Well File: 2/4-11

BAZ/eb-43-74 June 20, 1974

Mr. B.M. Boyce
BARTLESVILLE OFFICE

Attached, please find a copy of test analysis of well Espen 2/4-11. Only one interval 10320-10370 ft. flowed hydrocarbons to the surface. The results show a calculated productivity index of 0.033 BOPD/PSI and a kh of 8.21 md-ft.

B.M. Thompson

Attachment

cc: T.J. Jobin w/attach.

ESPEN 2/4-11 DST ANALYSIS

Five DST's were planned to evaluate the Espen 2/4-11 well, one of these was a retest of perforation on DST 2. None of the tests yielded oil in commercial amounts. The well was plugged and abandoned after completion of the test.

DST 1 (Danian Test) Due to the poor cushion recovery rate, after 2 hours flowing, the formation was fractured. And after reopening to the test tank, the flow declined to a mere trickle. The well was shut in for stimulation, reopened to overboard flare line, occasional slugs of water and acid gas blowing at surface. Some 2 hours later the well started to flow water, mud, gas and trace of crude oil but observed mud loss in the casing and the well was killed.

DST 2 (Danian Test) This test was abandoned due to loss of mud in the annulus.

DST 3 (Retest DST 2) Well flowed only some gas and crude oil at very low surface pressure and occasionally died completely. After some 12 hours flowing time, the flow had not improved so the well was shut in for a build up period of 12 hours duration.

DST 4 (Danian Test) Well flowed at a very poor rate, attempts were made to break down the formation at a maximum pump-down pressure of 6500 psi, did not succeed. Test tool bypass was opened and the well reverse circulated.

DST 5 (Danian Test) After acidizing the well was opened to overboard flare line. With oil at surface the flow was diverted through the separator and the well flow tested for 7 hours. After this flow period they had a build up period of 12 hours.

"ESPEN"

Well 2/4-11 Perfs. 10320 -10370 ft.

DST No. 5

P_i - 6840 psi , μ_o - 0.186

P_{wf} - 3437 " , B_o - 1.822

m - 2630 psi/cycle, q - 392 STBD

$$kh = \frac{162.6 \cdot q \cdot \mu_o \cdot B_o}{m} = \frac{162.6 \cdot 392 \cdot 0.186 \cdot 1.822}{2630} = 8.21$$

$h = 50$ ft. , $\therefore k = 0.164$ md

P_{1hr} - 4200 psi

ϕ_{avg} - 20%

r_w^2 - 0.125

$C_t = C_o S_o + C_w S_w + C_f$, $(20 \cdot 0.36 + 3.1 \cdot 0.64 + 10.7)10^{-6} =$

$C_t = 19.9 \times 10^{-6}$

$$s = 1.151\left[\frac{4200-3437}{2630} - \log\left(\frac{0.164 \cdot 10^6}{0.2 \cdot 0.186 \cdot 19.9 \cdot 0.125}\right) + 3.23\right] =$$

$s = -3.14$

$s = -3.14$
$\mu_o B_o = 0.357$
$r_e = 2360$ ft
$r_w = 0.334$

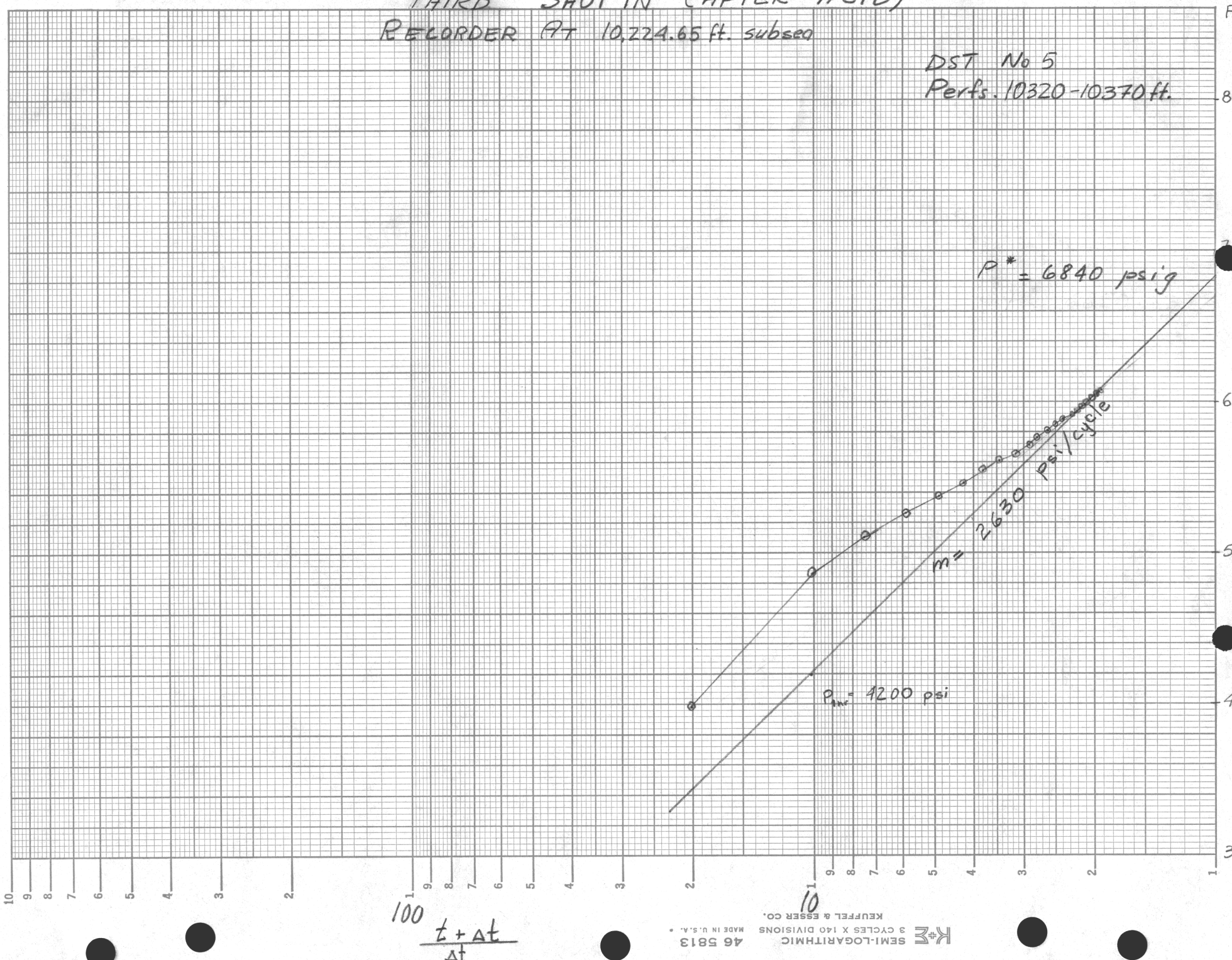
$$PI = \frac{7.08\,kh}{\left(\ln\frac{r_e}{r_w} - \frac{3}{4} + s\right)(\mu_o B_o)} = \frac{7.08(0.00821)}{\left(\ln\frac{2360}{0.334} - 0.75 - 3.14\right)(0.357)}$$

$$PI = \frac{0.0581}{(8.8 - 0.75 - 3.14)(0.357)} = 0.033 \text{ BOPD/PSI}$$

2/4-11

THIRD SHUT IN (AFTER ACID)

RECORDER AT 10,224.65 ft. subsea



KEUFFEL & ESSER CO.

MADE IN U.S.A.

3 CYCLES X 140 DIVISIONS

SEMI-LOGARITHMIC

46 5813

04-835-2/4-11 - No 11

Well File

301 19236+ 818
09.14
19236 agip n
33105a ppco n

tx 2320/74

stavanger 5, april 1974

attn g paulucci/g baldassarri
l laurent/f de boulard
f heritier/p hirtz

agip - oslo
petrofina - brussels
elf - paris

after acid test of 315 bopd with 25-35 psi ftp from dst no 4, 10320-10370, completes the testing of the espen 2/4-11 well. well will now be p and a.

e w thrall/ppco stavanger/norway

19236 agip n
33105a ppco n

Well File : 2/4-11

BAZ/eb-203-74 May 9, 1974

Norsk Agip
P.O. Box 1408 Vika
OSLO 1

Attention: Mr. G. Baldassarri

Petronord
P.O. Box 160
4001 STAVANGER

Attention: Mr. P. le Rest

Petrofina S.A.
33 Rue de la Loi
1040 BRUSSELS, Belgium

Attention: Mr. Castelain

Statens Oljedirektorat
Lagårdsveien 70
4000 STAVANGER

Dear Sirs,

We are transmitting with this letter one copy of the Halliburton Testing Report for Drill Stem Tests Nos. 4, 5 and 6 taken on Well No. 2/4-11, Espen Field, Norwegian Sector, North Sea.

Very truly yours,

B.M. Thompson
Manager Engineering

Attachment

cc: T.J. Jobin

Well File: 2/4-11
2/7-9

BAZ/eb-196-74 May 7, 1974

Norsk Agip
P.O. Box 1408 Vika
OSLO 1

Attention: Mr. G.C. Baldassarri

Petrofina S.A.
33 Rue de la Loi
1040 Brussels, Belgium

Attention: Mr. F. de Boulard

Petronord
P.O. Box 168
4001 STAVANGER

Attention: Mr. P. Le Rest

Statens Oljedirektorat
Lagårdsveien 80
4000 STAVANGER

Dear Sirs,

Enclosed please find one copy of drill stem test reports of well 2/4-11 and 2/7-9.from Flopetrol.

