SIMON PETROLEUM TECHNOLOGY WELL: 35/11-7

Print: 17032AC	Units: (M) F	Top	Bottom	Scale	TD
Length: 31 FT	Initials: TS	350	2900	1:500	NIL

DIGITAL WIRELINE LOGS PACKAGE
1994
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SIMON PETROLEUM TECHNOLOGY SPT

COMPLETION LOG

35/11-7 32/11-7 1:200

AC

ENCLOSURE 1

MOBIL EXPLORATION NORWAY INC.

FINAL COMPOSITE LOG

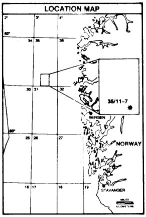
WELL 35/11-7

1 : 500

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7
WELL DATA

WELL CLASSIFICATION	WILDCAT
WELL LOCATION	61 01' 58.74"N 03 36' 28.33"E
SEISMIC LOCATION	LINE MN88-013, SP 541
LICENSE	PL 090 BLOCK 35/11
LICENSEES	MOBIL (OPERATOR) 40% STATOIL 50% NORSK HYDRO 10%
AFE No.	[illegible]
RIG NAME	WEST DELTA
DRILLING CONTRACTOR	SMEDVIG
RIG TYPE	SEMI-SUBMERSIBLE
K.B. ELEVATION	29.0 m
WATER DEPTH	366.0 m
TOTAL DEPTH	2895.0 mRKB (DRILLER)
TRUE VERTICAL DEPTH	2894.7 mRKB
SPUD DATE	23RD JULY 1992
T.D. REACHED	29TH AUGUST 1992
OFF LOCATION	1ST OCTOBER 1992
STATUS	PLUGGED AND ABANDONED OIL AND GAS DISCOVERY

LOCATION MAP



MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7
LIST OF CONTRACTORS

DRILLING AND TESTING CONTRACTORS

ANCHOR HANDLING/STANDBY BOATS	NORTH CRUSADER/NORTH VALIANT - BROVIG
CASING RUNNING	TROMS OILFIELD SERVICES
CEMENTING	HALLIBURTON
CENTRALIZERS	WEATHERFORD
CORING	DIAMANT BOART
CUSTOMS, FREIGHT, WAREHOUSE	NOR-CARGO BERGENSKE
DOWNHOLE PRESSURE GAUGES	HALLIBURTON RESERVOIR SERVICES
DIRECTIONAL SURVEYING	ANADRILL SCHLUMBERGER
DRILLING CONTRACTOR	SMEDVIG DRILLING
HELICOPTER SUPPORT	HELIKOPTER SERVICES A/S
HOLE OPENERS	RED BARON
JARS	OR SERVICES
LOGISTICS BASE	CCB
MUD PRODUCTS AND SERVICES	M-I NORGE
NAVIGATION SERVICES	RACAL NORGE
P & A SERVICES	RED BARON
ROV	SCANDIVE
STABILIZERS	OR SERVICES
SURFACE/DOWNHOLE SAMPLING	PETRA-TECH
WEATHER FORECASTS	OCEAN ROUTES
WELLHEAD EQUIPMENT	DRILQUIP
WELL TEST EQUIPMENT	SCHLUMBERGER

GEOLOGICAL CONTRACTORS

BIOSTRATIGRAPHY	SIMON PETROLEUM TECHNOLOGY
CORE ANALYSIS	GECO
GEOCHEMISTRY	GEOLAB NOR
MUD LOGGING	EXLOG NORGE
MWD	ANADRILL SCHLUMBERGER
SAMPLE SPLITTING	WEST-LAB
SITE SURVEY	GEOTEAM A/S
WELL SITE GEOLOGY	CAMBRIAN CONSULTANTS LTD
WIRELINE LOGGING	ATLAS WIRELINE
VELOCITY SURVEY	READ WELL SERVICES A/S

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7
HOLE CASING MUD CEMENTING DATA

