WA•2/7-17•11(1)
GEOLOGICAL SUMMARY REPORT
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PHILLIPS PETROLEUM 66

CONFIDENTIAL

PHILLIPS 2/7-17

GEOLOGICAL SUMMARY REPORT

PRODUCTION LICENCE 018

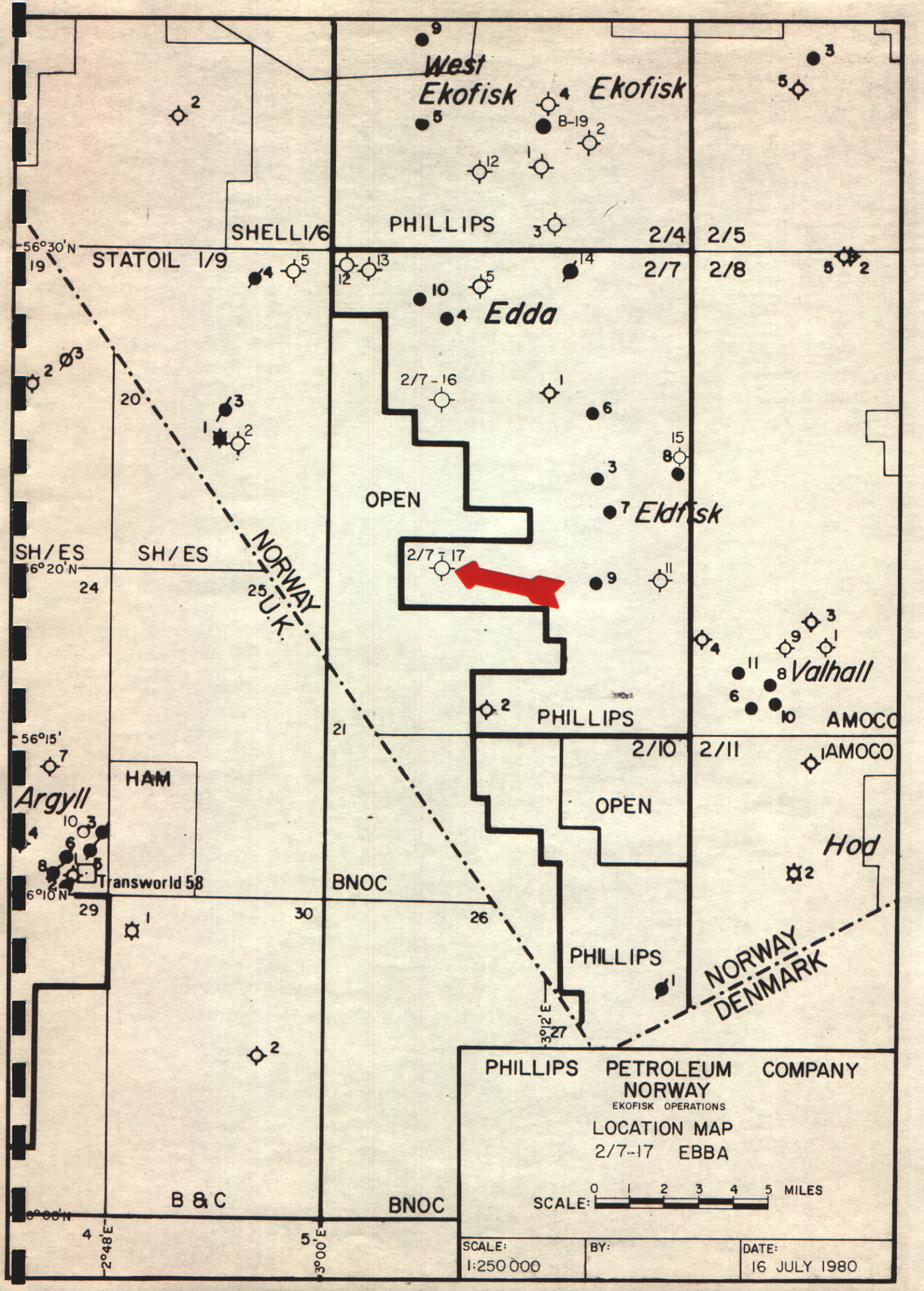
GEOLOGY FILE

CONFIDENTIAL

PHILLIPS 2/7-17

GEOLOGICAL SUMMARY REPORT

PRODUCTION LICENCE 018


West Ekofisk
Ekofisk
B-19
PHILLIPS
SHELL 1/6
2/4
2/5
56°30'N
STATOIL 1/9
2/7
2/8
Edda
2/7-16
OPEN
Eldfisk
SH/ES
SH/ES
56°20'N
NORWAY
U.K.
2/7-17
Valhall
PHILLIPS
AMOCO
56°15'
2/10
2/11
AMOCO
HAM
Argyll
OPEN
Hod
Transworld 58
BNOC
56°10'N
PHILLIPS
NORWAY
DENMARK
3°12'E
B & C
BNOC
56°00'N
2°48'E
3°00'E
PHILLIPS PETROLEUM COMPANY
NORWAY
EKOFISK OPERATIONS
LOCATION MAP
2/7-17 EBBA
SCALE: 0 1 2 3 4 5 MILES
SCALE: 1:250 000
BY:
DATE: 16 JULY 1980

