

FLOPETROL

Denne rapport
tilhører



99.595.274-21
L&U DOK. SENTER

L.NR. 20088020029

KODE Well 34/10-16 nr26

Returneres etter bruk

Well Testing Report

: STATOIL RIG: ROSS ISLE
: 34/10 ALPHA Well:- 34/10-16 DST NO. 2
: BRENT Date: 16 - 18 SEPT. 83

FLOPETROL

DIVISION : EMR/NSD
BASE : NWB
REPORT N° : 83/2301/37

Well Testing Report

Client :	STATOIL	RIG:	ROSS ISLE
Field :	34/10 ALPHA	Well :	34/10-16 DST NO. 2
Zone :	BRENT	Date :	16 - 18 SEPT. 83

FLOPETROLClient : STATOILSection : INDEXBase : NWBField : 34/10 ALPHAPage : 2Well : 34/10-16Report N°: 83/2301/37

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N° DOP 101

Flop petrol chief operator

Name : S. LØVIK

Client representative

Name : KARL GJERDE

FLOPETROL

Client : STATOILSection : **1**Base : NWBField : 34/10 - ALPHAPage : 3Well : 34/10-16Report N° : 83/2301/37

- TEST PROCEDURE -

OBJECTIVES: ESTIMATE PRODUCTIVITY, OBTAIN FLUID SAMPLES
ESTIMATE PRESSURE AND TEMPERATURE
EVALUATE RESERVOIR PROPERTIES

AFTER SCHLUMBERGER HAD PERFORATED 3177 - 3187 METER AND RUN GAUGE RING AND JUNKBASKET. THE TEST STRING WAS RUN USING HALIBURTON TEST TOOLS, FLOPETROL EZ-TREE, LUBRICATOR, FLOWHEAD AND SURFACE TESTING EQUIPMENT. ONE FLOPETROL SDP, AND ONE SPERRY SUN IN F-NIPPLE, 2 SPERRY SUN IN BUNDLE CARRIER.

GAUGES WAS RUN IN WITH STRING.

AFTER ALL TEST EQUIPMENT WAS PRESSURE TESTED TO 420 BAR. THE PACKER WAS SET AT 3152.39 M RKB.

THE LPR-N VALVE WAS OPENED AT 15:04 HRS AT 16.09.83 AND THE WELL WAS OPENED THROUGH A 52/64" POSITIVE CHOKE TO THE SURGE TANK FOR INITIAL FLOW AT 15:13 HRS ON 16.09.83. A TOTAL FLOW OF 1.2 M³ WATER CUSHION WAS FLOWED BACK BEFORE SHUTTING IN FOR INITIAL BUILD-UP AT 15.14.30.

THE WELL WAS OPENED FOR 2ND FLOW AT 16:21 HRS ON A 52/64" POSITIVE CHOKE. GAS REACHED SURFACE AFTER 4 MIN. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AFTER 44 MIN ON THIS CHOKE WHEN BSW WAS DOWN TO 0%.

2 SETS OF PVT SAMPLES WERE OBTAINED BEFORE SHUTTING IN THE WELL. THE TOTAL 2ND FLOW WAS 550 MIN AND "THE BUILD-UP WAS 539 MIN. THEN THE WELL WAS OPENED ON A 80/64" POSITIV CHOKE FOR 3RD FLOW. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AFTER 28 MIN. 2 SETS OF PVT SAMPLES WERE OBTAINED BEFORE SHUTTING IN THE WELL. THE 3RD FLOW WAS 423 MIN AND 3RD BUILD-UP WAS 575 MIN.

FLOPETROL

Client : STATOIL

Section : **2**

Base : NWB

Field : 34/10 ALPHA

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Well : 34/10-16

Report N° : 83/2301/37

- MAIN RESULTS -

Tested interval: BRENDT Perforations: 3177-3187 m RKB

OPERATION	DURATION	BOTTOM HOLE PRESSURE	WELL HEAD PRESSURE	OIL PROD.RATE	GAS PROD.RATE	G.O.R
Units	MIN	BARS	BARS	M ³ /M	MSM ³ /M	SCM/M ³
INITIAL FLOW 52/64" POS. CHOKE	1 MIN 30 SEC		45.81			
INITIAL BUILD-UP	66 MIN 30 SEC		138.89			
2ND FLOW 52/64" POS CHOKE	550		232.8	313.8	1.293	4105
2ND BUILD-UP	539		350.3			
3RD FLOW 80/64" POS. CHOKE	423		145.2	371.1	1.647	4438
3RD BUILD-UP	575		352.3			

Depth of bottom hole measurements : _____ Reference : M RKB

Temperature : _____ at : _____ depth

Separator gas gravity (air : 1) at choke size : 80/64" POSITIV .664

STO gravity at choke size 80/64" POSITIV .7832 60/60

BSW : 2 Water cut : _____

REMARKS AND OTHER OPERATIONS

ALL FIGURES ARE THOSE LAST RECORDED

- OPERATING AND MEASURING CONDITIONS -

A - TYPE OF GAUGE -

BOTTOM HOLE :

Pressure : SDP(CRG) MK III SPERRY SUNTemperature : SDR(CRG) MK III SPERRY SUN

WELL HEAD :

Pressure : DWT, FOXBORO, MR. SIXTemperature : FOXBORO

SEPARATOR :

Pressure : BARTONTemperature : BARTON

B - PRODUCTION RATE CONDITIONS AND SOURCES -

OIL PRODUCTION RATE

- Tank
 Meter
 Dump

- Floco
 Rotron

Reference conditions

- Separator
 Atmospheric
 pressure 60°F

Shrinkage measurement

- With tank
 With shrinkage
 tester

GAS PRODUCTION RATE

- Orifice meter

Standard conditions

15°C 760 MMHG

WATER PRODUCTION RATE

- Tank
 Meter

C - WELL DATA -

WELL STATE DURING SURVEY :

Well producing through : _____ tubing / drill pipe / casing

Main casing size 9 5/8" set at _____ Total well depth _____Tubing size 5" VAM set at 3180.95 Packer RTTS set at 3152.39

Perforations :

- Zone BRENDT From 3177 to 3187 From _____ to _____

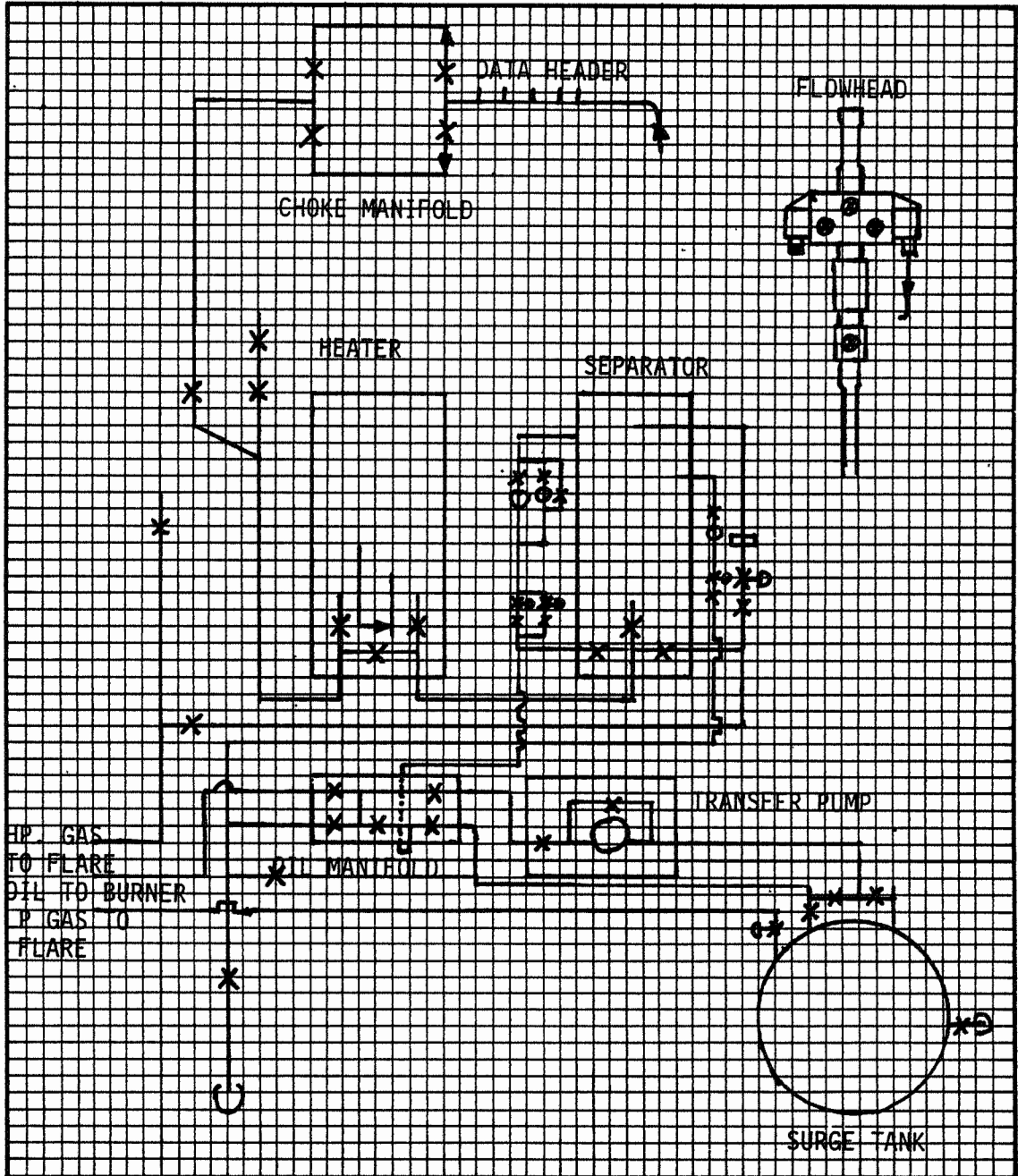
- Zone _____ From _____ to _____ From _____ to _____

WELL STATE BEFORE TEST :

 Well closed since DST NO. 1 Well flowing since _____ Producing zone BRENDT

Choke size _____

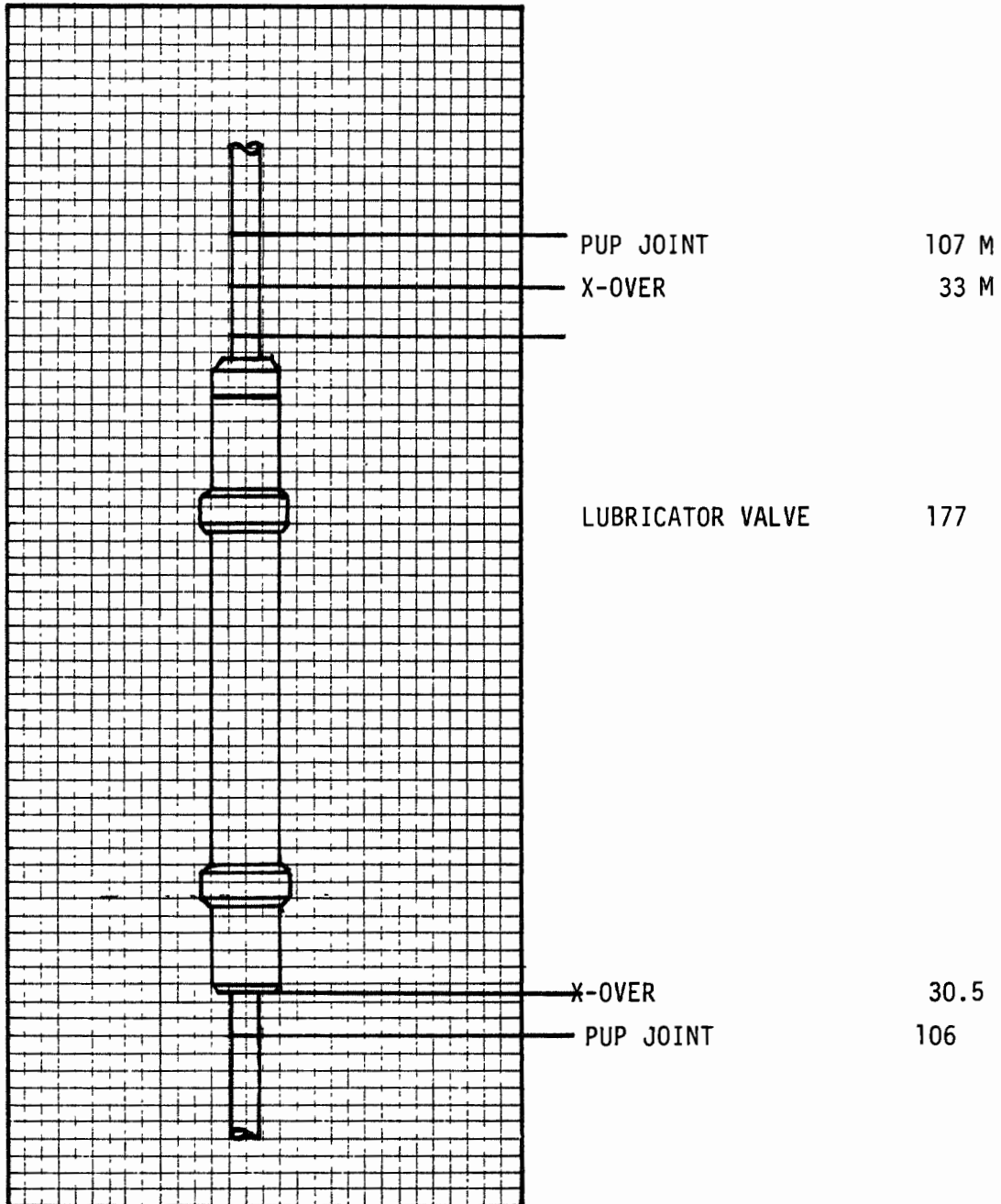
- SURFACE EQUIPMENT LAYOUT -



REMARKS:

NOT TO SCALE

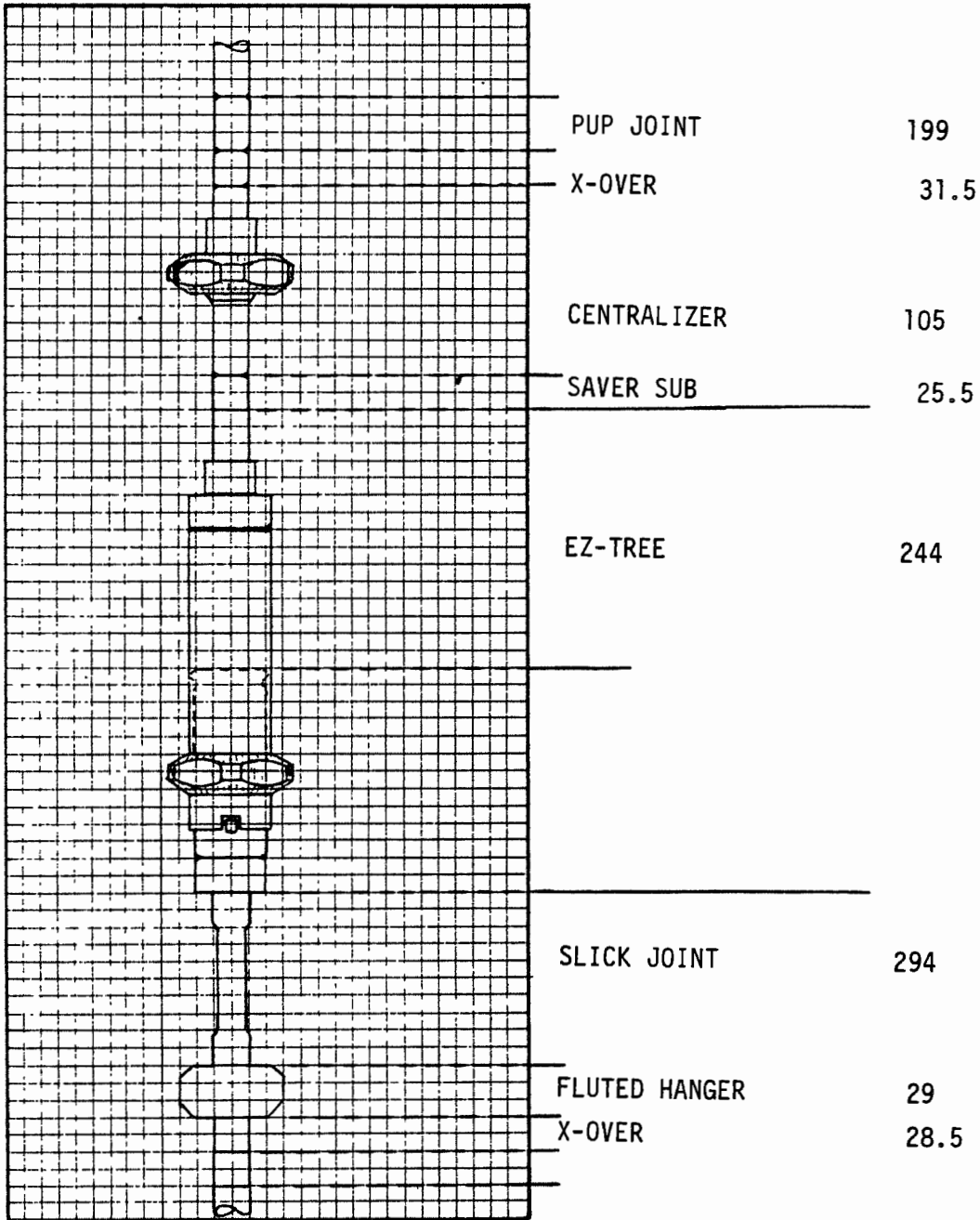
-WELL COMPLETION DATA-



REMARKS

NOT TO SCALE
ALL MEASUREMENT IN CM

-WELL COMPLETION DATA-

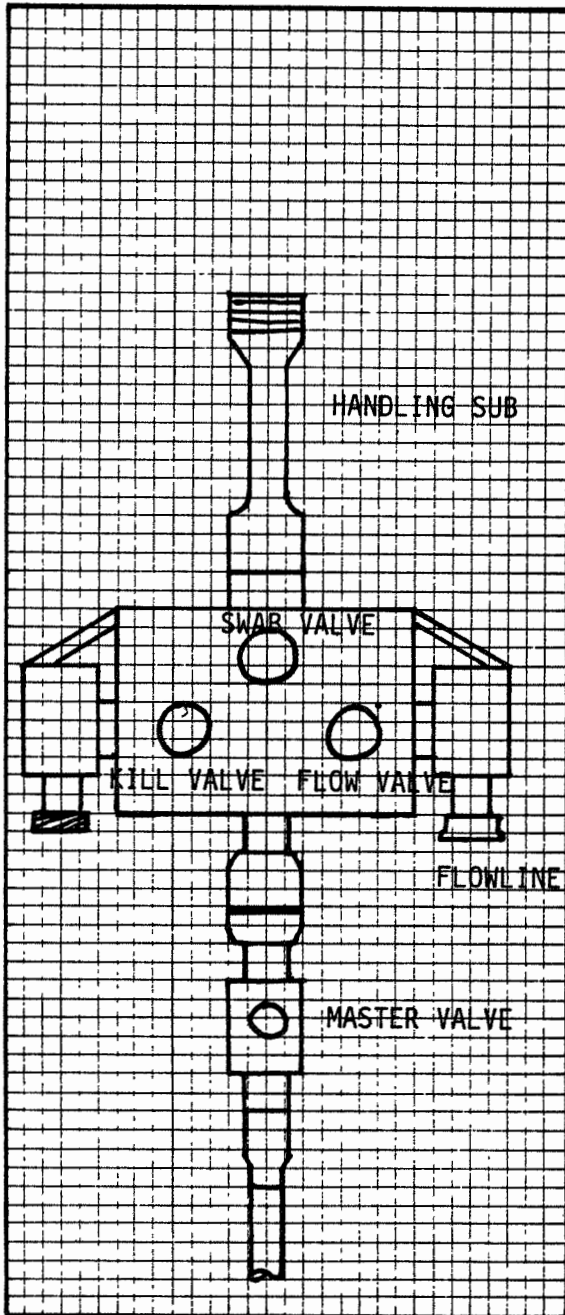


REMARKS

NOT TO SCALE

ALL MEASUREMENT IN CM

-WELL COMPLETION DATA-



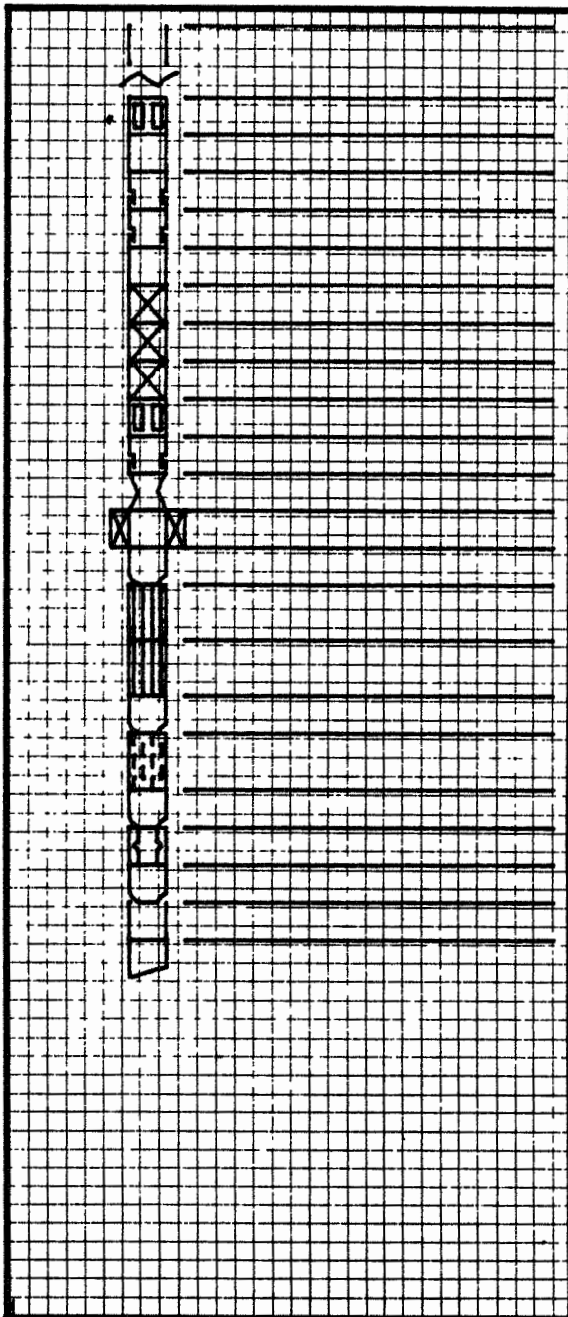
X-OVER .185 M

1 SINGLE 9.85 M

REMARKS

NOT TO SCALE

- WELL COMPLETION DATA -



RTTS CIRC VALVE	3072.88
1ST DRILL COLLAR	3101.37
SLIP JOINT	3105.39
SLIP JOINT	3109.41
1STD DRILLCOLLAR	3137.90
APR-M VALVE	3140.19
DRILLPIPE TESTER VALVE	3146.53
LPR-N TESTER VALVE	3141.54
FULL FLOW HYDRAULIC BY-PASS	3148.55
BIG JOHN JAR	3150.13
SAFETY JOINT	3151.01
RTTS PACKER	3152.39
x-OVER 27/8" EUE BOXx31/2" IF PIN	3152.64
BUNDLE CARRIER	3156.97
BUNDLE CARRIER	3161.50
x-OVER 3½" IF BOX x 27/8" EUE PIN	3161.50
PERFORATED 2 7/8" IF EUE JOINT	3170.86
X-OVER 2 7/8" EUE BOXx23/8"EUE PIN	3171.16
F-NIPPLE 2 3/8" EUE BOX x PIN	3171.44
X-OVER 2 3/8" EUE BOXx2 7/8" EUE PIN	3171.58
1 JOINT 2 7/8" EUE JOINT	3180.80
BULL PLUG W/CROSS 2 7/8" EUE BOX	3180.95

REMARKS :

NOT TO SCALE

ALL MEASUREMENT IN METERS

- SEQUENCE OF EVENTS -

DATE	TIME	OPERATION
12.09.83		PRESSURE TEST LUBRICATOR VALVE TO 6000 PSI, BODY + VALVE.
		PRESSURE TEST EZ-TREE, BODY + VALVE TO 6000 PSI.
		PRESSURE TEST FLOWHEAD, BODY + VALVE TO 6000 PSI.
		PRESSURE TEST CHOKE MANIFOLD BODY TO 6000 PSI, UPSTREAM
		VALVES TO 6000 PSI, DOWNSTREAM VALVES TO 5000 PSI.
		PRESSURE TEST CHIKSANS TO 6000 PSI.
		START TO PRESSURE TEST SURFACE EQUIPMENT.
		PRESSURE TEST HEATER UPSTREAM TO 6000 PSI, DOWNSTREAM TO
		2800 PSI.
		LEAK AT 1400 PSI ON SEPARATOR INLET AND GAS BY-PASS.
		REPAIR AND CHANGE 2 x 3" MAPEGAS VALVES.
13.09.83		PRESSURE GAS AND OIL DIVERTER VALVES TO 1000 PSI.
		PRESSURE TEST OIL MANIFOLD TO 1000 PSI. PRESSURE TEST
		SEPARATOR TO 1200 PSI, AND SEPARATOR INLET TO 1400 PSI.
		PRESSURE TEST BLIND CHOKE ON HEATER CHOKE LINE TO 6000
		PSI. CLEAN OUT BURNERS.
		WORK ON COFLEXIP AND PRESSURE TEST TO 6000 PSI.
		REPAIR LEAKS ON PORT BURNER BOOM AND PRESSURE TEST TO
		1000 PSI.
		GENERAL MAINTENANCE
14.09.83		GENERAL MAINTENANCE
15.09.83		D. BARDIN, P: GULBRANDSEN, S. BRAZINA, K. VARGEVIK, H.
		GEHIN, G. LOTE LEFT RIG.
		Ø. SKAGEN, G. HEITMANN, A. AUSTLID, W. BOSWARVA, M. TOPMS
		ARRIVED RIG.
		GENERAL MAINTENANCE.
		PREPARE SDP NO. 82818 TO RUN IN HOLE.
	17:55	SCHLUMBERGER PERFORATED AT 3177.3187 M RKB.

