FROM:
PHILLIPS PETROLEUM COMPANY-NORWAY
P.O.BOX 72
4001 STAVANGER, NORWAY

TO

WELL RECOMPLETION REPORT

WELL 2/4-1AX

II

2/4-2 NPD

FIG - 3A

WELL 2/4-1AX
COMPLETION

4⅛" Wire line Lubricator
5000 psi W.P.

OTIS TEST TREE
9"/16" 5000 psi W.P.
Master Valves
3" 6000 psi W.P.
Wing Valves

4⅛" OTIS UNION
X-over LT&C Pin x S.L. Pin
4½" 12.6 # N-80 Seal Lock
Riser Assy
NORSOO Swivel Unit
9⅛" STOP Collar

16" SLIP JOINT

16" RISER Assy

FLEX JOINT w/ shear studs

National Hyd. Connector

NATIONAL SUB-SEA
TREE

HYD Line to
Safety Valve

1 JT 4½" 12.6 # N-80 S.L. Tubing

4½" Baker Model "F" Seating Nipple

4½" 12.6 # N-80 S.L. Tubing
¼" S.S. Hyd Line

Slotted conduit Protector Sub

Baker Model "A" Safety Valve
Seating Nipple

4½" 12.6 # N-80 S.L.
Tubing

Baker Model "L" Sliding Sleeve

1 JT 4½" 12.6 # N-80 S.L.
Tubing

4" 47.0" 12.6 # N-80 S.L. Lift Sub w/
3½" EUE Pin

Model "G" Locator Seal Assy

Baker Model "FB-1" Packer
w/ 18' seal protector
Seal Assy w/ 24 seal units

1 JT 3½" 9.2 # N.U. Tubing
w/ 3.867" OD Collar

OTIS 3.9" OD FLOW COUPLING

OTIS "NO GO" NIPPLE 3½" NU

3½" 9.2 # Tubing with
Atlas Bradford connections

NAT REENTRY TOOL

±301'

(6.00)

6'-10"

00.00

18'

302.00

31.00

333.00

1.00

334.00

2,10.00

544.00

1.50

545.50

5.00

550.50

9345.80

9896.80

3.70

9900.00

31.00

9931.00

4.00

9935.00

24.00

9959.00

31.00

9990.00

4.00

9994.00

0.50

9994.50

1655.50

10,150.00

5" 19.5 # X-HOLE DRILL PIPE

5" X-Hole Box x
4½" IF Conn

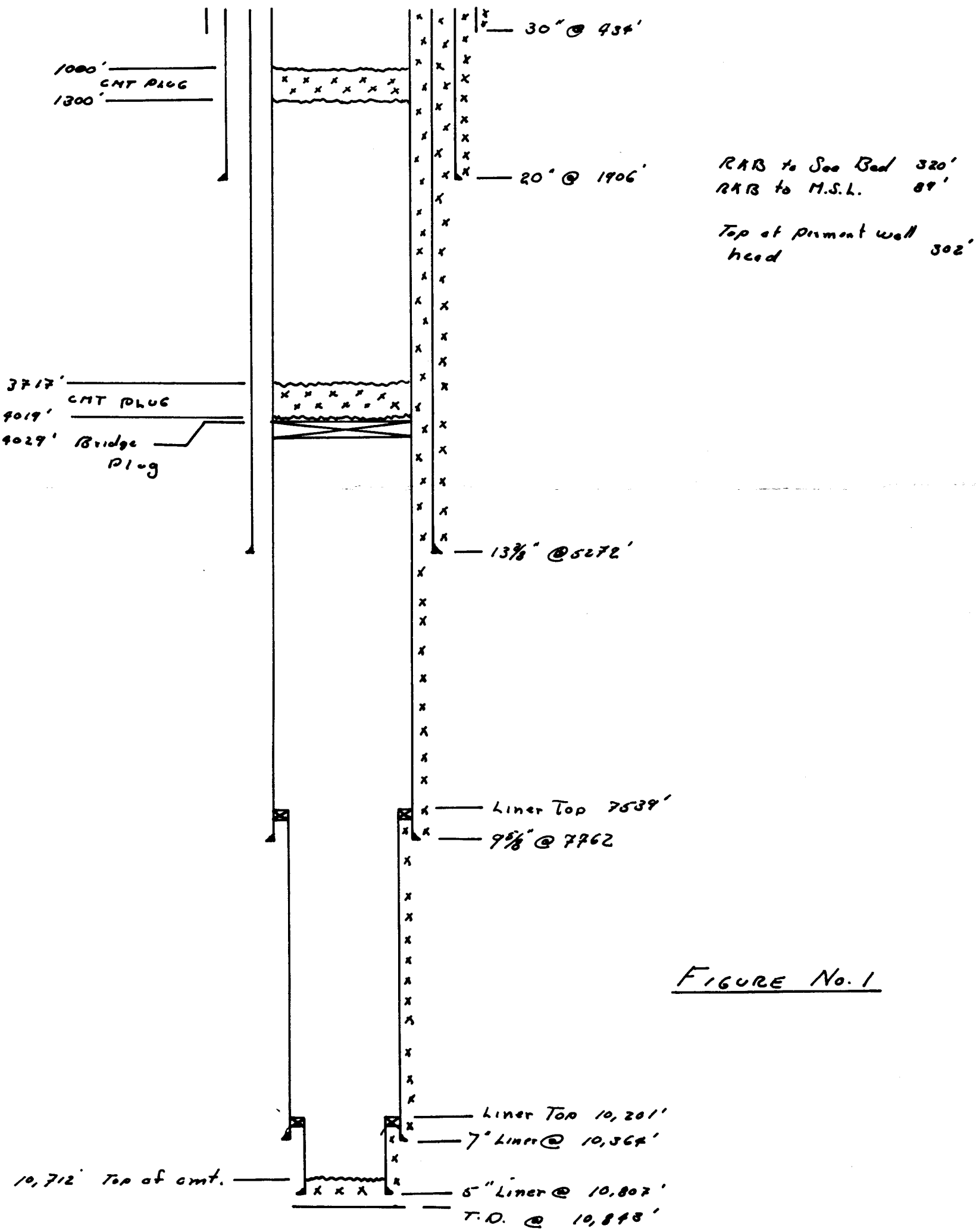
SAME AS FIG 3B

9/2/71

WELL 2/4 - 1AX

Present Completion

All measurements from Ocean Viking RKB



RAB to Sea Bed 320'
RAB to M.S.L. 89'

Top of permant well head 302'

FIGURE No. 1

Form 7956 2-62

INTERNATIONAL DEPARTMENT

INDEX – INDIVIDUAL WELL RECORD

COUNTRY NORWAY LEASE 2/4 WELL NO. 1AX

FIELD EKOFISK DATE COMPLETED Sept. 21, 1971

- [x] 1. Index, Form 7956
- [x] 2. Proposal and Authorization to Drill
- [ ] 3. Location Plat
- [x] 4. Reports to Governmental Agencies
- [ ] 5. Well Graph on Correlation Log
- [ ] 6. Individual Well Completion Record, Form 2266
- [x] 7. Perforating & Squeeze Record, Form 822
- [ ] 8. Exploration Record, Form 883
- [ ] 9. Hydrocarbon Mud Log
- [ ] 10. Well Logs –
- [ ] Logs –
- [ ] Logs –
- [ ] Logs –
- [ ] Logs –
- [ ] Logs –
- [ ] 11. Drill Stem Tests
- [ ] 12. Columnar Core Record, Form 2069
- [ ] 13. Core Analysis
- [x] 14. Individual Well Production Tests Previously submitted
- [ ] 15. Bottom Hole Pressure and Productivity Index Tests, Form 884
- [ ] 16. Water Analysis
- [ ] 17. Research Reports
- [ ] 18. Drilling Time and Bit Records
- [ ] 19. Hole Deviation Record
- [ ] 20. Mud Program and Record
- [ ] 21. Geological Summary
- [x] 22. Daily Report Detailed, Form 911
- [ ] 23. Proposal to Change Individual Well Status or to Repair or Replace Equipment, Form 902
- [ ] 24. Final Report Individual Well Status, Form 903
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

File

INTER-OFFICE CORRESPONDENCE
STAVANGER OFFICE

Re: 2/4-lax Well - Procedure (B) to complete well - Drill out Bridge plugs and cement, and complete well. (National Tree).