Very truly yours,

B.M. Thompson
Manager Engineering

Attachment

cc: T.J. Jobin
B.M. Boyce

2/4-11 -DST

BBB/eb-28-74 April 26, 1974

Mr. J. Gordon Erdman
R & D S
225-A RB No. 1
BARTLESVILLE

RE: WELL NO. 2/4-11, ESPEN STRUCTURE, NORWEGIAN SECTOR, NORTH SEA - PHILLIPS TYPE T AND F-KITS

Attached to this letter is one copy each of the data sheets for the Phillips Type F and T sample kits taken during the testing of Phillips Group Norway's Well No. 2/4-11, Espen Structure, Norwegian Sector, North Sea.

The following Phillips Type F and T sample kits are being shipped to your office for analysis:

DST No.	Flow Period	Sample Container No. F-Kit	T-Kit
3	Reverse		103
4	Reverse		35
5	3	31	

The air-way-bill number for this shipment is 117-27035886.

B.M. Thompson

Attachments

cc: B.M. Boyce
W.F. Buce

DATA SHEET
Geochemistry Branch Method 66-7~~A~~0

SAMPLING OF NON-PRESSURIZED DRILL STEM TEST FLUIDS IN TEFLON BOTTLES

Box Number
T - 103.

Enclose one copy in box with samples

Send one copy separately to:
J. G. Erdman
Geochemistry Branch
Phillips Research Center
Bartlesville, Oklahoma 74003

Retain one copy for your records if desired

Computer Key		SAMPLE LABEL			
		~~MUD~~ #1 (~~Before~~ Test)	~~TOP~~ #2 (~~First~~ from ~~Formations~~)	~~MIDDLE~~ #3	~~BOTTOM~~ (~~Last~~ from #4. ~~Formations~~)
Bl 11-51	Name of Sample Point	FLOOR TEST MANIFOLD.			
A2 49-52	Time sample taken	29/3/74 - 11.15	29/3/74 20.45	29/3/74. 21.15	30/3/74 - 10.45. BOTTOM
Bl 11-51	Bbl Fluid from Formation	WELL FLOWING OIL + WATER ~~NOT MEASURED~~			DURING REVERSE CIRCULATING.
Al 3-9	Sample Code Letters (assigned by Geochem Br)				
Al 11-13	Sample Type Code (assigned by Geochem Br)				

Al 14-41	Well name and number	2/4 - 11. D.S.T - 3.
Al 42-46	County or area name	NORWEGIAN NORTH SEA (ESPEN)
Al 47-51	State or country	—
Al 52-78	Well operator	PHILLIPS PETM. NORWAY.
A2 30	Depth reference e.g. RKB etc.	RKB.
A2 37-41	Depth of formation sampled	Upper 11940' Lower 12030'
A2 53-60	Month, day, year sampled	MARCH 29-30TH 1974.
A2 52-78	By whom sampled	FLOPETROL
A2 61-63	Geological age of formation sampled	DANIAN / CRETACEOUS.
A2 64-67	Lithology of formation sampled	LIMESTONE.
- -	Type of Drilling Mud Used	FRESH WATER.
- -	Kind and amount, if any, of crude, Diesel, Additive etc, put in Mud	3% DIESEL OIL.
- -	Material used as cushion	DRILL WATER AFTER ACID JOB.
Bl 11-51	Test Procedure or well status (e.g., Reverse circulation, Swabbing, Flowing, etc.)	D.S.T-3. FLOWING AND REVERSE CIRC.

COMMENT: POST- ACIDISATION.

DATA SHEET
Geochemistry Branch Method 66-7X-0

SAMPLING OF NON-PRESSURIZED DRILL STEM TEST FLUIDS IN TEFLON BOTTLES

Box Number
T - 35

Enclose one copy in box with samples

Send one copy separately to:
J. G. Erdman
Geochemistry Branch
Phillips Research Center
Bartlesville, Oklahoma 74003

Retain one copy for your records if desired

Computer Key		SAMPLE LABEL			
		MUD (Before Test)	TOP (First from Formations)	MIDDLE	BOTTOM (Last from Formations)
B1 11-51	Name of Sample Point	—	FLOOR TEST MANIFOLD TAKEN AT FISIGN OF REVERSE CIRCULATING		
A2 [illegible]-52	Time sample taken		1ST.	2ND	3RD.
B1 11-51	Bbl Fluid from Formation		— PROBABLY ZERO		
A1 3-9	Sample Code Letters (assigned by Geochem Br)				
A1 11-13	Sample Type Code (assigned by Geochem Br)				
A1 14-41	Well name and number		2/4-11 D.S.T.- 4.		
A1 42-46	County or area name		NORTH SEA - ESPEN.		
A1 47-51	State or country		NORWEGIAN SECTOR.		
A1 52-78	Well operator		PHILLIPS		
A2 [illegible]	Depth reference e.g. RKB etc.		RKB		
A2 37-41	Depth of formation sampled		Upper 10460'		Lower 10500'
A2 53-60	Month, day, year sampled		APRIL 1ST. 1974.		
A2 52-78	By whom sampled		FLOPETROL		
A2 61-63	Geological age of formation sampled		DANIAN - CRETACEOUS.		
A2 64-67	Lithology of formation sampled		LIMESTONE.		
- -	Type of Drilling Mud Used		SEA WATER BASE.		
- -	Kind and amount, if any, of crude, Diesel, Additive etc, put in Mud		3% DIESEL OIL.		
- [illegible]	Material used as cushion		SEA WATER.		
B1 11-51	Test Procedure or well status (e.g., Reverse circulation, Swabbing, Flowing, etc.)		REVERSE CIRCULATING.		

COMMENT: (No MUD SAMPLE) [illegible]

in box with samples for:
M.E. Rose
252 PB 1 PRC
Bartlesville, Oklahoma, U.S.A.

Phillips Supervisor at completion of DST for delivery to Stavanger Office

until completion of Test Program and delivery personally to Stavanger Office

Computer Key Card	Column		Gas	Liquid
-	-	Kit Number	F31.	
-	-	Container Number	G124	L164
A1	3-9	Sample Code Letters (by Geochem. Br.)		
A1	11-13	Sample Type (by Geochem. Br.)		
A1	14-36	Well	2/4-11	
A1	42-46	Field Name	ESPEN.	
A1	11-78			
A1	47-51	State or County	North Sea, Norway	
A1	52-78	Operator	Phillips Petroleum Company Norway	
A2	30	Depth Reference Point	DKB RKB ft	
A2	37-47	DST Interval	10320'	10320'
A2	49-52	Time Sampled, 24 Hour Clock	09.30	09.30
A2	53-60	Month, Day and Year Sampled	APRIL 3rd. '74	
-	-	By Whom Sampled	FLOPETROL	
A2	61-63	Geological Age of Formation Sampled	DANIAN - CRETACOUS	
A2	64-67	Lithology of Formation Tested	LIMESTONE.	
A2	68-78	Name of Formation Sampled	DANIAN	
B1	11-51	DST, Flow Period	FLOW P. - 3.	
B1	11-51	Name of Sampling Point(s)	GAS OUTLET / OIL SIGHT GLASS	
B1	52-55	Pressure of Sample Point(s), psig	30 psig	
B1	56-59	Temperature of Sample Point(s), °F	56°F.	
B1	60-65	Pressure Put in Sample Containers, psig	30psig	30 - OUTAGE.
B1	52-55	Pressure of Separator(s), psig	1st 30psig 2nd ____ 3rd ____	
B1	56-59	Temperature of Separator(s), °F	1st 56°F 2nd ____ 3rd ____	
B1	70-74	Separator Gas Flow Rate(s), Mcf/D	1st 68.62 2nd ____ 3rd ____	
B1	74-78	Separator Oil Flow Rate(s), Bbl/D	1st 462 2nd ____ 3rd ____	
B1	64-69	Gas-Oil Ratio, Mcf/bbl	1st 149 2nd ____ 3rd ____	
		Pressure Base Used for Gas Measurements	14.696 psia	
		F_g Factor Used in Field GGR Measurements	0.9407.	
		F_{pv} Factor Used in Field GGR Measurements	1.015 ESTIMATED	
		Average Temperature of Stock Tank Oil During Gauging	—	
		API Gravity of Stock Tank Oil, °API at 60°F	39.6. (SEPARATOR)	
		If No Stock Tank, Where was Oil Obtained for Gravity Measurement	SEPARATOR.	
		Total Water Production	THROU' SEPA. 4.5 Bbls AT TIME OF SAMPLING	
		Atmospheric Pressure	1027 m.bars.	

Comments: Post-Acid - D.S.T. - 5.

IMPORTANT: All bottles and labels should be clearly turned

2/4-11-DST

BAZ/eb-27-74 Appil 26, 1974

Mr. A.C. Pitchford
R & B F
83-E PRC
BARTLESVILLE

RE: WELL NO. 2/4-11, ESPEN STRUCTURE, NORWEGIAN SECTOR, NORTH SEA - CRUDE OIL SAMPLES

The following 10 liter metal Jerry Cans containing crude oil taken during the testing of Phillips Group Norway's Well No. 2/4-11, Espen Structure, Norwegian Sector, North Sea are being shipped to your office for analysis:

Sample No.	DST No.	Flow Period No.
1	3	2
2	3	Reverse
3	5	3
4	5	3

The air-way-bill number for this shipment is 117-27035890.

