

# S.O.

Denne rapport  
tilhører



**L&U DOK. SENTER**

L. NR. 1238418 0046

KODE Well 31/3-2 nr 4

Returneres etter bruk

## **STAVANGER OILFIELD SERVICES A/S**

Sampling Report on  
Well: 31/3-2

**STAVANGER OILFIELD SERVICES A/S**

P. O. BOX 199 - N-4051 SOLA - TELEPHONE (04) 65 22 77

Sampling Report on  
Well: 31/3-2

**STAVANGER OILFIELD SERVICES A/S** Base STAVANGER

Date 4-4-1984

SEQUENCE OF OPERATIONS

Customer NORSK HYDRO Well 31/3-2 Field TROLL Order No. \_\_\_\_\_

Interval \_\_\_\_\_ Perforations \_\_\_\_\_

Date	Time	Operations
30/3-84	11-25	DEPART STAVANGER TO BERGEN. JØRGENSEN HAD TO STAY OVERNIGHT
		IN BERGEN, NO ROOM ON RIG.
	15-20	ARRIVED ONBOARD TREASURE SEEKER. EQUIPMENT NOT YET ONBOARD.
		ON STAND BY
31/3-84	09.00	EQUIPMENT ARRIVED ON BOARD. CHECKED TO SEE EVERYTHING O.K.
	11-45	JØRGENSEN ARRIVED ONBOARD.
		SET UP AND PRESSURE TESTED EQUIPEMENT
	16-30	FINISHED P.T. ON STAND BY
	23-00	CHECKED TO SEE WHEN RFT TOOL WAS BEING RUN IN AND ESTIMATED
		TIME TOOL WILL BE ON SURFACE
1-4-84	02.09	TOOL ARRIVED ON SURFACE. SCHLUMBERGER CHECHED OPENING
		PRESSURE OF 2 3/4 GAL CHAMBER 1650 PSI AT AMB. TEMP.
	02-20	TOOL WAS EMPTIED. WE TOOK H <sub>2</sub> S CONTENT OF GAS, VOL OF GAS
		AND API GRAVITY ON THE OIL.
	03-00	COMMENCED B.Pt AND TRANSFER PROCEDURE OF 1st RFT RUN.
	11-05	COMPLETED TRANSFERS (SEE REPORT FOR SAMPLING DETAILS).
	16-00	PREPARE EQUIPMENT FOR NEXT RFT . FILLED BOTTLES WITH
		MERCURY.
	17-20	CHAMBER ARRIVED ON SURFACE OPENING PRESSURE OF 2 3/4 GAL
		CHAMBER 200 PSI AT AMB. CHAMBER CONTAINED MOSTLY WATER
		TOOK 1 GAL CHAMBER AND OPENING PRESSURE WAS 0 PSIG AT AMB.
		TEMP. EMPTIED ALL CONTENTS OF CHAMBER INTO 5 LTR. CONTAINER.
	20-15	ON STAND BY
2-4-84	11-00	THIRD RFT RUN WAS LIKE 2nd. EMPTIED CONTENTS INTO 5 LITRE
		CONTAINER. OPENING PRESS. 50 PSI AT AMP.
	12-30	ON STAND BY

REMARKS

Senior Technician

*K. Manning*



SUMMARY OF SAMPLING DATA ON WELL 31/3-2RFT RUN 1 - Sampling depth 1567.6m RKB

Opening pressure of 2 3/4 Gal. Chamber was 1650 Psig at ambient temp. 13.85 f<sup>3</sup> gas and 6.1. litres of oil with API gravity of 28 degr. at 45 degr. F. H<sub>2</sub>S content nil.  
G.O.R. 361 SCF/BBL

Opening pressure of 1 Gal chamber was 1450 Psig at 46 degr.F  
Bubble point in chamber was 2000 Psig at 46 degr. F.

Bottle No.	811092	B.Pt in bottle	2110	Psig at	46	degr.	F
"	"	"	"	"	"	"	"
"	"	811080	"	"	"	46	"
"	"	811078	"	"	"	45	"

RFT RUN 2 - Sampling depth 1577.8m RKB

Opening pressure of 1 Gal chamber 0 Psig at ambient temp.  
Chamber contained water. Transferred into 5 ltr. container.

RFT RUN 3 - Sampling depth 1576m RKB

Opening pressure of 1 Gal chamber 50 Psig at ambient temp.  
Chamber contained water. Transferred into 5 ltr. container.

RFT RUN 4 - Sampling depth 1567.6m RKB

Opening pressure of 2 3/4 Gal. chamber was 1500 Psig at ambient temp. 15.20 f<sup>3</sup> and 7.75 litres of oil with API gravity of 27.5 at 44 degr. F. H<sub>2</sub>S Content nil  
GOR 311.8 SCF/BBL

Opening pressure of 1 Gal chamber was 1350 Psig at 45 degr. F  
Bubble point in chamber was 1780 Psig at 44 degr. F

Bottle No	811084	B.Pt in bottle	1720	Psig at	44	degr.	F
"	"	"	"	"	"	"	"
"	"	810817	"	"	44	"	"
"	"	811087	"	"	44	"	"