To: Drilling Supervisors

From: Paul Reynolds

GENERAL

Fig. 1 shows the present well status. Observe the casing is full of mud, cement and bridge plugs (cast iron). The wellhead is capped.

		Viking
RKB to Ocean Floor	-	320' RKB
RKB to Mean Sea Level	-	89' RKB
Water Depth	-	231' RKB
Top of Existing National head	-	± 302' RKB

Well location:

Longitude	= 56°32' 08.65"N
Latitude	= 03°11' 54,57"E

PROCEDURE

1. Insert and replace any worn anchor chain when pulling anchors. Make arrangements with Decca to locate the wellhead using their side scanning sonar. If wellhead cannot be located this way have Decca actuated the Yoo-Hoo buoy attached to the wellhead. If the Yoo-Hoo buoy is actuated a new buoy should be installed as soon as possible after the Ocean Viking is on location. Decca will also set buoys at each required anchor location. Do not drop anchors near flow line.

   NOTE: Yoo-Hoo buoy has been anchored near wellhead with anchor line shackled to permanent guide base.

2. Use two tugs for holding "Ocean Viking" over wellhead while setting anchors. Viking heading shall be approximately 315°. Test each anchor to 350,000 lbs pull.

3. Divers will perform the following work:
   (a) Attach guide lines
   (b) Make provision for attaching and running TV and Diving Bell (Guide Frames, Guide lines etc.)

(c) Confirm compass direction of existing guide base and TV extension arms on base and location of flow line if installed.

(d) Assist in retrieving corrosion cap. Handling tool 530057-A will be run on drill pipe with guide arm and cap pulled.

(e) Inspect and clean all seal surfaces on exposed wellhead and latch grooves (Top and I.D. - especially seal ring surface) and confirm bore protector absence. Brush and clean all surfaces.

(f) Confirm 13' guide frame beam height above ocean floor using 14' pipe.

(g) Install Brown & Root clamp on 30" casing as soon as practical after BOP stack is run.

NOTE: After divers determine beam height have NORSCO cut off and install unions on flow line extensions. The completed extensions should then be sent to the Ocean Viking.

Modify BOP stack for running as shown in Figure No. 2. Assemble and test on rig - using BOP test procedure. Carefully inspect 13 5/8" Hydril rubber. This must be capable of closing on Schlumberger wireline.

NOTES: 1. Replace present upper body with part no. 530780-46-A with orienting slot.

2. When assembling BOP stack, orient slot in upper body as per drawing CC 2279.

3. Install Payne Pod and check all BOP and valves for proper operations before running stack.

4. Run the BOP stack (w/kill and choke lines) on drill pipe using bumper subs. Follow Phillips Procedure for running and testing BOP stack to prevent damage to seal surface and to test seals. Land BOP stack on the 13 5/8" wellhead housing, pressure test stack and 9 5/8" casing to 4300 psi using pipe rams followed by a blind ram test after COOH w/drill pipe. Test kill and choke lines to 5000 psi.

5. Run 16" riser assembly. Attach weight cans to riser assembly. Install short bore protector 531144-A w/handling tool 531167-A.

6. GIH w/8½" rock bit and drill out cement and bridge plug inside 9 5/8" casing to the top of the 7" liner. Test csg. to 4300 psi.

COOH. Use light soda ash pre- treatment drilling cement. Use fine screens, double shaker etc. Bottom hole drlg. assembly - bit, stabilizer, collars, B.S. etc.

7. Under supervision by Mr. Pope, have Baroid catch an undiluted and a cement contaminated mud samples while circulating mud from the top of the 7" liner hanger, Run packer mud tests at 275° F in order to determine mud treatment required to prevent high temperature gelation and barite settlement for a 14.3 lbs/gal. mud weight. (450 psi overblance.)

8. GIH with a 4 1/8" Bit, without jets, 6" reamer and 6" scraper. Spac out that the 4 1/8" bit will be at 10750' when the 6" reamer and 6" scraper are at 10,200'.

9. Work and rotate scraper through 9560 - 9660 interval several times to assure a successfull packer setting. Then lower 4 1/8" bit to within 30 ft. of bottom. Reverse out mud by pumping down the choke line. **Test casing to 4300 psi.**

10. Condition mud with final treatment for desired packer mud properties and for a 14.3 lbs/gal. weight. Use fine screens, double shaker, desilters, etc.

11. Make trip to PBTD with wire line junk basket. Perforate well as per attached schedule. Continous hole observation will be required to assure that hole remain full and stable through out the perforating operation.

12. Run 10 stand of drill pipe in hole with white painted couplings to determine low side of hole.

13. Pull Bore Protector from well head using 531167-A bore protector retrieving tool. Obtain exact pipe footage distance to bore protector with respect to fixed mark on the guide line. This measurement is critical for tubing hanger space-out in step 15.

14. Run 7" spacer packoff bushing no. 531105-A using installation and retrieving tool for 9 5/8" - 7" packing units. Run no. 532348-A test plug for 7" packoff unit. Close rams and test packoff to 5000

psi. Retrieve test plug and handling string.

NOTE: Have Baker pass running tools, shifting tools, etc., through all down-hole nipples before running tubing string.

15. Run Baker Model "FB-1" production packer on wire line and set at ± 9935 ft. Use collar locator to insure that packer is not set in casing coupling.

16. GIH with tubing string (with space out drill pipe on top) as shown in fig. no. 3 (Fig. 3A shows string while spacing out and fig. 3B shows string as permanently landed). Drift each joint during pick-up, and pressure test each threaded connection while running string. The Gator-Hawk unit will be used to test each pipe coupling to 5999 psi. (Price break is at 6000 psi). On connections that cannot be tested with Gator-Hawk unit, a 6000 psi internal pressure test will be made using end plugs.

(a) Pipe will be numbered, tallied drifted and each thread will be visually inspected and cleaned just prior to shipment to the rig.

(b) A special Baker packer grease will be applied to the Baker seal assembly. Grind off all burrs on tail pipe coupling.

(c) Baker-seal thread lubricant will be used on all the API 8rd. and 10rd thread connections. API modified lubricant will be used on all seal lock connections.

(d) Tubing torque recommendation
2 7/8 EUE 8rd. Opt1800 Min1600 Max2300 Ft lbs.
4½" Seal-lock Establish torque required to make up 5 1/4 to 5½ turns (1 - 1 1/4 turns from hand tight). This will probably be between 1000-1600 ft/lbs.

(f) Paint last 6 tool joints white to confirm low-side of hole during space out.

(g) Use 5" drill pipe in top part of 4½" tubing string during spaceout (see fig. 3.)

(h) Land seal nipples in packer and set down 10,000 - 20,000 lbs weight. Obtain exact pipe measurement with respect to guide line mark. Close hydril, pressure annulus to 3000 psi to test packer and seals.

