

FLOPETROL

Well Testing Report

STATOIL

RIG DYVI DELTA

WILDCAT

Well: 30/2-1 DST No. 3

NESS

Date: 05.10.82-08.10.82

Denne rapport
tilhører

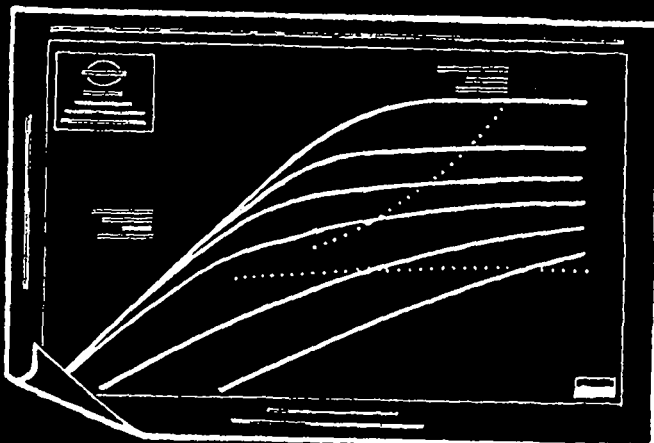
 **STATOIL**

UND DOK.SENTER

L.NR. 92 057946

KODE well 30/2-1 nr 12

Returneres etter bruk



FLOPETROL

DIVISION : NSD
BASE : NWB
REPORT N° : 82/2301/30

Well Testing Report

Client : STATOIL	RIG DYVI DELTA
Field : WILDCAT	Well : 30/2-1 DST No. 3
Zone : NESS	Date : 05.10.82-08.10.82

FLOPETROL

Client : STATOILSection : INDEXBase : NWBField : WILDCATPage : 1Well : 30/2-1Report N° : 82/2301/30

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N° DOP 101

Flopetrol chief operator
Name : B. NILSSENClient representative
Name : S. LØNING

- TEST PROCEDURE -**DST # 3, NESS, 3720m - 3728m RKB**

THE OBJECTIVES WITH THE TEST WERE TO EVALUATE RESERVOIR PROPERTIES, OBTAIN FLUID SAMPLES AND RESERVOIR PRESSURE AND TEMPERATURE.

- THREE SPERRY SUN MK III, ONE MK I AND ONE FLOPETROL AMERADA RPG-3 DOWNHOLE RECORDERS WERE RUN.
- THE LPR VALVE WAS OPENED WITH 290 BAR IN THE STRING, AND THE WELL OPENED SLOWLY ON ADJUSTABLE CHOKE TO 32/64" FOR 8 MINUTES AND THEN CHANGED TO 32/64" FIXED CHOKE FOR 457 MINUTES. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AFTER 85 MINUTES AND ACCURATE FLOW MEASUREMENTS MADE. 3 CONDENSATE, 2 BY MERCURY AND 1 BY WATER DISPLACEMENT AND 4 GAS SAMPLES WERE TAKEN WHEN WELL HAD STABILIZED.
- THE CHOKE WAS THEN CHANGED TO 32/64" ADJUSTABLE AND INCREASED SLOWLY TO 48/64" FOR 15 MINUTES BEFORE CHANGING TO 48/64" FIXED CHOKE FOR 306 MINUTES. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AS SOON AS NO SAND PRODUCTION WAS EVIDENT AND ACCURATE FLOW MEASUREMENTS CARRIED OUT. 2 CONDENSATE, 1 BY MERCURY AND 1 BY WATER DISPLACEMENT, AND 2 GAS SAMPLES WERE TAKEN AFTER WELL HAS STABILIZED.
- THE WELL WAS SHUT IN FIRST AT THE CHOKE MANIFOLD, THEN AT THE APR-M FOR A 1457 MINUTES BUILD UP PERIOD.

FLOPETROL

Client : STATOIL

Section : **2**

Base : NWB

Field : WILDCAT

Page : 3

Well : 30/2-1

Report No: 82/2301/30

— MAIN RESULTS —

Tested interval : NESS Perforations : 3720 m - 3728 m

Operation	Duration	Bottom hole pressure	Well head pressure	Oil prod. rate	Gas prod. rate	G.O.R.
Units	MIN	PSIG	PSIG	M ³ /DAY	mm ³ /DAY	m ³ /m ³
FLOW ON 32/64" ADJ CHOKE	8	-	2200	-	-	-
FLOW ON 32/64" FIXED CHOKE	457	9359	5450	312.6	737.6	2360
FLOW ON 48/64" ADJ CHOKE	15	9260	3000	-	-	-
FLOW ON 48/64" FIXED CHOKE	306	9293	3490	396.3	1016	2564
BUILD UP PERIOD	1457	-	-	-	-	-

Depth of bottom hole measurements : 3706.5 Reference : RKBTemperature : N/A at : _____ depthSeparator gas gravity (air : 1) at choke size : _____
0.687 at 32/64" CHOKE
- 0.692 at 48/64" CHOKESTO gravity at choke size : _____
0.805 at 32/64" CHOKE
- 0.814 at 48/64" CHOKEBSW : 1.8% Water cut : 1.8%

REMARKS AND OTHER OPERATIONS

RESULTS ARE THOSE LAST RECORDED. BSW TAKEN FROM SEPARATOR INLET.

FLOPETROL

Client : STATOILSection : **3**Base : NWBField : WILDCATPage : 4Well : 30/2-1Report N° : 82/2301/

- OPERATING AND MEASURING CONDITIONS -

DST No. 3

A - TYPE OF GAUGE -

BOTTOM HOLE :

Pressure : AMERADA RPG-3 0-15.000 PSIG

Temperature : _____

WELL HEAD :

Pressure : FOXBORO/DWT 0-15.000 PSIGTemperature : FOXBORO 32-180°F, THERMOMETER 0-200°C

SEPARATOR :

Pressure : BARTON 0-1.500 PSIGTemperature : BARTON 0-200°F

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

760 mm Hg and 15°C

WATER PRODUCTION RATE

- Tank
 Meter

C - WELL DATA -

WELL STATE DURING SURVEY :

Well producing through : 3½" tubing / ~~3½" tubing~~Main casing size 7" set at 3834 m Total well depth _____Tubing size 3 1/2" TDS set at _____ Packer BAKER "D" set at 3684.4

Perforations :

- Zone NESS From 3720m to 3728m From _____ to _____

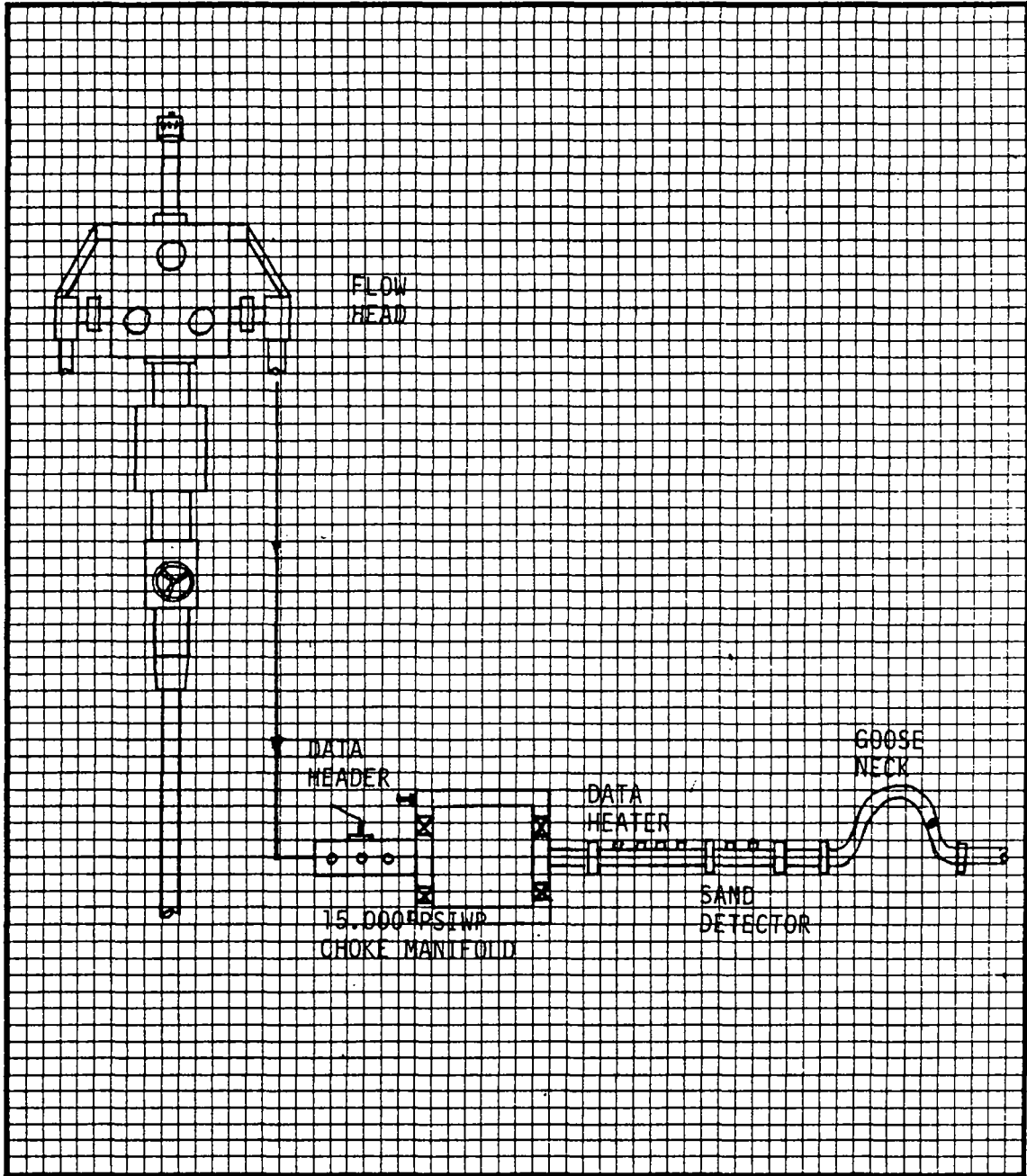
- Zone _____ From _____ to _____ From _____ to _____