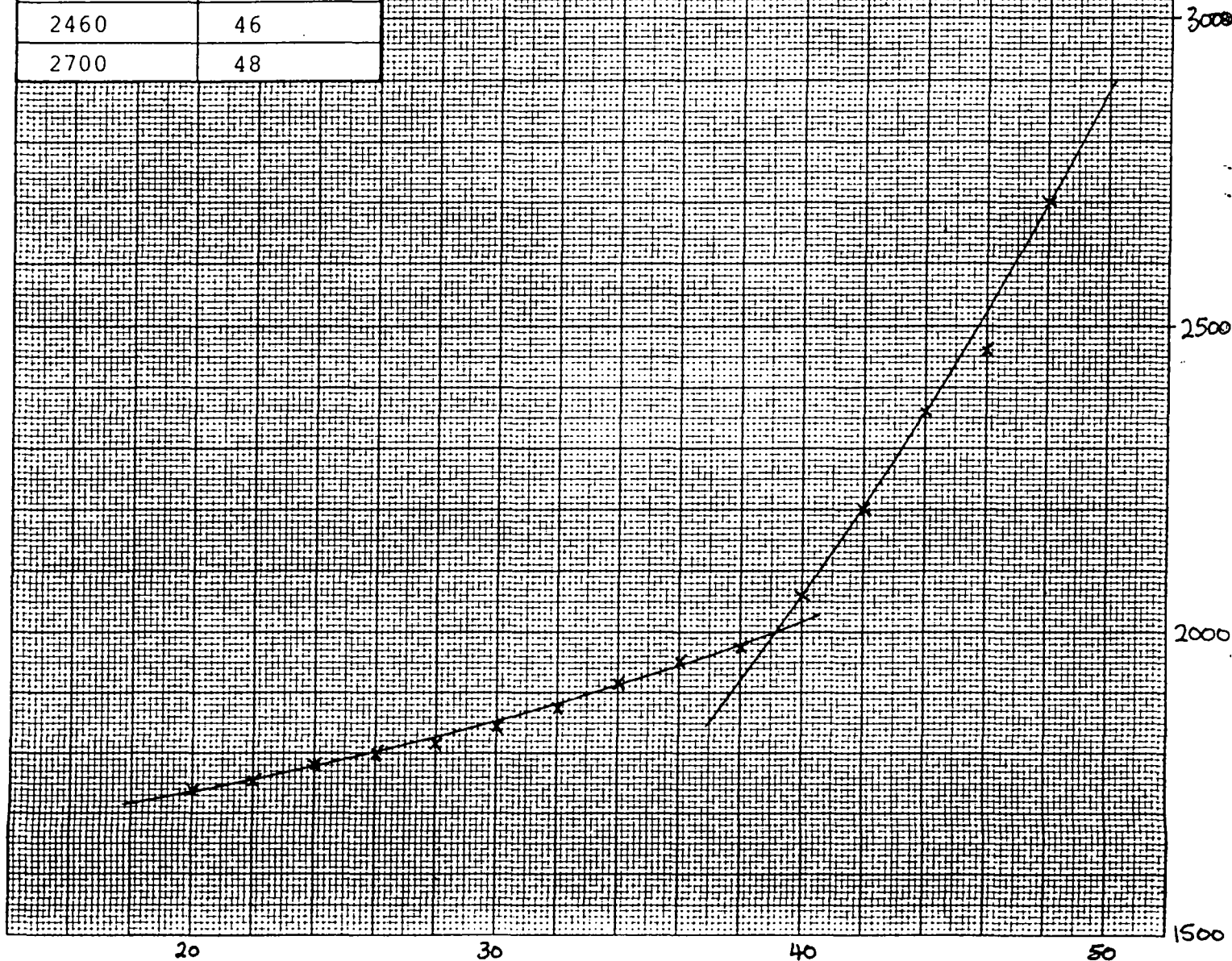
COMPANY: Norsk Hydro

WELL NO.: 31/3-2 RUN 1

DATE: 1st April 1984

Pressure PSIG	Pump Reading
1740	20
1755	22
1780	24
1800	26
1815	28
1845	30
1875	32
1915	34
1950	36
1975	38
2060	40
2200	42
2360	44
2460	46
2700	48

BUBBLE POINT DONE IN 1 GAL. CHAMBER  
2000 PSIG at 46° F





## Reservoir Sampling Report – Subsurface Sample

COMPANY: ..... NORSK HYDRO A/S .....      FORMATION: .....

WELL NO.: ..... 31/3-2 .....      INTERVAL TESTED: ..... 1567.6m RKB .....

TEST NO.: ..... RUN 1 .....      TYPE OF SAMPLER: ..... RET .....

DATE OF SAMPLING ..... 1st April 1984 .....      TIME OF SAMPLING .....

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### SAMPLING CONDITIONS

BOTTOM HOLE PRESSURE ..... PSIG / BAR

BOTTOM HOLE TEMPERATURE ..... °F / °C

### SURFACE CONDITIONS

OPENING PRESSURE ~~OF TOOL~~ ..... 145.0 ..... PSIG / ~~BAR~~

OPENING TEMPERATURE ..... 46 ..... °F / ~~°C~~

FIELD BUBBLE POINT ..... 2110 ..... PSIG / ~~BAR~~

BUBBLE POINT TEMP. .... 46 ..... °F / ~~°C~~

### TRANSFER CONDITIONS

SAMPLE NO.: ..... 1 .....

BOTTLE NO.: ..... 811092 .....