(i) Space out string so that there will be 10,000-20,000 lbs weight on packer when hanger is landed. Tubing space out pups to be installed below Baker "F" landing nipple.

(j) Observe painted tool joints to determine low side of hole.

(k) Install 1/4" tubing on high side of hole using protector strap on each coupling to prevent damage to tubing. Also install Baker 1/4" tubing protector sub above model "A" ported nipple.

(l) Cut-off 200' + of stainless steel tubing (to connect tubing hanger to ported nipple) and connect to nipple using swedge lock connector. Band the 1/4" to 4½" tubing using monel straps. Fill 1/4" tubing with sea water. After installing hanger attach the 1/4" line as per National and Baker procedures. Land Dummy mandrel in the Model "A" ported nipple, and Pressure test 1/4" tubing to 10,000 psi.

(m) Install tubing hanger installation tool no. 532114-A on top of tubing hanger and orient pin in _____ degrees directio Run assembly on 5" X-hole, drill pipe and bumper subs. Land hanger in wellhead body, slack off on bumper subs and turn handling string to right.

(n) Right hand rotation automatically locates, seats and latches the tubing hanger and also releases the installation tool. Retrieve the tubing hanger installation tool and handling string

17. After retrieving handling string, pick up tubing hanger reentry tool no. 532343-A and attach ½" 10,000 psi WP hose to reentry tool safety valve control port. Orient slot in reentry tool _____ degrees direction and run on 4½" tubing riser. Stingers in tool will automatically release when the tool is properly oriented on tubing hanger. The 4½" stinger will drop down, seal and latch into the tubing hanger and the 1/4" stinger will plug into the safety valve control port.

Remove elevators and attach air tugger lines to riser, record weight of 4½" riser just before stabbing (_____pounds.).

Pick up 100 % of riser weight and torque string to left 35% of make up torque to assure that tool is properly seated. Release torque.

(a) Pressure test 1/4" S.S. tubing to 10,000 psi. thru ½" hose. Release pressure.

(b) Pull "Dummy" Mandrel from ported nipple and pump water down ½" hose to check for restrictions.

(c) GIH with "No-Go" plug and land in "No-Go" nipple at ± 9994 Pressure test tubing to 6000 psi.

(d) GIH and open sliding sleeve at ± 9896. Pressure tubing to 3000 psi to test tubing hanger packing. Retrieve plug from "no-go" nipple. Land plug in "F" nipple at ± 333 RKB and pressure test tubing to 6000 psi.

18. Pull 4000 ± lbs strain on 4½" riser using air tugger w/swivel hook. Back-out riser assembly using right hand rotation and power tongs. COOH standing riser in derrick.

19. Pull 16" riser, BOPs, hydraulic operated Auto-lock connector, choke and kill lines as per Phillips procedure ref. folio 85.

20. Prior to running tree assembly (with tree on test stump).

(a) Install vertical flow line extensions to tree unit and pressure test to 7000 psi. Fill tree with 1:10 Kontol 147 - Diesel mixture.

(b) Attach 500' Payne Hose Bundle to tree at junction box, attach curved hose sheath to tree with 50' Payne Hose Bundle in sheath. Test all valves for proper operations. Carefully observe all connections for leaks. Properly tag all surface and subsurface control hoses and valves. Color code all hoses and stamp Payne junction box.

(c) Attach 2" 2500 psi WP hose to service flow line outlet and pressure test to 3000 psi.

(d) Attach 10,000 psi WP hydraulic hoses to ½" needle valve on swab valve, ½" annulus test port, ½" tree test port, and 2 hoses to auto-lock tree connector - open and close ports.

(e) Actuate and open valves as shown in fig. 4.

(f) Orient tree flow line outlets to conform with tubing hanger orientation when attaching tree to guide lines.

(g) After landing tree close tree auto-lock and pull 100,000 + pounds.

(h) Pressure to 7000 psi through tree test port line. This will test the 13 5/8" auto-lock seal, stinger seals, tubing hanger seals and packoff seals, release pressure. Monitor tubing and annulus pressure while performing test:

(i) Disconnect reentry auto-lock and retrieve.

(j) Run 16" riser assembly with shear bolts in bottom flex joint assembly.

(k) The tree - flow line connection will be made immediately following final production test.

21. Make up X-mass tree reentry tool No. 532349-A on $4\frac{1}{2}$" tubing. While running $4\frac{1}{2}$" riser, pressure test each connection in riser, Oti tree, Baker lubricator, and tree assembly to 6000 psi. After latching reentry into top of X-mass tree, pick up 100% of riser weigh using air tuggers and torque string to left 35% of make up torque to assure that tool is properly seated, Release torqu

22. Fig. 4 shows valve positions prior to landing tree. Valves III, V, VI are closed. Pressure tubing to 6000 psi and monitor 9 5/8" casing annulus pressure. Maintain 4000 lbs. tension on riser. NOTE: Do not exceed 3000 psi annulus pressure.

23. Pull plug from "F" nipple at ± 333.

24. Make "Dummy Run" to sliding sleeve mandrel with sliding sleeve shifting tool. Displace tubing with water to within 200' but not below sliding sleeve. Close sliding sleeve and come out of hole with shifting tool. Pressure test annulus to 2800 psi, and tubing to 4 000 psi.

25. Displace all water in 1/4" hydraulic line w/special oil, and set "Dummy Mandrel" in Model "A" ported nipple.

26. Connect the flow lines to the separator and pressure test surface equipment.

27. After checking out all equipment and approval is given by test foreman, open well wide open immediately to clear perforations. Reduce flow to satisfy test equipment capacity as required. (perform test and continously monitor annulus pressure).

28. After cleaning up perforation, acidize well as per instructions. Follow this with production test.

29. Immediately after cleaning up well, actuate each hydraulic valve several times to flush valves.

30. After clean up period, shut in well to install subsurface safety valve. Pull "Dummy Mandrel" from model "A" ported nipple. Run and install Baker safety valve in nipple. To flow well,,close swab valve, open safety valve then open swab valve. Carefully observe pressure pump and gage for leads in safety valve. After test displace tubing w/water and 500' of Kontol 147 mixture. Back flow 200' Kontol and close in well.

31. To close well following test, close Otis Head, then master, swab and annulus valves. Release hydraulic pressure on all hydraulic hoses to valves. Have diver remove rig hoses from all $\frac{1}{2}$" valves, close valves and install protection plugs. Disconnect 500' hose bundle from Payne junction box and connect 50' bundle in sheath. Remove 2" hose from service flow line outlet. Pull 4000 lbs on $4\frac{1}{2}$ riser, rotate to right to release. Release auto-lock connector and pull 16" riser to Phillips specs. Install corrosion cap on top of tree with corrosion cap handling tool. Häve diver disconnect all guide lines. Attach surface spare buoy to wellhead cap with nylon rope.