B.M. Thompson

ccf B.M. Boyce
R.E. Lindsay

D.S.T 3/4-11

TEST STRING 7" Casing — Phillips Petroleum Co. — PERFORATIONS 11940- 12030

TEST NO: 2

No.	I. D.	O. D.	Description	Length	Depth
	Inches	Inches	S-15 Surface Control Equipment	Feet	
			as desired		
1	2.602	3.50	3 1/2" IF Drill Pipe	11266.67	11256.67
2	2.50	4.875	Sub 3 1/2" IF (Box) x 3 1/2" FH		
			(Pin)	.90	11257.57
3	2.25	5.00	Reverse Sub (Full Flow)	4.00	11261.57
4	2.33	5.00	Sub 3 1/2" FH (Box) x 2 7/8" IF		
			Pin	.95	11262.52
5	2.00	4.375	One (1) Slip Joint (Extended)	20.00	11282 52
6	2.25	4.75	Sub 2 7/8" IF (Pin) x 3 1/2" IF		
			(Pin)	.75	11283.27
	225	4.75	3 1/2" IF Drill Collars	570.26	11853.53
			20,000 lbs.		
7	2.50	4.75	Sub 3 1/2" IF (Box) x 2 7/8" 8rd		
			EUE (Pin)	.95	11854.48
8	2.44	4.87	7" RTTS Circulating Valve	2.74	11857.22
9	2.185	5.75	Length above Center of Packer	2.87	11860.09
			Packer set (Center)		11860.09
10	2.185	5.75	Below Center of Packer	1.71	11861.80
11	2.125	5.00	Sub 2 7/8" 8rd EUE x 3 1/2" 8rd		
			EUE (Double Pin)	.75	11862.55
12	2.75	3.50	3 1/2" 8rd EUE Preforated Tubing	119.46	11982.01
13	2.062	4.50	Sub 3 1/2" 8rd EUE (Box) x 2 7/8"		
			8rd D.p. Pin	.90	11982.91
			F Nipple	4.03	11786.94

TEST STRING:

TEST NO: 2

PERFORATIONS

11940 - 12030

No.	I. D.	O. D.	Description	Length	Depth
14	3.00	3.75	HT-500 Temp. Recorder		
			Running Case	1.43	11988.37
15	3.00	3.875	HT Pressure Recorder		
			Running Case	4.03	11992.40
16	3.00	3.875	HT Pressure Recorder		
			Running Case	4.03	11996.43
17	3.00	3.875	HT Pressure Recorder		
			Running Case	4.03	12000.46
11	3.00	3.875	RT Pressure Recorder		
			Running Case	4.03	12004.49
			BELOW PACKER.		
			4. JTS TUBING.		
			1 PLAIN - 29.38		
			1 PLAIN 30.60		
			1 PERF. 29.80		
			1 PLAIN. 29.68		
			F. NIPPLE BETWEEN TWO		
			BOTTOM JTS. TUBING.		

TEST STRING:

PERFORATIONS

TEST NO: ~~2-4~~ 3

11940 - 12030

No.	I. D.	O. D.	Description	Length	Depth
	INCHES	INCHES		FEET	
			S-15 SURFACE EQUIP.		
			AS REQUIRED		
	2.602	3.50	3½ I.F 15.50 D.P.	2~~0~~[illegible]	2056.67
	2.764	3.50	3½ I.F 13.30 D.P.	9200	11256.67
	2.10	4.75	SUB 3½ I.F BOX -		
			2⅞ I.F PIN.	1.35	11258.02
	2.00	~~4~~.875	SLIP JOINT (EXTENDED)	20.00	11278.02
	2.25	4.75	SUB 2⅞ I.F BOX -		
			3½ I.F PIN.	.75	11278.77
18	2.25	4.75	3½ I.F DRILL COLLARS (19719 Ft)	540.56	11819.33
	2.50	4.75	SUB. 3½ I.F BOX -		
			2⅞ 8 RD. EUE PIN.	.95	11820.28
	~~1.84~~	3.62	BALL VALVE TESTER	4.15	11824.43
	2.44	4.87	CIRCULATING VALVE	2.74	11827.17
	2.185	5.75	LENGTH ABOVE CENTRE PKR.	2.87	11830.04
			PACKER SET		11830.04
	2.185	5.75	BELOW CENTRE of PACKER.	1.71	11831.75
	2.125	5.00	SUB. 2⅞ 8RD EUE -		
			3½ EUE (DOUBLE PIN)	.75	11832.50
3	2.75	3.50	3½ 8 RD EUE TUBING.	90.98	11923.48
1	2.75	3.50	3½ 8 RD EUE TUBING (PERF)	29.80	11953.28
	~~2.31~~		F. NIPPLE	4.03	11957.31
1	2.75	3.50	3½ 8RD E.U.E TUBING.	29.68	11986.99
	2.062	4.50	SUB 3½ 8RD EUE BOX -		
			2⅞ 8RD B.P. PIN	.90	11987.89

TEST STRING:

TEST NO: ~~2A~~ 3

PERFORATIONS

11940 - 12030

No.	I. D.	O. D.	Description	Length	Depth
	Inches	Inches		Feet	
	3.00	3.75	HT. 560 Temp. Recorder		
			Running Case	1.43	11989.32
	3.00	3.875	BT Pressure Recorder		
			Running case	4.03	11993.35
	3.00	3.875	BT Pressure Recorder		
			Running case	4.03	11997.38
	3.00	3.875	BT Pressure Recorder		
			Running case	4.03	12001.41
	3.00	3.875	BT Pressure Recorder		
			Running case	4.03	12005.45

TEST STRING:

Phillips Exploration
Well 2/4-11

PERFORATIONS 10,460 - 10,500

TEST NO: 4

No.	I. D.	O. D.	Description	Length	Depth
	2.602	3.50	3½ IF D.P. 15.50	533.84	533.84
	2.764	3.50	3½ I.F. D.P. 13.30	9200.00	9,733.84
			Less Above RKB	3.50	9,730.34
	2.10	4.75	Sub - 3½ IF Box x 2⅞ IF Pin	1.35	9,731.69
	2.00	4.375	Slip Joint - Collapsed	15.00	9,746.69
	2.25	4.75	Sub - 2⅞ IF Box x 3½ IF Pin	.75	9,747.44
	2.25	4.75	3½ IF Drill collars	540.56	10,288.00
	2.50	4.75	Sub - 3½ IF Box x 2⅞ EUE Pin	.95	10,288.95
	1.84	3.62	Ball valve tester	4.15	10,293.10
	2.44	4.87	RTTS By-Pass	2.74	10,295.84
	2.185	5.75	Above Packer centre	2.87	
			RTTS Packer set at		10,298.71
	2.185	5.75	Below Packer centre	1.71	10,300.42
	2.125	5.00	Sub - 2⅞ EUE Pin x 3½ EUE Pin	.75	10,301.17
	2.75	3.50	3½ E.U.E. Tbg. - Blank	90.98	10,392.15
	2.75	3.50	3½ EUE Tbg. Perforated	29.80	10,421.95
			Baker F Nipple	4.03	10,425.98
	2.75	3.50	3½ EUE tbg. Blank	29.68	10,455.66
	2.062	4.50	Sub - 3½ EUE Box x 2⅞ D.P. Pin	.90	10,456.56
	3.00	3.75	HT-500 Temp. Recorder	1.43	10,457.99
	3.00	3.875	BT Recorder Running Case	4.03	10,462.02
	3.00	3.875	BT Recorder Running Case	4.03	10,466.05
	3.00	3.875	BT Recorder Running Case	4.03	10,470.08

April 2 - 74.

TEST STRING: Phillips Exploration

TEST NO: 5 Well 2/4 - 11

PERFORATIONS 10,320 - 10,370

No.	I. D.	O. D.	Description	Length	Depth
			S-15 Surface Equipment		
	2.602	3.50	3½ IF D.P. 15.50	408.44	408.44
	2.764	3.50	3½ IF D.P. 13.30	9200.00	9,608.44
			Less above RKB	3.50	9,604.94
	2.10	4.75	Sub - 3½ IF Box x 2⅞ IF Pin	1.35	9,606.29
	2.00	4.375	Slip Joint Collapsed	15.00	9,621.29
	2.25	4.75	Sub - 2⅞ IF Box x 3½ IF Pin	.75	9,622.04
	2.25	4.75	3½ IF Drill Collars	540.56	10,162.60
	2.50	4.75	Sub - 3½ IF Box x 2⅞ EUE Pin	.95	10,163.55
	1.64	3.62	Ball valve tester	4.15	10,167.70
	2.44	4.87	RTTS By-Pass	2.74	10,170.44
	2.185	5.75	Above Packer Centre	2.87	10,173.31
			RTTS Packer set at		10,173.31 *
	2.185	5.75	Below Packer Centre	1.71	10,175.02
	2.125	500	Sub - 2⅞ EUE Pin x 3½ EUE Pin	.75	10,175.77
	2.75	3.50	3½ EUE tbg - Blank	90.98	10,266.75
	2.75	3.50	3½ EUE tbg - Perforated	29.80	10,296.55
			Baker F Nipple	4.03	10,300.58
	2.75	3.50	3½ EUE tbg - Blank	29.68	10,330.26
	2.062	4.50	Sub - 3½ EUE Box x 2⅞ D.P. Pin	.90	10,331.16
	3.00	3.75	HT-500 Temp. Recorder	1.43	10,332.59
	3.00	3.875	BT Recorder Running Case	4.03	10,336.62
	3.00	3.875	BT Recorder Running Case	4.03	10,340.65
	3.00	3.875	BT Recorder Running Case	4.03	10,344.68

DST 5 (1)

Symbole : 1103 GD 01

FLOPETROL

Base : NORTH SEA.
Date : APRIL [redacted] 74.