WELL STATE BEFORE TEST :

 Well closed since DST No. 2 Well flowing since _____ Producing zone NESS

Choke size _____

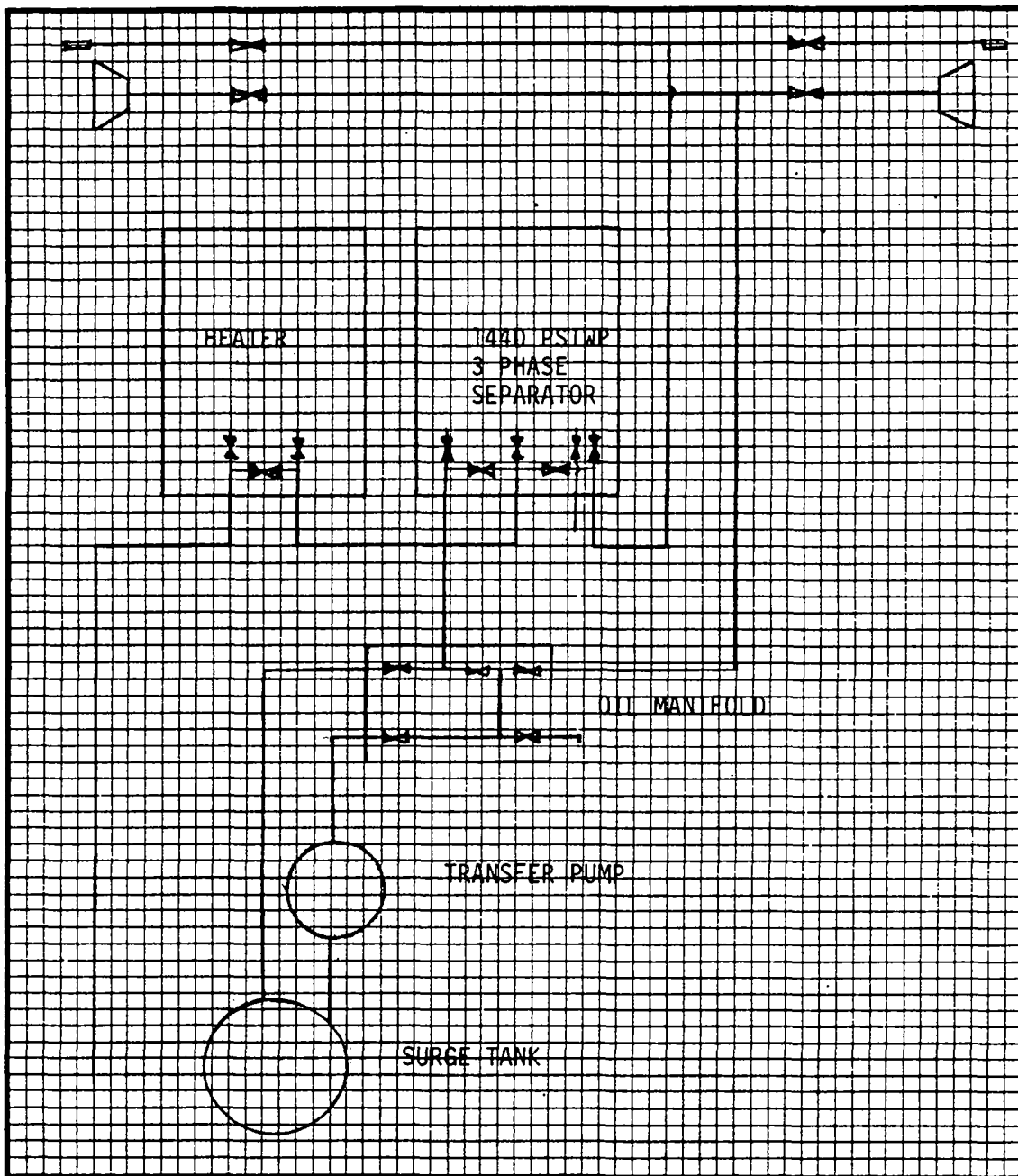
- SURFACE EQUIPMENT LAYOUT -



REMARKS :

DRAWING SCHEMATIC ONLY
NOT TO SCALE

- SURFACE EQUIPMENT LAYOUT -



REMARKS :

