31 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	19.56 mmscf/d	Oil rate (sep cond):	N/A
WHP:	2382 psia	Gas gravity (air = 1):	0.604	Oil gravity 60/60:	N/A
WHT:	38 °C	Gas diff pressure:	280 "H2O	Oil line temp:	N/A
Choke size:	36/64" Fixed Choke	Gas pressure:	391 psia	Water rate:	N/A
Stable since:	23:45 on 8 Nov 03	Gas temp:	31 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	1907.81	WOR:	N/A
CO₂:	0.3%	FPV factor:	1.0261	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging of condensate sight glass. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole data from Schlumberger Gauge Data at 03:58 on 9/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.07	Test No: 1	Sample Nature:	PVT Gas
Bottle No:	A2106	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 03:35	Finish: 03:58	
Sampling Point:	Separator Gas Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre Luxfer	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	400 psig @ 20 °C

Matched With Samples

Sample No: 1.06	In Bottle No: 6808-MA	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2830.1 psia	Sep pressure:	391 psia	Oil rate (std cond):	N/A
BHT:	92.5 °C	Sep temp:	31 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	19.56 mmscf/d	Oil rate (sep cond):	N/A
WHP:	2382 psia	Gas gravity (air = 1):	0.604	Oil gravity 60/60:	N/A
WHT:	38 °C	Gas diff pressure:	280 "H2O	Oil line temp:	N/A
Choke size:	36/64" Fixed Choke	Gas pressure:	391 psia	Water rate:	N/A
Stable since:	23:45 on 8 Nov 03	Gas temp:	31 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	1907.81	WOR:	N/A
CO₂:	0.3%	FPV factor:	1.0261	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging of condensate sight glass. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole data from Schlumberger Gauge Data at 03:58 on 9/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.08	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 04:35 Finish: 04:35		
Sampling Point:	Separator Oil Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Water production carried over into oil line. Small amounts of condensate seen.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.09	Test No: 1	Sample Nature:	PVT Gas
Bottle No:	1657A	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 09:32	Finish: 09:58	
Sampling Point:	Separator Gas Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre Luxfer	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	400 psig @ 21°C

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2796.9 psia	Sep pressure:	405 psia	Oil rate (std cond):	N/A
BHT:	92.6 °C	Sep temp:	30°C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	27.48 mmscf/d	Oil rate (sep cond):	N/A
WHP:	2213 psia	Gas gravity (air = 1):	0.602	Oil gravity 60/60:	N/A
WHT:	47 °C	Gas diff pressure:	192 "H2O	Oil line temp:	N/A
Choke size:	48/64" fixed choke	Gas pressure:	405 psia	Water rate:	N/A
Stable since:	07:45 on 9/11/2003	Gas temp:	30°C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	3172.09	WOR:	N/A
CO₂:	0.3%	FPV factor:	1.0274	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Production data obtained from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole Data taken from Schlumberger Gauge Data at 09:58 on 9/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.10	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 10:00 Finish: 10:05		
Sampling Point:	Separator Oil Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Water production carried over into oil line. Small amounts of condensate seen.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.11	Test No: 1	Sample Nature:	Produced Condensate (Dead)
Bottle No:	N/A	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 12:30 Finish: 12:10		
Sampling Point:	Separator Water Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	1 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Water production carried over into oil line. Small amounts of condensate seen.
 Condensate collected by draining away water.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.12	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 14:30	Finish: 14:35	
Sampling Point:	Separator Oil Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Water production carried over into oil line. Small amounts of condensate seen.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.13	Test No: 1	Sample Nature:	Produced Fluid (Water/Condensate)
Bottle No:	7276-MA	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 15:15 Finish: 15:37		
Sampling Point:	Separator Oil Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	Conventional (CSB)	Gas Cap Created:	60 cc
Sample Bottle Volume:	700 cc	Fluid Remaining:	40 cc (Water/ Glycol)
Sample Volume:	600 cc	Final Pressure:	50 psig @ 23 °C

Matched With Samples

Sample No: 1.14	In Bottle No: A2633	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2728.8 psia	Sep pressure:	573 psia	Oil rate (std cond):	N/A
BHT:	92.1 °C	Sep temp:	23 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	44.5 mmscf/d	Oil rate (sep cond):	N/A
WHP:	1863 psia	Gas gravity (air = 1):	0.608	Oil gravity 60/60:	N/A
WHT:	51 °C	Gas diff pressure:	248 "H2O	Oil line temp:	N/A
Choke size:	64/64" Fixed Choke	Gas pressure:	573 psia	Water rate:	N/A
Stable since:	11:00 on 9 Nov 03	Gas temp:	23 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	3718.2	WOR:	N/A
CO₂:	0.65%	FPV factor:	1.0432	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging of condensate sight glass. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole Data taken from Schlumberger Gauge Data at 15:37 on 9/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.14	Test No: 1	Sample Nature:	PVT Gas
Bottle No:	A2633	Flow Period:	Main Flow
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 15:15	Finish: 15:37	
Sampling Point:	Separator Gas Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre Luxfer	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	580 psig @ 23 °C

