



**BAKER OIL TOOLS, U.K. LTD.**

BAKER HOUSE, ADMIRALTY ROAD  
GREAT YARMOUTH, NORFOLK

DIRECTORS  
R. N. WATERS U.S.A.  
J. F. SCHNARS U.S.A.  
D. W. VAN WINKLE U.S.A.

INDUSTRIAL - DLJE
ARRIV
<del>1972 JUN 20 11 17</del>
BAKERS LTD. DMH/1433
EKSP.
MEPKN.

TELEPHONE No. ---  
GT. YARMOUTH 57126/3  
TELEX No 97297  
BACASO GT. YARM  
CABLE ADDRESS:  
BACASO GT. YARMOUTH

Phillips Petroleum Company Norway,  
P.O. Box 72,  
4001 Stavanger,  
Norway.

June 20, 1972.

Our Ref: PWW/slh/1452

Dear Sirs,

Production Measurements During The  
Drill Stem Testing of Well 17/12 - 1X  
May 31 - June 12, 1972

This report contains the production test results from Drill Stem Test Nos. 1, 2 and 6 on the above well. There was no flow to surface during test Nos. 3, 4, 5 and 7. Test No. 3 had some oil in the tubing and test Nos. 4 and 7 had formation water in the tubing. An acid squeeze was attempted prior to Drill Stem Test No. 5, however, the well would not unload the acid and the diesel used for displacement.

The oil produced was gas cut and the measurement of the 'Floco Meters' was estimated to be 50% to 70% high. The shrinkage factor was determined by filling a 1000ml graduated cylinder off the oil leg and letting it evaporate to atmosphere. After the sample was taken it would take 5-7 minutes before the gas would break out. During DST No. 7 a Baroid Anti-foam was injected to attempt to break out the gas, however, this did not help. If this zone is tested again, a shrinkage tester should be installed on the separator. The oil was heated to +105°F.

The gas was measured in accordance with A.G.A. report No. 3 at a pressure and temperature base of 14.65 psia and 60°F respectfully.

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Attached are a summary sheet, gas calculations and all field data. We trust this report is satisfactory and if there are any questions, please do not hesitate to contact us.

Very truly yours,  
BAKER OIL TOOLS (U.K.) LTD.

W. S. SCOTT  
Production Services Manager

DRILL STEM TESTS .

17/12 - 1X

May 31 - June 12, 1972

SUMMARY SHEET

Test	WELLHEAD		Water BPD	Oil BPD	Gas MMSCFD	GOR SCF/Bbl	Estimated Shrinkage Factor	Est. STB/Day
	Press. psig	Temp. F						
DST No. 1	320	68	Nil	885	0.174	196	70%	265.5
DST No. 2	225	66	Nil	505	0.145	287	50%	252.5
DST No. 6	365	72	Nil	1005	0.246	244	50%	503.0

# BAKER OIL TOOLS (U.K.) LTD.

COMPANY Phillips Petroleum Company Norway  
 WELL 17/12 - 1X  
 START OF FLOW RATE 1700, May 31, 1972  
 END OF FLOW RATE 0735, June 1, 1972

FLOW RATE No. 1 - DST No. 1  
 WELLHEAD CHOKE  
 HEATER CHOKE 12/64"

