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725.1

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00957 *21.03
SAKSB:
ARKIV:

SURVEY REPORT

FOR

PHILLIPS PETROLEUM COMPANY LTD.

REF: 7/11-2/486

12TH - 22ND JULY 1968

The Decca Navigator Company Ltd.
North Sea House,
South Quay,
Great Yarmouth.

SURVEY REPORTREQUIREMENTS:

1. To locate a position in Norwegian Block 7/11 as given below.
2. To sound an area of one square kilometre centred on Location.
3. To obtain a bottom sample at the Location.
4. To lay a pattern of buoys as indicated on Phillips buoy plan.
5. To con the drilling barge OCEAN TRAVELER onto location and to fix its position when finally moored.
6. To lay a reference buoy at a position approximately 26 miles north of location to assist the seismic ship ANO LINDINGER.

LOCATION $57^{\circ} 04' 14.723''$ N $02^{\circ} 24' 26.086''$ E

Forth Hi-Fix	Patt I	691.829	Patt II	1303.801	
Fisher Hi-Fix	"	648.451	"	448.281	
Forties Hi-Fix	"	625.283	"	031.066	
Sea Search I	Red	C23.399	Green	H30.662	
Main Chain 6C	"	C4.494	"	H46.361	Purple F69.594
Main Chain 7B	"	A12.825	"	A39.873	" A72.248
Main Chain OE	"	A10.373	"	G41.962	" E75.671

This position was obtained by applying a lay back of 350 metres on a bearing of 098° (True) to Shot Point 1248 on a seismic line NJV 5704

FINAL POSITION

The location of the OCEAN TRAVELER was obtained by subtense sextant angles using the derrick as a base. The final result was a mean of twelve observations. The position of the derrick was:-

$57^{\circ} 04' 15.2''$ N $02^{\circ} 24' 26.5''$ E
 Forth Patt I 691.81 Patt II 1303.84
 Fisher " 648.46 " 448.26

This position is 1909 metres due west of Location 7/11-1 and is approximately 1375 metres east of the median line. See Special Note at the end of the report.

OPERATION

The Decca Survey ship m.v. VIKING BLAZER left Great Yarmouth at 0800 on Friday 12th July, 1968. After setting in the correct Decca lanes at ORION at 1330 on Saturday 13th the ship continued towards the location arriving at 1630.

A Reference buoy was laid near the location and the echo sounder was calibrated with a bar check before sounding commenced. On completion of the sounding a bottom sample was taken, lanes were rechecked at the Reference buoy and the ship proceeded to Farsund to pick up Mr. T. Murphy of Phillips Petroleum who arrived at 1830 on Monday 15th July.

VIKING BLAZER remained in Farsund keeping in telephone contact with the Phillip's office in Stavanger until news was received that the drilling rig OCEAN TRAVELLER was ready for sea. Then, in order to arrive at ORION and re-set the Decca lanes at 0700, VIKING BLAZER left harbour at 1500 on 18th July. 1968.

The Reference buoy near the old location was still in position on arrival and the lanes checked correctly. The seismic ship ANO LINDINGER was waiting close to location as pre-arranged and various data regarding the seismic line to be run were passed between ships. VIKING BLAZER moved the Reference buoy about one mile northward out of the way of the geophone cable path and the seismic run began at about 1600.

The seismic observations were analysed on the ANO LINDINGER and instructions were passed to VIKING BLAZER at 1940 to use the location given by Phillip's London Office.

It had originally been intended to use only the Norwegian Hi-fix Chains to carry out the survey. However, Fisher Hi-fix chain closes down at dusk each day so rather than wait until the following morning it was decided to lay the buoys on Forth Hi-fix. This was done and all the buoys were laid by 2330. Although the Ocean Traveller was informed at this time that the location was ready, it had been decided on the drilling barge that it would not come on to the location before 0330.

The rig arrived on location just before 0400 and began laying anchors at 0730. M.V. VIKING BLAZER assisted in this operation by checking each anchor buoy in turn and indicating its position to the tug and tender. This was completed at 1230 and a fix was taken on the rig - the results showing that it was 55 metres in a direction of 260° from true location.