VOLUME OF BOTTLE: ... 6.75 ..... CC

TRANSFER PRESSURE: 3000-3200 ..... PSIG / ~~BAR~~

TRANSFER TEMP.: ..... 46 ..... °F / ~~°C~~

### FINAL SHIPPING CONDITIONS

FINAL PRESSURE ..... 18.25 ..... PSIG / ~~BAR~~      Hg REMOVED FOR GAS CAP ..... 25 ..... CC

FINAL TEMPERATURE ..... 46 ..... °F / ~~°C~~      VOLUME OF Hg REMAINING ..... 50 ..... CC

**REMARKS:**

Sampled by:

Reported by:





## Field Bubble Point – Subsurface Sample

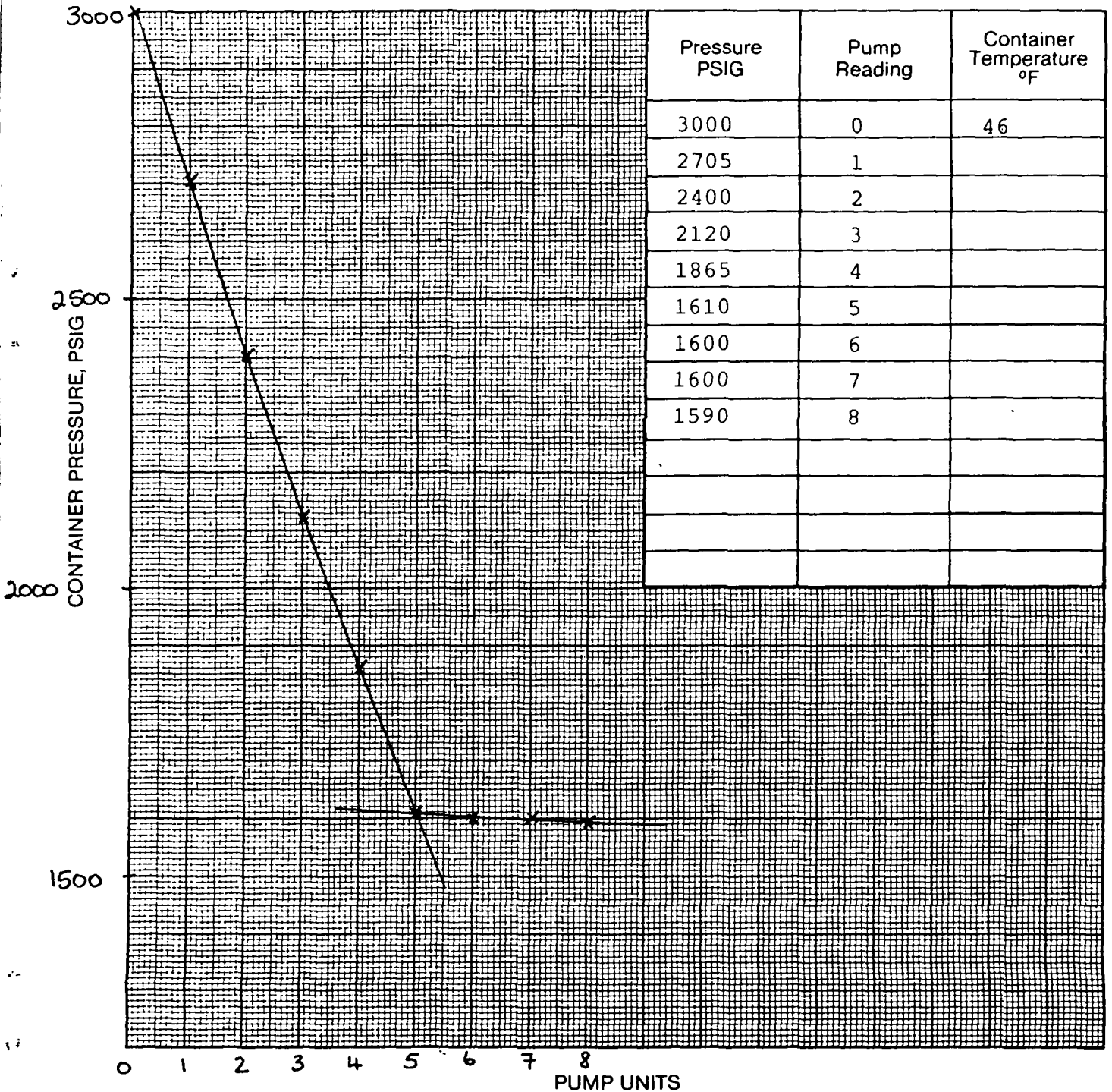
COMPANY ..NORSK..HYDRO..A/S..... LEASE .....

LOCATION ..North..Sea..... FORMATION .....

WELL NO. ....31/3-2..RUN..1..... INTERVAL SAMPLED ...1567.6m RKB.....

TYPE SAMPLE ..Oil/Gas (RFT)..... SAMPLE NO. ....2.....

DATE .....1/4-84..... TIME .....



## Reservoir Sampling Report – Subsurface Sample

COMPANY: ..... NORSK HYDRO A/S .....      FORMATION: .....

WELL NO.: ..... 31/3-2 .....      INTERVAL TESTED: ..... 1567.6m RKB .....

TEST NO.: ..... RUN 1 .....      TYPE OF SAMPLER: ..... RFT .....

DATE OF SAMPLING ..... 1/4-84 .....      TIME OF SAMPLING .....

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### SAMPLING CONDITIONS

BOTTOM HOLE PRESSURE ..... PSIG / BAR

BOTTOM HOLE TEMPERATURE ..... °F / °C

### SURFACE CONDITIONS

OPENING PRESSURE OF TOOL ..... 1450 ..... PSIG / ~~BAR~~

OPENING TEMPERATURE ..... 46 ..... °F / °C

FIELD BUBBLE POINT ..... 1610 ..... PSIG / ~~BAR~~

BUBBLE POINT TEMP. .... 46 ..... °F / °C

### TRANSFER CONDITIONS

SAMPLE NO.: ..... 2 .....