Matched With Samples

Sample No: 1.13	In Bottle No: 7276-MA	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	2728.8 psia	Sep pressure:	573 psia	Oil rate (std cond):	N/A
BHT:	92.1 °C	Sep temp:	23 °C	Corrected by:	N/A
At depth:	1967.73 m MDBRT	Gas rate (std cond):	44.5 mmscf/d	Oil rate (sep cond):	N/A
WHP:	1863 psia	Gas gravity (air = 1):	0.608	Oil gravity 60/60:	N/A
WHT:	51 °C	Gas diff pressure:	248 "H2O	Oil line temp:	N/A
Choke size:	64/64" Fixed Choke	Gas pressure:	573 psia	Water rate:	N/A
Stable since:	11:00 on 9 Nov 03	Gas temp:	23 °C	GOR (total):	N/A
H2S:	0 ppm	FB factor:	3718.2	WOR:	N/A
CO₂:	0.65%	FPV factor:	1.0432	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Emulsion seen during purging of condensate sight glass. Suspected water and condensate mixture.
 Production data taken from SLB Testing at time of sampling.
 Insufficient liquids produced for rates or CGR to be measured.
 Bottomhole Data taken from Schlumberger Gauge Data at 15:37 on 9/11/03

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.15	Test No: 1	Sample Nature:	Produced Condensate (Dead)
Bottle No:	N/A	Flow Period:	Shut In
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 17:00 Finish: 17:05		
Sampling Point:	Separator Water Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	20 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	20 Litre	Fluid Remaining:	N/A
Sample Volume:	20 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Sample taken during Main Shut In.
 Condensate collected by draining away water manually.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.16	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Shut In
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 17:10		Finish: 17:12
Sampling Point:	Separator Water Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	1 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Sample taken during Main Shut In.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.17	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Shut In
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 17:12 Finish: 17:14		
Sampling Point:	Separator Water Line		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	1 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Sample taken during Main Shut In.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.18	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Shut In
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 17:14 Finish: 17:16		
Sampling Point:	Separator Water Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	1 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Sample taken during Main Shut In.

Client: Santos SBU Australia
Job No: AOH 428
Date: 31st Oct – 11th Nov 2003

Field: Casino
Well: Casino-3
Installation: Ocean Epoch

Surface Sample Data Sheet

Identification

Sample No: 1.19	Test No: 1	Sample Nature:	Produced Fluid (Dead)
Bottle No:	N/A	Flow Period:	Shut In
Sampling Date:	9/11/03	Formation:	Waare Formation
Sampling Time	Start: 17:16 Finish: 17:18		
Sampling Point:	Separator Water Sight Glass		
Perforations :	2004 – 2013 mMDBRT		

Shipping Conditions

Sample Bottle Type:	1 Litre IATA can	Gas Cap Created:	N/A
Sample Bottle Volume:	1 Litre	Fluid Remaining:	N/A
Sample Volume:	1 Litre	Final Pressure:	N/A @ N/A

Matched With Samples

Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A
Sample No: N/A	In Bottle No: N/A	Sample No: N/A	In Bottle No: N/A

Production Conditions During Sampling

BHP:	N/A	Sep pressure:	N/A	Oil rate (std cond):	N/A
BHT:	N/A	Sep temp:	N/A	Corrected by:	N/A
At depth:	N/A	Gas rate (std cond):	N/A	Oil rate (sep cond):	N/A
WHP:	N/A	Gas gravity (air = 1):	N/A	Oil gravity 60/60:	N/A
WHT:	N/A	Gas diff pressure:	N/A	Oil line temp:	N/A
Choke size:	N/A	Gas pressure:	N/A	Water rate:	N/A
Stable since:	N/A	Gas temp:	N/A	GOR (total):	N/A
H2S:	N/A	FB factor:	N/A	WOR:	N/A
CO₂:	N/A	FPV factor:	N/A	BSW (choke):	N/A

Remarks

Sample Captured on instruction of Test Engineer Mike Lahiff.
 Sample taken during Main Shut In.