FORMATION 7668 - 7682  
 H.P. ORIFICE ~~XXXX~~ PLATE 1.000"  
 L.P. ORIFICE PLATE  
 PAGE 1 of 4

TIME	WELL HEAD DATA			SEPARATOR DATA				PRODUCTION DATA					REMARKS	
	DWT TBG psig	CSG psig	OF TEMP	METER RUN	STATIC psig	DIFF.	OF TEMP.	OIL METER	OIL METER Bbls	OIL METER	WATER METER	TOTAL OIL Bbls		TOTAL WATER
May 31, 1972														
1700	Open B.J. Tool													
1703	Air bubbles at surface													
1716	Water to surface - clean-up well by-passing Separator and Heater													
1726	Oil to surface, ignite burner													
1730	185	285												0.2% B.S. 32° AP 1 @ 60°F
1800	172	330	62											
1830	230	380	63											
1900	256	300	65											
1930	260	400	65	Flow through Separator on 12/64" Heater Choke										
2000	293	460	66	1.000	100									Having trouble with steam
2030	400	500	64		300									
2100	399	580	65	Bleed down Annulus										
2130	398	430	65		300									
2200	392	460	65		250			79.07						
2230	382	500	65		250	4	60	97.30				18.23		0.1% B.S. 29.4° API @ 60°F
2300	380	530	64		250	4	60	115.46				18.16		
2330	379	560	65		250	4	60	133.54				18.08		
2400	379	620	65		250	4	60	151.53				17.99		

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COMPANY Phillips Petroleum Company Norway  
 WELL 17/12 - 1X  
 START OF FLOW RATE 1700, May 31, 1972  
 END OF FLOW RATE 0735, June 1, 1972

FLOW RATE No. 1 - DST No. 1  
 WELLHEAD CHOKE  
 HEATER CHOKE 12/64"

FORMATION 7668 - 7682  
 H.P. ORIFICE ~~DIAMETER~~ PLATE 1.000"  
 L.P. ORIFICE PLATE  
 PAGE 2 of 4

TIME	WELL HEAD DATA			SEPARATOR DATA				PRODUCTION DATA					REMARKS	
	DWT TBG psig	CSG psig	°F TEMP	METER RUN	STATIC psig	DIFF.	°F TEMP.	OIL METER Bbls	OIL METER	OIL METER	WATER METER	TOTAL OIL Bbls		TOTAL WATER
June 1, 1972				1.000										
0030	379	620	65		250	4	60	169.53				18.00		
0100	378	640	65		250	4	60	187.43				17.90		0% B.S. 29.4° API @ 60°F
0130	375	700	65		250	4	60	205.18				17.78		
	Decrease Separator pressure to 150 psig													
0200	335	700	65		150	6	60	223.75				18.57		Bled off Annulus
0230	333	460	65		150	6	60	242.78				19.03		
0300	330	500	67		150	6	60	261.72				18.94		Shrinkage est. 70% (30% Oil 70% Gas)
0330	330	520	66		150	6	60	280.66				18.94		
0400	330	560	66		150	6	60	299.47				18.79		
0430	330	580	67		150	6	60	318.27				18.80		
0500	330	400	67		150	6	60	336.59				18.22		Bled off Annulus
0530	325	430	68		150	6	60	354.93				18.34		
0600	325	440	67		150	6	60	373.42				18.49		
0630	320	460	67		150	6	60	391.98				18.56		0% B.S. 29.1° API @ 60°F
0700	320	480	68		150	6	60	410.16				18.18		DST No. 1
0730	320	500	68		150	6	60	428.43				18.27		OIL - 885 BPD
				S H U T - I N F O R B U I L D - U P										GAS - 0.174 mm SCFPD
														GOR - 196 SCF/Bbl.





# BAKER OIL TOOLS (U.K.) LTD.

COMPANY Phillips Petroleum Company Norway  
 WELL 17/12 - 1X  
 START OF FLOW RATE 0325, June 3, 1972  
 END OF FLOW RATE 1800, June 3, 1972

FLOW RATE No. 1 - DST No. 2  
 WELLHEAD CHOKE  
 HEATER CHOKE 8/64"

FORMATION 7600 - 7628 (Below Rotary Table)  
 H.P. ORIFICE PLATE 1.000" x 7.625  
 L.P. ORIFICE PLATE  
 PAGE 1 of 4