DRAWING SCHEMATIC ONLY
NOT TO SCALE

FLOPETROL

Client : STATOIL

Section : **5**

Base : NWB

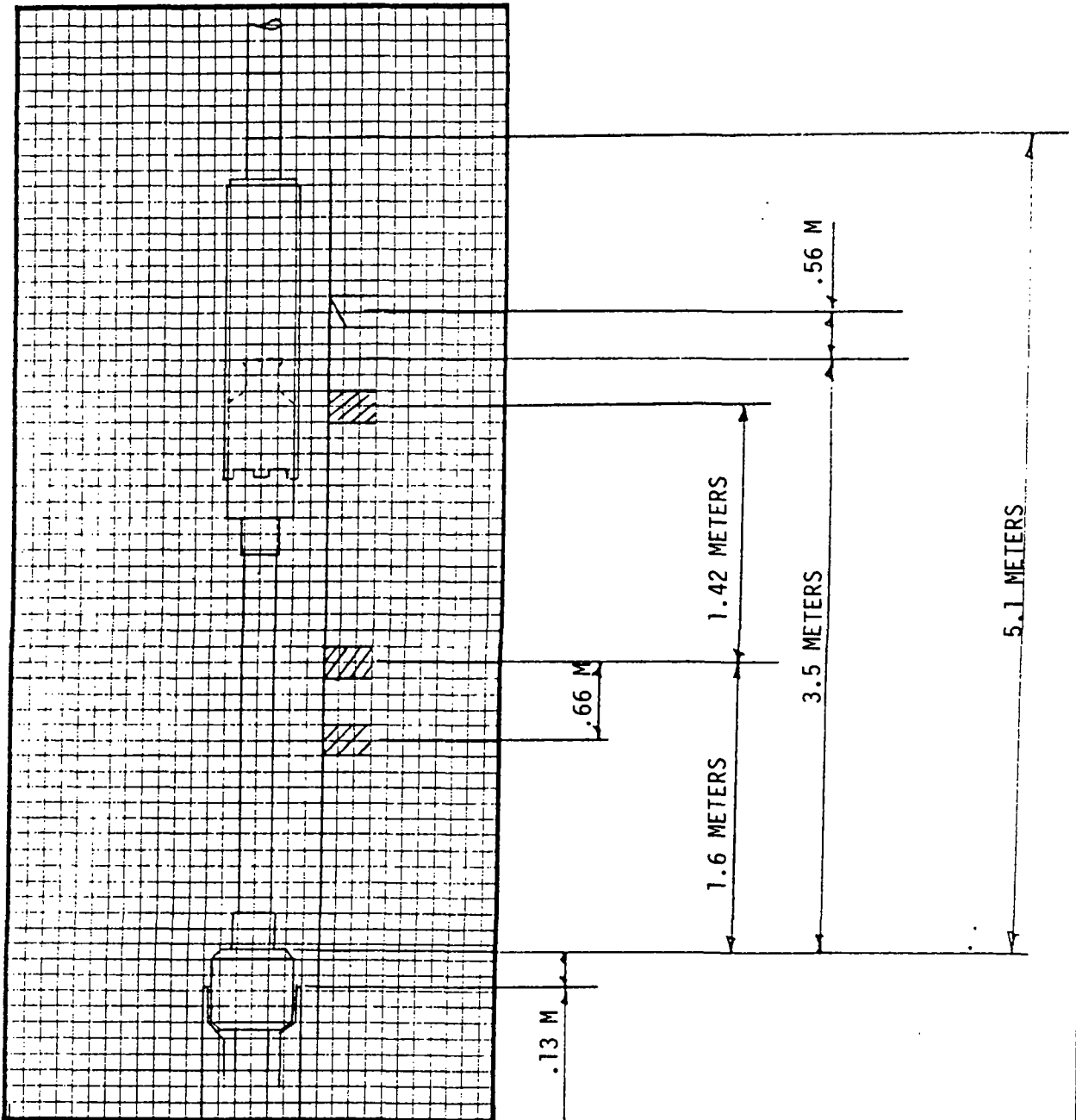
Field : WILDCAT

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Well : 30/2-1

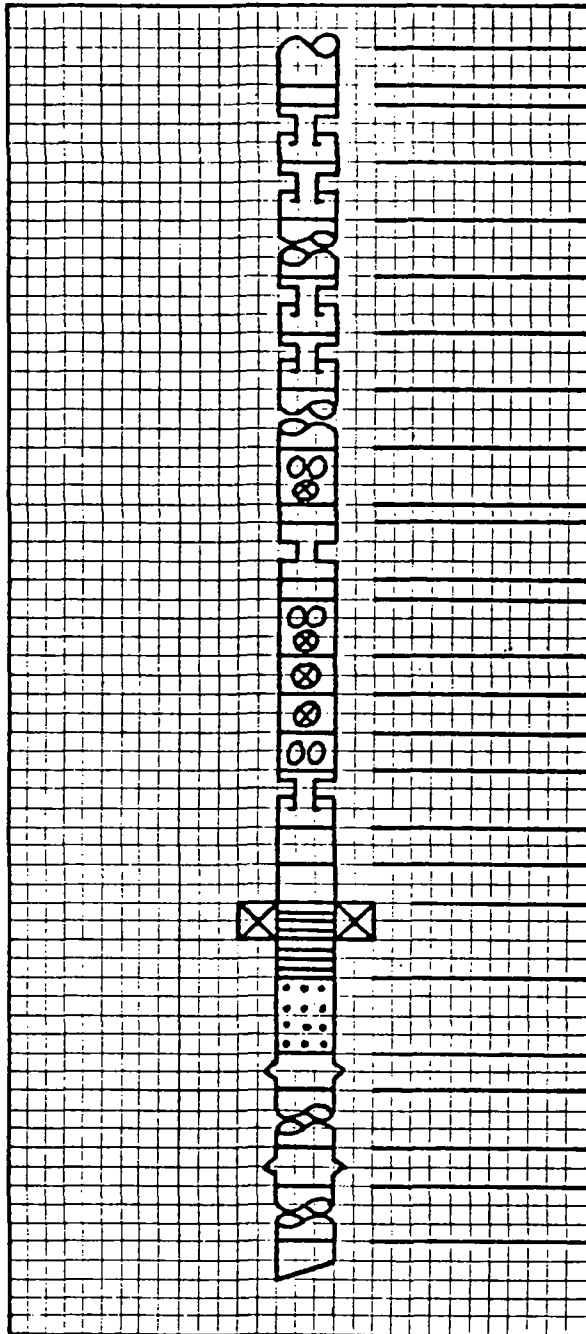
Report N° : 82/2301/30

- WELL COMPLETION DATA -



REMARKS :

-WELL COMPLETION DATA-



118 STD. + 2 SINGLES + PUP 3 1/2"
 X-O 3 1/2" TDS x 3 1/2" IF
 SLIP JOINT OPEN
 SLIP JOINT OPEN
 10 JOINTS DRILL COLLARS
 SLIP JOINT CLOSED
 SLIP JOINT CLOSED
 11 JOINTS DRILL COLLARS
 APR-M CIRC. VALVE
 X-O 3 1/2" IF x 3 1/2" FH
 HANDLING CHOKE & SUB ASSY.
 X-O 3 1/2" FH x 3 1/2" IF
 APR-M REV. CIRC. VALVE
 DRILL PIPE TESTER VALVE
 LPR TESTER VALVE
 FUL FLO HYD. BYPASS
 BIG JOHN JARS
 BAKER ROTARY SUB
 BAKER MOD. "G" LOCATOR
 BAKER MOD. "D" PACKER AT 3684.4m
 BAKER SEAL ASSY. AND PERF. JOINT
 BAKER "F" NIPPLE
 BAKER SPACER TUBE
 BAKER "F" NIPPLE
 BAKER SPACER TUBE
 MULE SHOE WIRELINE ENTRY

REMARKS

DRAWING SCHEMATIC ONLY
 NOT TO SCALE

FLOPETROL

Client : Statoil

Section : 6

Base : NWB

Field : Wild Cat

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Report N°: 82/2301/30

Well : 30/2-1

- SEQUENCE OF EVENTS -

DATE	TIME	OPERATION
		DST # 3
05.10.82	11:00	TIGHTEN JOINTS ON EZ TREE AND FLUTED HANGER.
	11:15	FATIGUED AMERADA TWICE TO 690 BAR.
	12:11	STYLUS ON AMERADA P.E.No. 37063 x 15000 psi, R.E. No.
		52099 SINGLE PITCH LEAD SCREW AND CLOCK No: F-876 x
		120 HRS.
	12:17	AMERADA IN STRING.
06.10.82	03:05	EZ-TREE ON STRING.
	03:20	FUNCTION TEST EZ-TREE, UNLATCHED AND LATCHED.
	03:22	FILLED WATER ON TOP OF EZ-TREE VALVES AND OPENED, OK.
	03:25	EZ-TREE THROUGH ROTARY TABLE
	04:50	FLOWHEAD ON STRING, START PICKING UP CHOKE MANIFOLD.
	06:10	CHOKE MANIFOLD ON FLOOR
	07:00	END OF RIG UP SURFACE EQUIPMENT. START FLUSHING LINES.
	07:27	CLOSE KILL AND MASTER VALVES. PRESSURE TEST KILL VALVE TO
		690 BAR. OK.
	07:45	OPEN KILL, CLOSE FAILSAFE VALVE. PRESSURE TEST TO 690
		BAR.OK.
	08:00	OPEN MASTER VALVE AND PRESSURE TEST STRING AGAINST
		D.P.TESTER VALVE, 690 BAR. OK.
	08:19	CLOSE EZ-TREE VALVES AND BLEED PRESSURE ABOVE TO 69 BAR.
		NO RETURNS.
	08:33	START PUMPING TO EQUALIZE PRESSURE.
	08:35	OPEN EZ-TREE VALVE.
	08:43	OPEN FAILSAFE, CLOSE HEATER AND FIXED SIDE ON CHOKE
		MANIFOLD. PRESSURE TEST TO 690 BAR.
	09:00	CLOSE ADJUSTABLE SIDE, OPEN FIXED SIDE. PRESSURE TEST TO
		690 BAR.

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FLOPETROL

Section : **6**

SEQUENCE OF EVENTS (Continuation)

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DATE	TIME	OPERATION
06:10.82	09:20	BLEED OFF PRESSURE.
	09:37	STING INTO PACKER
	09:55	PRESSURISED TUBING TO 207 BAR
	10:00	CLOSE KILL VALVE. START PRESSURIZING ANNULUS TO OPEN LPR-N.
	10:19	BLEED OFF TUBING AND ANNULUS PRESSURE
	10:24	PICK UP ON TUBING
	10:26	SIT BACK DOWN
	10:40	OPEN KILL VALVE AND PRESSURIZE TUBING TO 207 BAR.
	10:42	CLOSE KILL VALVE
	10:47	PRESSURIZE ANNULUS TO OPEN LPR-N
	11:05	OPEN KILL VALVE AND PRESSURIZE TUBING TO 276 BAR.
	11:08	CLOSE KILL VALVE
	11:10	PRESSURIZE ANNULUS TO OPEN LPR-N
	11:25	OPEN KILL VALVE AND BLEED PRESSURE.
	11:30	CLOSED EZ-TREE VALVES AND PUMP THROUGH TILL TUBING PRESSURE 207 BAR
	11:34	BLEED OFF TO 0. RETURNS = 0.25 BBL.
	11:37	REPRESSURIZE TO 241 BAR, OPEN EZ-TREE VALVES, AND BLEED OFF PRESSURE. RETURNS 1 BBL.
	12:32	CLOSE KILL VALVE AND PICK UP 1 JOINT
	12:39	LAND IN PACKER AGAIN.
	12:45	OPEN KILL VALVE AND PRESSURIZE TUBING TO 290 BAR.
	12:49	CLOSE KILL VALVE AND PRESSURIZE ANNULUS TO OPEN LPR-N.
	12:51	LPR-N OPEN. 115 BAR ANNULUS PRESSURE.
	12:57	OPEN WELL SLOWLY ON ADJUSTABLE CHOKE TO 32/64".
	13:05	CHANGE TO 32/64" FIXED CHOKE
	13:06	GAS TO SURFACE
	13:11	FLARE LIT
	14:30	PASSED FLOW THROUGH SEPARATOR