Sample Analysis Results Sheet

Water Analysis

Date	Sample Point	Salinity (ppk)	BS&W (%)	pH	Conductivity (mS/cm)	At Temp (°C)	Specific Gravity	At Temp (°C)	Comments
3/11/2003 10:00									Drilling Mud Sample captured from Mud pits. Mud Engineer reported Chloride count of 32,000 ppm.
7/11/2003 16:30	Mud Pits	80.1	n.m.	7.7	109.5	20.1	n.m.		Brine Sample Analysis
8/11/2003 8:13									Well opened for Clean Up
8/11/2003 8:30	u/s choke manifold	n.m.	100	n.m.	n.m.	n.m.	n.m.		
8/11/2003 8:38									Started pumping Methanol at 40gal/day.
8/11/2003 9:20									Gas at Surface
8/11/2003 9:45	u/s choke manifold	115.0	95.0	7.4	225.9	12.2	n.m.		No liquids
8/11/2003 12:37									Stopped pumping Methanol
8/11/2003 12:54									divert flow through separator
8/11/2003 15:03	Water sight glass	15.0	n.m.	5.7	26.2	23.0	n.m.		
8/11/2003 15:45									Well shut in for 6hr Build Up
8/11/2003 21:36									Methanol injected at 60 gal/day
8/11/2003 21:55									Main Flow 1
8/11/2003 23:00									divert flow through separator
8/11/2003 23:30									Stopped Methanol injection.
9/11/2003 4:43									Main Flow 2
9/11/2003 6:00	separator water line	2.8	90.0	6.8	5.2	19.8	n.m.		
9/11/2003 9:00	separator oil line	3.0	n.m.	6.8	5.3	19.0	n.m.		
9/11/2003 10:38									Main Flow 3
9/11/2003 11:30	separator oil line	4.7	n.m.	6.7	8.2	20.6	1.0	21.0	
9/11/2003 14:15	separator oil line	2.0	n.m.	6.5	3.5	23.0	n.m.		
9/11/2003 16:46									Shut In Well for Main Shut In 10 hrs

Sample Analysis Results Sheet

Gas Monitoring and Trace Analysis

Date	Time	Sample Point	Specific Gravity	H2S by tube (vol-ppm)	CO2 by tube (%)	Mercaptan by UOP (vol-ppm)	H2S by UOP (vol-ppm)	COS by UOP (vol-ppm)	Mercury (ng/m3)	Comments
8/11/2003	8:13									Opened well for Clean up
8/11/2003	8:38									Methanol injected at 40 gal/day
8/11/2003	9:30	d/s heat exchanger	n.m.	<0.2	0.45					
8/11/2003	10:00	d/s heat exchanger	n.m.	<0.2	0.40					
8/11/2003	11:00	d/s heat exchanger	n.m.	<0.2	0.45					
8/11/2003	12:00	d/s heat exchanger	n.m.	<0.2	0.35					
8/11/2003	12:37									Stopped Methanol injection.
8/11/2003	12:54									Flow diverted through separator.
8/11/2003	13:00	d/s heat exchanger	n.m.	<0.2	0.32					
8/11/2003	14:00	d/s heat exchanger	0.604	<0.2	0.30					
8/11/2003	15:45									Shut in for 6hr Build Up
8/11/2003	21:36									Methanol injected at 60 gal/day
8/11/2003	21:55									Main Flow 1
8/11/2003	22:30	d/s heat exchanger	0.604	<0.2	0.30					
8/11/2003	23:00									Flow diverted through separator.
8/11/2003	23:30	d/s heat exchanger	0.604	<0.2	0.25					Stopped Methanol injection.
9/11/2003	0:30	d/s heat exchanger	0.604	<0.2	0.25					
9/11/2003	1:30	Separator gas line							11.27	Mercury in Gas sample Tube1
9/11/2003	1:51	Separator gas line				<0.1	<0.1	<0.1		UOP H2S, RSH, COS sampling
9/11/2003	4:43									Main Flow 2
9/11/2003	5:00	u/s choke manifold	0.604	<0.2	0.25					
9/11/2003	7:00	d/s heat exchanger	0.606	<0.2	0.30					
9/11/2003	7:35	Separator gas line							15.29	Mercury in Gas sample Tube2
9/11/2003	8:02	Separator gas line				<0.1	<0.1	<0.1		UOP H2S, RSH, COS sampling
9/11/2003	9:00	d/s heat exchanger	0.602	<0.2	0.30					
9/11/2003	10:38									Main Flow 3
9/11/2003	11:30	u/s choke manifold	0.604	<0.2	0.25					
9/11/2003	13:30	Separator gas line							14.42	Mercury in Gas sample Tube3
9/11/2003	13:50	Separator gas line				<0.1	<0.1	<0.1		UOP H2S, RSH, COS sampling
9/11/2003	14:15	d/s heat exchanger	0.606	<0.2	0.60					
9/11/2003	16:46									Shut In Well for Main Shut In 10 hrs



WELL TESTING REPORT

ANNEXES

Company : Santos
Field / Well / Zone : VIC/P44 / Casino 3 / Appraisal
Country : Australia
Test date : 8-Nov-03 to 10-Nov-03
Report number : 2003-017
Area / GeoMarket / Base : MEA/APG/AUF