TIME	WELL HEAD DATA			SEPARATOR DATA				PRODUCTION DATA					REMARKS	
	DWT TBG psig	CSG psig	OP TEMP	METER RUN	STATIC psig	DIFF.	OP TEMP.	OIL METER Bbls	OIL METER	OIL METER	WATER METER	TOTAL OIL Bbls		TOTAL WATER
June 3, 1972														
0325	Tool open													
0405	Water to surface													
0415	Oil to surface, light flare													
0430	90	530												
0445	95	530		1.000										
0500	90	570	56											
0515	90	610	56											
0530	95	660	56											
0545	100	695	56											
0600	160	400	54		120	2	60	437.80	Start through Separator					
0615	160	430	53		120	2	60							
0630	200	450	54		120	4	60	447.96				10.16		
0700	215	480	54		120	4	60	458.32				10.36		33° API @ 60°F
0730	215	520	54		120	4	60	468.86				10.54		Oil temperature 108°F @ Heater outlet
0800	217	540	56		120	4	60	479.37				10.51		Shrinkage est. 50% (50% Oil, 50% Gas)
0830	220	580	57		120	4	60	489.76				10.39		
0900	220	620	57		120	4	60	500.30				10.54		
0930	220	640	57		120	4	60	510.85				10.55		

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COMPANY Phillips Petroleum Company Norway

WELL 17/12 - 1X

START OF FLOW RATE 0325, June 3, 1972

END OF FLOW RATE 1800, June 3, 1972

FLOW RATE No. 1 - DST No. 2

WELLHEAD CHOKE

HEATER CHOKE 8/64"

FORMATION

H.P. ORIFICE ~~PLATE~~ PLATE

L.P. ORIFICE PLATE

PAGE

7600' - 7628'

1.000

2 of 4

TIME	WELL HEAD DATA			SEPARATOR DATA				PRODUCTION DATA					REMARKS	
	DWT T&G psig	CSG psig	°F TEMP	METER RUN	STATIC psig	DIFF.	°F TEMP.	OIL METER	OIL METER	OIL METER	WATER METER	TOTAL OIL		TOTAL WATER
June 3, 1972				1.000				Bbls				Bbls		
1000	220	660	58		120	4	60	521.46				10.61		
1030	218	500	58		120	4	60	532.20				10.74		
1100	218	520	59		120	4	60	542.76				10.56		
1130	220	540	60		120	4	60	553.44				10.68		
1200	215	560	60		115	4	60	564.19				10.70		
1230	213	590	61		115	4	60	574.98				10.79		
1300	214	600	62		110	6	60	585.59				10.61		
1330	217	620	63		115	5	60	596.32				10.63		
1400	227	650	64		120	6	60	606.92				10.60		34.2° API @ 60°F
1430	230	650	63		140	6	60	617.32				10.40		
1500	232	660	64		150	5	60	627.51				10.19		Oil temperature 105°F at Heater outlet
1530	235	680	64		160	4	60	638.17				10.66		
1600	235	500	66		160	4	60	648.15				9.98		DST No.2
1630	233	510	66		160	4	60	658.45				10.30		Oil = 505 BPD
1700	233	520	66		160	4	60	668.97				10.52		Gas = 0.145 mmSCFPD
1730	225	530	66		150	5	60	679.52				10.55		GOR = 287 SCF/Bbl
1800	223	540	66		150	5	60	690.11				10.59		
S H U T - I N F O R B U I L D - U P														





# BAKER OIL TOOLS (U.K.) LTD.

COMPANY Phillips Petroleum Company Norway  
 WELL 17/12 - 1X  
 START OF FLOW RATE  
 END OF FLOW RATE

FLOW RATE Build-up DST No. 2  
 WELLHEAD CHOKE  
 HEATER CHOKE

FORMATION 7600' - 7620'  
 H.P. ORIFICE PLANT  
 L.P. ORIFICE PLATE  
 PAGE 4 of 4

WELL HEAD DATA		SEPARATOR DATA				PRODUCTION DATA						REMARKS		
TIME	DWT TRG PSIG	CSG	TEMP	METER RUN	STATIC	DIFF.	TEMP.	OIL METER	OIL METER	OIL METER	WATER METER	TOTAL OIL	TOTAL WATER	
June 3, 1972														
2100	822													
2130	822													
2200	824													
2230	825													
2300	825													
2330	825													
2400	825													
June 4, 1972														
0030	825													
0100	830													
0130	830													
0200	832													
0230	833													
0300	833													
0330	833													
0400	835													
0500	835													
0600	835			P R E P A R E T O K I L L W E L L										