31. Rig will be released when final flow line tie has been completed and tested.

PERFORATING SCHEDULE

1. Perforate the following intervals with 4 shots per foot,

10,010 - 10,090	80 feet
10,230 - 10,350	120 feet
10,390 - 10,430	40 feet
10,580 - 10,660	80 feet

Total:	320 feet

A. Interval 10,620 - 10,660 3 3/8" Hollow Carrier

Run No. 1 - 40 ft gun 10,620 - 10,660 ft
Run No. 2 - 40 ft gun 10,580 - 10,620 ft

B. Interval 10,390 - 10,430 3 3/8" Hollow Carrier

Run No. 3 - 40 ft gun 10,390 - 10,430 ft

C. Interval 10,230 - 10,350 3 3/8" Hollow Carrier

Run No. 4 - 40 ft gun 10,310 - 10,350 ft
Run No. 5 - 40 ft gun 10,270 - 10,310 ft
Run No. 6 - 40 ft gun 10,230 - 10,270 ft

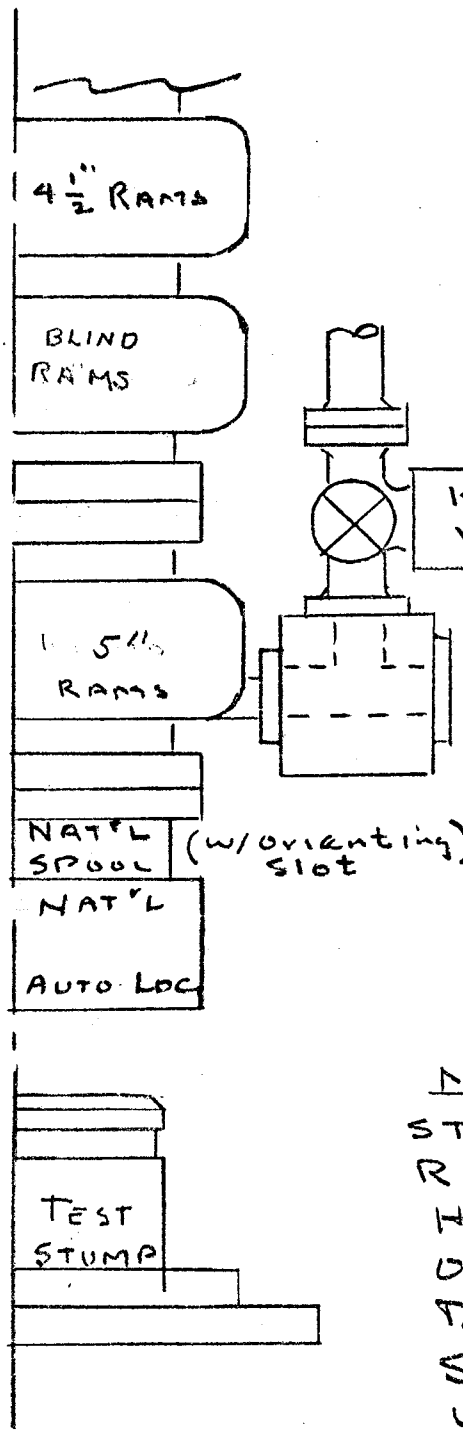
D. Interval 10,010 - 10,090 4" Hyperjet

Run No. 7 - 45 ft gun 10,045 - 10,090 ft
Run No. 8 - 35 ft gun 10,010 - 10,045 ft

NOTE:

1) Shoot all guns simultaneously during each run.

2) Log perforations before COOH and furnish Phillips supervisor with film.



NOTE: AFTER COOM W/ BOP STACK ON 2/4-4AX WELL, REMOVE X-OVER - VETCO H-4 HYDRAULIC CONNECTOR. INSTALL NAT'L DRLG. SPOOL (W/ ORIENTING SLOT) BY REPLACING UPPER BODY ON AUTO-LOCK

FIG # 2

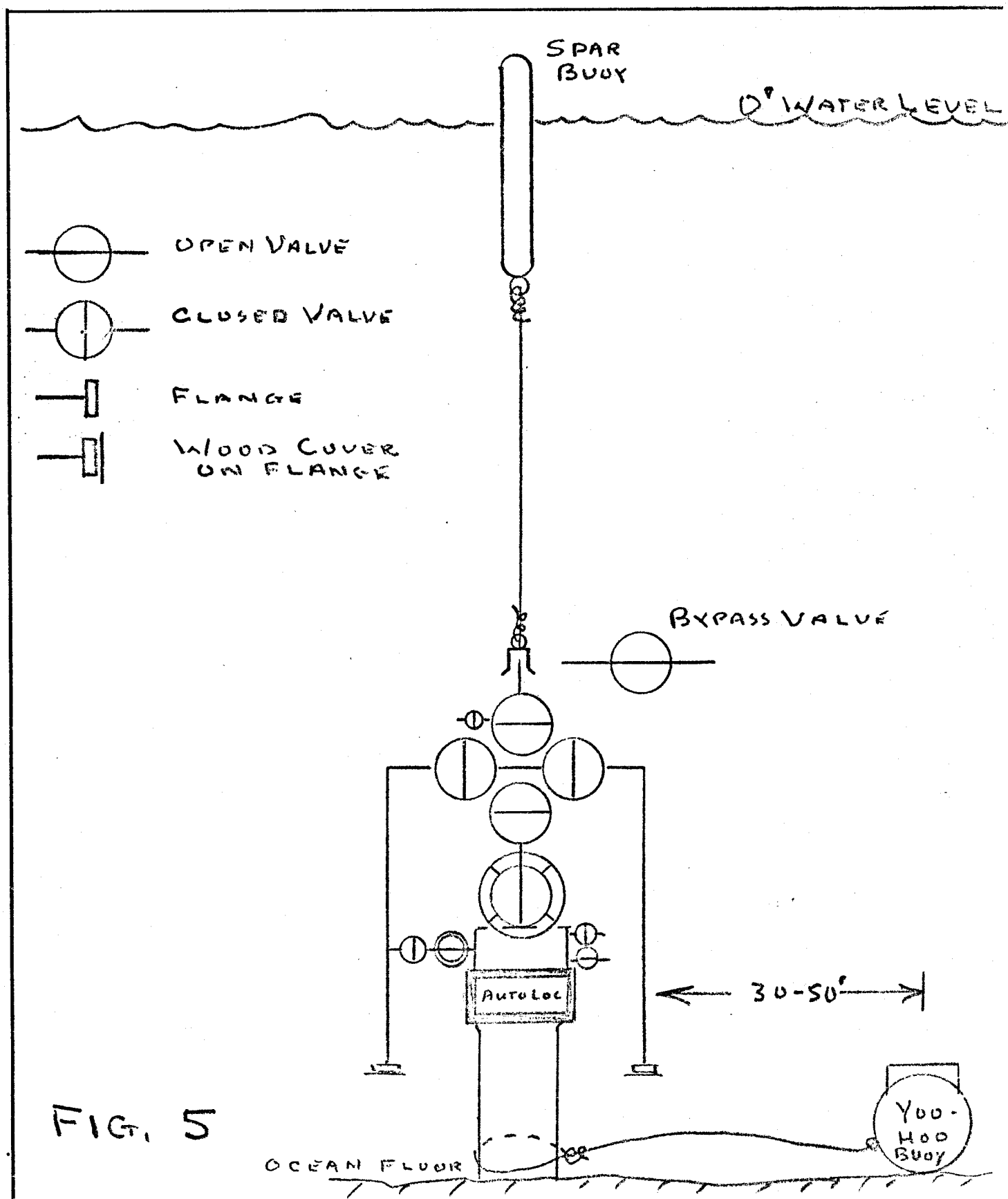

SPAR BUOY
0' WATER LEVEL
OPEN VALVE
CLOSED VALVE
FLANGE
WOOD COVER ON FLANGE
BYPASS VALVE
AUTOLOC
30-50'
YOO-HOO BUOY
OCEAN FLOOR