HOLE SIZE MUD TYPE	CASING AND THREAD	SHOE DEPTH (mRKB)	CEMENTING
36" 395-446mRKB SEAWATER VISCOUS PILLS	30" 310 LB/FT DRILQUIP H90-MT X56-60 457 LB/FT DRILQUIP H90-MT GRADE X-52	443	62 MT 'G' CEMENT MIXED WITH 314 gal CaCl2 and 170 BBL SEAWATER, AT 1.90 sg (15.8 ppg). SLURRY VOL = 174Bbls R.
17.5" 446-908mRKB SEAWATER VISCOUS PILLS	13-375" x 20" - 13-375" 72 LB/FT BUTTRESS GRADE N80, 20" 133 LB/FT DRILQUIP E60 CONNECTIONS, GRADE X-53	904	LEAD SLURRY 982 SX 'G' CEMENT MIXED WITH 1.5% BWOC GEL MIXED WITH 10.61 GPS SEAWATER AT 1.56 sg (13.0 ppg). 334 BBL SLURRY VOLUME. TAIL SLURRY 859 SX 'G' CEMENT MIXED WITH 5.26 GPS SEAWATER, AT 1.90 sg (15.8 ppg) 172 BBL SLURRY VOLUME.
12.25" 908-1781mRKB KCL/PHPA/PHB/PAC	9.625" 53.5 LB/FT L-80 VAM ACE AND L-80 BTC	1774.4	DUAL 'E' SPACER 50 BBL. LEAD SLURRY 357 SX 'G' CEMENT MIXED WITH 3% BWOC GEL 14.50 GPS DRILLWATER AT 1.44 sg (12.0 ppg). 170 BBL SLURRY VOLUME. TAIL SLURRY 224 SX 'G' CEMENT MIXED WITH 0.1 GPS HR4L 5.15 GPS DRILLWATER AT 1.90 sg (15.8 ppg).
8.5" 1781-2895mRKB KCL/PHPA/PHB/PAC	7" LINER 38 LB/FT L-80 VAM	2880	DUAL SPACER 12.5 M3 SLURRY 22 M3 'G' CEMENT

PLUG AND ABANDON -

CEMENT PLUGS	RETAINERS
2895-2770 m	
2770-2662 m	
2662-2610 m	
2490-2424 m	2424 m
1790-1585 m	1790 m
610-410 m	610 m

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7
LITHOSTRATIGRAPHY

LITHOSTRATIGRAPHY GROUP	FORMATION	DEPTH mRKB	mSS	VERTICAL THICKNESS (m)
NORDLAND	Utsira	685.0	656.0	26.0
HORDALAND		711.0	682.0	584.0
ROGALAND	Balder	1295.0	1266.0	48.5
	Sele	1343.5	1314.5	66.5
	Lista	1410.0	1381.0	305.0
	Upper Lista Sand	1486.5	1457.5	40.5
	Lower Lista Sand	1591.0	1562.0	35.0
	Vale	1715.0	1686.0	19.5
SHETLAND	Jorsalfare	1734.5	1705.5	44.5
	Kyrre	1779.0	1750.0	13.5
VIKING	Draupne	1792.5	1763.5	3.5
	Sognefjord	1796.0	1767.0	108.0
	Middle Heather	1904.0	1875.0	199.5
	Fensfjord	2103.5	2074.5	77.0
	Lower Heather	2180.5	2151.5	243.0
BRENT	Ness	2423.5	2394.5	30.0
	Etive	2453.5	2424.5	57.5
	Rannoch	2511.0	2482.0	17.0
	Oseberg	2528.0	2499.0	55.5
DUNLIN	Drake	2583.5	2554.5	8.0
	Cook	2591.5	2562.5	95.0
	Amundsen	2686.5	2657.5	104.5
	Johansen	2791.0	2762.0	49.0
	Statfjord	2840.0	2811.0	51.7+
TOTAL DEPTH (LOGGED)		2891.7	2862.7	

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7
WIRELINE LOGGING

CONTRACTOR ATLAS WIRELINE

LOG	DATE	RUN	INTERVAL (mRKB)
DIFL ACL ZDEN GR CHT	8 AUG 1992	1A	1772.0 - 981.0
DIFL ACL ZDEN CN GR CHT	19 AUG 1992	2B	2314.0 - 1774.0
DIFL ACL GR CHT (ACL Run as CBL in Csg)	29 AUG 1992	3C	2880.0 - 1778.5
FMT HP GR (P+S)	10 AUG 1992	1A	1460.0 - 1766.5
FMT HP GR (P+S)	20 AUG 1992	2B	1797.0 - 1947.0
FMT HP GR (P+S)	31 AUG 1992	3C	1815.5 - 2879.0
FMT HP GR (S)	1 SEP 1992	3D	1888.0
FMT HP GR (S)	1 SEP 1992	3E	2463.0
FMT HP GR (S)	1 SEP 1992	3F	2475.0
FMT HP GR (S)	1 SEP 1992	3G	2437.0
FMT HP GR (S)	1 SEP 1992	3H	1808.0
ZDEN CN SL	30 AUG 1992	3C	2881.3 - 1778.5
DLL MLL GR CHT	30 AUG 1992	3A	2881.0 - 1779.0
DIP GR	30 AUG 1992	3A	2880.0 - 1780.0
SWC GR	10 AUG 1992	1A	1758.5 - 975.0
SWC GR	2 SEP 1992	3B	2640.5 - 1786.0
SWC GR	2 SEP 1992	3C	2379.0 - 1777.0
VSP	6 SEP 1992	4A	2550.0 - 500.0