Client : P.P.Co. Well : 2/4-11 Field : ESPEN.
Service order : — Zone tested : DANIAN CRETACEOUS.
Perforations : 10320' → 10370'

WELL TESTING
Data Sheet

Pressure recorder depth : [redacted]
Z origin of depth : RKB

Casing - Diameter : 7"
PLUG. ~~Shoe~~ : 10420'

Tubing - Diameter : 3½" D/P.
Shoe : —

Packer : RTTS.
Set at : 10174'

1 Time	2 Cumulated time	FLOWING CONDITIONS: 3 BOTTOM Temp.	4 BOTTOM Pres.	5 CAS. Pres. *	6 TUBING Temp.	7 TUBING Pres. *	8 SEPARATOR Temp.	9 SEPARATOR Pres.	10 Ambient temp.	SAMPLES: 11 OIL Sp. gravity 15°C-60°F	12 OIL B.S.W. %	13 GAS gravity (air = 1)	WATER ~~OR~~ CUSHION: 14 RATE QUANTITY A B C a b c	15 Cumul. TOTAL production	GAS: 16 RATE 1 2 3	17 Cumul. production	18 WATER RATE	19 G.O.R.	20 WLR
										Units on this line			Bbls.	Bbls.	Bbls/HR.				
APRIL 2ND.																			
1000							TEST STRING AT DEPTH.												
1015							TEST-TOOL BALL VALVE CLOSED - TEST STRING AND SURFACE LINES												
							PRESSURE TESTED.												
1115							BALL VALVE OPENED AND STRING DISPLACED WITH SEA WATER. (70 Bbls)												
															FIRST 20 Bbls		DRILL WATER.		
1145						3440	FINISH DISPLACING.												
1153						3530	SET PACKER.												
1155						-	OPENED TO TEST TANK. (5000 gal.)												
1200						0							1.2	1.2	14.4				
1205						0							0.2	1.4	2.4				
1210						0	WELL SHUT-IN.						TOO SMALL	1.[redacted]4	—				
1215						7													

Ref. conditions	
1	14,73 PSIA - 60 °F
2	760 mm Hg - 15 °C
3	
4	

Measurement cond.	
A	Tank
B	Meter
C	Dump
	Shrinkage corrected
a	with shrinkage tester
b	with tank
c	not corrected by shr

REMARKS :

* Well head DWT or ~~gauge reading~~

Chief Operator

J F SMITH

DST 5 (2)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE 1 2 4 A B C a b c	15 Cumul. production	GAS: 16 RATE 1 2 3	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line									
1220						16			SHUT-IN PERIOD - 1.										
1225						32													
1230						54													
1235						91													
1240						130													
1245						190													
1250						245													
1255						270													
0300						320													
1305						380													
1310						420													
1315						450													
1320						518													
1325						540													
1330						577													
1335						620													
1340						655													
1345						680													
1350						717													
1355						750													

DST5 (3)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION: 14 Δ RATE QUANTITY A B C	a b c	15 Cumul. ~~TOTAL~~ production	~~GAS~~: 16 RATE 1 2 4	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line			Bbls		Bbls.	Bbls/HR.				
1400						772														
1405						808														
1410						832	WELL OPENED TO TEST -TANK.													
1415						0							0.2		1.6	2.4				
						0	SWITCH TO 50gal. DRUM. —						NO FLOW LINES			FILLING.				
1425						0	TRICKLE.													
1455						0							0.07		1.67	0.14				
1525						0							0.07		1.74	0.14				
1555						0							0.05		1.79	0.10				
1625						0							0.05		1.84	0.10				
1628							SHUT-IN TO PUMP DOWN.													
1640							PUMP-DOWN	12 Bbls at		± 4800 psi.										
1657						4110	OPENED WELL TO TEST TANK.													
1702						0							5.5		7.34	66.0				
1707						0							1.4		8.74	16.8				
1712						0							1.0		9.74	12.0				
1717						0							1.0		10.74	12.0				
1722						0							0.5		11.24	6.0				
1727						0							0.5		11.74	6.0				
1732						0							0.3		12.04	3.6				

DST 5 (4)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION 14 Δ RATE QUANTITY (1 2 4 / A B C a b c)	15 Cumul. TOTAL production	~~GAS~~ 16 RATE (1 2 3)	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
										Units on this line			Bbls.	Bbls.	Bbls/HR.				
1745						0							0.24	12.28	0.96				
1800						0							0.24	12.52	0.96				
1815						0							0.24	12.76	0.96				
1830						0	RIG TO		DRUM.				0.24	13.00	0.96				
1845						'							0.37	13.37	1.48				
1900						'							0.24	13.62	1.00				
1915						'							0.25	13.87	1.00				
1930						'							0.21	14.08	0.84				
1945						.							0.19	14.27	0.76				
2000						'							0.19	14.46	0.76				
2015						'							0.17	14.63	0.68				
2030						'							0.17	14.80	0.68				
2045													0.16	14.96	0.64				
2100													0.15	15.11	0.60				
2115						0	SHUT-IN	FOR	ACIDISATION.				0.12	15.23	0.48				
~~13~~ 1 APRIL 3RD.																			
0710							~~FINISH~~ FINISH	PUMPING:	-	COMMENCE	ACID	CONTACT	PERIOD.						
							(DIFFICULTY	IN	OPENING	VALVE).									
0200						3994													
0215						3970													

DST-5. (5)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE 1 2 4 A B C a b c	15 Cumul. production	GAS: 16 RATE 1 2 3	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
					°F	PSIG				Units on this line									
0230						3942		ACID CONTACT PERIOD.											
0245						3915													
0300						3897													
0315						3876													
0330						3858													
0345						3843													
0400						3827													
0415						3817	OPENED WELL TO OVERBOARD FLARE — LINE									24/64" CHOKE.			
0420						±1500	FLOWING CHOKES BYPASSED. (1 5/8")												
0425						±50													
0450							OIL AND GAS AT SURFACE.												
0455						100	FLOWING TO BURNER.												
0505					±	100													
0515					63 ±	100													
0530					62	150													
0545					60	115		CLEANING UP TO BURNER.											
0600					60	110													
0615					61	115													
0630					61	72													
0745					60	74													

DST. 5 (6)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE 1 2 4 A B C a b c	15 Cumul. production	GAS: 16 RATE 1 2 3	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
					°F	PSIG	°F	PSIG		Units on this line			BOPD	Bbls.	MSCFD	MSCF.	BWPD	SCF/Bbl.	
07.00							SWITCH		THROUGH			SEPARATOR,		ON 64/64" CHOKE.					
08.30							COMMENCE		READINGS.										
08.00					60	55	56	38		-	3%	1.130	531		88.05		98	166	
08.30					58	50	56	36		39.0	2%		523		83.52		49	160	
09.00					58	40	56	35		-	2%		488		75.06		52	154	
0930					58	35	56	30		39.6	2%		462		68.62		18	149	
1000					57	25/35	56	26			2%		423		62.92		33	149	
1030					57	25/35	56	21		39.4	3%	1.055	351		57.08		37	163	
1100					57	25/35	56	25			2%		403		43.54		48	108	
1130					57	25/35	56	25		39.6	2%		314		44.20		40	141	
1200					57	25/35	56	25			2%		360		44.20		29	123	
1230					57	25/30	56	25		39.9	2%		303		43.54		24	144	
1300					57	25/30	56	25			2%		311		39.38		18	127	
1330					56	AVG. 30	56	25		39.9	2%		306		37.13		12	121	
1400					56	AVG. 30	56	25			2%		315	106	37.13	15.1	13	118	
1405							WELL SHUT-IN.			FOR BUILD-UP.									
1410					50														
1415					70														
1420					97														
1425					132														

DST-5 (7)

Symbole : 1103 GD 01

FLOPETROL

Base : _____
Date : _____

Client : _____ Well : _____ Field : _____
Service order : _____ Zone tested : _____
Perforations : _____

WELL TESTING
Data Sheet

Pressure recorder depth : _____
Z origin of depth : _____

Casing - Diameter : _____ Shoe : _____

Tubing - Diameter : _____ Shoe : _____

Packer : _____
Set at : _____

1 Time	2 Cumulated time	FLOWING CONDITIONS							10 Ambient temp.	SAMPLES			OIL			GAS			WATER	19 G.O.R.	20 WLR
		BOTTOM		CAS.	TUBING		SEPARATOR			OIL		GAS	14 RATE		15 Cumul. production	16 RATE		17 Cumul. production	18 RATE		
		3 Temp.	4 Pres.	5 Pres. *	6 Temp.	7 PSIG Pres.	8 Temp.	9 Pres.		11 Sp. gravity 15°C-60°F	12 B.S.W. %	13 gravity (air = 1)	A B C a b c	1 2 4			1 2 3				
1430						225				Units on this line			TIME		PSIG	TIME		PSIG			
1435						265							1700		1720	2015		2127			
1440						412							1715		1767	2030		2151			
1445						684							1730		1811	2045		2172			
1450						900							1745		1846	2100		2195			
1455						997							1800		1879	2115		2217			
1500						1053							1815		1912	2130		2234			
1515						1213							1830		1940	2145		2251			
1530						1324							1845		1974	2200		2275			
1545						1447							1900		2005	2215		2295			
1600						1496							1915		2031	2230		2309			
1615						1567							1930		2056	2245		2325			
1630						1620							1945		2081	2300		2339			
1645						1680							2000		2111	2315		2359			