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FLOPETROL

Section : **6**

_ SEQUENCE OF EVENTS _ (Continuation)

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Report N°: 82/2301/30

DATE	TIME	OPERATION
06.10.82	15:20	DIVERTED FLOW TO TANK
	15:35	DIVERTED FLOW BACK TO BURNER
	17:03	DIVERTED FLOW TO TANK
	17:18	DIVERTED FLOW BACK TO BURNER
	18:28	START PVT SAMPLING NO. 1
	19:20	DIVERTED FLOW TO TANK
	19:40	DIVERTED FLOW BACK TO BURNER
	19:40	START PVT SAMPLING NO. 2
	20:40	BYPASSED SEPARATOR
	20:42	CHANG'D TO 32/64" ADJUSTABLE CHOKE, INCREASING SLOWLY.
	20:44	CHOKE AT 48/64".
	20:57	CHANGE TO 48/64" FIXED CHOKE
	21:28	DIVERTED FLOW THROUGH SEPARATOR
	22:02	DIVERTED FLOW TO TANK
	22:15	DIVERTED FLOW BACK TO BURNER.
07.10.82	00:11	DIVERTED FLOW TO TANK.
	00:25	DIVERTED FLOW BACK TO BURNER
	00:25	START PVT SAMPLING NO: 3
	00:45	SHRINKAGE = 9% at 13°C
	02:00	BYPASSED SEPARATOR
	02:03	SHUT IN AT CHOKE MANIFOLD
	02:05	APR-M SHEARED
	02:07	OPENED ON ADJUSTABLE CHOKE TO REVERSE CIRCULATE TO FLARE.
	02:23	CLOSE MASTER, OPEN KILL VALVES AND START FLUSHING LINES.
	23:50	START RIG DOWN SURFACE EQUIPMENT.
08.10.82	00:25	CHOKE MANIFOLD OFF RIG FLOOR
	02:02	LIFTED FLUTED HANGER OFF WEAR BUSHING
	02:20	PULLED SEAL ASSY OUT OF PACKER
	02:44	STUNG SEAL ASSY. BACK INTO PACKER
	03:15	FLOWHEAD OFF STRING

N° DOP 108

No. DOP 109

FLOPETROL

Client : STAI OIL
 Field : WILDCAT
 Well : 30/2-1

Section : **7**
 Page : 13
 Report N°: 82/2301/30

Base : NWB

- WELL TESTING DATA SHEET -

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				PROD RATES AND FLUID PROPERTIES				GOR		
Time	Cumul	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		
		Temp	Pressure	Iq temp	Ig press	Temp	Press	Rate	Gravity	Rate	Gravity	
HRS/MIN	MIN			OF	PSIG						Units	
06:10	.82											
12:51	-		LPR-N									
12:57	-				4300							
12:57	-		OPEN WELL SLOWLY ON									
12:57	0				4300							
12:58	1				850							
12:59	2				1050							
13:00	3			92	1150							
13:01	4			95	1350							
13:02	5			102	1570							
13:03	6				2200							
13:05	8/0		CHANGE TO 32/64"									
13:06	1				6350		GAS TO SURFACE					
13:07	2			138	6350							

LIQUID FLOW RATE MEASURING CONDITIONS :
 15°C AND 760 mmHG

TESTED INTERVAL : NESS 3720 m - 3728 m
 DEPTH REFERENCE : RKB
 DEPTH OF B H MEASUREMENTS : 3706.5 m

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS			SEPARATOR			PROD. RATES AND FLUID PROPERTIES				GOR	
06.10.82 Time	Cumul HRS/MIN	BOTTOM HOLE		WELL HEAD		SEPARATOR		OIL OR CONDENSATE		GAS		CO ₂ / H ₂ S % / ppm	MERC. APTAN Units ppm
		Temp	Pressure	Tg. temp	Cg. press.	Temp.	Press.	Rate	Gravity	Rate	Gravity		
			PSIG	OF	PSIG	OF	PSIG		%		Air=1		
13:07													
13:08	3			125	5200								
13:09	4			120	5100								
13:10	5			115	5200								
13:15	10			120	5100			20				1/0	
13:20	15			125	5130								
13:25	20			130	5150								
13:30	25			138	5230			5				4/8	
13:35	30			143	5240								
13:40	35			146	5250								
13:45	40			150	5400			4.5					0
13:50	45			152	5250								
13:55	50		9344	157	5350								
14:00	55		9344	161	5350			3					0
14:15	70		9342	167	5400			2.5 (0.4%BS)					
14:30	85		9348	170	5400	SWITCH FLOW THROUGH SEPARATOR							
14:45	100		9350	176	5400								
15:00	115		9352	172	5400		112	895					

FLOPETROL

WELL TESTING DATA SHEET(Continuation)

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD. RATES AND FLUID PROPERTIES				GOR		WATER		CO ₂ /H ₂ S		MERC. APTAN		
06.10.82	Cumul Time	BOTTOM HOLE Pressure	WELL HEAD Ig. temp	WELL HEAD Cg. press.	SEPARATOR Temp.	SEPARATOR Press.	OIL OR CONDENSATE Rate	Gravity	BSW %	Rate	Gravity	GAS	Rate	BSW %	GOR	m ³ /D	H ₂ S %	PPM	Units	ppm		
HRS/MIN	MIN	PSIG	OF	PSIG	OF	PSIG	M ³ /D	60/60	%	mm ³ /D	Air=1		mm ³ /D		m ³ /m ³							
20:50																						
20:57	15	9260	187	3000						3 (0.25%BS)												
20:57	-	CHANGED	TO 48/64"	FIXED CHOKE																		
20:57	0	9260	187	3000																		
20:58	1	9262	187	3300																		
21:00	3	9266	188	3370						4 (0.3% BS)												
21:15	18	9278	190	3410						4.5 (0.2% BS)												
21:25	28	DIVERTED	FLOW	THROUGH	SEPARATOR																	
21:30	33	9278	192	3420	144	910							995.5									
22:00	63	9278	192	3430	150	910	395.3	.809					988.7		2501	12.36					4/TRACE	
22:30	93	9278	193	3440	150	910	403.5		1.5				996.9		2471	1.91						
23:00	123	9280	194	3450	151	910	399.7						1003		2509	3.21						
23:30	153	9282	197	3465	154	915	398.9						1012		2537	3.05					4/8	
24:00	183	9285	200	3475	156	915	406.4						1017		2502	5.42						
07.10.82																						
00:30	213	9282	200	3470	156	920	389.1		1.8				1016		2611	2.52						
01:00	243	9282	202	3470	158	920	398.3	.814					1013		2543	3.36						
01:30	273	9288	202	3490	156	920	395.0						1020		2582	2.44					3/6	

FLOPETROL

DIVISION : NSD

BASE : NWB

REPORT N°: 82/2301/30

Well Testing Report Annexes —

Client : STATOIL

Field : WILDCAT

Zone : NESS

Well : 30/2-1 DST No. 3

Date : 05.10.82 - 08.10.82

INDEX of ANNEXES

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 - 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 -

BOTTOM HOLE PRESSURE AND TEMPERATURE MEASUREMENTS**A _PRESSURE_****a) READING USING CALIBRATED CHART :**

Chart is read using as reference line the base line drawn at atmospheric pressure.

$$P = KY + a + C$$

Y is the deflection for pressure P.

K, a and C (non linearity correction) are obtained from calibration by least square calculation.

b) READING USING REFERENCE LINE METHOD :

Chart is read using as reference line a line drawn at pressure P_R .

$$P = KY + P_{RC} + C$$

Y is the deflection for pressure P read from the reference line.

$P_{RC} = KY_R + a$: calculated pressure for reference line.

P_{RC} , K and C are obtained from calibration data.

B _TEMPERATURE_

Chart is read from zero at base line.

Bottom hole temperature is read from constructor's calibration tables at the point corresponding to the deflection

Base line is drawn with adjusting knob held against the stop.
Therefore $Y_0 = 0$

Base line is drawn at temperature $T_0 =$ _____
From calibration tables the corresponding deflection $Y_0 =$ _____

C _GENERAL INFORMATION_

Reference depth : RKB

Difference level between the two pressure elements : _____

FLOPETROL

Client : STATOIL

Section : ANNEX **1.1**

Base : NWB

Field : WILDCAT

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Well : 30/2-1

Report N : 82/2301/30

BOTTOM HOLE PRESSURE GAUGE CALIBRATION SHEET

DATE : 16.09.82

CALIBRATION No. : 2

EQUIPMENT DATA

Calibration cell No. : 2147 Manufacturer : FLOPETROL
 Dead weight tester No. : 1287 Manufacturer : COLEMAN Range : 50-10.000 PSI
 Recording element No. : 52099 Manufacturer : GRC
 Pressure element No. : 37063 Manufacturer : GRC Range : 0-15.000 PSI

MISCELLANEOUS INFORMATION

Base line drawing temperature : Ambient
 Reference line data - temperature : _____ pressure P_R : _____ reading Y_R : _____
 Calibration data - temperature : 200°F - step drawing : with crank
 with clock
 Equivalent pressure p of level difference between Dwt and bellows
 Level difference : 1.90m + in case of Dwt above
 Oil specific gravity : 0.874 $p = 2.36$ PSI - in case of Dwt beneath bellows.