FIG. 5

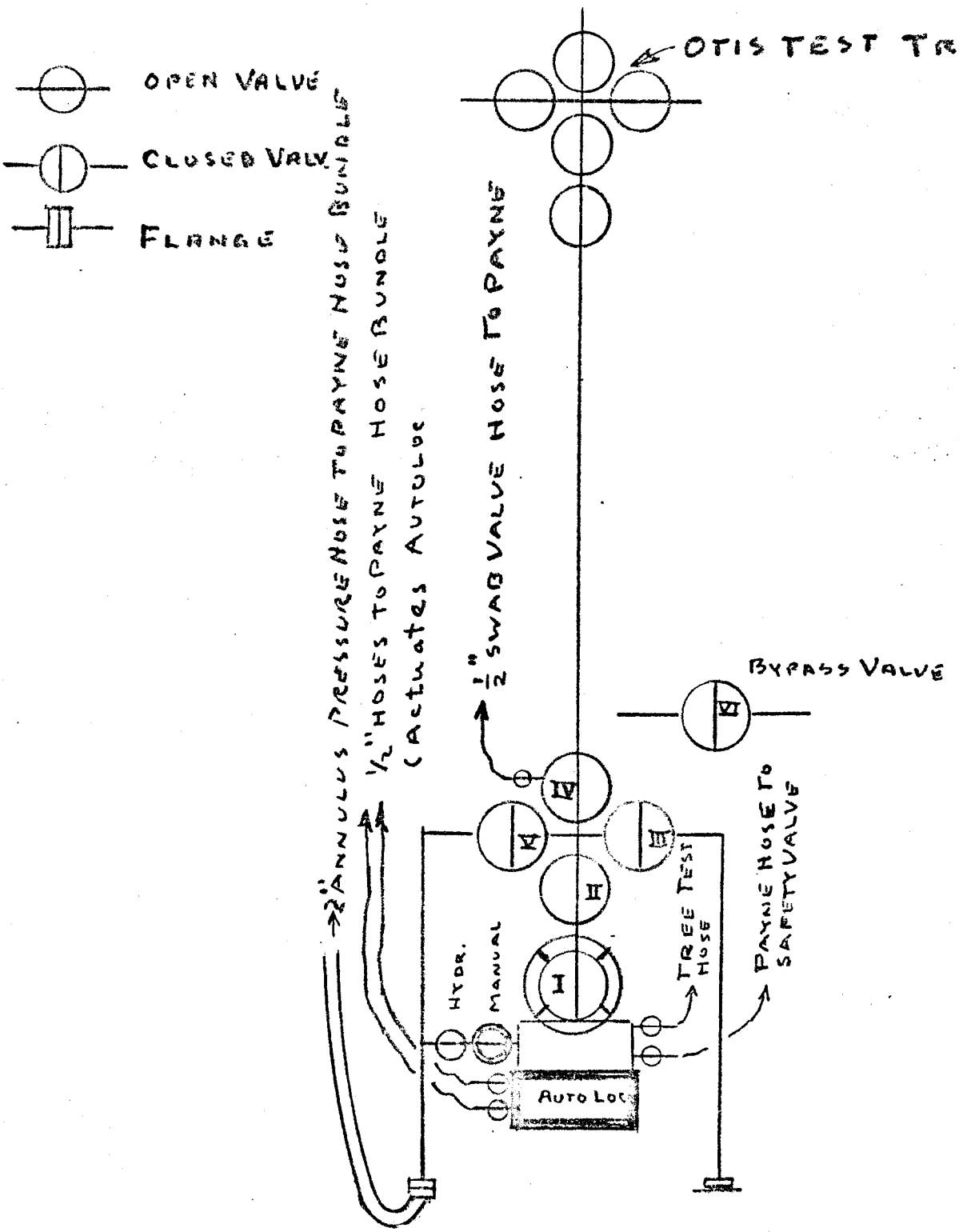

OPEN VALVE
CLOSED VALVE
FLANGE
OTIS TEST TREE
2" ANNULUS PRESSURE HOSE TO PAYNE HOSE BUNDLE
1/2" HOSES TO PAYNE HOSE BUNDLE
(ACTUATES AUTOLOC
1/2" SWAB VALVE HOSE TO PAYNE
BYPASS VALVE
VI
IV
V
III
II
I
HYDR.
MANUAL
TREE TEST HOSE
PAYNE HOSE TO SAFETY VALVE
AUTO LOC

FIGURE 4

PHILLIPS PETROLEUM COMPANY-NORWAY
UTENLANDSK AKSJESELSKAP
P.O.BOX 72 - STAVANGER, NORWAY - PHONE 41 340, 41 391 - CABLE: PHILLSTAV - TELEX: 33081

Stavanger, September 7, 1971

CONFIDENTIAL

The Ministry of Industry
Akersgaten 42
OSLO 1

ATTENTION: Petroleum Section

PHILLIPS PETROLEUM COMPANY-NORWAY - WEEKLY DRILLING REPORT

From August 30 To September 5 Well No. 2/4-1AX

	M	T	W	Th	F	S	S
Total Depth Beginning:	10807	-	-	-	-	-	-
Total Depth End:	-	-	-	-	-	-	10807
Hole Size:							
Geological Formations Drilled:	1.						
	2.						
	3.						
	4.						

Drilling Fluid Characteristics:
Mud Density (lbs/gal) 14.4 Viscosity (API) 52 sec
Water Loss 13.8 Chloride 25.000 ppm pH 11.4
Plastic Viscosity 28 Yield Point 18 Oil Trace

Casing Details:

Diameter (Inches)	Weight (lbs/ft.)	Grade (API)	Length (Feet)	Condition	Depth (Feet)

Cementing Details:

Shows: (Oil, Gas, Water, etc.):

Logging Details:

Deviation Surveys, Formation Tests, Pressure Tests, Temperature Measurements, etc: Tested BOP & 9 5/8" casing to 4300, OK

Details of Fishing Jobs, Shooting, Perforating, Fracturing, Acidizing, Completion or Abandonment: Drld. cement from 960' to 4041'
Drlg. on bridge plug

Details of Steps taken to protect Underwater Telecables, if requested:

Details of Accidents, Damages, Injuries and other as Ministry deems necessary

Details of Fire Drills held: 1 Sept. - 2 safety drills
4 " - 1 safety drill
5 " - 1 tip drill, reaction time 15 sec.

P.W. Reynolds
for PHILLIPS PETROLEUM COMPANY-NORWAY

PHILLIPS PETROLEUM COMPANY-NORWAY
UTENLANDSK AKSJESELSKAP
P.O.BOX 72 - STAVANGER, NORWAY - PHONE 41 340, 41 391 - CABLE: PHILLSTAV - TELEX: 33081

Stavanger, September 14, 1971

CONFIDENTIAL

The Ministry of Industry
Akersgaten 42
OSLO 1

ATTENTION: Petroleum Section

PHILLIPS PETROLEUM COMPANY-NORWAY - WEEKLY DRILLING REPORT

From 6 September To 12 September Well No. 2/4-1AX

	M	T	W	Th	F	S	S
Total Depth Beginning:	10807	-	-	-	-	-	-
Total Depth End:	-	-	-	-	-	-	10807
Hole Size:							

Geological Formations Drilled:
1.
2.
3.
4.