SUMMARY

Well	:	2/7 - 17
Classification	:	E xploratory
Area	:	Block 2/7, Licence 018
Rig	:	Borgsten Dolphin
Location	:	56° 20' 13" N 03° 06' 04" E
Water Depth	:	238' (72.5 m)
RKB Elevation	:	82' (25 m)
Total Depth	:	5250' (1600.2 m)
Objective	:	To test the Danian - Upper Cretaceous Limestone, and Lower Cretaceous and Jurassic sandstones on a low relief structure to the southwest of Eldfisk Field in Block 2/7.
Results	:	After setting 13 3/8" casing the casing collapsed forcing abandonment of the well. The o bjectives were not reached.
Status	:	Plugged and Abandoned.

DRILLING HISTORY

DATE OF OPERATIONS

Spud	:	23 June, 1980
At Total Depth	:	5 July, 1980
Completed	:	12 July, 1980

CASING PROGRAM

30 inch set at 513 feet (156.4 meters) RKB with 500 sacks of class " B " cement lead slurry and 200 sacks of class " B " cement tail slurry.

20 inch set at 1,906 feet (581 meters) RKB with 2,050 sacks of class " B " cement lead slurry and 550 sacks of class " B " cement tail slurry.

13 3/8 inch set at 5,205 Feet (1586.5 m) RKB with 2,500 sacks of class " B " cement followed by 1000 sacks of class " B " neat cement.

MUD PROGRAM

Drilled with gel and seawater to 30" casing point. Drilled with seawater, native solids and gel from base of 30" casing to 20" casing point. Drilled with seawater, native solids and bentonite from base of 20" casing to 13 3/8" casing point.

LOGGING PROGRAM

Schlumberger total depth is 5,240 feet (1597.2 m)

Sclumberger Logs	Run	Interval Feet	Interval Meters
ISF/Sonic/GR,	1	5,234 - 1,905	1595.3 - 580.6
GR continued up to		100	30.5

CORING

No cores were taken.

TESTING

No drill stem tests were made.

GEOLOGY

STRATIGRAPHY

Quaternary - Tertiary sediments, undifferentiated Recent - Pleistocene - Pliocene, were drilled from sea floor to TD 5250 feet (1600.2 m). Total thickness penetrated: 4930 feet (1502.7 m).

LITHOLOGY

Quaternary - Tertiary

Recent - Pleistocene - Pliocene - Late Miocene — Undifferentiated

Interval: 238 feet (72.5 m) seafloor to 5,250 feet (1600.2 m).
Thickness: 4,930 feet (1502.7 m).

No samples were caught prior to running 20" casing at 1,906 feet (581 m).Below that point samples consist of Clay and Claystone, light gray and gray to gray green, soft to very soft and sticky; traces of Siltstone, light brownish gray, occasinally firm, slightly calcareous; and Sand, clear, occasionally yellow, hard, rounded; and traces of Limestone and Dolomite, tan, hard, microcrystalline; traces of shell fragments, Foraminifera and lignite.

2/7 - 17 EBBA

LITHOLOGY DESCRIPTION

Begins at 1,906 feet (581 m)

1,906' - 2,510' (581 m - 765 m)	Clay, light gray, soft, sticky, silty in part. Traces of Lignite, Shell fragments, Forams. Trace of sand, clear, hard, moderately rounded, occasionally yellow, trace of Limestone, off-white, moderately firm.
2,510' - 3,500' (765 m - 1066.8 m)	Clay, light gray, soft, sticky, non-calcareous to moderately calcareous and Claystone, light gray to gray, soft, blocky calcareous. Traces of siltstone, light green gray, soft to firm, blocky, calcareous, glauconitic. Traces of limestone, pyrite, lignite and sand.
3,500 - 4,265' (1066.8 m - 1300 m)	Clay and Claystone, gray, occasionally gray green, soft, sticky, calcareous. Trace of siltstone, gray to gray green, soft to moderately firm, blocky, calcareous. Traces of Limestone and Dolomite, tan to buff colored, moderately firm to hard, microcrystalline. Traces of sand, clear, very fine grained, subangular, well sorted. Some Foraminifera, shell fragments, and lignite.
4,265' - 4,532' (1300 m - 1381.4 m)	Clay and Claystone, light to medium gray, occasionally light gray brown, very soft, sticky, slightly calcareous, with clay and claystone, soft to firm, blocky to platy, micromicaceous, silty. Traces of siltstone, limestone as above and sand, unconsolidated, clear, medium grained, rounded.
4,532' - 5,250' (1381.4 m - 1600.2 m)	Claystone, light gray to gray, occasionally gray brown and gray green , soft to firm, blocky to sub-fissile, silty and micromicaceous in part, calcareous. Abundant traces of dolomite in last 50 feet (15 m), light olive to olive brown, very hard, micro - to crypto crystalline.