CALIBRATION READING AND CALCULATIONS

P (Dwt)	Y	ΔY	Y^2	Y P	$P_c = KY + a$	$C = P - P_c$
PSIG	INCH		Units on this line -		PSIG	PSIG
8500	1.102				8497.68	+ 2.32
9000	1.167				9003.11	- 3.11
9500	1.231				9500.77	- 0.77
10000	1.295				9998.43	+ 1.57
		Σ				$\Sigma + = 3.88$ $\Sigma - = 3.88$

$A = \frac{\Sigma P}{n} =$ _____ $B = \frac{\Sigma Y}{n} =$ _____ $K = \frac{D - A}{C - B} =$ _____
 $D = \frac{\Sigma (YP)}{\Sigma Y} =$ _____ $C = \frac{\Sigma (Y^2)}{\Sigma Y} =$ _____
 $a' = A - BK = -71.40$ $a' = D - CK = -71.40$

FINAL RESULTS

$K = 7.775, 9368$ PSI/INCH $P_{RC} = K Y_R + a =$ _____
 $a = a' + p = -69.04$ PSI

FLOPETROL

Client : STATOIL

Section: ANNEX 1.2

Base : NWB

Field : WILD CAT

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Well : 30/2-1

Report N°: 82/2301/30

BOTTOM HOLE PRESSURE CALCULATIONS

Well producing through : ~~casing~~ / tubing / ~~drill pipe~~

Bottom hole temperature : N/A at depth _____ with _____

INSTRUMENT DATA		LOWER GAUGE	UPPER GAUGE
Instrument type :		RPG-3	
Press. element. No. and range:		37063 x 15000 psi	
Recording element. No.:		52099 x S.P.L.S.	
Clock. No. and capacity:		F 876 x 120 HRS.	
CALIBRATION DATA			
Calibration. No. and date :		2 16/09.82	
Calibration temperature :		200°F	
Calibration range :		8500 - 10000 psi	
K :		7.775, 9368 psi/inch	
a, (calibrated chart) :		-69.04 psi	
PRC, (non calibrated chart) :			

DATE - TIME		Choke size	W.H. pressure	Depth	Y	C *	P	Y	C *	P
Time	Cumul									
HRS	MIN	INCH	PSIG	M	INCH		PSIG			
05.10	82									
12:11	STYLUS	ON								
06.10	82									
12:51	LPR-N	VALVE OPEN.		UNABLE TO READ FIRST PRESSURES.						
13:55	50	32/64	5350	3706.5	1.2105		9344			
14:00	55	32/64	5350	3706.5	1.2105		9344			
14:15	70	32/64	5400	3706.5	1.2103		9342			
14:30	85	32/64	5400	3706.5	1.2110		9348			
14:45	100	32/64	5400	3706.5	1.2113		9350			
15:00	115	32/64	5400	3706.5	1.2115		9352			
15:30	145	32/64	5400	3706.5	1.2115		9352			
16:00	175	32/64	5500	3706.5	1.2125		9359			
16:30	205	32/64	5480	3706.5	1.2130		9363			
17:00	235	32/64	5480	3706.5	1.2125		9359			
17:30	265	32/64	5480	3706.5	1.2125		9359			
18:00	295	32/64	5490	3706.5	1.2125		9359			
18:30	325	32/64	5500	3706.5	1.2132		9365			

REMARKS :

* Only used if its value is significant compared to the accuracy of the gauge.

FLOPETROL

Section: ANNEX 1.2

_ B.H. PRESSURE CALCULATIONS (Continuation) _

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06.10.82				LOWER GAUGE			UPPER GAUGE			
DATE - TIME		Choke size INCH	W H pressure PSIG	Depth M	Y INCH	C *	P PSIG	Y	C *	P
Time HRS	Cumul MIN									
1830										
1900	355	32/64	5450	3706.5	1.2132		9365			
1930	385	"	"	"	"		"			
2000	415	"	"	"	"		"			
2030	445	"	"	"	1.2128		9362			
2042	457	"	"	"	1.2125		9359			
2042	-	CHANGED TO 32/64" ADJUSTABLE CHOKE; INCREASING SLOWLY								
2042	0			3706.5	1.2125		9359			
2044	2			-	1.2100		9340			
2044	-	CHOKE AT 48/64" ADJUSTABLE								
2045	3	48/64	3150	3706.5	1.2050		9301			
2050	8	"	3000	"	1.2000		9262			
2057	15	"	"	"	1.1997		9260			
2057	-	CHANGE TO 48/64" FIXED CHOKE								
2057	0	48/64	3000	3706.5	1.1997		9260			
2058	1	"	3300	-	1.2000		9262			
2100	3	"	3370	-	1.2005		9266			
2115	18	"	3410	-	1.2020		9278			
2125	28	DIVERTED FLOW THROUGH SEPARATOR								
2130	33	48/64	3420	3706.5	1.2020		9278			
2200	63	"	3430	"	"		"			
2230	93	"	3440	"	"		"			
2300	123	"	3450	"	1.2023		9280			
2330	153	"	3465	"	1.2025		9282			
2400	183	"	3475	"	1.2029		9285			
07.10.82										
0030	213	"	3470	"	1.2025		9282			
0100	243	"	"	"	"		"			
0130	273	"	3490	"	1.2033		9288			

No DOP 116 Litografen 8175

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

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

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.

$$V_o = V_S \times f \times (1 - \text{Shr}) \times K \times (1 - \text{BSW})$$

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.

$$V_o = V_S \times (1 - \text{Shr}') \times K \times (1 - \text{BSW})$$

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

$(1 - \text{Shr}')$: Shrinkage factor including meter correction factor.

BSW for oil measurements taken from separator outlet.

FLOPETROL

Client: STATOIL
 Field: WILD CAT
 Well: 30/2-1

- OIL PRODUCTION RATE -
 - MEASUREMENT WITH TANK -

Section : Annex **2.1**
 Page : 25
 Report N° : 82/230L/30

Base : NWB

Date - Time	Interval	Gauge graduation	Tank volume		STO Gravity		K	BSW %	Net volume of STO V ₀ BBL	Net STO product. rate /day	Cumulative production	Units
			Volume V BBL	Temp. OF	Gravity	Temp. Grav. 60°F						
06.10.82												
15:20	-	28	DIVERTED FLOW TO TANK WITH 35 PSI BACK PRESSURE									
15:35	-	152.5	21.91	72				21.91				
			METER READING IN SAME PERIOD: 25 BBLs • METER FACTOR = 0.8765									
17:03	-	35.5	DIVERTED FLOW TO TANK WITH 30 PSI BACK PRESSURE									
17:18	-	160.0	21.91	70				21.91				
			METER READING IN SAME PERIOD: 25 BBLs • METER FACTOR = 0.8765									
19:20	-	38.0	DIVERTED FLOW TO TANK WITH 30 PSI BACK PRESSURE									
19:40		219	31.86	75				31.86				
			METER READING IN SAME PERIOD: 36 BBLs • METER FACTOR = 0.8849									

1 cm = 0.176 BBL.