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Section : **6**

SEQUENCE OF EVENTS (Continuation)

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DATE	TIME	OPERATION
15.09.83	19:11	POWER ON SDP NO. 82818.
	19:21	GAUGES IN F-NIPPLE, START R.I.H.
16.09.83	05:56	PICK UP EZ-TREE.
	06:15	EZ-TREE MADE UP TO TUBING
	06:22	UNLATCH EZ-TREE
	06:25	RELATCH EZ-TREE
	06:30	CLOSE EZ-TREE PRESSURE UP B-LINE
	06:37	OPEN EZ-TREE DRIFT THROUGH WITH SANDLINE
	07:05	PICK UP LUBRICATOR VALVE
	07:17	LUBRICATOR VALVE MADE UP TO TUBING.
	07:23	FUNCTION TEST LUBRICATOR VALVE AND RIH.
	07:42	PRESSURE TEST ENTIRE TEST STRING 6100 PSIG.
	08:04	CLOSE EZ-TREE BLEED OFF TO 500 PSIG ABOVE (40 LTR WATER RETURN TO CEMENT UNIT).
	08:20	PRESSURE EQUALIZED EZ-TREE OPEN.
	08:25	BLEED DOWN PRESSURE TO ZERO (500 L RETURN AT CEMENT UNIT)
	08:33	PRESSURE ENTIRE TEST STRING TO 6100 PSIG.
		CLOSE LUBRICATOR VALVE
	08:45	EQUALIZE AND OPEN LUBRIATOR VALVE. BLEED DOWN TO ZERO, (500 L RETURN AT CEMENTUNIT).
	09:45	RIG UP STATOIL BAIL SLINGS.
	10:00	FLOWHEAD IN MOUSEHOLE
	10:15	WEIGHT BEARING EQUIPMENT RIGGED UP
	10:30	KILL LINE AND FLOWLINE CONNECTED TO FLOWHEAD
	10:34	FLOWHEAD MADE UP TO TUBING
	10:38	LAND TEST STRING
	10:45	CHOKE MANIFOLD ON RIG FLOOR
		MAKE UP FLOWLINE ETC.
	11:50	PRESSURE TEST AGAINST KILL VALVE TO 420 BAR
	12:03	BLEED OFF PRESSURE, OPEN KILL VALVE AND MASTER VALVE,

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SEQUENCE OF EVENTS (Continuation)

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Report N°: 83/2301/37

DATE	TIME	OPERATION
16.09.83		CLOSE FAILSAFE VALVE.
	12:10	START PRESSURE TEST AGAINST FAILSAFE, SWAB VALVE AND DRILL PIPE TESTER VALVE TO 420 BAR.
	12:35	CLOSE MASTER, BLEED OFF TO 35 BAR TO OBSERV PRESSURE.
	12:45	OPEN MASTER TO BLEED OFF STRING, THEN CLOSE MASTER VALVE AGAIN.
	12:52	CLOSE HEATER INLET AND BY-PASS, OPEN FAILSAFE TO PRESSURE TEST LINE TO 345 BAR.
	12:55	CLOSE CHOKE MANIFOLD DOWNSTREAM VALVES AND BLEED OFF PRESSURE UPSTREAM TO 35 BAR TO OBSERVE PRESS.
	13:00	DISCOVER THAT FAILSAFE IS BLEED OFF AND CLOSED.
	13:02	OPEN FAILSAFE AGAIN AND SECURE HANDLE BY TAPE.
	13:10	PRESSURE UP TO 345 BAR, OPEN UP DOWNSTREAM VALVES TO MAKE SURE WE HAD 345 BAR UPSTREAM HEATER.
	13:21	CLOSE DOWNSTREAM VALVES ON CHOKE MANIFOLD AND BLEED OFF TO 35 BAR UPSTREAM TO OBSERVE PRESSURE.
	13:23	BLEED OFF PRESSURE TO BURNER BOOM, CLOSE UPSTREAM VALVES ON CHOKE MANIFOLD AND PRESSURE TEST TO 450 BAR.
	13:35	BLEED OFF PRESSURE, OPEN MASTER AND CLOSE KILL VALVE.
	13:40	PICK UP STRING 5M.
	13:58	ATTEMPT TO SET PACKER.
	14:03	TRIED TO OPEN LPR-N BY PRESSURE UP ANNULUS.
	14:12	BLEED OFF ANNULUS PRESSURE.
	14:17	TRIED TO OPEN LPR-N BY PRESSURE UP ANNULUS TO 110 BAR, BUT NO RESPONSE FROM WELL.
	14:20	BLEED OFF ANNULUS PRESSURE.
	14:25	PICK UP STRING.
	15:00	SET PACKER
	15:04	OPEN LPR-N VALVE.
	15:13	OPEN WELL AT CHOKE MANIFOLD ON 32/64" POS. CHOKE FOR

FLOPETROL

Section : **6**

SEQUENCE OF EVENTS (Continuation)

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Report N: 83/2301/37

DATE	TIME	OPERATION
16.09.83		INITIAL FLOW.
	15:14:30	CLOSE IN AT CHOKE MANIFOLD. TOTAL VOLUME BACK IS ABOUT 1.2 M ³
	15:16	CLOSE LPR-N FOR INITIAL BUILD-UP.
	16:19	OPEN LPR-N
	16:21	OPEN WELL AT 52/64" POS CHOKE
	16:25	GAS TO SURFACE
	17:03	FLOW THROUGH SEPARATOR.
	17:30	SWITCH OIL FLOW TO SURGE TANK FOR METERFACTOR.
	18:00	SWITCH FLOW BACK TO PORT BURNER, METERFACTOR 0.7994.
	19:15	SWITCH FLOW TO SURGE TANK, START TRANSFERE PUMP.
	19:20	TANK EMPTY, START FILLING UP TO A METERFACTOR FOR FLOCO.
	20:00	SWITCH BACK TO PORT BURNER, METER FACTOR 0.8298.
	21:36	DUMPED 0.466 M ³ OF WATER
	22:45	SWITCH TO STARBOARD BURNER BOOM.
	23:01	DUMP 0.320 M ³ OF WATER.
	23:03	START TAKING FIRST SET OF PVT SAMPLES.
		COND. BOTTLE NO. 8308922
		GAS BOTTLE NO. A 14786
		GAS BOTTLE NO. A 14681
	23:32	FINISH WITH FIRST SET OF PVT SAMPLES.
	23:35	DUMP 0.480 M ³ OF WATER
17.09.83	00:01	DUMP 0.410 M ³ OF WATER
	00:05	START TAKING SECOND SET OF PVT SAMPLES.
		COND. BOTTLE NO: 83021217
		GAS BOTTLE NO. A14695
		GAS BOTTLE NO. A14761
	00:35	FINISH SECOND SET OF PVT SAMPLES
	01:00	BY-PASS SEPARATOR

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Section : **6**

SEQUENCE OF EVENTS (Continuation)

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Report N°: 83/2301/37

DATE	TIME	OPERATION
17.09.83	01:01	SHUT IN WELL AT CHOKE MANIFOLD AND LPR-N VALVE.
	01:05	DUMP 0.520 M ³ OF WATER
	01:15	FILLING UP DEAD CONDENSAT, 1 x 200 LITER DRUM 2 x 10 LITER JERRY CANS 6 x 1 LITER GLASSES 4 x 1 LITER PLASTIC CANS OF WATER FROM SEPARATOR.
	09:58	OPEN LPR-N VALVE
	10:00	OPEN WELL AT CHOKE MANIFOLD ON 80/64" FIXED CHOKE
	10:28	SWITCH FLOW THROUGH SEPARATOR
	10:45	SWITCH FLOW TO SURGE TANK FOR METERFACTOR.
	11:05	SWITCH FLOW BACK TO STARBOARD BURNER, METERFACTOR
		0.8649
	11:35	DUMP 0.500 M ³ OF WATER
	13:25	DUMP 0.810 M ³ OF WATER
	14:02	DUMP 0.19 M ³ OF WATER
	14:34	DUMP 0.330 M ³ OF WATER
	15:00	DUMP 0.320 M ³ OF WATER
	15:03	START TAKING THIRD SET OF PVT SAMPLES. CONDENSATE BOTTLE NO. 8208308 GAS BOTTLE NO. 14668 GAS BOTTLE NO. 14751
	15:40	FINISH TAKING PVT SAMPLES
	16:02	DUMP 1.040 M ³ OF WATER
	16:06	START TAKING FOURTH SET OF PVT SAMPLES. CONDENSATE BOTTLE NO. 83021209 GAS BOTTLE NO. A14789 GAS BOTTLE NO. A14688
	16:45	FINISH TAKING PVT SAMPLES
	16:52	DUMP 0.470 M ³ OF WATER

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_ SEQUENCE OF EVENTS _ (Continuation)

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DATE	TIME	OPERATION
17.09.83	17:01	BY-PASS SEPARATOR
	17:03	SHUT IN WELL AT CHOKE MANIFOLD AND LPR-N VALVE
	22:04	CLOSE MASTER VALVE
	22:06	BLEED OFF PRESSURE TO 35 BAR TO CHECK MASTER VALVE.
	22:09	BLEED OFF TO 0 PSI
	22:14	OPEN KILL VALVE FOR FLUSHING SURFACE EQUIPMENT.
	23:00	FINISH FLUSHING.
18.09.83	00:05	OPEN MASTER VALVE
	00:09	CLOSE KILL VALVE
	00:11	OPEN CHOKE MANIFOLD TO BURNER.
	00:14	CLOSE CHOKE MANIFOLD
	00:16	OPEN CHOKE MANIFOLD ON 28/64" ADJUSTABLE CHOKE
	00:30	CLOSE CHOKE MANIFOLD, PRESSURE INCREASE. NOT POSSIBLE TO BLEED OFF TUBING PRESSURE.
	00:35	CLOSE FAILSAFE VALVE
	00:37	OPEN LPR-VALVE
	00:39	BLEED OFF FLOWLINE PRESSURE.
	00:40	OPEN KILL VALVE.
	00:42	START BULLHEADING.
	02:54	BULLHEAD ANNULUS
	03:17	CLOSE KILL VALVE LINE UP 2" CHIKSANS TO SHALE SHAKERS.
	03:21	OPEN KILL VALVE
	03:25	OPEN APR-M CIRCULATING VALVE. START RESERCE CIRCULATION
	04:57	FINISH REVERCE CIRCULATION.
	05:00	CLOSE MASTER VALVE, LINE UP 2" CHIKSANS TO MUD PUMPS.
	05:01	OPEN FAILSAFE VALVE
	05:05	START TO FLUSH LINES TO BURNER
	05:15	FINISH FLUSHING, CLOSE FAILSAFE VALVE
	05:23	OPEN MASTER VALVE, START SIRCULATING. RIG DOWN CHOKE MANIFOLD, FLOWLINE ETC.