BOTTLE NO.: ..... 811080 .....

VOLUME OF BOTTLE: ..... 675 ..... CC

TRANSFER PRESSURE: 3.000-3.200 ..... PSIG / ~~BAR~~

TRANSFER TEMP.: ..... 46 ..... °F / °C

### FINAL SHIPPING CONDITIONS

FINAL PRESSURE ..... 1590 ..... PSIG / ~~BAR~~      Hg REMOVED FOR GAS CAP ..... 20 ..... CC

FINAL TEMPERATURE ..... 46 ..... °F / °C      VOLUME OF Hg REMAINING ..... 40 ..... CC

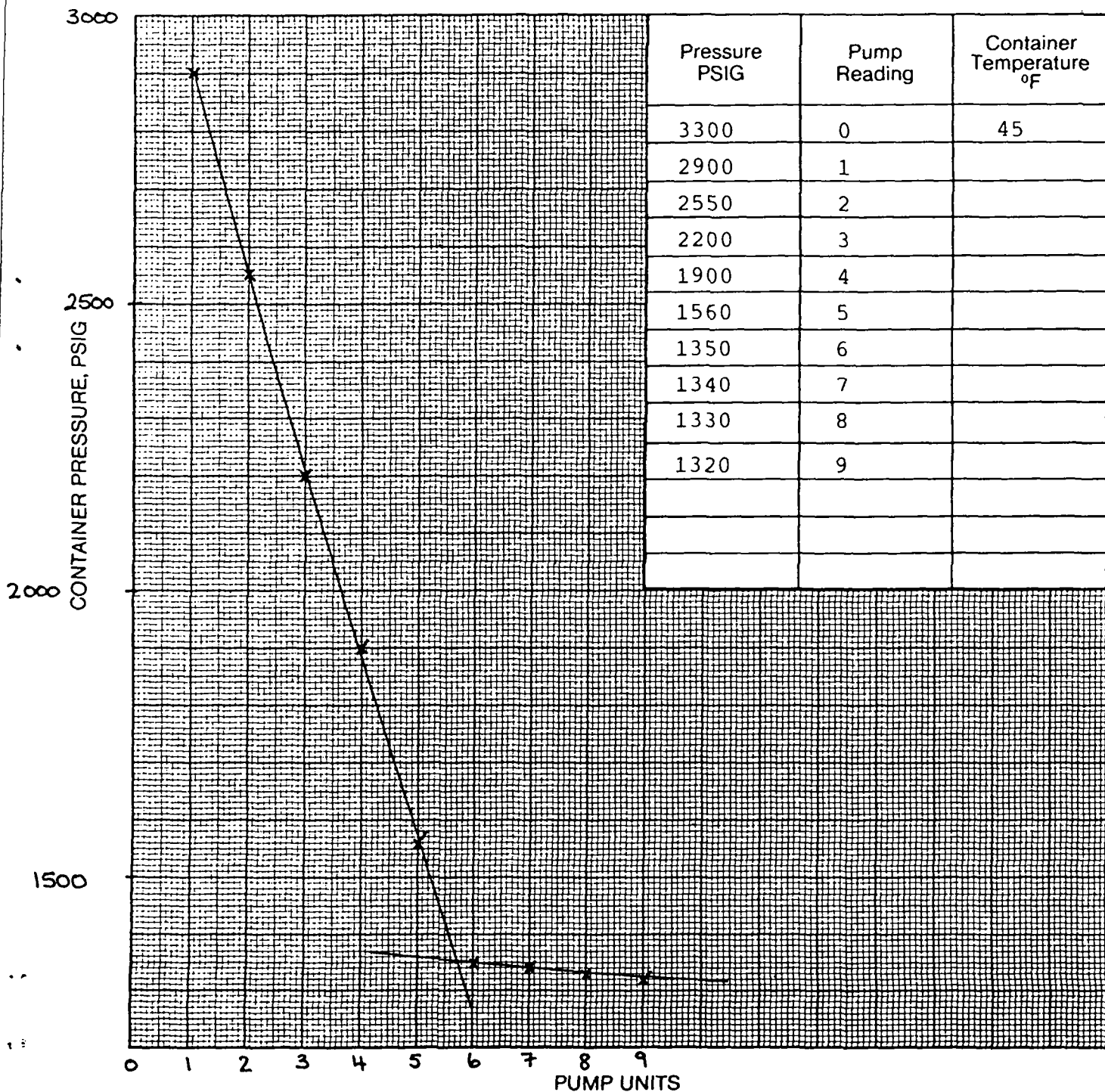
**REMARKS:**

Sampled by:  
Reported by:

*K. Manning*

## Field Bubble Point – Subsurface Sample

COMPANY ..... NORSK HYDRO A/S ..... LEASE .....  
 LOCATION ..... North Sea ..... FORMATION .....  
 WELL NO. .... 31/3-2 RUN 1 ..... INTERVAL SAMPLED ... 1567.6m ... RKB .....  
 TYPE SAMPLE ... Oil/Gas (RFT) ..... SAMPLE NO. ... 3 .....  
 DATE ..... 1/4-84 ..... TIME .....



## Reservoir Sampling Report – Subsurface Sample

COMPANY: NORSK HYDRO A/S..... FORMATION:.....  
 WELL NO.: 31/3-2..... INTERVAL TESTED: 1567.6m RKB.....  
 TEST NO.: RUN 1..... TYPE OF SAMPLER: RFT.....  
 DATE OF SAMPLING 1/4-84..... TIME OF SAMPLING .....