Tested interval : NESS
 Perforations : 3720m - 3728m

No.: DOP 122

FLOPETROL

Client: STATOIL

Field: WILD CAT
Well: 30/2-1

- OIL PRODUCTION RATE - - MEASUREMENT WITH METER -

Section: ANNEX 2.2

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Report N: 82/2301/30

Base: NWB

DATE - TIME	Interval HRS/MIN	Meter reading BBS	Vs BBS	B SW %	V'₀ BBS	1 - Shr		OIL GRAVITY		K	Net volume of STO: V₀ BBS	Net STO product. rate M³ /day	Cumulative production M³	Units
						Factor I - %	Temp. °F	Gravity SG	Temp. °C					
			DST # 3											
14:30	-	DIVERTED	FLOW THROUGH SEPARATOR											
15:00	-	START MEASUREMENTS	EST. CUMULATIVE				PRODUCTION FROM 1306 TO 1500 HRS!					24.0		
15:00	-	1652.44												
15:30	30	1699.47	47.03	0.2	41.14	1	72	.804	17.4	.805	.9940	40.9	312.1	f=0.8765
16:00	30	1747.32	47.85	0.2	41.86	1	72				.9940	41.6	317.5	
16:30	30	1793.00	45.68	0.2	39.96	1	72	.806	17.7	.807	.9940	39.7	303.1	
17:00	30	1842.10	49.10	0.2	42.95	1	72				.9940	42.7	325.8	f=0.8765
17:30	30	1890.07	47.97	0.2	41.96	1	70	.805	17.5	.806	.9950	41.8	318.6	
18:00	30	1937.34	47.27	0.2	41.35	1	70				.9950	41.1	314.0	
18:30	30	1984.24	46.90	0.2	41.03	1	70	.793	16.5	.794	.9950	40.8	311.5	
19:00	30	2031.37	47.13	0.2	41.23	1	70				.9950	41.0	313.0	
19:30	30	2078.23	46.86	0.2	40.99	1	70	.805	17.5	.806	.9950	40.8	311.3	
20:00	30	2124.91	46.68	0.2	41.22	1	75				.9950	41.0	313.0	f=0.8849
20:30	30	2171.52	46.61	0.2	41.16	1	75	.806	14.6	.805	.9950	41.0	312.6	

Shrinkage factor measured by Shrinkage tester Tank

*V'₀ = Vₛ x f x (1 - BSW) = Net oil volume at separator conditions. f =

TESTED INTERVAL: NESS
PERFORATIONS: 3720m - 3728 m

No. DOP 122

FLOPETROL

Client : STATOIL

Field : WILD CAT
Well : 3072-1

Base : NWB

WATER PRODUCTION RATE - - MEASUREMENT WITH METER -

Section: ANNEX 2.2

Page : 29
Report N°: 82/2301/30

DATE - TIME	Interval	Meter reading	Vs	B SW	V'°	1 - Shr		OIL GRAVITY		K	Net volume of STO: V _o	Net STO product rate	Cumulative production
						Factor	Temp.	Gravity	Temp.				
06.10.82				DST # 3									
14:30	-												
15:00	-												
15:00	-	74.03											
15:30	30	74.90	.87								.87	6.64	
16:00	30	76.09	1.19								1.19	9.08	
16:30	30	78.34	2.25								2.25	17.17	
17:00	30	78.79	0.45								0.45	3.43	
17:30	30	79.52	0.73								0.73	5.57	
18:00	30	80.08	0.56								0.56	4.27	
18:30	30	80.38	0.30								0.30	2.29	
19:00	30	80.57	0.19								0.19	1.45	
19:30	30	80.77	0.20								0.20	1.53	
20:00	30	81.16	0.39								0.39	2.98	
20:30	30	81.51	0.35								0.35	2.67	

TESTED INTERVAL : NESS

PERFORATIONS : 3720m - 3728m

Shrinkage factor measured by Shrinkage tester Tank
 $V_o = V_s \times (1 - BSW)$ = Net oil volume at separator conditions. $f = 1$

- 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.

a) EQUATIONS -

$$Q = C \sqrt{h_w \times P_f}$$

Q : Production rate at reference conditions.
C : Orifice flow coefficient.
h_w : Differential pressure in inches of water.
P_f : Flowing pressure in psia.

$$C = F_u \times F_b \times F_g \times Y \times F_{tf} \times F_{pv}$$

F_u : Unit conversion factor in desired reference conditions.
F_b : Basic orifice factor (Q in Cu.ft / hour).
F_g : Specific gravity factor.
Y : Expansion factor
F_{tf} : Flowing temperature factor.
F_{pv} : Supercompressibility factor (estimated).

Remarks

F_m : Manometer factor is equal one since only bellows type meters are used.
F_r : Reynolds factor is considered to be one.

UNITS	TABLE OF F _u FACTOR			
	REFERENCE CONDITIONS			
	60°F 14.73 psia	0°C 760mmHg*	15°C 760mmHg *	15°C 750mmHg *
Cu.ft / hour	1	0.9483	1.0004	1.0137
Cu.ft / day	24	22.760	24.009	24.329
m ³ / hour	0.02832	0.02685	0.02833	0.02870
m ³ / day	0.6796	0.6445	0.6799	0.6889

* Mercury at 32°F

b) METER DATA -

Meter type : DANIEL SENIOR Flange taps - P_f taken down from ~~1.571"~~
 Flow recorder type : BARTON ID of meter tube : 5.761"

c) SPECIFIC GRAVITY SOURCE -

Sampling point : TOP OF SEPARATOR Gravitometer type : KIMRAY
 GAS OUTLET

d) SUPERCOMPRESSIBILITY FACTOR F_{pv} -

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

No DOP 125

FLOPETROL

Base : NWB

Client : STATOIL

Field : WILD CAT

Well : 30/2-1

Section : ANNEX 3

- GAS PRODUCT. RATE MEASUREMENT -

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Report N : 82/2301/30

DATE - TIME	Flowing Temp. of	Pf 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 _{tf}	F _{pv}	C	Gas production rate Q mm ³ /Day	Cumulative Production mm ³
			DST # 3											
14:30			DIRTIED FLOW THROUGH SEPARATOR											
15:00			START MEASUREMENTS. ESTIMATED					FROM 13:06 TO 15:00 HRS						
15:00	-	910	120	330.454	3.500	.682	2691.5	1.2109	1.0007	.9535	1.070	2265	748.6	
15:30	30	910	124	335.917	3.500	.682	2691.5	1.2109	1.0007	.9501	1.068	2253	756.8	74.77
16:00	30	900	124	334.066	3.500	.682	2691.5	1.2109	1.0007	.9493	1.067	2249	751.3	90.42
16:30	30	900	124	334.066	3.500	.682	2691.5	1.2109	1.0007	.9436	1.064	2229	744.7	105.9
17:00	30	900	124	334.066	3.500	.684	2691.5	1.2091	1.0007	.9428	1.064	2224	743.0	121.4
17:30	30	900	124	334.066	3.500	.684	2691.5	1.2091	1.0007	.9420	1.063	2220	741.7	136.9
18:00	30	905	124	334.993	3.500	.684	2691.5	1.2091	1.0007	.9404	1.063	2216	742.4	152.3
18:30	30	905	124	334.993	3.500	.684	2691.5	1.2091	1.0007	.9388	1.062	2210	740.5	167.8
19:00	30	905	124	334.993	3.500	.684	2691.5	1.2091	1.0007	.9388	1.062	2210	740.5	183.2
19:30	30	905	124	334.993	3.500	.687	2691.5	1.2065	1.0007	.9372	1.062	2202	737.6	198.6
20:00	30	905	124	334.993	3.500	.687	2691.5	1.2065	1.0007	.9372	1.062	2202	737.6	213.9
20:30	30	905	124	334.993	3.500	.687	2691.5	1.2065	1.0007	.9372	1.062	2202	737.6	229.3

TESTED INTERVAL : NESS
PERFORMANCES : 3720m - 3728m

Recorder ranges : P_{tf} = 0-1500 PSIG
h_w = 0-400 "H₂O Temp. = 0-200°F

F_u = 0.6799

FLOPETROL

Client : STATOIL

Section : ANNEX

42Base : NWBField : WILD CATPage : 34Well : 30/2-1Report N°: 82/2301/30

SURFACE SAMPLING

Date of sampling : 06.10.82 Service order : _____ Sampling No. : Oil # 1(Hg)
 Sample nature : CONDENSATE Sampling point : BOTTOM OF SIGHT GLASS

A - RESERVOIR AND WELL CHARACTERISTICS-

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A
 Depth origin : RKB Tubing Dia. : 3 1/2" Casing Dia. : 7"
 Surface elevation : _____ Shoe : Packer at 3684.4m Shoe : 3834m

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 : 19:12 Time elapsed since stabilisation : 2 HRS

Bottom hole dynamic conditions	Choke size : <u>1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450 PSIG</u> Well head temp. : <u>188°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp. : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air: 1) : 0.684 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.062

Values used for calculations : Hw=124, Fb=2691.5, Fg=1.2091, Y=1.0007, Ftf=0.9388

Separator	Pressure : <u>890 PSIG</u>	Rates - Gas : <u>740.5 Mm³/day</u>	GOR : <u>2014 m³/m³</u> (separator cond.)
	Temp. : <u>130 °F</u>	Oil (separator cond.) : <u>367.6 m³/day</u>	
METRE CORRECTION FACTOR=1.022			

Stock tank	Atmosphere : <u>760 mmHg.</u> °F	Oil at 60°F : <u>313.0 m³/day</u>
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2%

Transferring fluid : MERCURY Transfer duration : 44 min

Final conditions of the shipping bottle : _____
 Pressure : 625 PSIG Temp. : 9°C

Shipping bottle No. : 8207013 C - IDENTIFICATION OF THE SAMPLE
820713 sent on : _____ by : _____ Shipping order No. : _____
 Addressee : _____

Coupled with	LIQUID		GAS	
	Bottom hole samples No.	_____	_____	_____
Surface samples No.	<u>OIL # 2</u>	<u>8208308</u>	<u>GAS # 1</u>	<u>A-14058</u>
	_____	_____	<u>GAS # 2</u>	<u>A-14082</u>

Measurement conditions.