Ref. conditions	
1	14,73 PSIA - 60 °F
2	760 mm Hg - 15 °C
3	
4	

Measurement cond.	
A	Tank
B	Meter
C	Dump
a	Shrinkage corrected with shrinkage tester
b	with tank
c	not corrected by shr

REMARKS :

* Well head DWT or gauge reading

Chief Operator

DST-5 (8)

Symbole : 1103 GD 01

FLOPETROL

Base : _____
Date : _____

Client : _____ Well : _____ Field : _____
Service order : _____ Zone tested : _____
Perforations : _____

WELL TESTING
Data Sheet

Pressure recorder depth : _____
Z origin of depth : _____

Casing - Diameter : _____ Shoe : _____

Tubing - Diameter : _____ Shoe : _____

Packer : _____
Set at : _____

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS. 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL 14 RATE 1 2 4 A B C a b c	OIL 15 Cumul. production	GAS 16 RATE 1 2 3	GAS 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIA.				Units on this line									
2330						2374													
2345						2390													
0000	APRIL 4th.					2406													
0015						2424													
0030						2437													
0045						2448													
0100						2464													
0115						2481													
0130						2493													
0145						2506													
0200						2521													
0205						2527													
0210						—	TEST TOOL		BY PASS OPENED - REVERSE CIRCULATED TO BURNER.										

Ref. conditions	
1	14,73 PSIA - 60°F
2	760 mm Hg - 15°C
3	
4	

Measurement cond.	
A	Tank
B	Meter
C	Dump
a	Shrinkage corrected with shrinkage tester
b	with tank
c	not corrected by shr

REMARKS : END OF D.S.T.-5.

* Well head DWT or gauge reading

Chief Operator

Symbole : 1103 GD 01

FLOPETROL

Base : NORTH SEA.
Date : MARCH - APRIL '74.

Client : P.P. Co. Well : 2/4-11. Field : ESPEN.
Service order : — Zone tested : DANIAN CRETACEOUS.
Perforations : 10460' - 10500'.

WELL TESTING
Data Sheet

Pressure recorder depth : RKB.
Z origin of depth : —

Casing - Diameter : 7"
PLUG ~~Shoe~~ : 10740'

Tubing - Diameter : 3½" D/P.
Shoe : —

Packer : RTTS.
Set at : 10298'

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS. 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION. 14 Δ RATE QUANTITY A B C a b c	15 Cumul. TOTAL production	~~GAS~~ 16 RATE 1 2 3	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line			Bbls.	Bbls.	Bbls/HR.				
							D.S.T. - 4.												
31ST.	MARCH.																		
1845							TEST - STRING AT DEPTH.												
1900							TEST - TOOL BALL VALVE						CLOSED	AND D/P PRESSURE TESTED.					
							BALL VALVE OPENED.												
1930							TEST STRING DISPLACED						WITH	~~DRILL~~ SEA. WATER (70 Bbls).					
2002						3300	FISINHED DISPLACING.												
2008						3400	PACKER SET.												
2011							OPENED TO TEST - TANK							FLOW - PERIOD 1					
2016						0							1.2	1.2	14.4				
2021						0							0.2	1.4	2.4				
2026						0	WELL SHUT-IN.						0.2	1.6	2.4				

Ref. conditions	
1	14,73 PSIA - 60 °F
2	760 mm Hg - 15 °C
3	
4	

Measurement cond.	
A	Tank
B	Meter
C	Dump
a	Shrinkage corrected with shrinkage tester
b	with tank
c	not corrected by shr

REMARKS :

* Well head DWT or ~~gauge~~ reading

Chief Operator

J.F. SMITH

D.S.T. 4 (2)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	SAMPLES: GAS 13 gravity (air = 1)	OIL 14 RATE 1 2 4 A B C a b c	OIL 15 Cumul. production	GAS 16 RATE 1 2 3	GAS 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line									
2031						40			SHUT-IN PERIOD - 1.										
2036						90													
2041						120													
2046						160													
2051						225													
2056						282													
2101						320													
2106						370													
2111						420													
2116						440													
2121						467													
2126						510													
2131						535													
2136						565													
2141						600													
2146						635													
2151						660													
2156						687													
2201						710													
2206						745													

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION: 14 Δ ~~RATE~~ QUANTITY	15 Cumul. TOTAL production	~~GAS~~: 16 RATE	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line			Bbls.	Bbls.	Bbls/HR.				
2211						759													
2216						780													
2221						810													
2226						825													
2230						848	WELL OPENED TO TEST TANK.								FLOW PERIOD 2.				
2245						0							0.2	1.8	0.8				
2250							RIG TO 50gal. DRUM. – No Flow.												
2330						0	STARTS TO FLOW.												
~~0000~~	1st APRIL 74.																		
0000						0							0.076	1.88	0.15				
0030						0							0.076	1.95	0.15				
0045						0							0.019	1.97	0.04				
0055							SHUT-IN TO PUMP DOWN.												
0100						–	PUMPED DOWN 2.75 Bbls. TO 6500psi W.H.P. FORMATION WOULD NOT BREAK DOWN.												
0120						6500	OPENED WELL TO TEST-TANK.												
0130						0							1.7	3.67	10.2				
0135						0	RIGGED TO 50gal. DRUM.						– NO FLOW.		(LINE FILLING)				
0150						0	STARTS TO FLOW												
0220						0							0.076	3.75	0.15				

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION 14 Δ RATE QUANTITY A B C / a b c	15 Cumul. TOTAL production	~~GAS~~ 16 RATE 1 2 3	17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
										Units on this line			Bbls.	Bbls.	Bbls/HR.				
0250						0							0.076	3.82	0.15				
0320						0							0.076	3.90	0.15				
0355						0							0.076	3.98	0.15				
0420						0	WELL SHUT-IN.						0.076	4.05	0.15				
0430						—	TEST-STRING PRESSURED TO 2000 P.S.I.G.												
0445						3200	TEST-TOOL BY PASS OPENED.												
							WELL REVERSE CIRCULATED TO OVERBOARD FLARE-LINE.												
							PACKER RELEASED.												
							END OF D.S.T.-4.												
											~~SAMLES~~								
											SAMPLES.								
													'T' KIT N°. 35		COLLECTED AS MUD				
															NEARED SURFACE DURING				
															REVERSE CIRCULATING.				

Symbole : 103 GD 01

FLOPETROL

Base : North Sea.
Date : March. 74.

Client : P. P. Co. Well : 2/4-11. Field : ESPEN.
Service order : Zone tested : DANIAN.
Perforations : 11940' – 12030'.

WELL TESTING
Data Sheet

Pressure recorder depth : 0
Z origin of depth : RKB.

Casing - Diameter : 7"
PLUG. ~~Shoe~~ : 12270'

Tubing - Diameter : 3½ D.P.
Shoe : —

Packer : RTS.
Set at : 11830'

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS. 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION 14 RATE QUANTITY A B C a b c	WATER ~~OIL~~ CUSHION 15 Cumul. TOTAL production	WATER - ~~GAS~~ 16 RATE 1 2 3	WATER - ~~GAS~~ 17 Cumul. production	18 WATER RATE	19 G.O.R.	20 WLR
						PSIG.				Units on this line			Bbls.	Bbls.	Bbls/HR.				
							D.S.T. – 3 (RETEST SAME PERFS. AS D.S.T. – 2).												
MARCH	28.																		
2230							TEST STRING AT DEPTH.												
2315							CLOSE DOWN HOLE BALL VALVE AND PRESSURE TEST STRING 7500 PSI												
2344							OPENED BALL VALVE.												
2345							DISPLACED TEST STRING WITH DRILL WATER.												
MARCH.	29.																		
0005						3950	FINISH DISPLACING (80 Bbls.).												
0009							PACKER SET. (11830').												
0010							WELL OPENED TO TEST TANK.												
0015						0							6.0	6.0	72.0				
0020						0							2.4	8.4	28.8				
0025						0							2.6	11.0	31.2				

Ref. conditions	
1	14,73 PSIA - 60°F
2	760 mm Hg - 15°C
3	
4	

Measurement cond.	
A	Tank
B	Meter
C	Dump
a	Shrinkage corrected with shrinkage tester
b	with tank
c	not corrected by shr

REMARKS :

* Well head DWT or gauge reading

Chief Operator

J.F. SMITH.