MOBIL EXPLORATION NORWAY INC
WELL 35/11-7

FMT RESULTS

DATE RUN No TEST No	DEPTH (mRKB) MD	DEPTH (mRKB) TVD	HYDSTAT MUD PRESSURE psia	FM PRESSURE (HP GAUGE) psia	FM PRESSURE (HP GAUGE) Mpa	TEMP deg C	REMARKS
9 AUG 92 RUN 1A							
1	1766.5	1766.5	3119.8	2643.7	18.228	56.4	FAIR PERMEABILITY - Hydrostatic not stable
2	1763.0	1763.0	3107.0	2643.0	18.229	56.8	FAIR PERMEABILITY
3	1765.0	1765.0	3106.0	2643.8	18.229	56.2	FAIR PERMEABILITY
4	1744.0	1744.0	3066.1			56.6	NO SEAL
5	1744.3	1744.3	3067.3			57.1	NO SEAL
6	1744.1	1744.1	3068.2	733+		57.2	TIGHT
7	1743.0	1743.0	3064.1	688+		57.4	TIGHT
8	1742.8	1742.8	3066.1			57.7	LOST SEAL
9	1743.4	1743.4	3066.8	3027.8+	20.875	57.9	POOR PERMEABILITY - Supercharged
10	1737.5	1737.5	3053.4	2599.5	17.923	58.3	GOOD PERMEABILITY - Segregated Sample
11	1609.9	1609.9	2831.8	2753.0	18.981	57.8	GOOD PERMEABILITY
12	1605.0	1605.0	2823.7	2775.9	19.140	57.8	GOOD PERMEABILITY - Slightly Supercharged?
13	1603.0	1603.0	2819.8	2745.9	18.932	57.8	GOOD PERMEABILITY
14	1593.0	1593.0	2802.2	2717.2	18.734	57.7	GOOD PERMEABILITY
15	1525.0	1525.0	2683.8	2619.1	18.058	56.1	GOOD PERMEABILITY
16	1506.0	1506.0	2664.1	2580.9	17.796	56.8	GOOD PERMEABILITY
17	1490.0	1490.0	2623.1	2536.8	17.490	56.8	GOOD PERMEABILITY
20 AUG 92 RUN 2B							
1	1797.0	1796.9	3062.2	2648.7	18.262	62.2	GOOD PERMEABILITY
2	1800.0	1799.9	3056.7	-	-		TIGHT
3	1799.5	1799.4	3055.8	2646.8	18.263	62.7	GOOD PERMEABILITY
4	1809.0	1808.9	3071.2	2666.5	18.385	62.8	GOOD PERMEABILITY
5	1811.0	1810.9	3074.2	2657.7	18.324	63.1	GOOD PERMEABILITY
6	1833.5	1833.4	3111.8	2668.8	18.400	63.7	GOOD PERMEABILITY
7	1835.0	1834.9	3114.5	2682.4	18.501	64.0	GOOD PERMEABILITY
8	1845.0	1844.9	3130.8	2693.9	18.574	64.4	GOOD PERMEABILITY
9	1847.0	1846.9	3134.2	2695.9	18.588	64.7	GOOD PERMEABILITY