Company representative : P. Nardone
Schlumberger representative : E. Caina

Schlumberger

Date:	8-Nov-03
Client:	Santos
Well:	Casino # 3
Engineer:	Rowan Blok

TVD:	2001.0
Cushion:	2397.0
Brine:	9.30
Cush Flu:	7.0
Temp F:	194

Pc = 2397

Hydrostatic Pressure
Ph = 3175

Safety Factor
Ps = 1000

Select highest value of following Additional Pressures

Reversing valve	
Tubing test	800
Annulus test	
Pa =	800

Theoretical Actuating Pressure
Pt = Ph + Ps + Pa

Pt =	3174.97	+	1000	+	800
Pt =	4975				

Determine Shear Pin temperature correction factor from graph
Ftc = 0.96

Then determine temperature corrected Nominal Shear Pin value

Short:	484	x	0.96	=	464.64
Long:	945	x	0.96	=	907.20

Determine lower tolerance value for temperature corrected pins

Short:	0.95	x	464.64	=	441.41
Long:	0.95	x	907.20	=	861.84

Determine quantity of long Shear Pins.
Divide Pt by temperature/tolerance corrected value of long pins
(Pt) 4975 divide by 862 = 5.77
If remainder is greater than or equal to .5 add a long pin.
If not add a short pin

Quantity of short Shear Pins	0
Quantity of long Shear Pins	6

Determine lower limit of Shear Pin setting, P sp(LL)

P sp(LL) =	5171.04
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Determine nominal Shear Pin setting, P sp (Nom.)

P sp(Nom) =	5439.93
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Determine upper limit Shear Pin setting, P sp (UL)

P sp (UL) =	6117.42
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Pc = Pcushion

Determine lower limit Surface Pump Pressure, Pp (LL)

Pp (LL) =	5171.04	-	2397.00
PUMP PRESSURE LOWER LIMIT			
	2774.04		

Determine upper limit Surface Pump Pressure, Pp (UL)

Pp (UL) =	6117.42	-	2397.00
PUMP PRESSURE UPPER LIMIT			
	3720.42		

Schlumberger

Shear Pin and Pressures Summary Sheet

Santos - Casino # 3

HGD	Hydrostatic Pressure when Guns are on Depth	3175	psi
SM	Safety Margin when guns are on depth. <i>Difference between LSPV and Hydrostatic</i>	1996	psi

LSPV	Low Shear Pin Value	5171	psi
NSPV	Nominal Shear Pin Value	5440	psi
HSPV	High Shear Pin Value	6117	psi

MinSAP	Min Surface Applied Pressure that <u>could</u> detonate the guns	2774	psi
MaxSAP	Max Surface Applied Pressure that <u>will</u> detonate the guns	3720	psi

TD	Time Delay before guns fire with Full Hydrostatic	11	min
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TD	Time Delay before guns fire once Cushion Displaced	15	min
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Prepared By Rowan Blok