# BAKER OIL TOOLS (U.K.) LTD.

COMPANY Phillips Petroleum Company Norway

WELL 17/12 - 1X

START OF FLOW RATE 2335, June 11, 1972

END OF FLOW RATE 1135, June 12, 1972

FLOW RATE No. 1 - DST No. 6

WELLHEAD CHOKE

HEATER CHOKE 8/64

FORMATION

H.P. ORIFICE PLATE 1.000"

L.P. ORIFICE PLATE

PAGE 1 of 3

TIME	WELL HEAD DATA			SEPARATOR DATA				PRODUCTION DATA					REMARKS	
	TGC psig	CSG psig	°F TEMP	METER RUN	STATIC psig	DIFF.	°F TEMP.	OIL METER	OIL METER	OIL METER	WATER METER	TOTAL OIL		TOTAL WATER
June 11, 1972				1.000				Bbls				Bbls		
2200	Set Packer													
2300	90	600	62		Clean-up by-passing Separator									
2315	105	650	65											
2330	100	430	66											1% B.S., no water
2335					Flow through Separator									31.4° API @ 60°F
2345	314	450	66											
2400	320	500	66		100	12		371.60						
0030	395	590	66		200	16		392.20				20.60		
0100	360	620	65		160	8	90	413.50				21.30		
0130	364	460	66		160	12	90	435.00				21.50		32.2° API @ 60°F
0200	360	505	66		160	12	90	456.39				21.39		
0230	360	525	66		160	12	90	477.68				21.29		
0300	360	600	67		160	12	90	498.96				21.28		
0330	360	430	67		160	12	90	519.99				21.03		
0400	360	500	67		160	12	90	541.01				21.02		
0430	360	520	67		160	12	90	562.12				21.11		0.1% B.S., no water
0500	360	540	68		160	12	90	583.25				21.13		32.4° API @ 60°F
0530	360	560	68		160	12	90	604.64				21.39		





COMPANY: Phillips Petroleum Company Norway WELL NO: 17/12 - 1X COUNTRY: Norway TEST NO:

DATE OF TEST: May 31 to June 12, 72; FORMATION: INTERVAL TESTED: ft. to ft.

SEPARATOR MEASUREMENTS AND GAS FLOW RATE CALCULATIONS

SEPARATOR: 42" x 15'6" SERIAL NO: MAX.W.P.: 1440 PSIG, CAPACITY:

HEATER : 3 mm BTU SERIAL NO: MAX.W.P:Shell: PSIG, Pipe: 5000 PSIG

Temperature: °F Choke Size: inches

DATE	TIME	METER ORIFICE Flange <input type="checkbox"/> Pipe <input type="checkbox"/>	DIFF. INCHES WATER 'h'	PRESS. PSIA	$\sqrt{h \times P}$	TEMP. °F	COEFFICIENTS (A.G.A. Report No. 3.)						C	Q=24 C $\sqrt{hxP}$ MCF/D 14.65 & 60
							F <sub>b</sub>	F <sub>pb</sub>	F <sub>tb</sub>	F <sub>g</sub>	F <sub>tf</sub>	F <sub>tv</sub>		
DRILL STEM TEST		NO. 1												
May 31 - June 1		1.000	6	165	31.5	60	200.39	1.0055	1.0000	1.1180	1.0000	1.0129	230.0	0.174
DRILL STEM TEST		NO. 2												
June 3		1.000	4	160	25.3	60	200.39	1.0055	1.0000	1.1180	1.0000	1.0129	230.0	0.145
DRILL STEM TEST		NO. 6												
June 11 - 12			2	175	45.8	90	200.39	1.0055	1.0000	1.1180	0.9723	1.0129	224.0	0.246