Drilling Fluid Characteristics:
Mud Density (lbs/gal) 14.3 Viscosity (API) 55 sec
Water Loss 10.5 Chloride 25,000 ppm pH 11.5
Plastic Viscosity 30 Yield Point 15 Oil Trace

Casing Details:

Diameter (Inches)	Weight (lbs/ft.)	Grade (API)	Length (Feet)	Condition	Depth (Feet)

Cementing Details:

Shows: (Oil, Gas, Water, etc.):

Logging Details:

Deviation Surveys, Formation Tests, Pressure Tests, Temperature Measurements, etc: Tested 9 5/8" casing to 4300 psi, Ok
Drld. out cement and bridge plug and set packer at 9960'

Details of Fishing Jobs, Shooting, Perforating, Fracturing, Acidizing, Completion or Abandonment: Perforated 10580 - 10660, 10390 - 10430, 10230 - 10350 and 10010 - 10090

Details of Steps taken to protect Underwater Telecables, if requested:

Details of Accidents, Damages, Injuries and other as Ministry deems necessary

Details of Fire Drills held: 11th - One safety drill - results good
12th - One safety drill - results good
12th - One pit drill, reaction time 15 secs.

P.W. Reynolds
for PHILLIPS PETROLEUM COMPANY-NORWAY

PHILLIPS PETROLEUM COMPANY-NORWAY
UTENLANDSK AKSJESELSKAP
P.O.BOX 72 - STAVANGER, NORWAY - PHONE 41 340, 41 391 - CABLE: PHILLSTAV - TELEX: 33081

Stavanger, September 21, 1971

CONFIDENTIAL

The Ministry of Industry
Akersgaten 42
OSLO 1

ATTENTION: Petroleum Section

PHILLIPS PETROLEUM COMPANY-NORWAY - WEEKLY DRILLING REPORT

From Sept. 13 To Sept. 19 Well No. 2/4-1AX

	M	T	W	Th	F	S	S
Total Depth Beginning:	10759	-	-	-	-	-	-
Total Depth End:	-	-	-	-	-	-	10759
Hole Size:							

Geological Formations Drilled:
1.
2.
3.
4.

Drilling Fluid Characteristics:
Mud Density (lbs/gal) 14.3 Viscosity (API) 52 sec
Water Loss 10.5 Chloride 25.000 ppm pH 11.4
Plastic Viscosity 27 Yield Point 15 Oil Trace

Casing Details:

Diameter (Inches)	Weight (lbs/ft.)	Grade (API)	Length (Feet)	Condition	Depth (Feet)

Cementing Details:

Shows: (Oil, Gas, Water, etc.): Flowed well on 25/64" choke, rate 3024 BOPD, gas 2.754 MMCFD and flowing press. 3675 psi. Acidized well and flowed on 23/64" choke, rate 2990 BOPD and flowing pressure 4155 psi.

Logging Details:

Deviation Surveys, Formation Tests, Pressure Tests, Temperature Measurements, etc: Ran 4½" production string. Tested X-mas tree to 7000 psi ok.

Details of Fishing Jobs, Shooting, Perforating, Fracturing, Acidizing, Completion or Abandonment:

Details of Steps taken to protect Underwater Telecables, if requested:

Details of Accidents, Damages, Injuries and other as Ministry deems necessary: None

Details of Fire Drills held: None

P.W. Reynolds
for PHILLIPS PETROLEUM COMPANY-NORWAY

Form 882 12-57 A 59362
Printed in U.S.A.

Lease 2/4 North Sea Norway

PERFORATING AND SQUEEZE RECORD

Well 1AX

Date	Size of Casting	Perforating		No. of Feet Perforated	No. of Holes	Size of Holes	Gun Diameter	Gun Type	Perforating Company
		To	From						
9.9.71	7"	10660	10580	80	4/ft.				Schlumberger
10.9.71	7"	10430	10390	40	4/ft.				
10.9.71	7"	10090	10075	15	4/ft.				
11.9171	7"	10350	10230	120	4/ft.				
11.9.71	7"	10075	10010	65	4/ft.				

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 1

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Aug. 30		3 hrs Running in anchors, last anchor bolstered 0915 hrs ending 2/4-3X.
P.T.D. 10807' PBD		0915 hrs Beginning 2/4-1AX
		2½ hrs Rig under tow
		3½ hrs Running anchors and position barge
		3 hrs Looking for well head
		2 hrs Position barge
		2½ hrs Releasing tugs tow lines at 2250 hrs
		3 hrs Pump barge to 80' draft
		1½ hrs Attempt to repair No 6 anchor chain
		3 hrs Pumping up barge to repair chain
		0700 Repairing no 6 chain.
Aug. 31		8½ hrs Repairing and running No 6 anchor, Ran no 1 anchor and reran no 3 anchor
P.T.D. 10870'PBD		1½ hrs Pump barge down to 80' draft
		2½ hrs Made dive no 1, O.B. 90 minutes, install no. 2 guide spear, inspected no 3 guide spear in permenent guide base found to be A-ok, install 2 U.T.V. guide lines, found no 1 and 4 spear to be bent over (this is from storm damage 2 years ago) distance from sea floor to guide base 2.5 meters, Rig reports Brown and Root did not clean junk from around well head or guide base, wire line, pipe, chain, 2 - corrosion caps laying inside guide base, wire line over well head and home made cover for well still in place, one anchor laying on top of Payne hose bundle do not know how or where it came from--est. wt. 200 lbs. Also divers report flow lines not coming in as diagram supplied by Brown & Root this will be checked further to be sure
		6½ hrs Re-position barge over well and de-compressing divers, started reparing 30" clamp to run
		2½ hrs Made dive no 2 (100 minutes on bottom) Removed bent spears from no 1 and no 4 guide post install no 1,3,4 makes total 4 guide spears and guide lines installed. Cleaned junk from 30" Clamp area, removed horizontal brace from guide base, remove junk from over hose bundle (Payne) anchor still on top of hose bundle.
		2½ hrs Recharge diving bell

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 2

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 1 P.T.D. 10870'PBD		3 hrs Ran 30" clamp, divers installed on 30" casing and removed home made corrosion cap, cleaned and inspected well head 8½ hrs Test BOP stack on test stump, hung off on cranko beams and installed new laurent seal 3½ hrs Ran jet sub on stingers (5" dp) stab into well head and jetted clean same 7 hrs Ran BOP stack with 5" rams closed on stinger landed, latched and pull tested Tested auto-lock laurent seal with 3000 psi COOH with stinger and landing string 2 hrs Running 16" mud riser 0630 Run mud riser
Sept. 2 P.T.D. 10870'PBD		1 hr. Running 16" mud riser--suspended operations, bacause of weather. 8 hrs Moving x-tree to cellar deck and re-building, suspended this operation barge was rolling to much to work on tree. 15 hrs WOW
Sept. 3 P.T.D. 1134' cement		2 hrs WOW 2½ hrs Install block valves on x-tree 5 hrs Finish running 16" mud riser, latched and pull tested, nipple up cellar deck 1 hr. Ran short bore protector retrieving tool confirmed no short bore protector in place, ran short bore protector 4 hrs Test stack, choke and kill lines, stand pipe and kelly cook and choke manifold Test casing to 4300 psi 1 hr. Pick up BHA and GIH to 960' 1 hr. Circulating, displace mud riser 6 hrs Fin. GIH-tag top of cement at 1036' and drilling hard cement from 1036' to 1134' 1½ hrs Trip to pick up Bumper sub. 0630 Drilling hard cement at 1140' Mw: 14.3, Vis: 51, Pv: 26, Yp: 16