Approved By Paul Harris

Casing Talley m MDBRT	String	Descriptions	OD in	ID in	Top Connection	Bottom Connection	Length m	Depth		Volume Tubing bbbls	Gauge m.p. offset from bottom m	Gauge measuring depth m MDBRT
								Top m MDBRT	Bottom m MDBRT			
		Flowhead				6 1/2" SA BOX	3.20	-12.03	-8.83	0.00		
		Saver Sub	6.00	3.00	6 1/2" SA PIN	4 1/2" SA BOX	0.60	-8.83	-8.23	0.02		
		Crossover	6.00	3.00	4 1/2" SA PIN	4 1/2" PH6 PIN	0.40	-8.23	-7.83	0.03		
		4 1/2" Tubing L80 15.5 Lb	4.50	3.83	4 1/2" PH6 BOX	4 1/2" PH6 PIN	34.75	-7.83	26.92	1.65		
		Crossover	5.00	3.00	4 1/2" PH6 BOX	5" SA PIN	0.50	26.92	27.42	1.67		
		Lubricator Valve (SSLV)	8.25	3.00	5" SA BOX	5" SA BOX	1.53	27.42	28.95	1.71		
		Crossover	5.00	3.00	5" SA PIN	4 1/2" PH6 PIN	0.48	28.95	29.43	1.73		
		4 1/2" Tubing L80 15.5 Lb, inc pup joints.	4.50	3.83	4 1/2" PH6 BOX	4 1/2" PH6 PIN	50.27	29.43	79.70	4.08		
		Crossover	7.00	3.00	4 1/2" PH6 BOX	5" SA PIN	0.78	79.70	80.48	4.10		
		Shear Sub	5.00	3.00	5" SA BOX	5" SA PIN	1.51	80.48	81.99	4.14		
		Sub Sea Test Tree (SSTT)	16.00	3.00	5" SA BOX	5" SA BOX	1.21	81.99	83.20	4.18		
		Slick Joint	5.00	3.00	5" SA PIN	5" SA PIN	1.29	83.20	84.49	4.21		
		Hanger Assy above hang off point	5.00	3.00	n/a	n/a	1.70	84.49	86.19	4.26		
		Hanger Assy below hang off point.	11.00	3.00			0.38	86.19	86.57	4.22		
		Crossover	7.00	3.00	5" SA BOX	4 1/2" PH6 PIN	0.43	86.57	87.00	4.27		
		Stretch, log vs driller's depth	4.50	3.83	4 1/2" PH6 BOX	4 1/2" PH6 PIN	3.67	87.00	90.67	4.39		
		4 1/2" Tubing L80 15.5 Lb, inc. pup joints.	4.50	3.83	4 1/2" PH6 BOX	4 1/2" PH6 PIN	1850.92	90.67	1941.59	90.80		
		Crossover	5.00	3.00	4 1/2" PH6 BOX	3 1/2" PH6 PIN	0.38	1941.59	1941.97	90.81		
		SHRV	5.00	2.25	3 1/2" PH6 BOX	3 1/2" PH6 PIN	1.23	1941.97	1943.20	90.83		
		Tubing joint	3.50	2.75	3 1/2" PH6 BOX	3 1/2" PH6 PIN	9.55	1943.20	1952.75	91.06		
		MCVL 6 cycle	5.00	2.25	3 1/2" PH6 BOX	3 1/2" PH6 PIN	2.93	1952.75	1955.68	91.11		
		Tubing joint	3.50	2.75	3 1/2" PH6 BOX	3 1/2" PH6 PIN	9.58	1955.68	1965.26	91.34		
		DGA Gauge Carrier (4 gauges)	5.00	2.25	3 1/2" PH6 BOX	Taper Acme	2.97	1965.26	1968.23	91.38	0.5	1967.73
		PCTH-F 5 x 1 Hoop sleeve	5.00	2.25	Taper Acme	4 1/5" M.API BOX	5.93	1968.23	1974.16	91.48		
		PORT-F	5.00	2.25	4 1/5" M.API Pin	3 1/2" PH6 PIN	1.51	1974.16	1975.67	91.50		
		TFTV (Bypass open)	5.00	2.25	3 1/2" PH6 BOX	3 1/2" PH6 PIN	1.77	1975.67	1977.44	91.53		
		crossover	5.00	2.75	3 1/2" PH6 BOX	4 1/2" PH6 PIN	0.00	1977.44	1977.44	91.53		
		G22 Locator Sub (Top to no go 0.12m)	5.13	2.98	4 1/2" PH6 BOX	3 1/2" NV Box	0.12	1977.44	1977.56	91.54		
			4.00	2.98			0.00	1977.56	1977.56	91.54		
			4.00	2.98						91.54		
		Seal assy	4.00	2.98	3 1/2" NV Pin	3 5/8" SA Pin	6.27	1977.56	1983.83	91.71		
			4.00	2.98						91.71		
			4.00	2.98			0.00	1983.83	1983.83	91.71		
		Crossover	3.75	2.44	3 5/8" SA BOX	2 7/8" EUE PIN	0.00	1983.83	1983.83	91.71		
		2 7/8" EUE Perforated Pup Joint	3.67	2.44	2 7/8" EUE BOX	2 7/8" EUE PIN	9.62	1983.83	1993.45	91.90		
	Fluid Isolation Sub	3.67	2.44	2 7/8" EUE BOX	2 7/8" EUE PIN	0.77	1993.45	1994.22	91.91			
	2 7/8" Tubing Pup Joint	3.67	2.44	2 7/8" EUE BOX	2 7/8" EUE PIN	1.25	1994.22	1995.47	91.93			
	TCR-B Gun drop sub	3.67	n/a	2 7/8" EUE BOX	2 7/8" EUE PIN	0.66	1995.47	1996.13				
	2 7/8" EUE Tubing Pup	3.67	n/a	2 7/8" EUE BOX	2 7/8" EUE PIN	1.25	1996.13	1997.38				
	HDF/TCF Hydraulically Actuated Firing Head	3.67	n/a	2 7/8" EUE BOX	2 3/8" Mod PIN	2.87	1997.38	2000.25				
	Safety Spacer	3.38	n/a	2 3/8" Mod BOX	2 3/8" Mod PIN	3.75	2000.25	2004.00				
	3 3/8 HMX PJ 3406 6spf TCP Guns	3.38	n/a	2 3/8" Mod BOX	2 3/8" Mod PIN	9.00	2004.00	2013.00				
	Bull nose	3.38	n/a	2 3/8" Mod BOX	n/a	0.18	2013.00	2013.18				



Client : Santos
Well : Casino 3
Field : VIC/P44

Job : 2003-017
Rig : Ocean Epoch
Date : 19-Nov-03

Rupture Disc Calculation

TFTV

Well Data

Temp. :	190	°F	Mud :	9.30	lb/gl
Depth :	1977	meters	Ph :	3137	psi

Part Nr.	Code	Size	Min	Max	°F
75508	H	4000	3900	4100	125

Pressure Corrected	
Minimum	Maximum
3816 psi	4012 psi

Pump Pressure	
Minimum	Maximum
679 psi	875 psi

Rated Temperature factor
0.9829

Actual Temperature factor
0.9618



Client : Santos
Well : Casino 3
Field :