Later whilst adjusting the tension of the anchor cables No 5 anchor parted. Instructions were given to M.V. VIKING BLAZER to standby and not to

take the final fix until the anchor had been recovered and re-set. It was not until 0500 on Sunday 21st July that M.V. VIKING BLAZER was asked to take the final fix. In order to provide greater accuracy in better daylight conditions the fix was not begun until 0600. It was completed and plotted by 0730 and the result, which showed that the derrick was only 18 metres North East of the true location were passed to the Ocean Traveller.

At the request of Mr. C.W. Conley the Phillips representative onboard the Anó Lindinger the M.V. VIKING BLAZER carried Decca Lanes North and laid a reference buoy at a position 57° 30' North and 02° 30' East. This took approximately three hours after which the VIKING BLAZER returned to Great Yarmouth arriving at 1900 on Monday 22nd July. 1968.

The survey was carried out by Mr. B.R. Hodge assisted by Mr. M.H. Creffield, Mr. I. Eames and Mr. R. Laycock Hi-Fix engineer. Mr. T. Murphy of Phillips Petroleum accompanied the team.

Sounding

The sounding was carried out using a Kelvin Hughes MS26A echo sounder. This was checked correct just before commencing work at 20ft 30 ft and 80 ft. The soundings were reduced to Lowest Astronomical Tide and an examination of the completed chart shows a very flat bottom, 268 ft over location and not varying more than three feet over the square kilometre.

Tidal Information

L.A.T 0 ft
 M.L.W.S. 0.5 ft
 M.L.W.N. 1.5 ft
 M.L. 2.1 ft
 M.H.W.N. 2.9 ft
 M.H.W.S. 3.6 ft
 H.A.T. 4.1 ft

Bottom Sample

One bottom sample was obtained. This was given to Mr. T. Murphy and appeared to be very fine brown sand or sediment.

Buoy Plan

Location Buoy		on location
Lead 1	" 550 ft in a direction	315° from location
Lead 2	" 1200 " " " "	315° " "
N.E. Transit	500 " " " "	045° " "
S.W. "	500 " " " "	225° " "

Buoy Plan (continued)

No.1.Anchor Buoy	2000 ft	in a direction	251° 23'	from location
No.2 " "	2000 ft	" " "	291° 45'	" "
No.3 " "	2000 ft	" " "	338° 15'	" "
No.4 " "	2000 ft	" " "	018° 37'	" "
No.5 " "	2000 ft	" " "	068° 30'	" "
No.6 " "	2000 ft	" " "	110° 30'	" "
No.7 " "	2000 ft	" " "	159° 30'	" "
No.8 " "	2000 ft	" " "	201° 30'	" "