### SAMPLING CONDITIONS

BOTTOM HOLE PRESSURE ..... PSIG / BAR

BOTTOM HOLE TEMPERATURE ..... °F / °C

### SURFACE CONDITIONS

OPENING PRESSURE OF TOOL.....1450..... PSIG / ~~BAR~~

OPENING TEMPERATURE .....46..... °F / ~~°C~~

FIELD BUBBLE POINT .....1355..... PSIG / ~~BAR~~

BUBBLE POINT TEMP. ....45..... °F / ~~°C~~

### TRANSFER CONDITIONS

SAMPLE NO.: .....3.....

BOTTLE NO.: .....811078.....

VOLUME OF BOTTLE: .....675..... CC

TRANSFER PRESSURE: 3000-3200..... PSIG / ~~BAR~~

TRANSFER TEMP.: .....45..... °F / ~~°C~~

### FINAL SHIPPING CONDITIONS

FINAL PRESSURE .....1150..... PSIG / ~~BAR~~      Hg REMOVED FOR GAS CAP .....25..... CC

FINAL TEMPERATURE .....45..... °F / ~~°C~~      VOLUME OF Hg REMAINING .....50..... CC

**REMARKS:**

Sampled by:

Reported by: *K. Manning*

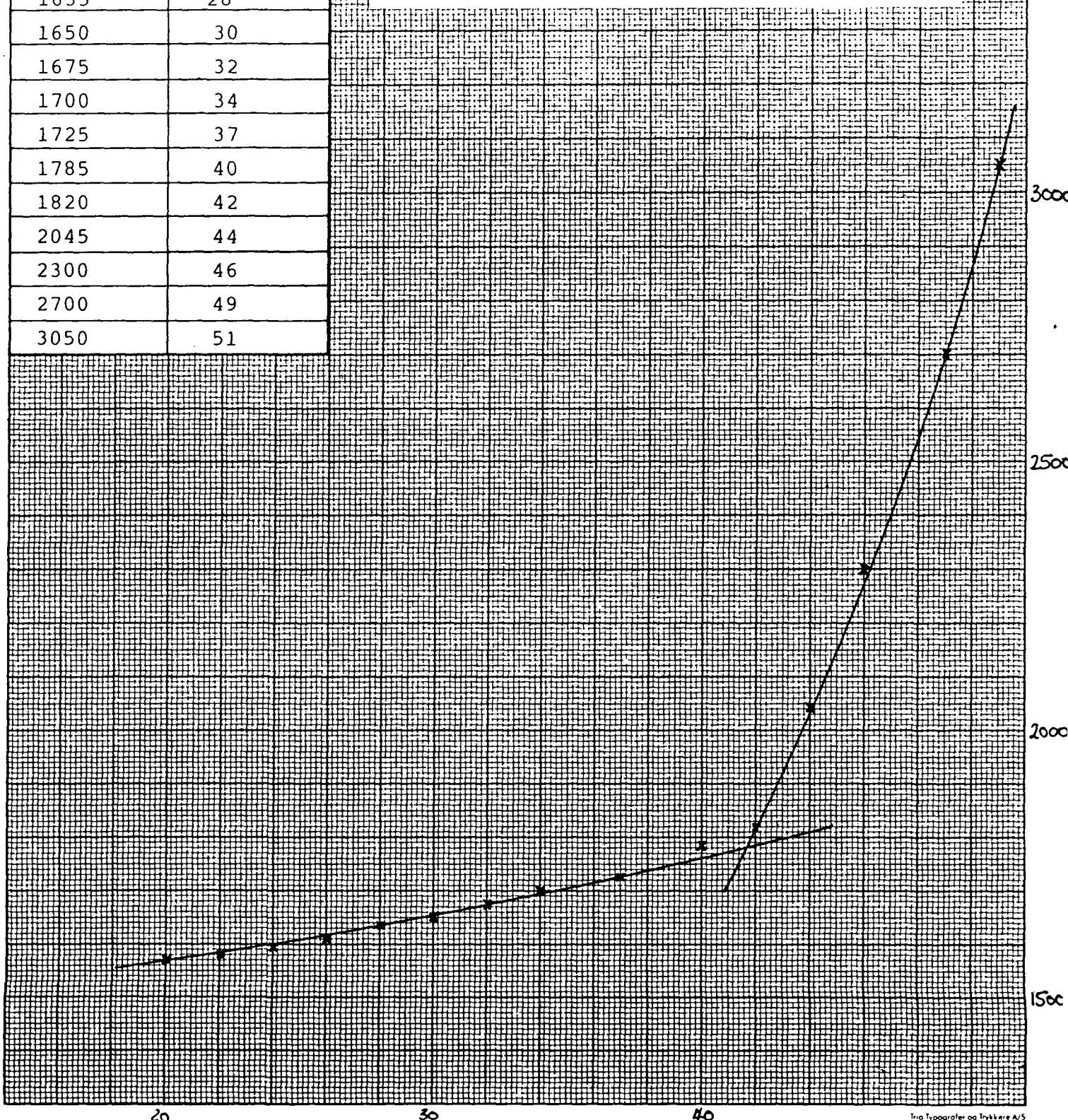
COMPANY: .....NORSK HYDRO A/S

WELL NO.: ..... 31/3-2 RUN 4

DATE: .....3rd April 1984.