Job : 2003-017
Rig : Ocean Epoch
Date : 19-Nov-03

Rupture Disc Calculation SHRV

Well Data

Temp. :	190	°F	Mud :	9.30	lb/gl
Depth :	1943	meters	Ph :	3083	psi

Part Nr.	Code	Size	Min	Max	°F
75512	L	6000	5850	6150	155

Pressure Corrected	
Minimum	Maximum
5783 psi	6079 psi

Pump Pressure	
Minimum	Maximum
2700 psi	2996 psi

Rated Temperature factor
0.9730

Actual Temperature factor
0.9618



Client : Santos
Well : Casino 3
Field : VIC/P44

Job : 2003-017
Rig : Ocean Epoch
Date : 19-Nov-03

Rupture Disc Calculation

PORT

Well Data

Temp. :	190	°F	Mud :	9.30	lb/gl
Depth :	1975	meters	Ph :	3134	psi

Part Nr.	Code	Size	Min	Max	°F
75508	H	4000	3900	4100	125

Pressure Corrected	
Minimum	Maximum
3816 psi	4012 psi

Pump Pressure	
Minimum	Maximum
683 psi	878 psi

Rated Temperature factor
0.9829

Actual Temperature factor
0.9618



Client : Santos
Well : Casino 3
Field : VIC/P44

Job : 2003-017
Rig : Ocean Epoch
Date : 19-Nov-03

Rupture Disc Calculation MCVL

Well Data

Temp. :	190	°F	Mud :	9.30	lb/gl
Depth :	1955	meters	Ph :	3102	psi

Part Nr.	Code	Size	Min	Max	°F
79397	GA	3750	3650	3850	120

Pressure Corrected

Minimum	Maximum
3566 psi	3761 psi

Pump Pressure

Minimum	Maximum
464 psi	659 psi

Rated Temperature factor

0.9845

Actual Temperature factor

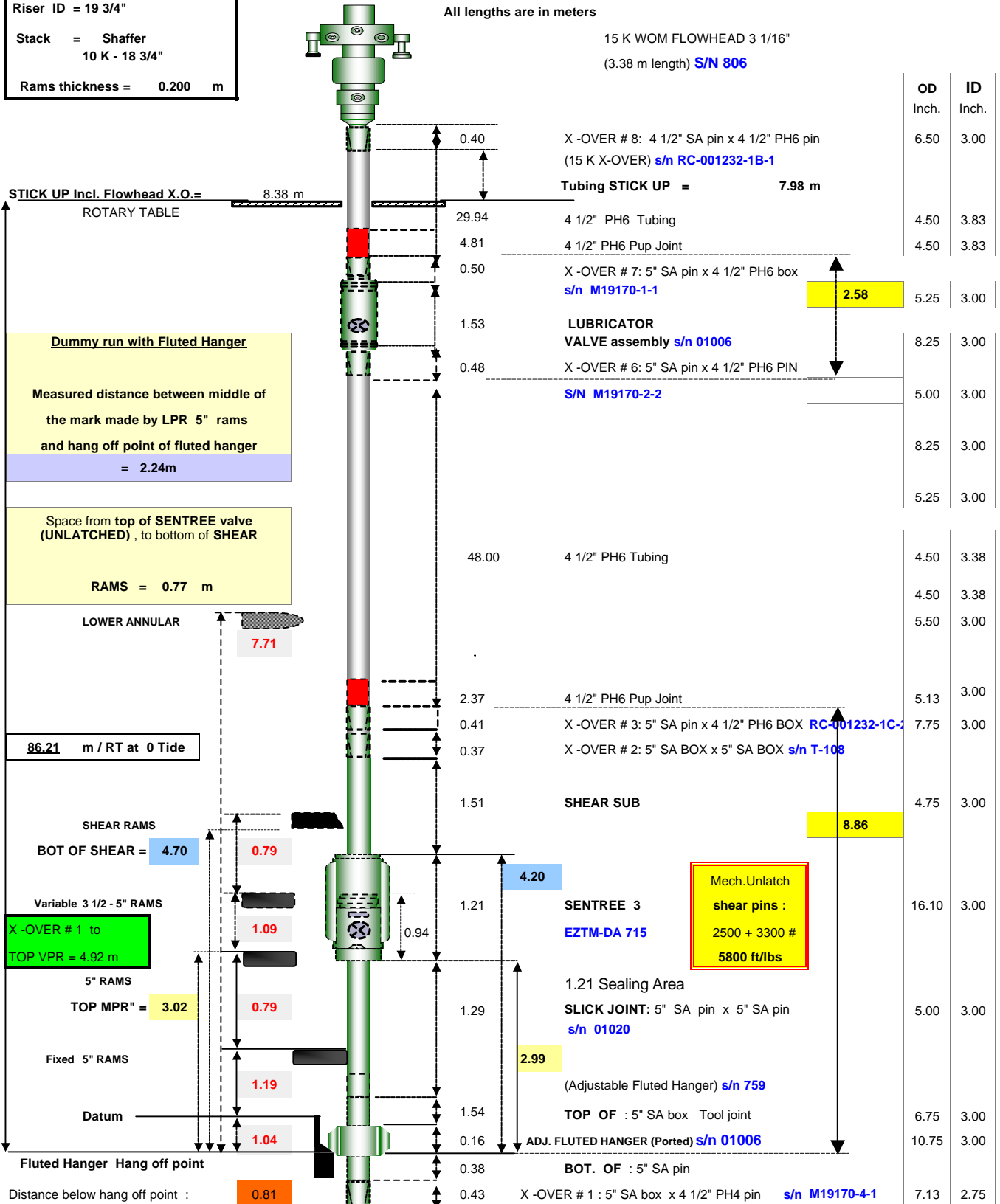
0.9618

OCEAN EPOCH - LANDING STRING DIAGRAM - DST 1

Ocean Epoch B.O.P'stack	
Riser ID =	19 3/4"
Stack =	Shaffer 10 K - 18 3/4"
Rams thickness =	0.200 m

All lengths are in meters

15 K WOM FLOWHEAD 3 1/16"
(3.38 m length) S/N 806

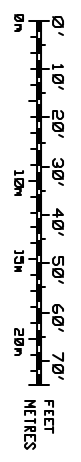
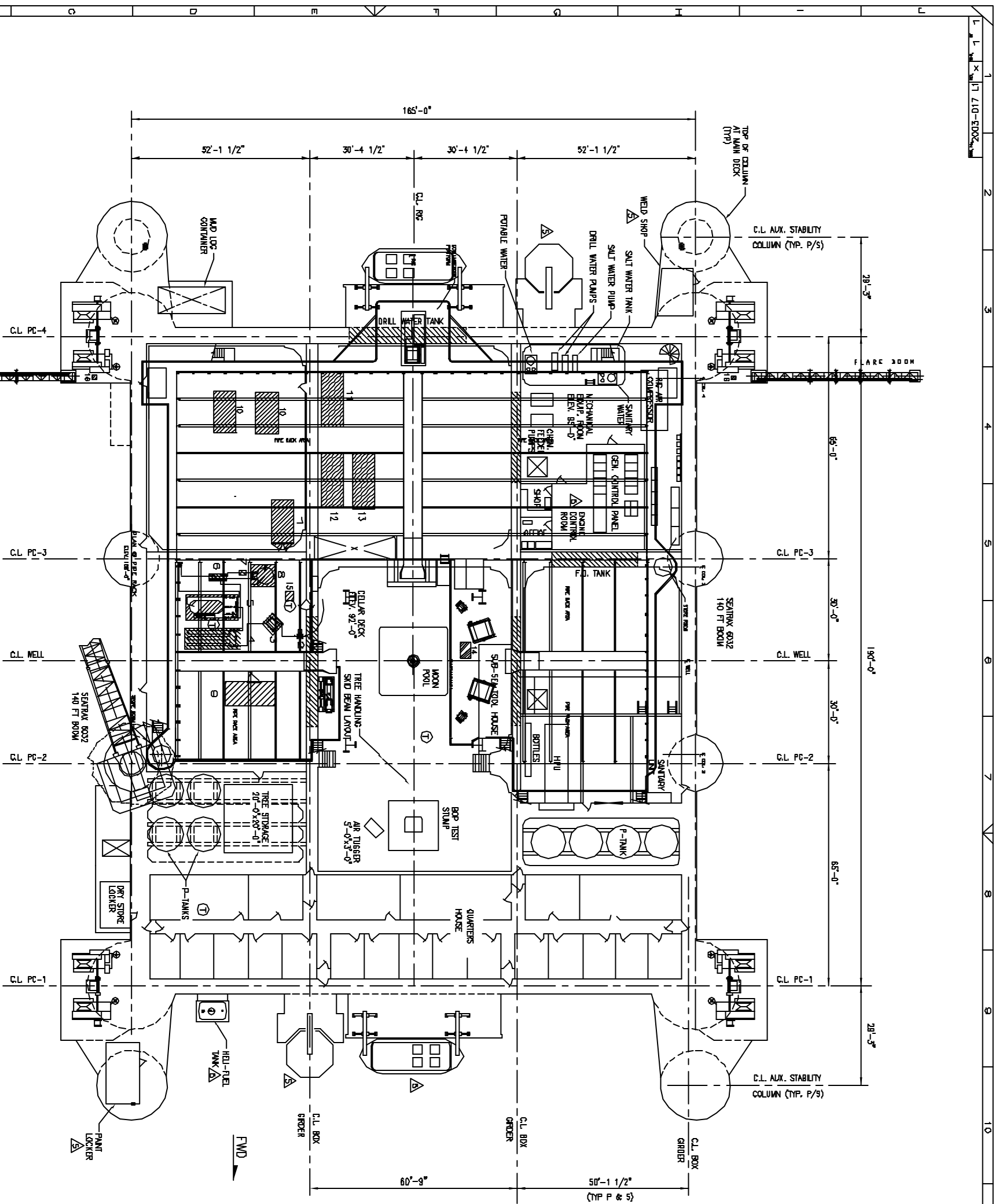