FLOPETROL

Client : STATOIL

Field : 34/10 ALPHA
Well : 34/10-16

Base : NMB

- WELL TESTING DATA SHEET -

Section : **7**

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS			WELL HEAD			SEPARATOR			PROD. RATES AND FLUID PROPERTIES				GOR			
Time HR/MIN	Cumul MIN	Bottom Hole Pressure	Tg. temp	Tg. press.	Cg. press.	Temp.	Press.	Rate	Gravity	BSW	Rate	OIL OR CONDENSATE		GAS		Units		
												Rate	Gravity	Rate	Gravity			
15:00																		
15:04																		
15:05																		
15:06								125.4										
15:08								125.8										
15:08								125.8										
15:08								125.1										
15:09								125.1										
15:10								124.9										

LIQUID FLOW RATE MEASURING CONDITIONS :

TESTED INTERVAL : 3177 - 3187
DEPTH REFERENCE : MRKB
DEPTH OF B.H. MEASUREMENTS :

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WELL TESTING DATA SHEET(Continuation)

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD RATES AND FLUID PROPERTIES				GOR	
Time	Cumul HR/MIN	BOTTOM HOLE		WELL HEAD		Temp. of	Temp. PSIG	Rate M ³ /D	Gravity	BSW %	Rate MMSCM/D	GAS		GOR	Units
		Temp.	Pressure	Ig.temp C°	Ig.press. BAR							Cg.press. PSIG	Rate		
15:25			16.09.83												
15:26	11.30				148.41										
15:27	12.30				148.20										
15:28	13.30				147.86										
15:29	14.30				147.51										
15:30	15.30				147.23										
15:35	20.30				145.79										
15:40	25.30				138.20										
15:45	30.30				143.72										
15:50	35.30				142.89										
15:55	40.30				140.96										
16:00	45.30				140.61										
16:05	50.30				140.61										
16:10	55.30				139.58										
16:19	64.30				138.89										
16:21	66.30/0														
16:22	1				125.10										
16:23	2				83.74										

OPEN LPR-N VALVE
OPEN WELL AT CHOKE MANIFOLD ON 52/64" FIXED CHOKE

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD RATES AND FLUID PROPERTIES				GOR	
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		Rate	MMSCM/D	Air=1	Units
		Temp.	Pressure	Tg temp OC	Tg press. BAR	Cg press. OP	Temp. PSIG	Press.	Rate	Gravity	BSW				
16:23				16.09	83										
16:24	3				93.39										
16:25	4				104.42	GAS TO SURFACE									
16:26	5				111.31										
16:27	6				137.51										
16:28	7				145.79										
16:29	8				169.92										
16:30	9			50	190.60										
16:35	14			52	215.42										
16:40	19			52	217.35										
16:45	24			53	219.21										
16:50	29			57	220.94										
16:55	34			59	222.32										
17:00	39			62	224.73										
17:03	42					DIVERTED FLOW THROUGH SEPARATOR									
17:30	69			69	228.18					0	1.282		.655		
17:30	69					SWITCH OIL FLOW TO SURGE TANK FOR METERFACTOR									
17:45	84			71	229.21					335.3	.7882	0	1.281	.655	

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WELL TESTING DATA SHEET(Continuation)

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				PROD. RATES AND FLUID PROPERTIES				GOR			
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		SHR/SHR	
		Temp.	Pressure	Tg. temp °C	Tg. press. BAR	Cg. press. OF	Temp. PSIG	Press.	Rate M ³ /D	Gravity 60/60	Rate MMSCM/D		Gravity Air=1
17:45				16.09	83								
18:00	99					107	900		SWITCH FLOW BACK TO PORT BURNER				
18:00	99			73	229.7	107	900	2	322.5	.7882	1.281	.655	3972
18:30	129			74	230.3	111	895		318.2	.7882	1.289	.655	4051
19:00	159			75	230.4	113	890	2.5	314.9	.7882	1.282	.664	4071
19:15	174			76	230.5	113	870		SWITCH FLOW TO SURGE TANK FOR EMPTY TANK AND NEW METER FACTOR				
19:30	189			77	230.8	113	870		316.4	.7882	1.281	.664	4049
20:00	219					114	870		SWITCH FLOW BACK TO PORT BURNER				
20:00	249			78	231.0	114	870	TRACE	309.1	.7895	1.283	.664	4151
20:30	279			78	231.1	114	875		311.2	.7895	1.293	.660	4155
21:00	309			79	231.3	117	875	TRACE	310.0	.7895	1.293	.660	4171
21:30	339			79	231.4	118	875		321.0	.7913	1.294	.660	4031
21:36	345								DUMPED 2.93 BBL WATER				
22:00	369			79	231.6	120	875	3	320.3	.7910	1.292	.660	4034
22:30	399			79	231.7	120	875	3	318.7	.7910	1.292	.660	4054
22:45	414								SWITCH TO STARFORD BURNER BOOM				
23:00	429			80	231.8	120	875	3	319.3	.7910	1.292	.660	4064
23:05	434								DUMPED 2.01 BBL WATER				

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD. RATES AND FLUID PROPERTIES				GOR					
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		Temp. OF	Temp. PSIG	Rate M ³ /D	Gravity 60/60 %	Rate MMSCM/D	Gravity	Rate	M ³ /D	Air=1	SCM/M ³	CO ₂	H ₂ S	CL-PPM	Units
		Temp.	Pressure	Tg. temp OC	Cg. press. BAR														
06:30	329			17.09	83														
06:45	344			22	351.0														
07:00	359			22	350.9														
07:15	374			21	350.9														
07:30	389			21	350.9														
07:45	404			21	350.8														
08:00	419			20	350.7														
08:15	434			19	350.6														
08:30	449			19	350.5														
09:00	479			19	350.4														
08:30	509			19	350.3														
09:58	537																		
10:00	539/0																		
10:01	1																		
10:02	2				245.8														
10:03	3				183.7														
10:04	4				169.9														
10:05	5				159.6														
					152.7														

OPEN LPR-N VALVE

OPEN WELL ON 80/64" POSITIV CHOKE

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD RATES AND FLUID PROPERTIES				GOR		
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		TEMP.		PRESS.		OIL OR CONDENSATE		GAS		Rate	GOR	
		Temp.	Pressure	Tg. temp.	Cg. press.	Temp.	PSIG	Rate	Gravity	Rate	Gravity					
		°C	BAR	°C	BAR	°F	PSIG	M ³ /D	%	MMSCM/D	Air=1	SCM/M ³	CO ₂	H ₂ S	CL-PPM	Units
10:05	5	17.09	8.3													
10:06	6		147.2													
10:07	7		143.0													
10:08	8		135.4													
10:09	9		134.1													
10:10	10	38	132.8													
10:11	11		132.8													
10:12	12		132.7													
10:13	13		132.7													
10:14	14		132.9													
10:15	15	45	133.0													
10:20	20	57	134.8							5				1.5/0		
10:25	25	62	136.1													
10:28	28															
10:30	30	63	137.0													
10:35	35	66	139.6							2.5					1/0	
10:40	40	67	142.9													
10:45	45	68	142.9			114	920				1.637					.663

SWITCH FLOW THROUGH SEPARATOR

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				PROD. RATES AND FLUID PROPERTIES				GOR						
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		CO ₂	H ₂ S	CL-PPM	SHR/SHR	
		Temp.	Pressure	Tg.temp °C	Ig.press. BAR	Cg.press. PSIG	Temp. OF	Temp. PSIG	Rate M ³ /D	Gravity 60/60	Rate MMSCM/D					Gravity Air=1
10:45	63			17.09	83											
11:00	60			71	142.9			117	925	400.3	.7932	2	1.647	.663	4114	1/0
11:05	65									BACK TO STARBOARD BURNER						
11:15	75			72	143.0			120	920	401.6	.7932		1.647	.663	4101	
11:30	90			72	143.7			123	920	401.6	.7932		1.639	.665	4081	
11:45	105			72	143.9							1.5				
12:00	120			73	144.2			125	915	387.2	.7932	1	1.640	.665	4236	2/0
12:30	150			74	144.4			126	910	381.3	.7932		1.638	.665	4296	
13:00	180			74	144.6			128	910	387.9	.7932	1.5	1.643	.663	4236	
13:30	210			74	144.5			128	905	384.6	.7932		1.642	.663	4269	1300/7.0
14:00	240			75	144.6			129	905	378.7	.7932	2	1.640	.663	4331	
14:30	270			75	144.7			129	905	386.5	.7932		1.639	.664	4241	2/0
15:00	300			75	144.7			130	910	382.3	.7932	2	1.642	.664	4295	
15:30	330			76	145.1			130	910	375.5	.7932		1.647	.664	4386	
16:00	360			76	145.1			131	910	374.5	.7931	2	1.646	.663	4395	
16:30	390			76	145.1			131	910	370.8	.7931		1.649	.663	4447	
17:00	420			77	145.2			132	910	371.1	.7942		1.647	.663	4438	2/0
17:01	421									BY-PASSED SEPARATOR						

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

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Section : 7

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD RATES AND FLUID PROPERTIES				GOR					
Time HR/MIN	Cumul MIN	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		Rate	MMSCM/D	Air=1	SCM/M ³	CO ₂	H ₂ S	CL-PPM	Units
		Temp.	Pressure	Tg.temp °C	Tg.press BAR	Cg.press. OF	Temp. PSIG	Press.	Rate	Gravity	Rate								
17:50	47			17.09	33														
17:55	52			54	356.9														
18:00	57			52	356.1														
18:15	72			49	355.4														
18:30	102			45	355.2														
19:00	132			39	354.7														
19:30	162			35	354.0														
20:00	192			32	353.3														
20:30	222			28	353.0														
21:00	252			26	352.6														
21:30	282			23	352.3														
22:00	312				352.3														
22:04	316																		
22:06	318																		
22:09	321																		
22:14	326																		
23:00	372																		

CLOSED MASTER VALVE
BLEED OFF PRESSURE TO 500 PSI TO CHECK MASTER VALVE
BLEED OFF TO 0 PSI
OPEN KILL VALVE FOR FLUSHING SURFACE EQUIPMENT
FINISH FLUSHING

FLOPETROL

DIVISION : EMR/NSD

BASE : NWB

REPORT N°: 83/2301/37

Well Testing Report Annexes —

Client : STATOIL

Field : 34/10 ALPHA Well : 34/10-16

Zone : BRENDT Date : 16 - 18 SEPT. 83

INDEX of ANNEXES

- 1 - BOTTOM HOLE PRESSURE AND TEMPERATURE MEASUREMENT -
 - 1.1 - B.H. gauge calibration -
 - 1.2 - B.H. pressure calculation -
 - 1.3 - B.H. temperature calculation -

- 2 - LIQUID PRODUCTION RATE MEASUREMENT -
 - 2.1 - Measurements with tank -
 - 2.2 - Measurements with meter -

- 3 - GAS PRODUCTION RATE MEASUREMENT -

- 4 - SAMPLING SHEETS -
 - 4.1 - Bottom hole sampling -
 - 4.2 - Surface sampling -

- 5 - CHARTS AND MISCELLANEOUS -

-LIQUID PRODUCTION RATE MEASUREMENT -**2.1 - MEASUREMENT WITH TANK -**

$$V_o = V \times K \times (1 - BSW)$$

V_o : Net oil volume at 60°F and atmospheric pressure.

V : Gross oil volume measured by tank gauging.

K : Volume correction factor to be applied between the tank temperature during gauging and 60°F.

BSW : Basic sediments and water.

2.2 - MEASUREMENT WITH METER -

a) Shrinkage factor is measured by shrinkage tester.

$$V_o = V_s \times f \times (1 - Shr) \times K \times (1 - BSW)$$

V_o : Net oil volume at 60°F and atmospheric pressure.

V_s : Gross oil volume measured by meter under separator conditions.

f : Meter correction factor = $\frac{\text{Volume measured in tank}}{\text{Volume measured by meter}}$

Shr : Percentage of oil volume reduction between separator and tank conditions, reported to oil volume at separator conditions.

K : Volume correction factor to be applied between the final temperature during shrinkage measurement and 60°F.

BSW : Basic sediments and water.

b) Shrinkage factor is measured with tank.

$$V_o = V_s \times (1 - Shr') \times K \times (1 - BSW)$$

V_o , V_s , K and BSW : Same meaning as in a).

$(1 - Shr')$: Shrinkage factor including meter correction factor.