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 3

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 4 P.T.D. 10870'PBD	3½ hrs 1 hr. 10 hrs ½ hr. 9 hrs	Drilled hard cement at 1124' to 1146' Trip to change bits Drilling hard cement at 1146 to 1332' Circulate bottoms up Picking up 5" drill pipe to drill out next plug, found top of cement stringers at 1939', drilled out intermittent stringers cement to 3948' top of plug 0630 Drilling cement 3960' Have 4200 gal acid on board, divers removing flow line spools in 3 dives. X-mass tree is tested all but the loops around tree,10000 psi Installing UTV-Drum anc cable Mw: 14.3, Vis: 46, Pv: 26, Yp: 16
Sept. 5 P.T.D. 10807'PBD	4½ hrs 2½ hrs 1½ hrs 1½ hrs 2 hrs 2½ hrs 1½ hrs 6½ hrs 1½ hrs 0630	Finish drilling hard cement 3948' to 4041' GIH picking up 5" drill pipe to 6100' Circulating and condition mud Picking up 5" drill pipe and GIH to top of liner and circulating Circulating and condition mud at 7540' COOH, SLM no correction--recovered 4 pcs of old retainer junk--?-- Test casing with 4300 psi worked BOPS as per program, ran jet suband wash out BOP stack Pick up BHA and GIH bit stopped at the to of liner 7540'--unable to get into liner COOH to check BHA COOH Mw: 14.3, Vis: 47, Pv: 28, Yp: 14 Will GIH without casing scraper and see--?--
Sept. 6 P.T.D. 10807' PBD	4½ hrs 3½ hrs 4 hrs 2 hrs 2½ hrs 7½ hrs 0630	Finish COOH lay down casing scraper and ran in hole to 7540' and drill on Bridge plug junk--with 6" bit COOH RIH with 8½" ~~hxtk~~ bit Drill on bridge plug junk--7540' COOH RIH with 6" to 7540' drill on bridge plug junk for 15 mins and push down to 8005' pick up kelly and rotate and push down junk to 8700'-- at 8760'

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 4

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 6 cont.		X-tree is complete and tested to 10000 psi Divers below Connected Payne Hose bundle to O/V from G/T , tested hose bundle, observed G/T pumping through flow lines and found to be correct not crossed Pinned UTV frame to guide base, removed bolts from flanges on flow lines Mw: 14.4, Vis: 50, Pv: 28, Yp: 16
Sept. 7 P.T.D. 10870' PBD		5 hrs Circulate and condition mud and pushing bridge plug to 10200' from 8700' 1½ hrs Circulate and condition mud 3 hrs Drilling on plug at 10200' and circulate and work junk baskets 4 hrs COOH cleaned 2 junk baskets, recovered 2.5 gal bridge plug junk 3½ hrs GIH with casing scraper and 6" bit, scrape 9880' to 10000' and GIH to 10200' 2 hrs Circulate work junk baskets 3 hrs COOH 2 hrs Make up 4 1/8" and pick up 600' 2 3/8" tubing and GIH 0700 GIH Mw: 14.4, Vis: 52, Pv: 28, Yp: 18
Sept. 8 P.T.D. 10759		1 hr. GIH 1 hr. Slip and cut drilling line 1½ hrs Finish GIH to 10200 1½ hrs Drill & push junk BP to 10224 bit plugged 1½ hrs Trying to break circulation 1½ hrs COOH to 9 5/8 csg at 7539 1 hr. Circulating at 7539 5½ hrs GIH and reverse circulating 8553, 9232, 9940 & 10194 at 10194 vis 165 & mud wt. 14.6 2 hrs Wash to 10759 ½ hr. Trying to drill on junk but making no progress 3 hrs Reverse circulating & conditioning mud 4 hrs COOH At 0700 testing csg to 4300 psi. Tested hi-press. corrosion cap and tree to 10000 psi. Tested hydraulic hose from Gulftide. Tested DHSV line Gulftide to tree to 7000 psi. Mw: 14.4, Vis: 51, Pv: 29, Yp: 17

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 5

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 9	3½ hrs	Run Schlumberger junk bskt.
P.T.D. 10759'	1 hr.	Test casing to 4300 psi
	2 hrs	Run CBL to 10759' to 10200'--at10200' lost nose cone from CBL (rubber approx. 18" long)
	2½ hrs	Run perforating gun--gun stopped 10207' & COOH
	3½ hrs	GIH with 4 1/8" bit
	1 hr.	Pushed rubber nose cone 10207' to 10759'
	1 hr.	Reverse circulate
	1½ hrs	Circulate conventional
	4 hrs	Perforate from 10660' to 10620'--2nd run 10620' to 10580'
	0700	Perforating, Made one dive to disconnect junction box from payne hose bundle G/T to O/V and connect both spools to flow lines.
		Mw: 14.4, Vis: 51, Pv: 30, Yp: 17
Sept. 10	5 hrs	Perforate 10430' to 10390', made 2nd run fired 15' of perforations 10090' to 10075' 2 guns misfire COOH found 4 port hole plugs missing from gun
P.T.D. 10769' PBD	3½ hrs	RIH with 6" reverse junk basket
	1 hr.	Circulating on top of 5" liner
	5½ hrs	COOH
	2½ hrs	RIH with 4 1/8" bit
	½ hr.	Slip and cut drlg. line
	2 hrs	Finish RIH
	2 hrs	Circulate 10759' bit plugged, COOH to 10294' broke circulation
	1 hr.	RIH to 10558' & reverse circulate
	1 hr.	Lay down 4 singles and wash to bottom
	0700	Circulate and condition mud at 10759'
		Mw: 14.3, Vis: 51, Pv: 31, Yp: 16
Sept. 11	1½ hrs	Reverse circulate
P.T.D. 10769	4½ hrs	COOH
	5 hrs	Rig up Schlumberger and perforate 10350 - 10310, 10310 - 10270, 10270 - 10230, 10075 10045, and 10045 - 10010
	4½ hrs	Trip in hole
	3½ hrs	Wash to bottom and circulate and condition mud
	1 hr	COOH laying down DP
	0700	COOH laying down 5" DP
		Mw: 14.3, Vis: 55, Pv: 30, Yp: 15

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 6

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 12	6 hrs	Laying down drill pipe
P.T.D. 10769' PBD	2½ hrs	Pull bore protector and run spacer pack off bushing 7" - and test to 5000 psi
	14 hrs	Run Schlumberger junk basket to 10000' made up and run Baker model "FB1" production packer stopped at 8760' - COOH and ran junk basket to 10000' - run and set packer at 9960'
	1½ hrs	Running tubing production string
	0700	Same
Sept. 13	20 hrs	Running 4½" seal lock armco 12.6 lb. N-80-tubing
P.T.D. 10769' PBD	½ hr	Running drill pipe space out string
	½ hr	Circulating reverse
	3 hrs	Circulating and condition mud and test seal assembly to 3000 psi
	0645	COOH with space out string
	Mw: 14.3, Vis: 52, Pv: 27, Yp: 15	
Sept. 14	½ hr	Finish testing sealassy production packer 3000 psi
P.T.D. 10769' PBD	1 hr	COOH with space out string & check low side of hole
	11 hrs	Picking up tubing - OTIS- nipple-slotted guides and Baker"F" nipple - tested 1/4" ss tubing to 9000 psi - space out tubing and Gator-Hawk all connections to 6000 psi and install tubing hanger 4 port - and connect 1/4" ss tubing - hanger was tested to 6000 psi - install installation tool and orient ran tubing hanger and landed (seal assembly took 50000 lbs passing through packer) sheared orienting pins COOH with installati tool, found segment had failed to retract - re-ran and landed hanger-proper orientation (seal assembly took 10/15000 lbs to pass through packer) COOH with installation tool confirmed proper orientation
	2 hrs	Ran tubing re-entry tool on 5" riser tested each connection with 6000 psi Gator-Hawk-cleaned 1/4" ss tubing with bray oil - latched into hanger and tested 1/4" ss tubing with 10000 psi -
	6 hrs	Rig up Otis test tree and Baker lubricator-pull seperation sleeve from Otis nipple (safety valve) at 522' set plug in Baker "F" nipple at 10008' - test tubing with 6000 ps