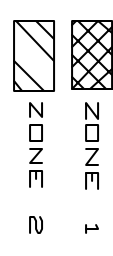
Santos VIC/P44 / Casino 3 / Appraisal	GAUGE INFORMATION SHEET	Gauge Setup 2003-017	1
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Downhole Pressure and Temperature Gauge Setup Information

Gauge Type	Lower Gauge Setup						Upper Gauge Setup					
	WCQR-B			WCQR-B			WCQR-B			WCQR-B		
Gauge Serial Number	3818			2855			2850			1728		
Sensor Serial Number	2564			1187			1161			393		
Type of Sensor	Sch - CQG			Sch - CQG			Sch - CQG			Sch - CQG		
Maximum Pressure Rating (psi)	0 - 16,000			0 - 16,000			0 - 16,000			0 - 16,000		
Calibrated Pressure Range (psi)	1000 - 15,000			1000 - 15,000			1000 - 15,000			1000 - 15,000		
Pressure Accuracy (psi)	+/- 1 to 2.5			+/- 1 to 2.5			+/- 1 to 2.5			+/- 1 to 2.5		
Pressure Resolution @ 1 sec scan	0.01 psi			0.01 psi			0.01 psi			0.01 psi		
Temperature Range °C	0-177			0-177			0-177			0-177		
Temperature Accuracy °C	+/- 0.5			+/- 0.5			+/- 0.5			+/- 0.5		
Temperature resolution °C	0.01 @ 1 sec			0.01 @ 1 sec			0.01 @ 1 sec			0.01 @ 1 sec		
Measure Name	WTP1			WTP2			WTP3			WTP4		
Measuring Depth (m-LD)												
Measuring Depth m-TVDLD												
Measuring Location												
Power on Date	6-N0v-03			6-N0v-03			6-N0v-03			6-N0v-03		
Power on Time	18:51:52			18:21:01			18:15:05			18:09:12		
Memory Guard	Yes			Yes			Yes			Yes		
Delay Time (hours)	29			1			28:40:00			28:45:00		
Recording session Breakdown	Duration hrs	Rate sec	Reduction yes/no	Duration hrs	Rate sec	Reduction yes/no	Duration hrs	Rate sec	Reduction yes/no	Duration hrs	Rate sec	Reduction yes/no
Session #1	91	1.0	yes	341	15	yes	91	4	yes	91	4	yes
Session #2												
Session #3												
Session #4												
Session #5												
Session #6												
Session #7												
Session #8												
Session #9												
Battery Type (P/N)	H357760			H357760			H357760			H357760		
Battery Serial Number	267-290			237-290			241-290			239-290		
Number of Data Sets Available	100,000			100,000			100,000			100,000		
Memory Usage (percentage)	57.4			36.9			60.3			60.9		



AREA ZONING



ESD STATION

ITEM	DESCRIPTION	(T) (K) (W) (H) (M) (W) (H) (M)
1	Weld Tank Workshop	— 6500 3.5 2.4 2.6
2	Steel Down Valve	250 10K 146 1.3 0.6 1.18
3	Circle Worktable	250 10K 3000 1.97 1.96 0.99
4	Steam Extinguisher	350 10K 1700K 0.9 1.93 2.41
5	Separator	212 1.4K 1800K 0.73 2.21 2.41
6	Oil Handled	250 1.4K 500 2.65 0.7 0.4
7	Transfer Pump	200 0.4K 3.0 2 2 1.6
8	Storage Tank 1000L	212 0.18K 2000 2.45 2.8 2.8
9	Lab Cabin	— 10000 3.5 2.4 2.8
10	Compressor	— 0.13K 6000 5 2.2 1.8
11	Specimen Generator	— 0.13K 16000 5 2.3 2.4
12	Sub Sea Workshop	— 18000 4.18 2.6 2.8
13	DSV/TOP Workshop	— 5K 12000 3 2.4 2.76
14	58 Head Rail	— 5 K 2000 1 1.5 1.5
15	ESD unit	— 7.5K 500 1 1.5 1.5
16	Programme rack	— — — — —
17	ESD Button	— — — — —

4 = vert. weights

REV.	DATE	DESCRIPTION	DRN/CHK	APPR.
2	02-11-03	Job Report	LB	DB
1	23-10-03	UPDATE FROM HAZOP	LB	DB
0	02-10-03	Draft for Comment	LB	DB

Schlumberger Oilfield Australia
Level 11, 300 St Georges Way, Perth WA, Australia

LAUNCH & HAZARDOUS AREA DRAWING

NO.	DATE	DESCRIPTION	BY	CHK	APPR.
01	02-10-03	D.I.G	DB	DB	DB
02	02-10-03	D.O.G	DB	DB	DB
03	2003-017	NTS	DB	DB	DB