FLOPETROL

Client : STATOIL
 Field : 34/10- ALPHA
 Well : 34/10-16

Base : : NWB

2.1

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- OIL PRODUCTION RATE -
 - MEASUREMENT WITH TANK -

Time HR/MIN	Date - Time Interval	Gauge graduation	Tank volume		STO Gravity		K	BSW %	Net volume of STO %	Net STO product. rate /day	Cumulative production Units
			Volume V BBL/CM	Temp.	Gravity	Temp.					
		CM		16.09.83		END FLOW					
17:30		6.5		SWITCH FLOW TO SURGE TANK FOR METER FACTOR OIL		METER 98.20					
18:00				SWITCH FLOW BACK TO BURNER BOOM OIL METER 152.25							
19:00		252	43.21								
				METER FACTOR: $\frac{43.21}{152.25-98.20} = .7994$							
19:15				SWITCH FLOW TO SURGE TANK FOR EMPTY TANK AND METER FACTOR							
19:30		41.5		OIL METER 304.20							
20:00				SWITCH FLOW BACKT O PORT BURNER OIL METER 355.0							
21:00		281.0	42.15								
				METER FACTOR: $\frac{42.5}{355.0-304.2} = .8297$							
				17.09.83							
10:45		12.5		SWITCH FLOW THROUGH TANK OIL METER 6392.4							
11:05				SWITCH FLOW BACK TO STARBOARD BURNER OIL METER 6433.1							
13:00		212.5	35.20								
				METER FACTOR: $\frac{35.20}{6433.1-6392.4} = 0.9649$							

Tested interval :
 Perforations : 3177 - 3187

FLOPETROL

Client : STATOIL

Field : 34/10 ALPHA

Well : 34/10-16

Section : Annex

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2.2

Base : NWB

- OIL PRODUCTION RATE -
- MEASUREMENT WITH METER -

Date - time Time	Date - time Interval	Meter reading	Vs	BSW	V'o*	1 - Shr		Oil Gravity		K	Net volume of STO: Vo	Net STO product. rate	Cumulative production
						Factor	Temp. OF	Gravity	Temp. OF				
		BBL	BBL/S	%	BBL/S						BBL	M3	M3
				16.99	83								
17:30		98.20											
17:45		125.75	27.55	0	22.02	1	65	.786	66	.7882	22.0	335.3	17.5
18:00		152.25	26.50	0	21.18	1	65	.786	66	.7882	21.1	322.5	21.0
18:30		204.55	52.30	0	41.81	1	65	.786	66	.7882	41.7	318.2	24.7
19:00		256.3	51.76	0	41.37	1	65	.786	66	.7882	41.3	314.9	31.3
19:30		304.20	52.00	0	41.57	1	65	.789	64	.7905	41.5	316.4	37.9
20:00		355.00	50.80	0	40.61	1	65	.785	72	.7895	40.5	309.1	44.5
20:30		406.14	51.14	0	40.88	1	65	.785	72	.7895	40.8	311.2	50.9
21:00		457.08	50.94	0	40.72	1	65	.785	72	.7895	40.6	310.0	57.4
21:30		507.90	50.82	0	42.17	1	65	.788	69	.7913	42.1	321.0	63.9
22:00		555.90	50.93	0	42.26	1	73	.785	76	.7910	42.0	320.3	70.6
													773

Shrinkage factor measured by Shrinkage tester Tank

* V'o = Vs x f x (1 - BSW) = Net oil volume at separator conditions. f = .7994

Tested interval :
Perforations :

FLOPETROL**MEASUREMENT WITH METER -(Continuation)**

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Section:ANNEX

2.2

DATE - TIME	Interval	Meter reading	Vs		BSW	V'	1 - Shr		OIL GRAVITY			K	Net volume of STO. Vo	Net STO product. rate	Cumulative production	Units
			BBL	BBL			Factor	Temp. OF	Gravity	Temp. OF	Grav. 60F					
HR/MIN	MIN	BBL	BBL	%	%	BBL	OF	OF	OF	OF	OF	M3	M3	M3	M3	Units
22:00		555.90		16.09.83												
22:30	30	606.57	50.67	0	42.04	1	73	76	.785	.7910	.9933	41.8	318.7	83.9	.8298	
23:00	30	657.83	50.76	0	42.12	1	73	76	.785	.7910	.9933	41.8	319.3	90.5	.8298	
23:30	30	705.72	49.90	0	41.41	1	73	76	.786	.7919	.9933	41.1	313.9	97.1	.8298	
24:00	30	753.0	50.27	0	41.71	1	73	69	.786	.7893	.9932	41.4	316.2	103.7	.8298	
				17.09.83												
00:30	30	800.47	50.07	0	41.55	1	73	69	.786	.7893	.9932	41.3	314.9	110.2	.8298	
01:00	30	850.36	49.89	0	41.40	1	73	69	.786	.7893	.9932	41.1	313.8	116.8	.8298	
01:00																
01:00																
01:01																
10:45												90.0		131.1		
10:45		6392.4														
11:00	15	6422.9	30.50	0	26.38	1	71	82	.785	.7932	.9943	26.2	400.3	135.3	.8649	
11:15	15	6453.5	30.60	0	26.46	1	71	82	.785	.7932	.9943	26.3	401.6	139.5	.8649	
11:30	15	6484.1	30.60	0	26.46	1	71	82	.785	.7932	.9943	26.3	401.6	143.7	.8649	
12:00	30	6540.0	59.00	0	51.03	1	71	82	.785	.7932	.9943	50.7	387.2	151.8	.8649	
12:30	30	6598.1	58.10	0	50.25	1	71	82	.785	.7932	.9943	50.0	381.3	159.7	.8649	

FLOPETROL

Client : STATOIL
 Field : 34/10 ALPHA
 Well : 34/10-16

Base : NWB

- WATER PRODUCTION RATE -
 - MEASUREMENT WITH METER -

Section : Annex
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 Report N° : 83/2301/37

2.2

Date - time Time Interval	Meter reading	Vs BBLs	BSW %	V'o*	1 - Shr		Oil Gravity		K	Net volume of STO: Vo	Net STO product. rate /day	Cumulative production Units
					Factor	Temp.	Gravity	Temp. 60°F				
HR/MIN			16.09.83									
21:30	55.59											
21:36	58.52	2.93	WATER DUMPED									
23:00												
23:01	60.53	2.01	WATER DUMPER									
23:30												
23:35	63.52	2.99	WATER DUMPED									
			17.09.83									
00:01	66.10	2.6	WATER DUMPED									
01:05	69.35	3.25	WATER DUMPED									
11:30												
11:35	72.51	3.16	WATER DUMPED									
13:23												
13:25	77.59	5.08	WATER DUMPED									

Shrinkage factor measured by Shrinkage tester Tank

Tested interval :
 Perforations :

* V'o = Vs x f x (1 - BSW) = Net oil volume at separator conditions. f =

- GAS PRODUCTION RATE MEASUREMENT by orifice meter -

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

a) 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

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

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

Remarks

Fm : Manometer factor is equal one since only bellows type meters are used.

Fr : Reynolds factor is considered to be one.

TABLE OF Fu FACTOR				
UNITS	REFERENCE CONDITIONS			
	60° F 14.73 psia	0° C 760 mm Hg *	15° C 760 mm Hg*	15° C 760 mm Hg*
Cu. ft/hour	1	0.9483	1.0004	1.0137
Cu. ft/day	24	22.760	24.009	24.329
m3/hour	0.02832	0.02685	0.02833	0.02870
m3/day	0.6796	0.6445	0.6799	0.6889

* Mercury at 32 F

b) Meter data -

Meter type : DANIEL Flange taps - Pf taken down/up stream

Flow recorder type : BARTON ID of meter tube : 5.761

c) Specific gravity source -

Sampling point : TOP SEPARATOR OUTLET Gravimeter type : KIMRAY

d) Supercompressibility factor Fpv -

All coefficients are from AGA NX 19 manual for natural gas free of air, CO² and H₂S. More accurate values could only be determined by laboratory measurement.

FLOPETROL

Client : STATION

Section : ANNEX 3

Field : 34/10- ALPHA
Well : 34/10-16

- GAS PRODUCT. RATE MEASUREMENT -

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Base : NMB

DATE - TIME	Flowing Temp. OF	P _f absolute psia	h _w "of wat.	$\sqrt{h_w \times P_f}$	Orifice diameter Inches	Gas gravity (air=1)	F _b	F _g	Y	F _f	F _{pv}	C	Gas production rate : Q	Cumulative Production
			16.09.83											
			2ND FLOW											
17:30		ESTIMATED	CUMULATIVE	GAS PRODUCTION	DURING CLEAN UP									53.42
17:30	102	930	324	548.926	3.5	.655	2695.1	1.2356	1.0019	.9619	1.0703	2335	1.282	53.42
17:45	105	925	328	550.818	3.5	.655	2695.1	1.2356	1.0019	.9594	1.0684	2325	1.281	66.76
18:00	107	915	334	552.820	3.5	.655	2695.1	1.2356	1.0020	.9577	1.0666	2317	1.281	80.11
18:30	111	910	344	559.500	3.5	.655	2695.1	1.2356	1.0020	.9543	1.0644	2304	1.289	106.96
19:00	113	905	348	561.195	3.5	.664	2695.1	1.2272	1.0021	.9526	1.0647	2285	1.282	133.67
19:30	113	885	356	561.302	3.5	.664	2695.1	1.2272	1.0022	.9526	1.0632	2282	1.281	160.36
20:00	114	885	358	562.877	3.5	.664	2695.1	1.2272	1.0022	.9518	1.0628	2279	1.283	187.09
20:30	114	890	360	566.039	3.5	.660	2695.1	1.2309	1.0022	.9815	1.0618	2284	1.293	214.03
21:00	117	890	363	568.392	3.5	.660	2695.1	1.2309	1.0022	.9493	1.0605	2276	1.293	240.96
21:30	118	890	364	569.174	3.5	.660	2695.1	1.2309	1.0022	.9485	1.0601	2273	1.294	267.92
22:00	120	890	365	569.956	3.5	.660	2695.1	1.2309	1.0022	.9469	1.0593	2267	1.292	294.84
22:30	120	890	365	569.956	3.5	.660	2695.1	1.2309	1.0022	.9469	1.0593	2267	1.292	321.75

F_u = .6799

Recorder ranges : P_f = 0-1500 PSIG
h_w = 0-400 IN H₂O Temp. = 0-300°F

TESTED INTERVAL : 3177-3187
PERFORATIONS

FLOPETROL										GAS PRODUC. RATE MEASUREMENT - (Continuation)										Page Report N°: 83/2301/37		Section: ANNEX 3	
DATE - TIME		Flowing Temp.	Pf	hw	$\sqrt{h_w \times P_f}$	Orifice diameter	Gas gravity	F _b	F _g	Y	F _{tf}	F _{pV}	C	Gas production rate	Cumulative Production								
Time	Interval	OF	absolute	"of wat.		Inches	(air = 1)							Q	MSCM								
HR/MIN	MIN		psia											MMSCM/O	MSCM								
22:30			16.09.83																				
23:00	30	120	890	368	572.294	3.5	.660	2695.1	1.2309	1.0022	.9469	1.0593	2267	1.297	348.67								
23:30	30	121	890	368	572.294	3.5	.660	2695.1	1.2309	1.0022	.9460	1.0589	2264	1.296	375.7								
24:00	30	123	890	368	572.294	3.5	.660	2695.1	1.2309	1.0022	.9444	1.0580	2259	1.293	402.6								
				17.09.83																			
00:30	30	123	890	368	572.294	3.5	.660	2695.1	1.2309	1.0022	.9444	1.0580	2259	1.293	429.5								
01:00	30	123	890	368	572.294	3.5	.668	2695.1	1.2309	1.0022	.9444	1.0580	2259	1.293	456.5								
01:00																							
01:01																							
10:45		114	935	288	518.922	4.0	.663	3718.2	1.2281	1.0014	.9518	1.0662	3155	1.637	507.6								
11:00	15	117	940	292	523.908	4.0	.663	3718.2	1.2281	1.0014	.9493	1.0651	3143	1.647	524.8								
11:15	15	120	935	296	526.808	4.0	.663	3718.2	1.2281	1.0014	.9469	1.0634	3130	1.647	542.0								
11:30	15	123	935	296	526.080	4.0	.665	3718.2	1.2263	1.0014	.9444	1.0624	3115	1.639	559.0								
12:00	30	125	930	300	528.205	4.0	.665	3718.2	1.2263	1.0014	.94282	1.0606	3104	1.640	593.2								
12:30	30	126	925	302	528.536	4.0	.665	3718.2	1.2263	1.0014	.9420	1.0598	3099	1.638	627.3								
13:00	30	127	925	304	530.283	4.0	.663	3718.2	1.2281	1.0015	.9412	1.0591	3099	1.643	661.5								