2/7 - 17X EBBA

GEOLOGICAL SUMMARY

The Ebba Prospect is a low relief structure mapped by seismic at the top of the Danian - Upper Cretaceous Chalk. Migration of hydrocarbons into the structure through deep seated faults in the Jurassic and Lower Cretaceous is believed to have preserved the chalk porosity from diagenetic distruction.

Irregular and lens - shaped reflectors seen on the seismic records in the Lower Cretaceous and Jurassic intervals have been interpreted as sandstones which could have favorable reservoir characteristics and have stratigraphically trapped hydrocarbons.

The premature abandonment of the 2/7 - 17X well at total depth of 5,250 feet (1600.2 meters) for mechanical reasons has not altered the basis for the prospect. The prospect remains untested and will require another well for complete evaluation.

15 July 1980

PHILLIPS PETROLEUM COMPANY
NORWAY

COMPOSITE LOG

CO-ORDINATES: 56° 20' 13" N, 03° 06' 04" E — WELL NUMBER: 2/7-17

PRODUCTION LICENCE: 018 — LICENCE BLOCK: 2/7

DATE SPUDDED: 23 June, 1980 — DATE COMPLETED: 12 July, 1980

ELEVATION KB: 82 — DF: — WATER DEPTH: 238'

TOTAL DEPTH: 5,250' — PBTD: — STATUS: P & A

CASING RECORD: 30" at 513 feet, 20" at 1,906 feet, 13 3/8" at 5,205 feet

GEOLOGIST: "The Analysts"

REMARKS: Well abandoned for mechanical reasons; casing collapse

TESTING AND COMPLETION SUMMARY: No cores, No tests

LEGEND

Limestone, Dolomite, Dolomitic Limestone, Argillaceous Limest, Sandy Limestone, Silty Limestone, Coquina Limestone (50% + fossil frag.), Chalk, Marl, Gypsum, Anhydrite, Salt (NaCl), Salt casts, Polyhalite, Sylvite (potassium salts)

Conglomerate, Breccia, Granite Wash (Arkose), Sandstone, Siltstone, Sandy Shale, Silty Shale, Shale & Clay, light grey, green, red, brown, Shale, dark grey - black, Calcareous Shale, Dolomitic Shale, Coal, Lignite, Chert, Bentonite

Percentage of Drill Cuttings with: Porosity (one dot=5%); Oil Stain or Oil Fluorescence and Cut in CCl_4; Gas show in Mud or Cuttings; Gas (positive DST); Oolites; Fossils; Pyrite; Glauconite; Siderite; Limonite Nodules; Sidewall core; Carbonate Nodules; No Samples

SCALE: 1:500

DRILLING RATE | DEPTH AND GRAPHIC LOG | SHOWS: TRACE, POOR, FAIR, GOOD, EXCEL | LITHOLOGIC DESCRIPTION

BS (IN) 10.00 – 20.00; CALI (IN) 10.00 – 20.00; GR (GAPI) 0.0 – 150.0; SP (MV) 0.0 – 150.0; FEET/HOUR 0 – 300 – 600

ILD (OHMM) 20.00 – 2000.; ILD (OHMM) 0.2000 – 20.00; SFLU (OHMM) 0.2000 – 20.00; SFLU (OHMM) 20.00 – 2000.; TENS (LB) 10000. – 0.0; CILD (MM/M) 4000. – 0.0; DT (US/F) 250.0 – 50.00

CALIPER; GR; 30" casing at 513'; Quaternary - Tertiary Undifferentiated; sea bed; 20" casing at 1906' SP; BIT SIZE; Log RIL; SONIC; Log SFL; Lithology Description begins at 1906'; 1906' – 2,510'; 2,510' – 3,500'; S.P. SHIFT; 3,500' – 4265'; 4172 (?) Late Miocene; 4,265' – 4,532'; 4,532' – 5,250'; 13 3/8" casing at 5205'; Total Depth 5250 RKB; Tension Device Pick-up

RECENT - PLEISTOCENE - PLIOCENE

LATE MIOCENE