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

D - REMARKS -

590 ccHg DRAINED FROM BOTTLE.
 DRAIN VALVE OPENED TOO MUCH FOR A SHORT PERIOD IN THE END OF TRANSFER PERIOD. MAY HAVE AFFECTED THE SAMPLE.

 Visa Chief Operator

FLOPETROL

Client : STATOIL

Section : ANNEX

42

Base : NWB

Field : WILD CAT

Page : 35

Well : 30/2-1

Report N° : 82/2301/30

SURFACE SAMPLING

Date of sampling : 06.10.82 Service order : _____ Sampling No. : Oil # 2(H₂O)
 Sample nature : CONDENSATE Sampling point : BOTTOM OF SIGHT GLASS

A - RESERVOIR AND WELL CHARACTERISTICS--

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A
 Depth origin : RKB Tubing Dia. : 3 1/2" Casing Dia. : 7"
 Surface elevation : _____ Shoe : Packer at 3684.4m Shoe : 3834m

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 : 19:06 Time elapsed since stabilisation : 2 HRS

Bottom hole dynamic conditions	Choke size : <u>3 1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450 PSI</u> Well head temp. : <u>188°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp. : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air: 1) : 0.684 Factor $F_{pv} = \frac{1}{VZ}$: 1.062
 Values used for calculations : Hw=124, Fh=2691.5, Fg=1.2091, Y=1.0007, Ftf=0.938

Separator	Pressure : <u>890 PSIG</u> Rates - Gas : <u>740.5 m³/day</u> GOR : <u>2014 m³/m³</u>
	Temp. : <u>130 °F</u> Oil (separator cond.) : <u>367.6 m³/day</u> (separator cond.)

METRE CORRECTION FACTOR=1.022

Stock tank	Atmosphere : <u>760 mmHg.</u> °F	Oil at 60°F : <u>313.0 m³/day</u>
	Tank temperature : _____ °F	B

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : SALT WATER Transfer duration : 38 min

Final conditions of the shipping bottle :
 Pressure : 890 Temp. : 90c

C - IDENTIFICATION OF THE SAMPLE

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

Coupled with	LIQUID	GAS
Bottom hole samples No.	_____	_____
Surface samples No.	<u>OIL # 1</u> <u>8207013</u>	<u>GAS # 1</u> <u>A-14052</u>
	_____	<u>GAS # 2</u> <u>A-14066</u>

Measurement conditions.

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

D - REMARKS -

 Visa Chief Operator

FLOPETROL

Client : STATOIL

Section : ANNEX

42Base : NWBField : WILD CATPage : 36Well : 30/2-1Report N° : 82/2301/30

SURFACE SAMPLING

Date of sampling : 07.10.82 Service order : _____ Sampling No. : Oil # 3(Hg)
 Sample nature : CONDENSATE Sampling point : BOTTOM OF SIGHT GLASS

A - RESERVOIR AND WELL CHARACTERISTICS-

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A
 Depth origin : RKB Tubing Dia. : 3 1/2" Casing Dia. : 7"
 Surface elevation : _____ Shoe : Packer at 3684.4m Shoe : 3834m

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 : 20:21 Time elapsed since stabilisation : 3 HRS

Bottom hole dynamic conditions	Choke size : <u>1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450 PSIG</u> Well head temp. : <u>188°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp. : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air: 1) : 0.687 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.062Values used for calculations : Hw=124, Fb=2691.5, Fg=1.2065, Y=1.0007, Ftf=0.9372

Separator	Pressure : <u>890 PSIG</u> Rates - Gas : <u>737.6 Mm³/day</u> SCFD	GOR : <u>2029 m³/m³</u> (separator cond.)
	Temp. : <u>132 °F</u> Oil (separator cond.) : <u>363.5 m³/day</u> BOPD	
METRE CORRECTION FACTOR=1.022		

Stock tank	Atmosphere : <u>760 mmHg.</u> °F	Oil at 60°F : <u>312.6 m³/day</u>
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2 %Transferring fluid : MERCURY Transfer duration : 41 min

Final conditions of the shipping bottle :	Pressure : <u>480 PSIG</u> Temp. : <u>9°C</u>
---	---

C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No. : 8207111 sent on : _____ by : _____ Shipping order No. : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No.	_____	_____
Surface samples No.	_____	GAS # 3 A-14052 GAS # 4 A-14066

Measurement conditions.

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

D - REMARKS -

Visa Chief Operator

FLOPETROL

Client : STATOILSection: ANNEX 42Base : NWBField : WILD CATPage : 37Well : 30/2-1Report N°: 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 07.10.82 Service order : _____ Sampling No : Oil # 4(Hg)Sample nature : CONDENSATE Sampling point : BOTTOM OF SIGHT GLASS

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/ADepth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"Surface elevation : _____ Shoe : Paeker at 3684.4m : 3834m

<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 : 01:28 Time elapsed since stabilisation : 3 HRS

<u>Bottom hole dynamic conditions</u>	Choke size : <u>3/4"</u> since : <u>20:44</u> Well head pressure : <u>349psig</u> ^{Well} head temp : <u>202°</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.692 Factor Fbv = $\frac{1}{\sqrt{Z}}$: 1.054

Values used for calculations :

Hw=129, Fh=3718.2, Fg=1.2021, Y=1.0006, Ftf=0.9173

<u>Separator</u>	Pressure : <u>920</u> PSIG	Rates - Gas : <u>1016</u> Mm ³ /day SCFD	GOR : <u>2236</u> m ³ /m ³
	Temp : <u>156</u> °F	Oil (separator cond) : <u>454.3</u> m ³ /day BOPD	(separator cond)

METRE CORRECTION FACTOR=1.022

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>395</u> m ³ /BOPD
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2 %Transferring fluid : MERCURY Transfer duration : 63 min

<u>Final conditions of the shipping bottle :</u>
Pressure : <u>420</u> PSIG Temp : <u>9°C</u>

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8208516 sent on : _____ by : _____ Shipping order No : _____

Addressee : _____

<u>Coupled with</u>	<u>LIQUID</u>		<u>GAS</u>	
<u>Bottom hole samples No</u>	_____	_____	_____	_____
<u>Surface samples No</u>	<u>OIL No 5</u>	<u>8208301</u>	<u>GAS no. 5</u>	<u>A-14049</u>
			<u>GAS no. 6</u>	<u>A-14056</u>

Measurement conditions,

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

D - REMARKS -

Visa Chief Operator

No. : DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : WILD CAT

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Well : 3072-1

Report N°: 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 07.10.82 Service order : _____ Sampling No : Oil # 5(H₂O)
 Sample nature : CONDENSATE Sampling point : BOTTOM OF SIGHT GLASS

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
 Surface elevation : _____ Shoe : Packer at 3684.4m : 3834m

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 : 01:14 Time elapsed since stabilisation : 3 HRS

Bottom hole dynamic conditions	Choke size : 3/4" since : 20:44 Well head pressure : 3491 PSIG Well head temp : 202.0°
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.692 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.054
 Values used for calculations :

Hw=129, Fb=3718.2, Fg=1.2021, Y=1.0006, Ftf=0.9173

Separator	Pressure : 920 PSIG	Rates - Gas : 1016 Mm ³ /day	GOR : 2236 m ³ /m ³
	Temp : 156 °F	Oil (separator cond) : 454.3 m ³ /day	

METRE CORRECTION FACTOR=1.022

Stock tank	Atmosphere : _____ mmHg - _____ °F	Oil at 60 °F : 395 m ³ /DAY
	Tank temperature : _____ °F	<input checked="" type="checkbox"/> B <input type="checkbox"/> b

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : SALT WATER Transfer duration : 49 min

Final conditions of the shipping bottle :
 Pressure : 920 PSIG Temp : 9°C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8208301 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	GAS no. 5 A-14049 GAS no. 6 A-14056	OIL no. 4 8208516

Measurement conditions

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

D - REMARKS -

Visa Chief Operator

No.: DOP 127

FLOPETROL

Client : STATOILSection: ANNEX 42Base : NWBField : WILD CATPage : 39Well : 30/2-1Report N° 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 06.10.82 Service order : _____ Sampling No : Gas # 1
Sample nature : GAS Sampling point : TOP OF SEPARATOR OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/ADepth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
Surface elevation : _____ Shoe : Packer at 3684.9m : 3834m

<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 : 18:48 Time elapsed since stabilisation : 2 HRS

<u>Bottom hole dynamic conditions</u>	Choke size : <u>1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450 PSIG</u> head temp : <u>188°</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.684 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.062Values used for calculations : $H_w=124, F_b=2691.5, F_g=1.2091, Y=1.0007, F_{tf}=0.9388$