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	WATER ~~OIL~~ CUSHION 14 Δ RATE ~~QUANTITY~~ A B C a b c	15 Cumul. ~~TOTAL~~ production	WATER. ~~GAS~~ 16 RATE 1 2 3 4	17 Cumul. production	18 WATER RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line			Bbls.	Bbls.	Bbl/HR.				
0030						0		C					2.0	13.0.	24.0				
0040						0							2.0	15.0	~~24.0~~ 12.0				
0050						0							0.5	15.5	3.0				
0100						0							0.7	~~14.2~~ 16.2	4.2				
0110						0							2.4	18.6	14.4				
0120						0							1.7	20.3	10.2				
0130						0							0.4	20.7	2.4				
0140						0							1.0	21.7	6.0				
0150						0							1.0	22.7	6.0				
							RIG TO		50 GAL. DRUM				~~FOR~~ TO MEASURE		BACK FLOW.				
0155						0							–	– ~~23.84~~	–				
0200						–							0.57	~~6.84~~	6.84				
0205						–							0.50	24.3	6.00				
0210						–							0.48	24.8	5.76				
0215						–							0.46	25.3	5.52				
0220						–							0.46	25.7	5.52				
0223						–	WELL SHUT-IN FOR ACIDISATION.												
0225						750													
0310						1675													
							COMMENCE			ASIDISATION.									

D.S.T.-3. (3)

Symbole : 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE A B C a b c	15 Cumul. production	GAS: 16 RATE 1 2 4	GAS: 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line									
07.00						4602		ACIDISATION COMPLETE. - COMMENCE ACID CONTACT PERIOD.											
0705						4583													
0710						4565													
0715						4552													
0720						D.W.T. FAILURE.													
0825						4456													
0830						4450													
0845						4443													
0900						4435													
0915						4429													
0930						4424													
0945						4418													
1000						4414		WELL OPENED TO OVERBOARD FLARE LINE ON 24/64" CHOKE.											
1005						1950													
1010						1280													
1015						950		~~WELL OPENE~~ FLOWING ON DUAL CHOKES 40/64" + 24/64".											
1017								FLOWING ~~WELL~~ CHOKES BYPASSED. Well open											
1030						± 50													
1035								ACID GAS AT SURFACE.											
1040						120													

DST-3. ④

Symbole: 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS							10 Ambient temp.	SAMPLES			OIL			GAS			WATER	19 G.O.R.	20 WLR
		BOTTOM		CAS	TUBING		SEPARATOR			OIL		GAS	14 RATE (1 2 4)		15 Cumul. production	16 RATE (1 2 3)		17 Cumul. production	18 RATE		
		3 Temp.	4 Pres.	5 Pres. *	6 Temp.	7 Pres. *	8 Temp.	9 Pres.		11 Sp. gravity 15°C-60°F	12 B.S.W. %	13 gravity (air = 1)	A B C	a b c							
					°F	PSIG				Units on this line											
10.45						127															
1050					70	102															
1055					70	100															
1100					70	90		TRACES OF OIL AT SURFACE.													
1105					70	90		FLOWING TO BURNER AND FLARE LINE.													
1110					70	80															
1115					69	75															
1120					69	75															
1125					69	75		FLOWING WATER/OIL/GAS.													
1130					69	70															
1145					AMBIENT TEMP.	< 50															
1200						< 50															
1215						< 50															
1230						< 50															
1245						< 50							SAMPLE % OIL		OIL BS.W. %	CLORIDES.		P.H.	RESISTY		
1300						35										85,000		3.7	0.10		
1315						33							35%		32%						
1330						33							33%		30%						
1345						23							25%		30%						
1400						24.							23%		33%	80,000		3.8	0.10		

Symbols: 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE (1 2 4) A B C a b c	OIL: 15 Cumul. production	GAS: 16 RATE (1 2 3)	GAS: 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line						P.H.			
~~1415~~				WELL HEAD PRESSURE FLUCUTATING	DUE TO GAS								SAMPLE % OIL	OIL BSW %	CHLORIDES PPM.	WATER SAMPLE. PH.	RESISY.		
1415					EXAGGERATED	23							40%	30%					
~~1445~~					BURNER AGAINST	21							38%	30%		3.8	0.10		
1515						20	DIVERT ALL FLOW TO BURNER.												
1545						20							40%	31%		3.8	0.09		
1615						80							50%	30%					
1645						50							67%	30%					
1715						55							58%	30%					
1800						60							98%	33%					
1830						55							98%	45%					
1845 ~~1845~~				FLOW HEADING		0	FLOW CEASES ONLY GAS BLOWING AT SURFACE BUBLE HOSE.												
1900						0	No FLUID FLOWING.						GAS GRAVITY			0.890.			
2000						220	WELL STARTS TO FLOW.												
2030						40							80%	45%		3.8	0.09		
2100						10							25%	30%					
2115						2	GAS FLOWING ONLY.						—	—					
2130						25							80%	30%					
2145						65							85%	31%					
2200						30							85%	31%	75,000	3.8	0.09		
2205						30	WELL SHUT-IN FOR BUILD-UP.												

WELL HEAD PRESSURE FLUCUTATING
DUE TO GAS
EXAGGERATED
BURNER AGAINST
FLOW HEADING
WELL HEAD PRESSURE
FLOW BACK-PRESSURING

Symbols 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL 14 RATE (1 2 4 / A B C a b c)	OIL 15 Cumul. production	GAS 16 RATE (1 2 3)	GAS 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line									
2205							WELL	SHUT-IN		FOR BUILD-UP.				W.H.P.		WHP			WHP
2210						100							TIME	PSIG	TIME	PSIG		TIME	PSIG
2215						135							2345	425	0225	1414		0535	2592
2220						155							2350	445	0235	1500		0550	2647
2225						170							2355	469	0245	1574		0605	2698
2230						182					MARCH 30,		0000	486	0255	—		0620	2752
2235						194							0005	510	0305	1760		0635	2793
2240						205							0015	563	0315	1825		0650	2844
2245						220							0025	612	0325	1905		0705	2884
2250						230							0035	670	0335	1975		0720	2928
2255						245							0045	714	0345	2037		0735	2962
2300						265							0055	778	0356	2096		0750	2997
2305						277							0105	842	0405	2174		0805	3033
2310						290							0115	905	0415	2230		0820	3070
2315						310							0125	971	0425	2284		0835	3101
2320						330							0135	1035	0435	2325		0850	3130
2325						345							0145	1112	0445	2375		0905	3160
2330						365							0155	1185	0455	2426		0920	3185
2335						390							0205	1264.	0505	2467		0935	3213
2340						407							0215	1337	0520	2532		0950	3240

Symbole: 1103 GD 02

1 Time	2 Cumulated time	FLOWING CONDITIONS: BOTTOM 3 Temp.	BOTTOM 4 Pres.	CAS 5 Pres. *	TUBING 6 Temp.	TUBING 7 Pres. *	SEPARATOR 8 Temp.	SEPARATOR 9 Pres.	10 Ambient temp.	SAMPLES: OIL 11 Sp. gravity 15°C-60°F	OIL 12 B.S.W. %	GAS 13 gravity (air = 1)	OIL: 14 RATE (1/2/4) A B C a b c	OIL: 15 Cumul. production	GAS: 16 RATE (1/2/3)	GAS: 17 Cumul. production	WATER 18 RATE	19 G.O.R.	20 WLR
						PSIG				Units on this line									
1000						3254													
1005							OPENED TEST TOOL BY-PASS.												
1007							WELL REVERSE CIRCULATED TO BURNER.												
1115							PACKER RELEASED.												
							SAMPLES.												
										'T' KIT Nº 103				COLLECTED DURING FLOWING AND REVERSE CIRCULATING.					
										20 L. JERRY CAN				COLLECTED DURING FLOWING.		2115 – 2200.			
										10 L. JERRY CAN				COLLECTED DURING REVERSE CIRCULATING.					

TEST STARTED: 24 MARCH 1974

TEST COMPLETED: 25 MARCH 1974

DEPTH OF PRESSURE RECORDER: 11992

PHILLIPS PETROLEUM COMPANY

DST NO. 2 SUMMARY

PERFS: 11940 - 12030

Operation	Time From	Time To	Length of Test Hrs.	Length of Test Mins.	Choke Size	Wellhead Press PSIA	Wellhead Temp °F	Gas MMCFD	Oil BPD	GOR Cu.Ft./STB	Water BPD	BHP ~~PSIA~~ PSIG
DISPLACE DP & TEST LINES	1755	1820	0	25	DISPLACE DP W/85 BBLS WATER X PRESSURE TEST LINES							
FLOW PERIOD #1	1820	1835	0	15	REC 2.7 BBLS WATER. PRESS WENT FROM 4150 TO 0							5264.6
SHUT IN #1	1835	2035	2	0	MAXIMUM SI DRILL PIPE PRESSURE (SURFACE) 576 psig							5852.8
FLOW PERIOD #2	2035	2250	1	15	WIDE OPEN 0 RECOVERED 1.02 BBLS WATER.							
PUMP IN	2250	2305	0	15	PUMPED 14 BBLS. TREATED WATER DOWN DP. FORMATION BROKE AT 6300 psig SURF PRESS x PUMPED 2 BPM @ 5600 psig.							
FLOW PERIOD #2	2305	2400	0	55	WIDE OPEN REC. 7.8 BBLS WATER							
					25 MARCH 1974							
FLOW PERIOD #2	0	0620	6	20	WIDE OPEN REC 8 BBLS. WATER							5180.6
					WATER SAMPLE CAUGHT AT 0545							
					pH 9.3 RES. 4.11 @ 45°F							
					NITRATES 0 Cl 2000 ppm							
					8.3 #/GAL							