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 7

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 14 P.T.D. 10769' PBD		retrieved plug & open sliding sleeve at 9908' - ran Baker SB1 plug and set in "R" nipple at 9955' and test tubing annulus, packer, seal assembly and tubing hanger packing with 3000 psi - retrieved SB1 plug at 9955' -
	1½ hrs	Baker repairing wire line - line was strand ed
	1½ hrs	Ran seperation sleeve into Otis safety valve nipple at 522' sheared out of rope socket - ran RB1 running tool retrieved fish-leaving seperation sleeve in place - test 1/4" ss tubing to 6000 psi
	½ hr	Rig up to run "FWG" plug in "F" nipple at 356'
	0630 hrs	running "FWG" plug Notice will test "FWG" plug with 1200 psi only Landed tubing with "O" weight on packer at space out final -
Sept. 15 P.T.D. 10759' PBD	1 hr	Ran and set "FWG" plug and set in "F" nippl at 356' test 2000 psi
	1½ hrs	Released re-entry tool and pull 5" riser
	6 hrs	Nipple down celler deck pull blue pod-choke and kill lines - and 16" riser
	5½ hrs	Pull BOP stack with 5" rams closed on safety stinger - and set in celler deck - moved O/V- off location while pulling stack
	10 hrs	Made dive and check orientation of tubing hanger and cleaned sealing surface - recov- ered 1 small piece of retainer junk from around tubing hanger - moved tree over slot installed flowline down comers - filled tree with control, methonol and diesel oil mixture and opened and closed valves three times - and test to 7000 psi (attach payne hose bundle and test) install chicksan to service flowline downcomer - orient tree on guide to conform with orientation slot on tubing hanger - landed running auto-lock and chained in closed position to prevent accidental unlocking - of running auto-lock
	0630	Running x-tree

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 8

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 16 P.T.D. 10759'	19½ hrs	Ran x-tree - pull test to 100000 lbs - test tree to 7000 psi auto-lock laurent and tubing hgr packing - test service line to 2500 psi - made dive closed ½" valves on tree- removed 3 hoses - secured chain to hold tree auto-lock in closed position -distance from down comers to 30" B&R clamp 5' - released running auto-lock and COOH with landing string - ran 5" riser and tested connections with 6000 psi - landed closed auto-lock and rigged up Otis tree and Baker wire line lubricator tested to 5600 psi - displaced water in riser with x-c-polmer - retrieved FWG plug 356' and Otis seperation sleeve at 522' & test all surface lines to 5000 psi - displace mud in tubing with 25 BBL x-c polmer 125 BBL fresh water displace to 9708' - closed sliding sleeve at 9908' test annulus to 2500 psi - ran and set Otis seperation sleeve in Otis s/nipple at 522' test 1/4" ss line to 7000 psi - rig down wire line lubricator and rig up dead weight tester
	4 hrs	Flowing well to clean up open well to BJ tanks recovered 12 BBL load water in three minutes - opened well through burner and 1½" choke - FTP 150 oil and gas to surface in 19 minutes
	½ hr	Flowing well through test seperator on 25/64 choke - 3024 BOPD FTP 3675 psi - 2 bsw - GOR 911 - gas - 2754 mmcfpd -
	0630	testing well through test seperator
		Vis: 150, Pv: 33, Yp: 25
Sept. 17	5½ hrs	Finish flowing well through test seperator
P.T.D. 10759' PBD	9½ hrs	Spotted contol-methonol and diesel mixture in x-tree - worked all valves 2 times - well shut in (9 hrs) for final build up pressure
	1 hr	Rig up BJ acid head and test to 6000 psi
	5 hrs	Acidizing well
	3 hrs	Rig down acidizing head and rig up dead weight tester - acid contact time (3 hrs) 2480 final shut in pressure
	0630	Flowing well- 0615 - FTP - 3345 - 0630 - 2950 FTP Opened well - 0547 hrs

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 9

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 18 P.T.D. 10759' PBD	4 hrs	Flowing well to clean up - 1.5" choke FTP 2970 psi
	1½ hrs	Attempt to retrieve seperation sleeve 3/16 wire line Baker will not fall through lubricator packing pressure lokson line
	6 hrs	testing through test seperator flow period No. 2
	12 hrs	FSIP - 4170 psi
	½ hr	Spot contol-methonol and diesel mixture in tree
	0630	GIH with .092 line to retrieve seperation sleeve
Sept. 19 P.T.D. 10759'	3½ hrs	Finish rigging up lubricator, retrieved Otis seperation sleeve from Otis nipple at 522' Jarred seperation sleeve thru "F" nipple & left two packoff rings in hole (packing ring on sleeve) Ran and set Otis ball valve type "DD" at 522'. Pull out of rope socket, left running tool, jars, nuckle joint & rope socket in hole
	4 hrs	Fished & recovered all fish -
	2½ hrs	Pressure 5" riser to 5000 psi opened swab valve & safety valve, spotted Kontol, methanol & diesel oil mixture below safety valve. Closed safety valve & pressure up to 3800 psi - pressure 1/4" ss line to 7000 psi Safety valve started opening with 5500 psi with Otis pump. Bleed pressure off 1/4" ss line, valve closed, observed well for one hour, safety valve holding OK. Spotted Kontol, methanol & diesel oil mixture to x-mas tree & actuate all valves as per program DHSV left in closed position. All hydraulic valves on x-mas tree left in closed position Manual master valve on tree left in open position & ½" needle valve to DHSV left in open position
	1½ hrs	Rig down lubricator & Otis tree & pulled 5" riser
	3½ hrs	Made dive, disconnected junction box from O.V. & connected to G/T. Disconnected swab valve hose & closed ½" needle valve, removed 2 3/8" annulus line, removed TV weight below TV frame & released 2 guide lines
	9 hrs	Decompressed divers, ran corrosion cap, nylon rope failed to hold cap, cap dropped to sea bed. Made dive, recovered corrosion cap, inspected x-mas tree, found to be OK divers do not believe cap hit tree, two pad

DAILY REPORT DETAILED

LEASE 2/4 WELL NO. 1AX SHEET NO. 10

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
Sept. 19 P.T.D. 10759'		eyes on cap were bent in same direction & handling device on top of cap was knocked off. X-mass tree is OK. Made dive with double nylon ropes & ran corrosion cap
	0630 hrs	With corrosion cap installed in place, divers tightening dogs. Retrieved starboard crane & making repairs on same
Sept. 20	½ hr	Finish securing corrosion cap
P.T.D. 10759' PBD	23½ hrs	Pump barge up to towing draft - repair stbd crane, looking for leak in water tank into fuel tank and changing out anchor chains No. 2 and repair chain No. 3 - connect two tugs to stern - Tug Scaldis and Gerling arrived Sat. 1720 hrs and Orinoco and Hudson arrived Sun. 1030 hrs
	0630	Repair stbd. crane
Sept. 21	3 hrs	Repairing starboard crane
P.T.D.	3 hrs	Pumped barge down to drilling level to keep barge from rocking
	9 hrs	Repairing starboard crane, hooked up 2 tugs (forward)
	3 hrs	Pumped barge up & finished repairing crane
	5 hrs	Pulling anchors 2, 4, 6 & 7
	1 hr	Pulled barge forward 125 to 150' & set spare buoy
	0700 hrs	Pulling anchors no. 5 & 3 Note: Expect to move at 10.00 hrs