SURFACE SAMPLING

2ND FLOW 52/64" POSITIV CHOKE

16.09.83

23:03 START SAMPLING 1ST SET PVT SAMPLE

OIL BOTTLE NO. 8308922

GAS BOTTLE NO. A 14786

GAS BOTTLE NO. A 14681

17.09.83

00:05 START SAMPLING 2ND SET PVT SAMPLE

OIL BOTTLE NO. 83021217

GAS BOTTLE NO. A 14695

GAS BOTTLE NO. A 14761

DEAD OIL SAMPLES

1 x 200 LITER DRUM OF CONDENSATE

6 x 1 LITER GLASS OF CONDENSATE

2 x 10 LITER JERRY CANS OF CONDENSATE

4 x 1 LITER PLASTIC CANS OF WATER

3RD FLOW 80/64" POSITIV CHOKE

START TAKING 3RD SET PVT SAMPLE

OIL BOTTLE NO. 8208308

GAS BOTTLE NO. A 14668

GAS BOTTLE NO. A 14751

START TAKING 4TH SET PVT SAMPLE

OIL BOTTLE NO. 83021209

GAS BOTTLE NO. A 14789

GAS BOTTLE NO. A 14688

FLOPETROL

Client : STATOILSection: ANNEX 42Base NWBField : 34/10 ALPHAPage : 45Well : 34/10-16Report N3/2301/37

- SURFACE SAMPLING -

Date of sampling : 16.09.83 Service order : _____ Sampling No : 1
Sample nature : CONDENSATE Sampling point : SIGHT GLASS OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation 160 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 23:03 Time elapsed since stabilisation: 5 hr 30 min

Bottom hole dynamic conditions	Choke size : <u>52/64"</u> since: <u>16:21</u> Well head pressure: <u>230.9 BAR</u> Well head temp : <u>81°F</u>
	Bottom hole pressure : _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1) : .660 Factor Fpv = $\frac{1}{VZ}$: 1.0589Values used for calculations : $F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{rf} = 0.9460$

Separator	Pressure : <u>875</u> PSIG	Rates - Gas : <u>1.296</u> MMSCM SCFD	GOR: <u>3395,2</u> m ³ /m ³ (separator cond)
	Temp : <u>121</u> °F	Oil (separator cond) : <u>3808.83</u> m ³ /BOPD	

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.9</u> M ³ /D BOPD
	Tank temperature : _____ °F	

BSW : _____ % WLR : 3 %Transferring fluid : Hg Transfer duration : 29 MIN

Final conditions of the shipping bottle : _____	Vol on bottle <u>700cc</u>
Pressure : <u>620 PSI</u> Temp: <u>57°F</u>	Sample <u>600 cc</u> 50cc Hg in bottle
	Gas & Cap <u>50 cc</u>

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8308922 sent on : _____ by: STATOIL Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	_____	<u>A-14786</u>
	_____	<u>A-14681</u>

Measurement conditions.

 A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

ALL READINGS FROM 23:30

V s/a Chief Operator

A. BERGENSEN

FLOPETROL

Client : STATOILSection: **ANNEX 42**Base : NWBField : 34/10 ALPHAPage : 46Well : 34/10-16Report N°: 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 16.09.83 Service order : _____ Sampling No : 2
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia. : 5" VAM Casing Dia. : 9 5/8"
Surface elevation 160 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 23:03 Time elapsed since stabilisation: 5 hr 30 min

Bottom hole dynamic conditions	Choke size : <u>52/64"</u> since: <u>16:21</u> Well head pressure: <u>230.9 BAR</u> Well head temp : <u>81°F</u>
	Bottom hole pressure : _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .660 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.0589
Values used for calculations :

$$F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{t,f} = 0.9460$$

Separator	Pressure: <u>875</u> PSIG	Rates - Gas : <u>1.296</u> MMSCM SCFD	GOR: <u>3395.2</u> m ³ /m ³
	Temp : <u>121°C</u> °F	Oil (separator cond) : <u>3808.83</u> m ³ /DOPD	(separator cond)

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.9</u> M ³ /DOPD
	Tank temperature: _____ °F	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> a <input type="checkbox"/> b

BSW : _____ % WLR : 3% %Transferring fluid : Hg Transfer duration : 29 MINFinal conditions of the shipping bottle :
Pressure : 875 PSI Temp: 57°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 17-14786 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

Coupled with

Bottom hole samples No

Surface samples No

	LIQUID	GAS
	_____	_____
	_____	_____
	<u>8308922</u>	<u>A-14681</u>
	_____	_____

Measurement conditions.

 A - Tank . B - Meter . C - Dump . a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

ALL READINGS FROM 23:30

Visa Chief Operator:

A. BERGENSEN

No DOP 127

FLOPETROL

Client : STATOILSection: ANNEX 42Base : NWBField : 34/10 ALPHAPage : 47Well : 34/10-16Report N°: 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 16.09.83 Service order : _____ Sampling No : 3
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation 160 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 23:03 Time elapsed since stabilisation: 5 hr 30 min

Bottom hole dynamic conditions	Choke size : <u>52/64"</u> since: <u>16:21</u> Well head pressure: <u>230.9 BAR</u> Well head temp : <u>81°C</u>
	Bottom hole pressure: _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .660 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.0589
Values used for calculations :

$$F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{tf} = 0.9460$$

Separator	Pressure : <u>875</u> PSIG	Rates - Gas : <u>1.296</u> MMSCM/SCFD	GCR: <u>3395,2</u> m ³ /m ³
	Temp : <u>121°C</u> °F	Oil (separator cond) : <u>3808.83</u> m ³ /BOPD	: separator cond ;

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.9</u> M ³ /BOPD				
	Tank temperature : _____ °F	<table border="1"><tr><td>A</td><td>B</td><td>C</td><td>a</td><td>b</td></tr></table>	A	B	C	a
A	B	C	a	b		

BSW : _____ % WLR : 3% %Transferring fluid : VACUUM Transfer duration : 29 MINFinal conditions of the shipping bottle : _____
Pressure : 875 PSI Temp: 57 °F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14681 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>8308922</u>	<u>A-14786</u>

Measurement conditions.

 Tank . Meter . Dump .
 Corrected with shrinkage tester. Corrected with tank .

D - REMARKS -

ALL READINGS FROM 23:30

Visa Chief Operator

A. BERGENSEN

FLOPETROL

Client : STATOILSection: **ANNEX 42**Base NWBField : 34/10 ALPHAPage : 48Well : 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 4
Sample nature : CONDENSATE Sampling point : SIGH GLAS SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations : 3177-3187M Sampling interval : _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation : 60 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 00:05 Time elapsed since stabilisation : 6 hr 30 min

Bottom hole dynamic conditions	Choke size : <u>52/64"</u> since : <u>16:21</u> Well head pressure : <u>231.8 BAR</u> Well head temp : <u>81°C</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : .660 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.0589
Values used for calculations : $F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{ff} = 0.9444$

Separator	Pressure : <u>875</u> PSIG	Rates - Gas : <u>1.293</u> MMSCM SCFD	GOR : <u>3395,2</u> m ³ /m ³ (separator cond)
	Temp : <u>123°C</u> °F	Oil (separator cond) : <u>380:76</u> m ³ /D BOPD	

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.9</u> M ³ /D BOPD
	Tank temperature : _____ °F	

BSW : _____ % WLR : 3% %Transferring fluid : HG Transfer duration : 30 MIN

Final conditions of the shipping bottle : Pressure : <u>620</u> PSI Temp : <u>57</u> °F	BOTTLE 700cc SAMPLE 600cc 50Hg left in bottle GAS 50 cc
--	---

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8302127 sent on : _____ by : _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	_____	<u>A-14695</u> <u>A-14761</u>

Measurement conditions,

 Tank . Meter . Dump .
 Corrected with shrinkage tester. Corrected with tank .

D - REMARKS -

ALL READINGS FROM 01:00

Visa Chief Operator

A. BERGENSEN

No DOP 127

FLOPETROL

Client : STATOILSection: **ANNEX 42**Base : NWBField : 34/10 ALPHAPage : 49Well : 34/10-16Report N°: 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 5
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia. : 5" VAM Casing Dia. : 9 5/8"
Surface elevation 160 m Shoe : 3180.95m Shoe : _____Bottom hole static conditions
Initial pressure : _____ at depth : _____ date : _____
Latest pressure measured : _____ at depth : _____ date : _____
Temperature : _____ at depth : _____ date : _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 00:05 Time elapsed since stabilisation : 6 hr 30 minBottom hole dynamic conditions
Choke size : 52/64" since : 16:21 Well head pressure : 231.8 BAR Well head temp : 81°C
Bottom hole pressure : _____ at depth : _____ date : _____
Bottom hole temp : _____ at depth : _____ date : _____Flow measurement of sampled gas - Gravity (air 1) : .660 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.0589
Values used for calculations :

$$F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{rf} = 0.9444$$

Separator
Pressure : 875 PSIG Rates - Gas : 1.293 MMSCMSCFD GOR: 3395,8 m³/m³
Temp : 123°C F Oil (separator cond) : 380.76 m³/DOPD (separator cond)Stock tank
Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : 313.8 M³/DOPD
Tank temperature : _____ °FBSW : _____ % WLR : 3% %Transferring fluid : VACCUM Transfer duration : 30 MINFinal conditions of the shipping bottle : _____
Pressure : 875 PSI Temp : 57°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14695 sent on : _____ by : _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>8302127</u>	<u>A-14761</u>

Measurement conditions

 Tank . Meter . Dump .
 Corrected with shrinkage tester. Corrected with tank .

D - REMARKS -

ALL READINGS FROM 01:00

Visa Chief Operator

A. BERGENSEN

No DOP 127

FLOPETROL

Client : STATOILSection : ANNEX 42Base : NWBField : 34/10 ALPHAPage : 50Well : 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 6
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : BRENT Perforations : 3177-3187M Sampling interval : _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation : 60 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 00:05 Time elapsed since stabilisation : 6 hr 30 min

Bottom hole dynamic conditions	Choke size : <u>52/64"</u> since : <u>16:21</u> Well head pressure <u>231.8 BAR</u> Well head temp : <u>81°C</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : .660 Factor Fpv = $\frac{1}{VZ}$: 1.0589Values used for calculations : $F_b = 2695.1, F_g = 1.2309, \gamma = 1.0022, F_{tf} = 0.9444$

Separator	Pressure : <u>875</u> PSIG	Rates - Gas : <u>1.293</u> MMSCM SCFD	GOR : <u>3395.8</u> m ³ /m ³
	Temp : <u>123°C</u> °F	Oil (separator cond) : <u>380.76</u> m ³ /DOPD	(separator cond)

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.8</u> M ³ /DOPD
	Tank temperature : _____ °F	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> a <input type="checkbox"/> b

BSW : _____ % WLR : 3% %Transferring fluid : VACUUM Transfer duration : 30 MINFinal conditions of the shipping bottle : _____
Pressure : 875 PSI Temp : 57°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 14761 sent on : _____ by : _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>8302127</u>	<u>14695</u>

Measurement conditions

 A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

ALL READINGS FROM 01:00

Visa Chief Operator

A. BERGENSEN

FLOPETROL

Client : STATOILSection: ANNEX 42Base NWBField : 34/10 ALPHAPage : 51Well : 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 7
Sample nature : CONDENSATE Sampling point : SIGHT GLASS CONDENSATE

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation: 160 m Shoe : 3180.95m Shoe : _____

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 15:03 Time elapsed since stabilisation: 4 hr

<u>Bottom hole dynamic conditions</u>	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp : <u>76°C</u>
	Bottom hole pressure: _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .664 Factor Fpv = 1 : 1.0581Values used for calculations : $F_b = 3718.2, F_g = 1.2272, \gamma = 1.0015, F_{tf} = 0.9388$

<u>Separator</u>	Pressure : <u>910</u> PSIG Rates - Gas : <u>1.647</u> MMSCM/D SCFD GOR: <u>3795</u>
	Temp : <u>130°C</u> °F Oil (separator cond) : <u>434</u> m ³ /D BOPD (separator cond)

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : <u>375.5</u> m ³ /D BOPD
	Tank temperature: _____ °F

BSW: 2.0 % WLR: _____ %Transferring fluid : MERCURY Transfer duration: 37 MIN

Final conditions of the shipping bottle : _____	VOL OF BOTTLE <u>700 cc</u>
Pressure : <u>41.4 BAR</u> Temp: <u>20°F</u>	SAMPLE <u>600 cc</u> 50 Hg left in bottle
	CAS CAP <u>50 cc</u>

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8208308 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
<u>Bottom hole samples No</u>	_____	_____
	_____	_____
	_____	_____
<u>Surface samples No</u>	_____	A-14668
	_____	A-14751

Measurement conditions.