Form. 102. 500-3-71. Gardum

PHILLIPS PETROLEUM COMPANY

TEST STARTED: 24 MARCH 1974

TEST COMPLETED: 25 MARCH 1974

DEPTH OF PRESSURE RECORDER: 11992

DST NO. 2 SUMMARY

PERFS: 11940-12030

Operation	Time From	Time To	Length of Test Hrs.	Length of Test Mins.	Choke Size	Wellhead Press PSIA	Wellhead Temp °F	Gas MMCFD	Oil BPD	GOR Cu.Ft./STB	Water BPD	BHP PSIA
RIG UP HALL. & PRESS. TEST	620	720	1	0	RIG UP HALLIBURTON AND PRESSURE TEST LINES TO 7500 psig							
ACIDIZE	720	1230	5	10	ACIDIZE AS PER PROCEDURE ISIDP 4400 psig 5 min SIDP 4800 psig (DEADWEIGHT ISIDP 4715 psig).							
ACID CONTACT	1230	1232			ANNULUS STARTED FLOWING							
RELEASED & RESET PKR	1232	1235	0	5	DID NOT HELP							
SI. & CHECK ANNULUS & DP PRESS	1235	1445	2	10	SIDP (FINAL) 4570 psig SI ANNULUS (FINAL) 1430 psig							
OPEN DP OVERBOARD & STARTED KILLING WELL	1445	1600	1	15								
RELEASE PKR	1600											

END DST #2

Form. 102. 500-3-71. Gardum

PHILLIPS PETROLEUM COMPANY

TEST STARTED: 19 MARCH 1974

TEST COMPLETED:

DEPTH OF PRESSURE RECORDER:

DST NO. 1 SUMMARY

PERFORATIONS 12330-12370

Operation	Time From	Time To	Length of Test Hrs.	Length of Test Mins.	Choke Size	Wellhead Press PSIA	Wellhead Temp °F	Gas MMCFD	Oil BPD	GOR Cu.Ft./STB	Water ~~BPD~~	BHP PSIA
FLOW PERIOD #1	2230	2245	0	15	WIDE OPEN	0		0	0	0	4 BBLS REC.	
SHUT IN #1	2245	0045	2	0	SHUT IN	FINAL SHUT IN SURFACE PRESSURE 1127 psig						
FLOW PERIOD #2	0045	0245	2	0	WIDE OPEN	0		0	0	0	1.8 TOTAL	
BREAKDOWN	0245	0258	0	13	PUMP IN 13 BBLS TREATED WATER TO BREAKDOWN WELL. BREAKDOWN PRESSURE 6500 psig							
FLOW PERIOD #2	0258	0509	2	11	WIDE OPEN	0	CLOSED IN TO HOOK UP ACIDIZING LINES				10.8 TOT.	
SHUT IN	0509	0545	0	36	HOOKING UP ACIDIZING LINES							
FLOW PERIOD #2	0545	0730	1	30	WIDE OPEN	0		0	0	0	1.0 TOTAL	
ACIDIZE	0730	1232	5	02	TREAT WELL IN ACCORDANCE WITH PROCEDURE							
SHUT IN #2	1232	1530	2	58	SHUT IW	FINAL SHUT IN SURFACE PRESSURE 5450 psig						
FLOW PERIOD #3	1530	2100	5	45	WIDE OPEN	FLOW TO SMALL TO MEASURE						

Form. 102. 500-3-71. Gardum

PHILLIPS PETROLEUM COMPANY

TEST STARTED: 19 MARCH 1974

TEST COMPLETED: 20 MARCH 1974

DEPTH OF PRESSURE RECORDER:

DST NO. 1 SUMMARY

PERFORATIONS 12330-12370 EW

Operation	Time From	Time To	Length of Test Hrs.	Length of Test Mins.	Choke Size	Wellhead Press PSIA	Wellhead Temp °F	Gas MMCFD	Oil BPD	GOR Cu.Ft./STB	Water BPD	BHP PSIA
FLOW PERIOD #3	2100	2115	0	15	WIDE OPEN	WELL STARTED HEADING						
SHUT IN	2115	2130	0	15	ANNULUS MUD LEVEL STARTED FALLING STARTED WELL TO HEADING					SUSPECT THIS IN WHAT		
KILL WELL, SET CEMENT RETAINER AND SQUEEZE CEMENT PBTD												
END DST #1												

Form. 102. 500-3-71. Gardum

Well File 04-835 - 2/4-11 - ~~Nov~~ Non
28 T

09.18).3=
306 913+
814 +? 21556+ 2041
09.19
21556a pfina b
33105a ppco n

tx 2320/74 stavanger 5, april 1974

attn g paulucci/g baldassarri agip - oslo
l. laurent/f de boulard petrofina - brussels
f heritier/p hirtz elf - paris

after acid test of 315 bopd with 25-35 psi ftp from dst no 4, 10320-10370, completes the testing of the espen 2/4-11 well. well will now be p and a.

e w thrall/ppco stavanger/norway

✠
21556a pfina b + AGIP - Oslo + Elf - Paris + LONDON (philpots)

33105a ppco n

Well File 2/4-11 No 11

ppcobar

33105b ppco n

tx 1377/74 stavanger 15, march 1974

attn baldassarri - agip - oslo
f de boulard - petrofina - brussels
p hirtz - elf norge - paris
c j silas (r) l m rickards - ppco - london
b m boyce - ppco - bville
---

re: test program espen 2/4-11.
no testing will be performed in jurassic because there were no mud log shows during drilling and no significant hydrocarbon productive zones on schlumberger logs.

test intervals in the danian cretaceous will be as follows:

dst 1 - interval 12330 - 12370
dst 2 - interval 11940 - 12030
dst 3 - interval 10460 - 10500.

if zone is hydrocarbon productive add interval 10320-10420.
if zone 10460-10500 is not hydrocarbon productive, go to dst 4.
dst 4 - interval 10320 - 10370.

e w thrall/ppco stavanger/norway

ppcobar

33105b ppco n

March 15, 1974

2/4-11 No. 11
Well File

WELL 2/4-11
ZAPATA EXPLORER

TEST PROGRAM

Test Intervals

DST No. 1	12330 - 12370	40 feet
DST No. 2	11940 - 12030	90 feet
DST No. 3	10460 - 10500	40 feet
DST No. 4	10320 - 10370	50 feet

1. Perforate interval 12330 - 12370 for DST No. 1. Run wireline junk basket to the top of the perforations.

2. Run in hole with test string, as per attached diagram. Space out such that the recorders are across the middle of the perforations. Displace test string with drill water. The first 20 bbls are to be treated with clay stabilizer.

3. Flow Period No. 1. Open well for 15 minutes to tank on pipe rack.

4. Shut in period No. 1. Shut well in for 2 hours on surface.

5. Flow Period No. 2. Flow well wide open to burner for cleanup. If well produces

   (a) Water, go to step W6
   (b) Hydrocarbons, go to step H6
   (c) Nothing, go to step D6

W 6 - Water Zone

Continue flowing well until resistivity, chlorides and nitrate ion tracer indicate formation water is being produced. Flow until readings are constant. Catch sample in T-kit.

H 6 - Hydrocarbon Zone

Flow well 8 hours at maximum stabilized rate. Catch oil and gas sample in F-kit. Catch atmospheric pressure oil sample in metal can. All samples must be labeled and data sheets completed in detail.

H 7 Shut in period No. 2. Shut well in 12 hours at surface.

H 8 Test all lines to 7500 PSI. Stimulate well according to Halliburton recommendation. Shut well in for 3 hours at surface for acid contact.

H 9 Flow period No. 3. Flow well wide open to burner to cleanup. Stabilize rate at maximum capacity of equipment and flow for 8 hours. If FTP is greater than 2500 PSI, catch Corelab companion oil and gas samples. Catch oil and gas sample in F-kit.

H10 Shut in period No. 3. Shut well in 12 hours at surface.

Dead Zone

D 6 Wait 2 hours after well dies. Attempt to breakdown formation and pump in 10 bbls treated water cushion. Wait a further 2 hours.

D 7 Test all lines to 7500 PSI. Stimulate according to Halliburton recommendation. Shut in for 3 hours.

D 8 (a) If well produces water, proceed to Step W 6.
(b) If well produces hydrocarbons, proceed to Step H 9.
(c) If well dies, wait 2 hours.

11. Kill well and condition mud as necessary.

12. If well produced either water or hydrocarbons, run in hole with cement retainer on drillpipe. Set retainer at ± 12290. Mix 200 Sx Class E neat cement at 16.7 lb/gal and squeeze zone to a maximum holding pressure of 3000 PSI. If well produced no fluids, set bridge plug at ± 12290 on wireline. No cement will be squeezed into the perforations.

13. Perforate 11940 - 12030 for DST No. 2. Run a wireline junk basket to the top of the perforations.

14. Repeat Steps 2 through 11. (The procedure for Test No. 2 is the same as for test No. 1).

15. Set a retainer, and squeeze cement at ± 11,900, or set a bridge plug on wireline at ± 11,900, dependant on results of the test (See Step 12).

16. Perforate 10460 - 10500 for DST No. 3. Run a wireline junk basket to the top of the perforations.

17. Repeat Steps 2 through 11. (The procedure for Test No. 3 is the same as for Test No. 1).

18. (a) If DST No. 3 produces water, set a cement retainer at ± 10420 and squeeze off the perforations.
    (b) If DST No. 3 produced no fluids, set a bridge plug at ± 10420 on wireline.
    (c) If DST No. 3 produced oil, the perforations will be left open, and retested with DST No. 4.