Dron Position of Buoys

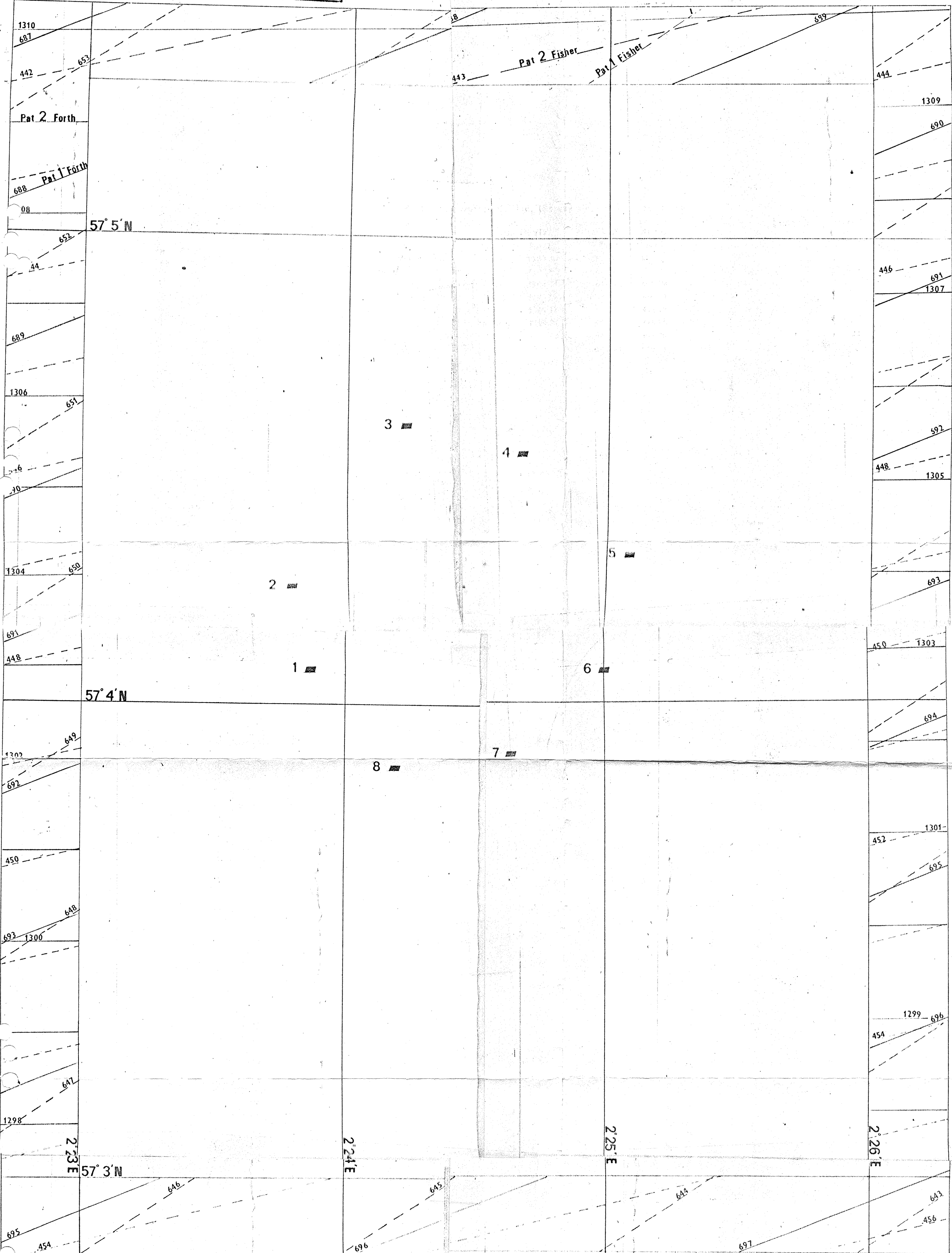
<u>Time</u>	<u>Buoy</u>	<u>Forth Hi-Fix</u>	
		<u>Patt I</u>	<u>Patt II</u>
2009	Location Buoy	691.83	1303.78
2020	Lead 1	691.54	1304.08
2030	Lead 2	691.16	1304.47
2051	N.E.Transit	691.72	1304.07
2058	S.W "	691.87	1303.43
2313	No.1.Anchor	691.76	1303.28
2253	No.2 "	691.07	1304.38
2243	No.3 "	690.72	1305.39
2239	No.4 "	690.98	1305.40
2332	No.5 "	691.83	1304.39
2320	No.6 "	692.60	1303.16
2349	No.7 "	692.90	1302.20
2351	No.8 "	692.63	1302.24

Special Note

From the geographical position relative to the Hi-Fix values given for this particular point we have calculated a distance of 1375 metres to the median line. The definition of the median line is taken from the Statutory Instruments 1965 No.1531 Continental Shelf. We have assumed that the geographical co-ordinates given in this paper are joined by lines of great circles.

ID/OLJE
00957 *21.11.68
SAKS6:
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PHILLIPS Oil Company



Tracing showing
Location +
Final position of rig -|-
Final position of anchor buoys. ■
Date of operation 13-21 July 68
Reference No. 7/11/2/486
Drawn by M.H. Bedford
Approved P.R. [Signature]

Produced by the Decca Navigator Co. Ltd. (Survey Dept.) Great Yarmouth

Final position of rig
Position of L buoys

	Forth	Hi Fix	Fisher	Hi Fix
	Pat 1	Pat 2	Pat 1	Pat 2
	691.81	1303.81	648.46	448.46
1	691.98	1302.92		
2	691.39	1303.74	649.00	448.00
3	690.59	1305.59	649.64	446.64
4	691.06	1305.32	649.02	447.10
5	692.07	1304.05	648.05	448.56
6	692.79	1302.83	647.39	449.70
7	693.11	1301.93	647.28	450.32
8	692.87	1301.93		

Lattice : Forth HI FIX
Fisher HI FIX

Scale 1:10,000