<u>Separator</u>	Pressure : <u>890</u> PSIG	Rates - Gas : <u>740.5</u> m ³ /day	GOR : <u>2014</u> m ³ /m ³
	Temp : <u>130</u> °F	Oil (separator cond) : <u>367.6</u> m ³ /day	

METRE CORRECTION FACTOR=1.022

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : <u>313.0</u> m ³ /DAY
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2 %Transferring fluid : VACUUM Transfer duration : 18 minFinal conditions of the shipping bottle : _____
Pressure : 885 PSIG Temp : 9° C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14058 sent on : _____ by : _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID		GAS	
	<u>Bottom hole samples No</u>	_____	_____	_____
<u>Surface samples No</u>	<u>Oil # 1</u>	<u>8207013</u>	<u>Gas # 2</u>	<u>A-14082</u>
	<u>Oil # 2</u>	<u>8208308</u>		

Measurement conditions

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

D - REMARKS -

Visa Chief Operator

No. : DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : WILD CAT

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Well : 30/2-1

Report N° 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 06.10.82 Service order : _____ Sampling No Gas # 2
 Sample nature : GAS Sampling point : TOP OF SEPARATOR OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
 Surface elevation : _____ Shoe : Packer at 3684.5moe : 3834m

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 : 19:26 Time elapsed since stabilisation : 2 HRS

Bottom hole dynamic conditions	Choke size : <u>1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450psig</u> Well head temp : <u>188° F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.684 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.062
 Values used for calculations :

$H_w=124, F_b=2691.5, F_g=1.2091, Y=1.0007, F_{rf}=0.9388$

Separator	Pressure : <u>890</u> PSIG	Rates - Gas : <u>740.5</u> m^3/day	GOR : <u>2014</u> m^3/m^3
	Temp : <u>130</u> °F	Oil (separator cond) : <u>367.6</u> m^3/day	(separator cond)

METRE CORRECTION FACTOR=1.022

Stock tank	Atmosphere : <u>760</u> mmHg. °F	Oil at 60 °F : <u>313.0</u> m^3/day
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : VACUUM Transfer duration : 32 min

Final conditions of the shipping bottle :
 Pressure : _____ Temp : 90C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14082 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	OIL no. 1 <u>8207013</u> OIL no. 2 <u>8208308</u>	GAS no. 1 <u>A-14058</u>

Measurement conditions.

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

D - REMARKS -

Visa Chief Operator

No. : DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : WILD CAT

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Well : 30/2-1

Report N° 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 06.10.82 Service order : _____ Sampling No : Gas # 3
 Sample nature : GAS Sampling point : TOP OF SEPARATOR OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
 Surface elevation : _____ Shoe : Packer at 3684.5moe : 3834m

<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 : 20:05 Time elapsed since stabilisation : 3 HRS

<u>Bottom hole dynamic conditions</u>	Choke size : <u>1/2"</u> since : <u>OPEN</u> Well head pressure : <u>5450 PSIG</u> Well head temp : <u>188</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.687 Factor $F_{pv} = \frac{1}{\sqrt{Z}}$: 1.062
 Values used for calculations :

$H_w=124, F_b=2691.5, F_g=1.2065, Y=1.0007, F_r f=0.9372$

<u>Separator</u>	Pressure : <u>890</u> PSIG Rates - Gas : <u>737.6</u> Mm ³ /day GOR : <u>2029</u> m ³ /m ³
	Temp : <u>132</u> °F Oil (separator cond) : <u>363.5</u> m ³ /day (separator cond)

METRE CORRECTION FACTOR=1.022

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : <u>312.6</u> m ³ /day
	Tank temperature : _____ °F

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : VACUUM Transfer duration : 26 min

Final conditions of the shipping bottle : _____
 Pressure : 890 PSIG Temp : 9°C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14052 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>Oil # 3 8207111</u>	<u>Gas # 4 A-14066</u>

Measurement conditions

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

D - REMARKS -

Visa Chief Operator

No. : DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : WILD CAT

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Well : 30/2-1

Report N°: 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 06.10.82 Service order : _____ Sampling No. Gas # 4
 Sample nature : GAS Sampling point : TOP OF SEPARATOR OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
 Surface elevation : _____ Shoe : Packer at 3684.9m : 3834m

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 : 20:28 Time elapsed since stabilisation : 3 HRS

Bottom hole dynamic conditions	Choke size : 1/2" since : OPEN Well head pressure : 5450 PSIG Head temp : 180°
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.687 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.062
 Values used for calculations :

Hw=124, Fb=2691.5, Fg=1.2065, Y=1.0007, Ftf=0.9372

Separator	Pressure : 890 PSIG	Rates - Gas : 737.6 m ³ /day	GOR : 2029 m ³ /m ³
	Temp : 132 °F	Oil (separator cond) : 363.5 m ³ /day	(separator cond)

METRE CORRECTION FACTOR=1.022

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : 312.6 m ³ /day
	Tank temperature : _____ °F	

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : VACUUM Transfer duration : 18 min

Final conditions of the shipping bottle :
 Pressure : 890 PSIG Temp : 9°C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14066 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with

Bottom hole samples No.

Surface samples No.

LIQUID		GAS	
Oil # 3	8207111	Gas # 3	A-14052

Measurement conditions.

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

D - REMARKS -

Visa Chief Operator

No.: DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX 42

Base : NWB

Field : WILD CAT

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Well : 30/2-1

Report N°: 82/2301/30

- SURFACE SAMPLING -

Date of sampling : 07.10.82 Service order : _____ Sampling No : Gas # 5
Sample nature : GAS Sampling point : TOP OF SEPARATOR OUTLET

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : NESS Perforations : 3720-3728m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
Surface elevation : _____ Shoe : Packer at 3684.3m : 3834m

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 : 00:48 Time elapsed since stabilisation : 3 HRS

Bottom hole dynamic conditions	Choke size : 3/4" since : 20:44 Well head pressure : 3491 PSIG Head temp : 202°
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.692 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.054
Values used for calculations :

Hw=129, Fb=3718.2, Fg=1.2021, Y=1.0006, Ftf=0.9173

Separator	Pressure : 920 PSIG Rates - Gas : 1016 m ³ /day GOR : 2236 m ³ /m ³
	Temp : 156 °F Oil (separator cond) : 454.3 m ³ /day (separator cond)

METRE CORRECTION FACTOR=1.022

Stock tank	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : 395 m ³ /day
	Tank temperature : _____ °F

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : VACUUM Transfer duration : 22 min

Final conditions of the shipping bottle :
Pressure : 920 PSIG Temp : 9°C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14049 sent on : _____ by : _____ Shipping order No : _____
Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No.	_____	_____
Surface samples No.	Oil # 4 8208516	Gas # 6 A-14056

Measurement conditions.

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

D - REMARKS -

Visa Chief Operator

No.: DOP 127

FLOPETROL

Client : STATOIL

Section: ANNEX **42**

Base : NWB

Field : WILDCAT

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Well : 30/2-1

Report N°: 82/2301/30

_ SURFACE SAMPLING _

Date of sampling : 07.10.82 Service order : _____ Sampling No : Gas NO. 6
 Sample nature : Gas Sampling point : Top of separator outlet

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : Ness Perforations : 3720-3728 m Sampling interval : N/A

Depth origin : RKB Tubing Dia : 3 1/2" Casing Dia : 7"
 Surface elevation : _____ Shoe Packer at 3684,4m Shoe : 3834 m

<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 : 01:28 Time elapsed since stabilisation : 3 HRS

<u>Bottom hole dynamic conditions</u>	Choke size : <u>3/4"</u> since : <u>20:44hrs</u> Well head pressure <u>3491psig</u> Well head temp : <u>202°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.692 Factor Fpv = $\frac{1}{\sqrt{Z}}$: 1.054
 Values used for calculations :

$H_w=129 F_b=3718.2 F_g=1.2021 Y=1.0006 F_{t_f}=0.9173$

<u>Separator</u>	Pressure : <u>920</u> PSIG Rates - Gas <u>1016m³/Day</u> SCFD GOR <u>2236 m³/m³</u>
	Temp : <u>156</u> °F Oil (separator cond) <u>454,3m³/day</u> BOPD <input checked="" type="checkbox"/> (separator cond)
	Metre correction factor <u>1.022</u> <input checked="" type="checkbox"/>

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : <u>395.0m³/day</u> BOPD
	Tank temperature : _____ °F <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

BSW : 0.2 % WLR : 0.2 %

Transferring fluid : Vacuum Transfer duration : 35 min

Final conditions of the shipping bottle : _____
 Pressure : 920 PSIG Temp : 9°C

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A 14056 sent on : _____ by : _____ Shipping order No : _____
 Addressee : _____

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	OIL No. <u>4</u> <u>8208516</u> OIL No. <u>5</u> <u>8208301</u>	GAS No. <u>5</u> <u>A 14049</u>

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

D - REMARKS -

 Visa Chief Operator

No. : DOP 127