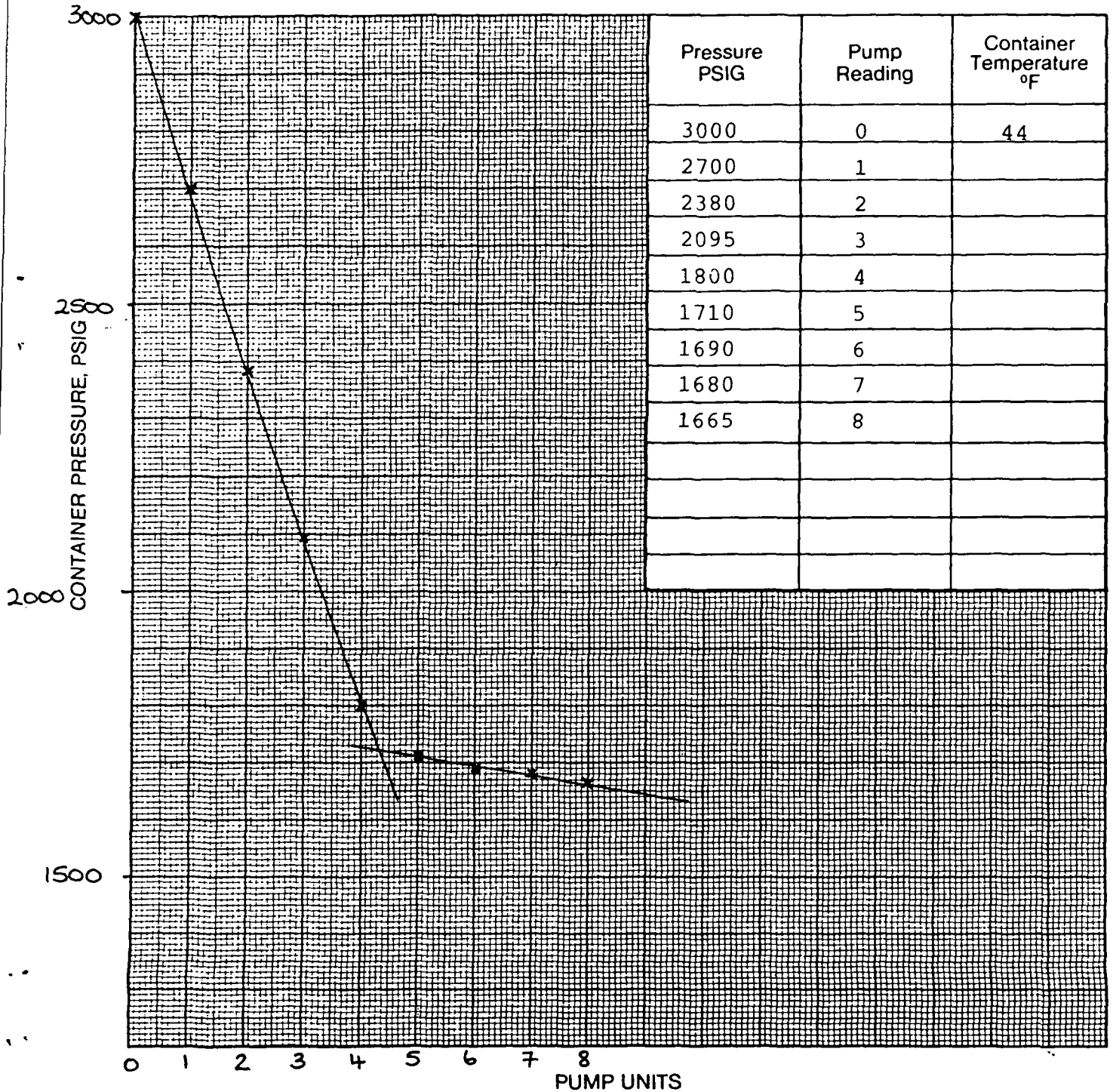
Pressure PSIG	Pump Reading
1570	20
1580	22
1595	24
1610	26
1635	28
1650	30
1675	32
1700	34
1725	37
1785	40
1820	42
2045	44
2300	46
2700	49
3050	51

BUBBLE POINT DONE IN 1 GAL. CHAMBER  
1780 PSIG at 44° F



## Field Bubble Point – Subsurface Sample

COMPANY NORSK HYDRO A/S LEASE .....  
 LOCATION North Sea FORMATION .....  
 WELL NO. 31/3-2 RUN 4 INTERVAL SAMPLED 1567..6m RKB  
 TYPE SAMPLE Oil/Gas (RFT) SAMPLE NO. 1  
 DATE 3/4-84 TIME .....