A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

ALL READINGS FROM 15:30

Visa Chief Operator

FLOPETROL

Client STATOILSection: **ANNEX 42**Base NWBField 34/10 ALPHAPage : 52Well 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 8
 Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone: BRENT Perforations: 3177-3187M Sampling interval: _____

Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
 Surface elevation: 160 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 15:03 Time elapsed since stabilisation: 4 hr

Bottom hole dynamic conditions	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp. : <u>76°C</u>
	Bottom hole pressure: _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .664 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.0581
 Values used for calculations: $F_b = 3718.2, F_g = 1.2272, \gamma = 1.0015, F_{tf} = 0.9388$

Separator	Pressure: <u>910</u> PSIG	Rates - Gas : <u>1.647</u> MMSCM/D	GOR: <u>3795</u>
	Temp : <u>130°C</u> °F	Oil (separator cond) : <u>434</u> m ³ /D	separator cond : _____

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>375.5</u> M ³ /D
	Tank temperature: _____ °F	

BSW: 2.0 % WLR: _____ %

Transferring fluid : VACUUM Transfer duration: 37 MIN

Final conditions of the shipping bottle :
 Pressure : 63.7 BAR Temp: 20°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8208308 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coveted with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	_____	<u>A-14668</u> <u>A-14751</u>

Measurement conditions:
 Tank . Meter . Dump .
 Corrected with shrinkage tester. Corrected with tank.

D - REMARKS -

ALL READINGS FROM 15:30

Visa Chief Operator

FLOPETROL

Client STATOILSection: **ANNEX 4**Base NWBField 34/10 ALPHAPage : 53Well 34/10-16Report N° 83/2301/3

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 9
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone: BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia.: 5" VAM Casing Dia : 9 5/8"
Surface elevation: 60 m Shoe : 3180.95m Shoe : _____

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 15:03 Time elapsed since stabilisation: 4 hr

<u>Bottom hole dynamic conditions</u>	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp : <u>76°C</u>
	Bottom hole pressure : _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .664 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.0581Values used for calculations : $F_b = 3718.2, F_g = 1.2272, y = 1.0015, F_{tf} = 0.9388$

<u>Separator</u>	Pressure: <u>910</u> PSIG	Rates - Gas : <u>1.647</u> MMSCM/D	GOR: <u>3795</u>
	Temp : <u>130°C</u> °F	Oil (separator cond) : <u>434</u> m ³ /D	BOPD (separator cond)

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>375.5</u> M ³ /D
	Tank temperature: _____ °F	BOPD A B C a

BSW : 2.0 % WLR : _____ %Transferring fluid : VACUUM Transfer duration: 37 MINFinal conditions of the shipping bottle :
Pressure : 63.7 BAR Temp: 20 °F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14751 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

<u>Coupled with</u>	<u>LIQUID</u>	<u>GAS</u>
<u>Bottom hole samples No</u>	_____	_____
	_____	_____
	_____	_____
	<u>8208308</u>	<u>A-14668</u>
<u>Surface samples No</u>	_____	_____

Measurement conditions

A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

Visa Chief Operator

ALL READINGS FROM 15:30

FLOPETROL

Client : STATOILSection: ANNEX 4Base : NWBField : 34/10 ALPHAPage : 54Well : 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 10
Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone: BRENT Perforations: 3177-3187M Sampling interval: _____Depth origin : RKB Tubing Dia : 5" VAM Casing Dia : 9 5/8"
Surface elevation: 60 m Shoe : 3180.95m Shoe : _____

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 16:06 Time elapsed since stabilisation: 5 hr

<u>Bottom hole dynamic conditions</u>	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp : <u>76°C</u>
	Bottom hole pressure : _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .663 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.0575Values used for calculations : $F_p = 3718.2, F_g = 1.2281, \gamma = 1.0015, F_{tf} = 0.9380$

<u>Separator</u>	Pressure : <u>910</u> PSIG	Rates - Gas : <u>1.649</u> MMSCM/D	GOR: <u>3848</u>	
	Temp : <u>131°C</u> °F	Oil (separator cond) : <u>428.5</u> M ³ /D	SOPD <table border="1"><tr><td>B</td><td>C</td></tr></table> (separator cond)	B
B	C			

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>370.8</u> M ³ /D				
	Tank temperature : _____ °F	<table border="1"><tr><td>A</td><td>B</td><td>C</td><td>a</td><td>b</td></tr></table>	A	B	C	a
A	B	C	a	b		

BSW : 2.0 % WLR : _____ %Transferring fluid : VACUUM Transfer duration : 39 MINFinal conditions of the shipping bottle :
Pressure : 63.7 BAR Temp : 20°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14789 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
<u>Bottom hole samples No</u>	_____	_____
	_____	_____
	_____	_____
<u>Surface samples No</u>	<u>82021209</u>	<u>A-14688</u>
	_____	_____

Measurement conditions

A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

Visa Chief Operator

ALL READINGS FROM 16:30

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : 34/10 ALPHA

Page : 55

Well : 34/10-16

Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 11
 Sample nature : GAS Sampling point : GAS OUTLET SEPARATOR

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone: BRENT Perforations: 3177-3187M Sampling interval: _____

Depth origin : RKB Tubing Dia.: 5" VAM Casing Dia : 9 5/8"
 Surface elevation: 60 m Shoe : 3180.95m Shoe : _____

Bottom hole static conditions	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 16:06 Time elapsed since stabilisation: 5 hr

Bottom hole dynamic conditions	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp : <u>76°C</u>
	Bottom hole pressure: _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1): .663 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.0575
 Values used for calculations :

$$F_b = 3718.2, F_g = 1.2281, \gamma = 1.0015, F_{eff} = 0.9380$$

Separator	Pressure : <u>910</u> PSIG	Rates - Gas : <u>1.649</u> MMSCM/BCFD	GOR: <u>3848</u>
	Temp : <u>131°C</u> °F	Oil (separator cond) : <u>428.53/D</u> BOPD	(separator cond)

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>370.8</u> M ³ /BOPD
	Tank temperature : _____ °F	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> a <input type="checkbox"/> b

BSW : 2.0 % WLR : _____ %Transferring fluid : VACUUM Transfer duration : 39 MIN

Final conditions of the shipping bottle : _____
 Pressure : 63.7 BAR Temp : 20°F

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14789 sent on : _____ by: _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>83021209</u>	<u>A-14789</u>

Measurement conditions

A - Tank . B - Meter . C - Dump .
 a - Corrected with shrinkage tester. b - Corrected with tank .

D - REMARKS -

Visa Chief Operator

ALL READINGS FROM 16:30

FLOPETROL

Client STATOILSection: ANNEX **42**Base NWBField : 34/10 ALPHAPage : 56Well : 34/10-16Report N° 83/2301/37

- SURFACE SAMPLING -

Date of sampling : 17.09.83 Service order : _____ Sampling No : 12
 Sample nature : CONDENSATE Sampling point : SIGHT GLASS CONDENSATE

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone BRENT Perforations: 3177-3187M Sampling interval: _____
 Depth origin : RKB Tubing Dia. : 5" VAM Casing Dia : 9 5/8"
 Surface elevation: 160 m Shoe : 3180.95m Shoe : _____

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth: _____ date: _____
	Latest pressure measured : _____ at depth: _____ date: _____
	Temperature : _____ at depth: _____ date: _____

B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken: 16:06 Time elapsed since stabilisation: 5 hr

<u>Bottom hole dynamic conditions</u>	Choke size : <u>80/64"</u> since: <u>10:00</u> Well head pressure: <u>145.1 BAR</u> Well head temp : <u>76°C</u>
	Bottom hole pressure : _____ at depth: _____ date: _____
	Bottom hole temp : _____ at depth: _____ date: _____

Flow measurement of sampled gas - Gravity (air 1) : .663 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.0575
 Values used for calculations :

$$F_b = 3718.2, F_g = 1.2281, \gamma = 1.0015, F_{ff} = 0.9380$$

<u>Separator</u>	Pressure : <u>910</u> PSIG	Rates - Gas : <u>1.649</u> MMSCM/DCFD	GCR: <u>3848</u>
	Temp : <u>131°C</u> °F	Oil (separator cond) : <u>428.5³/D</u> BOPD	(separator cond)

<u>Stock tank</u>	Atmosphere : _____ mmHg - _____ °F	Oil at 60 °F : <u>370.8</u> M ³ /DBOPD
	Tank temperature : _____ °F	A B C a b

BSW : 2.0 % WLR : _____ %

Transferring fluid : MERCURY Transfer duration : 39 MIN

Final conditions of the shipping bottle : _____	VOL OF BOTTLE <u>700cc</u>
Pressure : <u>41.0 BAR</u> Temp : <u>20°C</u>	SAMPLE <u>600 cc</u> 50 cc Hg left in bottle
	GAS CAP <u>50 cc</u>

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 83021209 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with	LIQUID	GAS
<u>Bottom hole samples No</u>	_____	_____
	_____	_____
	_____	_____
<u>Surface samples No</u>	_____	<u>A-14789</u>
	_____	<u>A-14688</u>

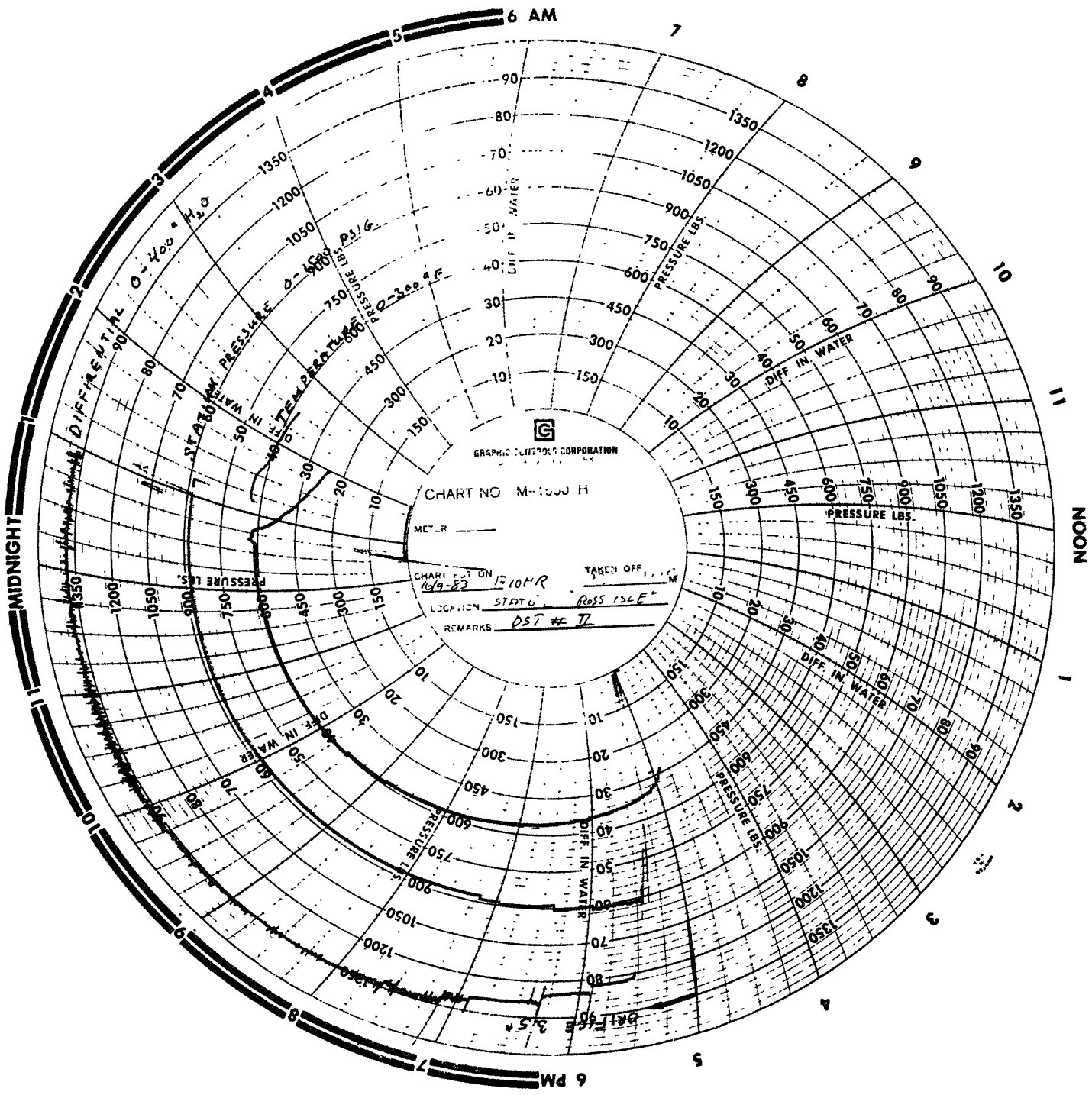
Measurement conditions

Tank . Meter . Dump .
 Corrected with shrinkage tester. Corrected with tank .