19. Perforate 10320 - 10370 for DST No. 4. Run a wireline junk basket to the top of the perforations.

20. Repeat Steps 2 through 11.

21. Proceed with Plug and Abandon Program.

Halliburton
REGISTERED IN ENGLAND

MANUFACTURING & SERVICES LTD

C/O AKER NORSCO A/S — 4056 TANANGER — NORWAY
TELEPHONE: STAVANGER (045) 43 370/72

Registered Office:
PARK HOUSE,
118 PARK STREET,
LONDON, W1Y 4DB,

REGISTRATION NO. 61 451

March 15, 1974

ACID STIMULATION
RECOMMENDATION

PHILLIPS PETROLEUM CO.

WELL NO. 2/4-11
DANIAN LIMESTONE

Directors E. L. PARAMORE (U.S.A.) L. F. MERMIS (U.S.A.) H. K. McARTHUR (U.S.A.)

ACID PROCEDURE FOR PERFS 12330 - 12370'

1) Test all lines

2) Pump 4200 gals. Sea Water + 4.2 gals. 5N
(Non-emulsifier + fractant)

3) Pump 8000 gals. Sea Water (Pad)
+ 8 gals. 5N
+ 320 lbs. Adomite Aqua (Gelling and Fluid Loss Additive)

4) Acidize with 8000 gals. MOD-303 Acid
+ 32 lbs. FR-20 (Friction Reducer)
+ 40 gals. HAI-70 (Corrosion Inhibitor)
+ 8 gals. 5N

5) Displace Well with Sea Water
(Over displace with 10 bbls. + 1 gal. 5N)

ACID PROCEDURE FOR PERFS 11940 - 12030'

1) Test all lines to 9000 PSI

2) Pump 4200 gals Sea Water + 4.2 gals. 5N
(Non-Emulsifier + surfactant)

3) Pump 5000 gals. Sea Water (Pad)
+ 5 gals. 5N
+ 200 lbs. Adomite Aqua (Gelling and Fluid Loss Additive)

4) Acidize with 5000 gals. MOD-303 Acid
+ 20 lbs. FR-20 (Friction Reducer)
+ 25 gals. HAI-70 (Corrusion Inhibitor)
+ 5 gals. 5N

5) Divert with 850 gals. Sea Water
+ 80 lbs. Adomite Aqua
+ 1 gal. 5N
+ 850 lbs. TLC-80 (Temporary Bridging Agent)

6) Repeat Step No. 3

7) Repeat Step No. 4

8) Repeat Step No. 5

9) Repeat Step No. 3

10) Repeat Step No. 4

11) Repeat Step No. 5

12) Pump 3000 gals. Sea Water (Pad)
+ 3 gals. 5N
+ 120 lbs. Adomite Aqua

13) Acidize with 3000 gals. MOD-303 Acid
+ 3 gals. 5N
+ 15 gals. HAI-70
+ 12 lbs. FR-20

14) Displace with Sea Water
(Over displace with 10 bbls. + 1 gal. 5N)

ACID PROCEDURE FOR PERFS 10,460 - 10,500'

1) Test all lines to 9000 PSI

2) Pump 4200 gals. Sea Water + 4.2 gals. 5N
(Non-emulsifier + surfactant)

3) Pump 8000 gals. Sea Water (Pad)
+ 8 gals. 5N
+ 320 lbs. Adomite Aqua (Gelling and Fluid Loss Additive

4) Acidize with 8000 gals. MOD-303 Acid
+ 32 lbs. FR-20 (Friction Reducer)
+ 40 gals. HAI-70 (Corrosion Inhibitor)
+ 8 gals. 5N

5) Displace well with Sea Water
(Over displace with 10 bbls. + 1 gal. 5N)

ACID PROCEDURE FOR PERFS 10,320 - 10,370'

1) Test all lines to 9000 PSI

2) Pump 4200 gals. Sea Water + 4.2 gals. 5N
(Non-emulsifier + surfactant)

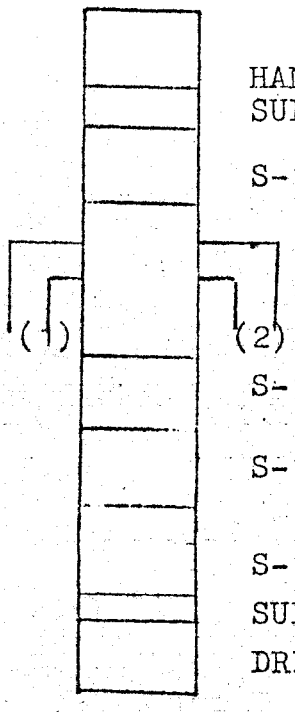
3) Pump 10000 gals. Sea Water (Pad)
+ 10 gals. 5N
+ 400 lbs. Adomite Aqua (Gelling and Fluid Loss Add.)

4) Acidize with 10000 gals. MOD-303 Acid
+ 40 lbs. FR-20 (Friction Reducer)
+ 50 gals. HAI-70 (Corrosion Inhibitor)
+ 10 gals. 5N

5) Displace well with Sea Water
(Over displace with 10 bbls. + 1 gal. 5N)

2/4-11 (ZIA-PAT-14 EXPLORER)

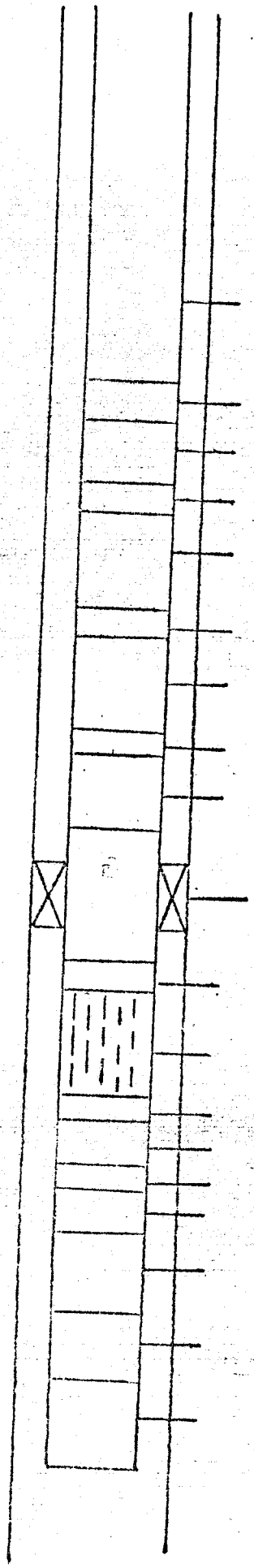
SURFACE EQUIPMENT



(1) 1.25" OPENING

(2) 1.65" OPENING

SUB SURFACE EQUIPMENT



DRILL PIPE

SUB - 3 1/2" IF (Box) x 3 1/2" FH (pin)

REVERSING SUB (SLEEVE TYPE)

SUB 3 1/2" FH (Box) x 2 7/8" IF (Pin)

SLIP JOINT

SUB 2 7/8" IF (BOX) x 3 1/2" IF (PIN)

DRILL COLLARS

SUB ⅀ 1/2" IF (BOX) x 2 7/8" 8rd EUE (PIN)

7" RTTS CIRCULATING VALVE

7" 32 lb. RTTS PACKER

SUB 2 7/8" 8rd EUE (PIN) x 3 1/2 8rd EUE (BOX)

PERFORATED PIPE

BAKER "R" NIPPLE
3 1/2" TUBING TAIL PIPE

SUB 3 1/2" 8rd EUE (BOX) x 2 7/8" DP (PIN)
HT-500 TEMP. DEVICE

BT CASE/w - HR. CLOCK (48)

BT CASE/w - HR. CLOCK (72)

BT CASE/w - HR. CLOCK (120)

TEST STRING: Full Flo Test 7" Casing PERFORATIONS

TEST NO:

No.	I. D.	O. D.	Description	Length	Depth
	Inches			Feet	
			S-15 Surface Control Equipment		
			as desired		
			Drill Pipe	?	
			Sub 3 1/2IF(Box) x 3 1/2" F.H.		
			(Pin)	?	
		5.00	Reverse Sub (Sleeve Type)		optional
			Sub 3 1/2" F.H. (Box) x 2 7/8" IF		
			(Pin)		
2	2.00	4.375	Slip Joints Collapsed	15.00	
			Sub 2 7/8" IF (Box)x 3 1/2-IF)(Pin)	?	
			Drill Collars (20.000 Lbs) Sub	?	
			3 1/2IF (Box) x 2 7/8" 8rd EUE		
			(Pin)		
	2.14	4.87	RTTS Circulating Valve	2.74	
	2.183	5.75	Above RTS Packer	2.87	
			Packer Set		
	2.183	5.75	Below Packer	1.71	
			Sub 2 7/8" 8rd EUE (Pin) x 3 1/2"		
			8rd EUE (Pin) 3 1/2" Preforated		
			Tubing		
			Sub 3 1/2" 8rd EUE (Box) x 2 7/8"		
			8rd D.p. (Pin)		
	3.00	3.75	HT 500 Temp. Device Running Case	1.43	
	3.00	3.875	BT Pressure Recorder Running Case	4.03	

TEST STRING

TEST NO:

PERFORATIONS

No.	I. D.	O. D.	Description	Length	Depth
	3.00	3.975	BT Pressure Recorder Running Case	4.03	
	3.00	3.875	BT Pressure Recorder Running Case	4.03	