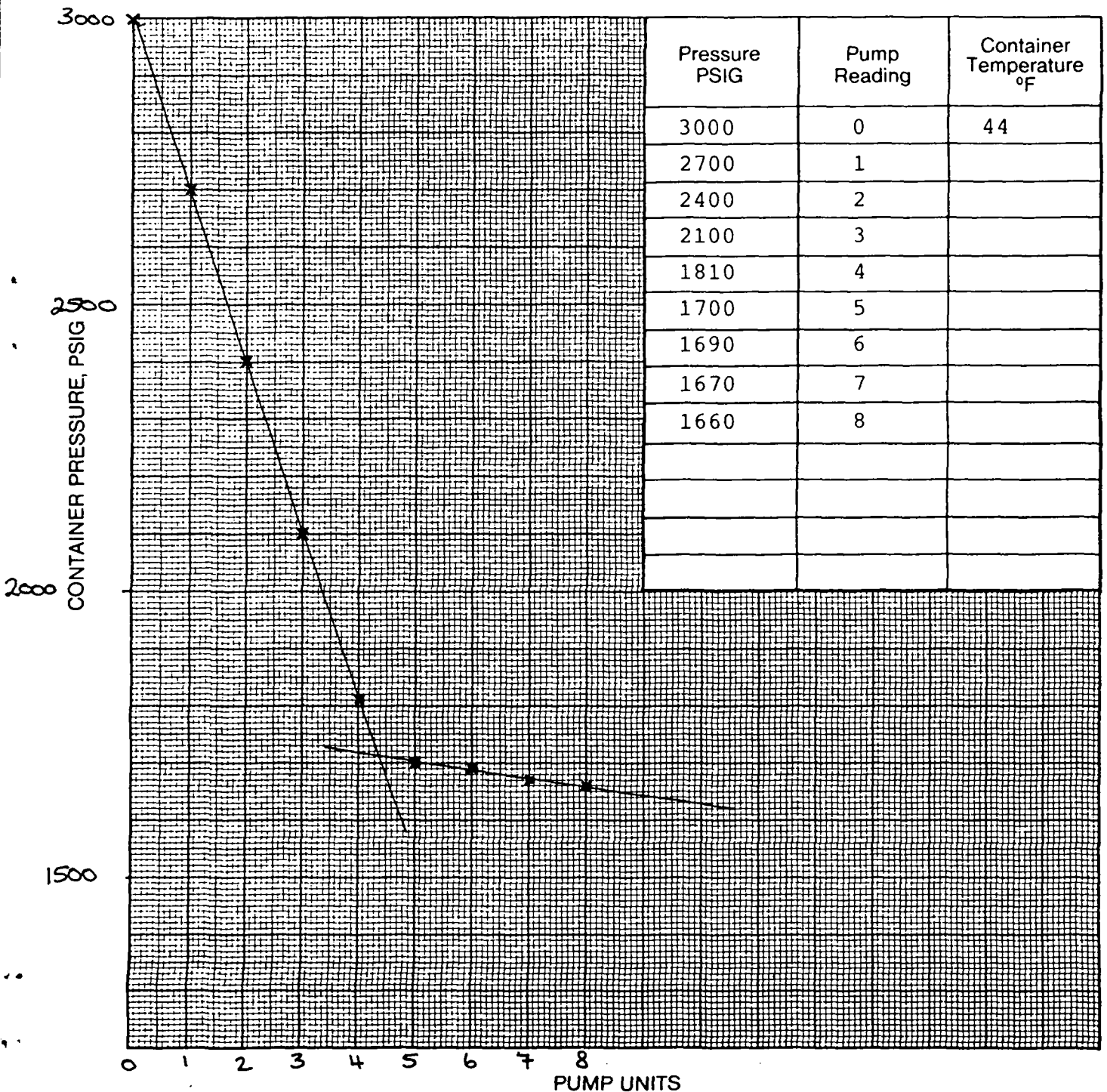






## Field Bubble Point – Subsurface Sample

COMPANY NORSK HYDRO A/S LEASE .....  
 LOCATION North Sea FORMATION .....  
 WELL NO. 31/3-2 RUN 4 INTERVAL SAMPLED 1567.6m RKB  
 TYPE SAMPLE Oil/Gas (RFT) SAMPLE NO. 2  
 DATE 3/4-84 TIME .....





## Reservoir Sampling Report – Subsurface Sample

COMPANY: ...NORSK HYDRO A/S..... FORMATION:.....  
 WELL NO.: ...31/3-2..... INTERVAL TESTED: ...1567.6m RKB.....  
 TEST NO.: ...RUN 4..... TYPE OF SAMPLER: .....RET.....  
 DATE OF SAMPLING ...3/4-84..... TIME OF SAMPLING .....

### SAMPLING CONDITIONS

BOTTOM HOLE PRESSURE ..... PSIG / BAR  
 BOTTOM HOLE TEMPERATURE ..... °F / °C

### SURFACE CONDITIONS

OPENING PRESSURE OF TOOL ..... 1350 ..... PSIG / ~~BAR~~  
 OPENING TEMPERATURE ..... 45 ..... °F / ~~°C~~  
 FIELD BUBBLE POINT ..... 1710 ..... PSIG / ~~BAR~~  
 BUBBLE POINT TEMP. .... 44 ..... °F / ~~°C~~

### TRANSFER CONDITIONS

SAMPLE NO.: ..... 2 .....  
 BOTTLE NO.: ..... 810817 .....  
 VOLUME OF BOTTLE: ..... 755 ..... CC  
 TRANSFER PRESSURE: ..... 35.00 ..... PSIG / ~~BAR~~  
 TRANSFER TEMP.: ..... 44 ..... °F / ~~°C~~

### FINAL SHIPPING CONDITIONS

FINAL PRESSURE ..... 13.00 ..... PSIG / ~~BAR~~    Hg REMOVED FOR GAS CAP ..... 65 ..... CC  
 FINAL TEMPERATURE ..... 44 ..... °F / ~~°C~~    VOLUME OF Hg REMAINING ..... 55 ..... CC

**REMARKS:**

Sampled by:  
 Reported by:

*L Manning*

## Field Bubble Point – Subsurface Sample

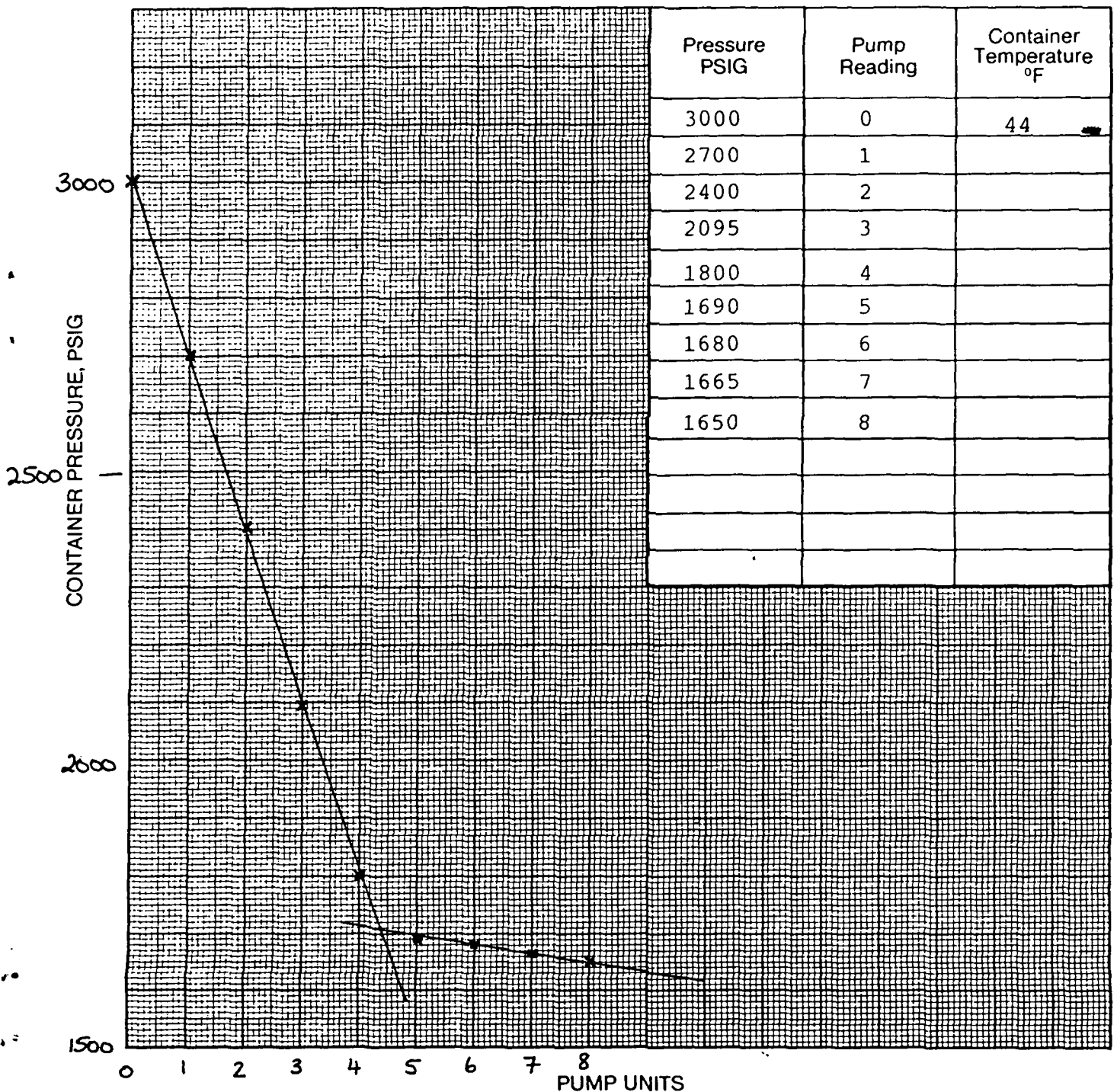
COMPANY ..... NORSK HYDRO A/S ..... LEASE .....

LOCATION ..... North Sea ..... FORMATION .....

WELL NO. .... 31/3-2 RUN 4 ..... INTERVAL SAMPLED ..... 1567.6m RKB .....

TYPE SAMPLE Oil/Gas (RFT) ..... SAMPLE NO. .... 3 .....

DATE ..... 3/4-84 ..... TIME .....



## Reservoir Sampling Report – Subsurface Sample

COMPANY: NORSK HYDRO A/S ..... FORMATION: .....

WELL NO.: 31/3-2 ..... INTERVAL TESTED: 1567.6m RKB .....

TEST NO.: RUN 4 ..... TYPE OF SAMPLER: RET .....

DATE OF SAMPLING 3/4-84 ..... TIME OF SAMPLING .....

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### SAMPLING CONDITIONS

BOTTOM HOLE PRESSURE ..... PSIG / BAR

BOTTOM HOLE TEMPERATURE ..... °F / °C

### SURFACE CONDITIONS

OPENING PRESSURE ..of..TOOL.....1350..... PSIG / ~~BAR~~

OPENING TEMPERATURE .....45..... °F / ~~°C~~

FIELD BUBBLE POINT .....1705..... PSIG / ~~BAR~~

BUBBLE POINT TEMP. ....44..... °F / ~~°C~~

### TRANSFER CONDITIONS

SAMPLE NO.: .....3.....

BOTTLE NO.: .....811087.....

VOLUME OF BOTTLE: .....675..... CC

TRANSFER PRESSURE: .....3500..... PSIG / ~~BAR~~

TRANSFER TEMP.: .....44..... °F / ~~°C~~

### FINAL SHIPPING CONDITIONS

FINAL PRESSURE .....1450..... PSIG / ~~BAR~~      Hg REMOVED FOR GAS CAP .....20..... CC

FINAL TEMPERATURE .....44..... °F / ~~°C~~      VOLUME OF Hg REMAINING .....50..... CC

**REMARKS:**

Sampled by:  
Reported by:

*K. Manning*