D - REMARKS -

Visa Chief Operator

ALL READINGS FROM 16:30



GRAPHIC CONTROLS CORPORATION

CHART NO M-1000 H

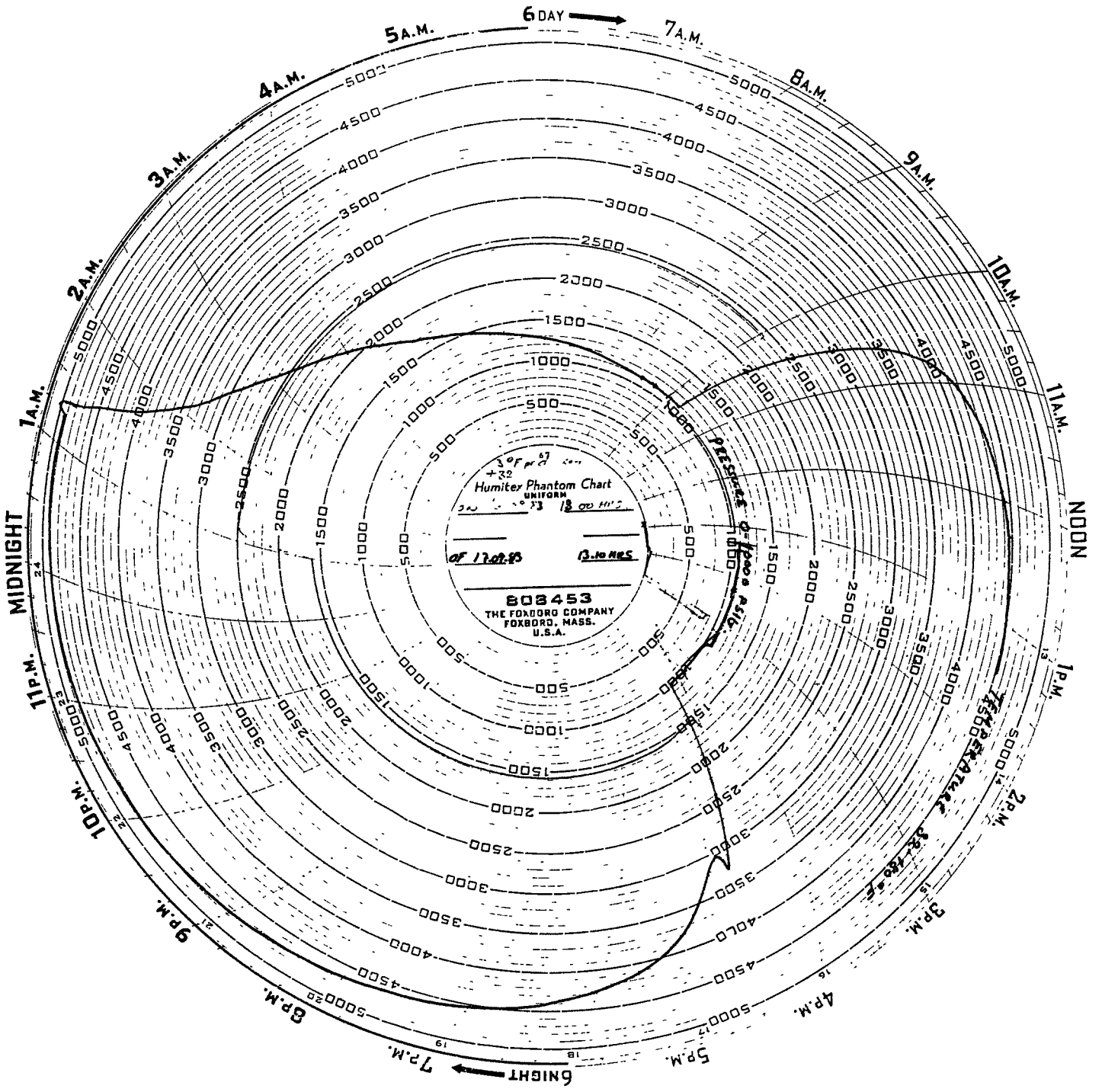
CHART SET ON 10/9-83
TAKEN OFF 11/10/83
LOCATION STATO
REMARKS DST # 7

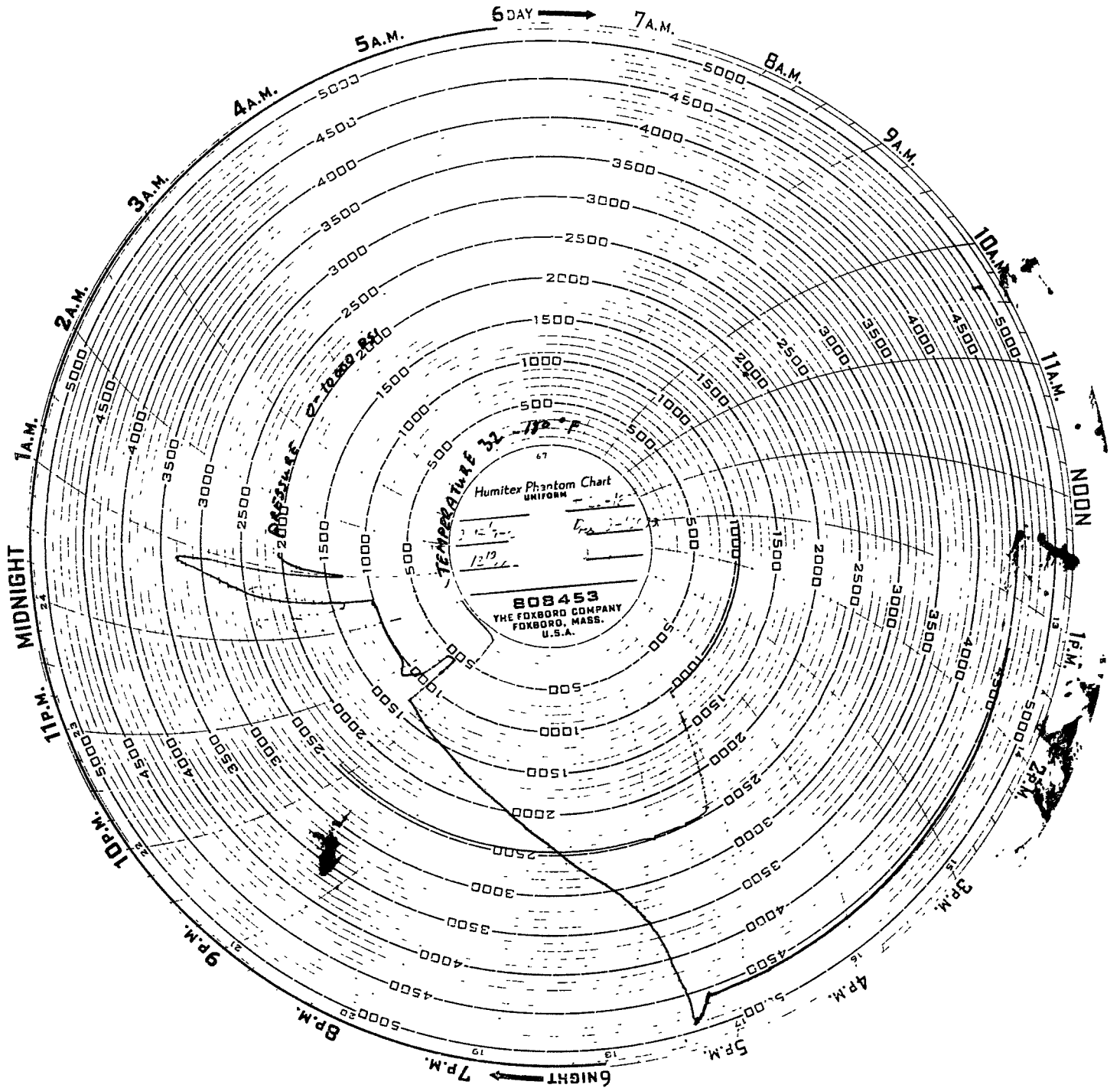
MIDNIGHT

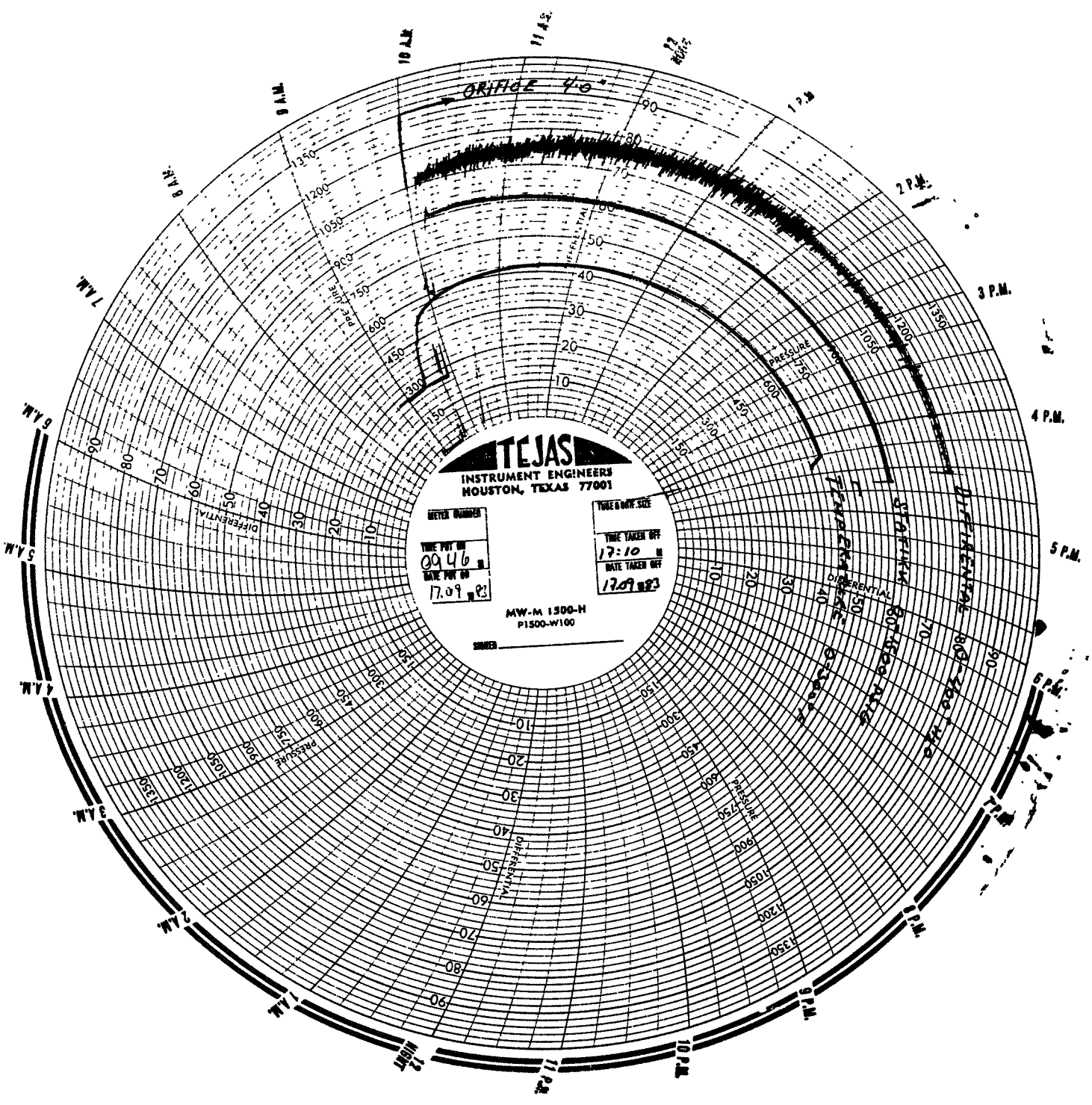
NOON

6 AM

6 PM







TEJAS
 INSTRUMENT ENGINEERS
 HOUSTON, TEXAS 77001

WEVER NUMBER
 TIME PUT ON
 DATE PUT ON

TIME OF SIZE
 TIME TAKEN OFF
 DATE TAKEN OFF

0046
 17.09.83

17:10
 12.09.83

MW-M 1500-H
 P1500-W100

SHEET