MOBIL EXPLORATION NORWAY INC
WELL 35/11-7

FMT RESULTS

DATE RUN No TEST No	DEPTH (mRKB) MD	DEPTH (mRKB) TVD	HYDSTAT MUD PRESSURE psia	FM PRESSURE (HP GAUGE) psia	FM PRESSURE (HP GAUGE) Mpa	TEMP deg C	REMARKS
20 AUG 92 RUN 2B							
10	1848.5	1848.4	3138.2	2698.7	18.607	65.0	GOOD PERMEABILITY
11	1867.0	1866.9	3167.1	2723.7	18.779	65.6	GOOD PERMEABILITY
12	1886.0	1885.9	3198.8	2750.7	18.965	66.5	GOOD PERMEABILITY
13	1908.0	1907.9	3235.2	2782.7	19.186	67.0	GOOD PERMEABILITY
14	1937.0	1936.9	3283.4	2824.6	19.475	68.3	GOOD PERMEABILITY
15	1947.0	1946.9	3299.0	2838.8	19.573	68.8	GOOD PERMEABILITY
16	1835.0	1834.9	3114.3				TIGHT
17	1848.5	1848.4	3136.1	2698.8	18.608	67.7	GOOD PERMEABILITY - Segregated Sample
31 AUG 92 RUN 3C							
1	1815.5	1815.4	3068.8	1380+		56.3	TIGHT
2	1818.5	1818.4	3083.7	780+		56.6	TIGHT
3	1820.5	1820.4	3084.4	325+		57.1	TIGHT
4	1822.0	1821.9	3086.3	2791.8	19.249	58.0	POOR PERMEABILITY - Supercharged
5	1823.5	1823.4	3071.8	1020+		60.3	TIGHT
6	2104.5	2104.4	3532.4	3062.2	21.113	64.2	GOOD PERMEABILITY
7	2106.4	2106.3	3536.8	3073.8	21.195	64.6	GOOD PERMEABILITY
8	2119.4	2119.3	3556.1	3089.5	21.301	65.8	GOOD PERMEABILITY
9	2123.5	2123.4	3562.8	3095.3	21.341	66.2	GOOD PERMEABILITY
10	2151.0	2150.9	3607.5	3135.3	21.617	66.6	GOOD PERMEABILITY
11	2158.5	2158.4	3621.3	3147.3	21.700	66.8	GOOD PERMEABILITY
12	2165.0	2164.9	3630.0	3155.9	21.759	66.4	GOOD PERMEABILITY
13	2174.0	2173.9	3644.7	3168.2	21.844	66.7	GOOD PERMEABILITY
14	2180.5	2180.4	3655.5	3177.8	21.911	67.0	GOOD PERMEABILITY
15	2436.0	2435.9	4070.8	3616.6	24.936	69.5	GOOD PERMEABILITY
16	2439.5	2439.3	4076.4	3617.1	24.939	69.6	GOOD PERMEABILITY
17	2450.5	2450.3	4094.2	3621.4	24.969	70.0	GOOD PERMEABILITY
18	2459.5	2459.3	4108.6	3624.3	24.989	70.5	GOOD PERMEABILITY
19	2464.0	2463.8	4115.8	3626.8	25.006	71.5	GOOD PERMEABILITY

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7

FMT RESULTS

DATE RUN No TEST No.	DEPTH (mRKB) MD	DEPTH (mRKB) TVD	HYDSTAT MUD PRESSURE psia	FM PRESSURE (HP GAUGE) psia	FM PRESSURE (HP GAUGE) Mpa	TEMP deg C	REMARKS
31 AUG 92 RUN 3C							
20	2469.0	2468.8	4123.8	3627.9	25.013	72.8	GOOD PERMEABILITY
21	2474.0	2473.8	4131.9	3631.6	25.039	73.4	GOOD PERMEABILITY
22	2479.0	2478.8	4138.8	3636.6	25.073	73.9	GOOD PERMEABILITY
23	2485.0	2484.8	4148.8	3640.8	25.102	74.3	GOOD PERMEABILITY
24	2489.0	2488.8	4157.6	3645.1	25.132	74.8	GOOD PERMEABILITY
25	2494.0	2493.8	4163.8	3648.7	25.157	75.2	GOOD PERMEABILITY
26	2498.5	2498.3	4170.8	3652.3	25.182	75.7	GOOD PERMEABILITY
27	2506.5	2506.3	4182.1	3658.5	25.224	76.2	GOOD PERMEABILITY
28	2517.0	2516.8	4200.3	3677.0	25.352	76.7	GOOD PERMEABILITY
29	2520.0	2519.8	4205.5	3690.0	25.441	77.5	FAIR PERMEABILITY - Supercharged
30	2523.0	2522.8	4210.4	3691.5	25.452	77.8	FAIR PERMEABILITY - Supercharged ?
31	2530.0	2529.8	4222.0	3694.1	25.470	78.3	GOOD PERMEABILITY
32	2535.0	2534.8	4230.1	3701.8	25.521	78.6	GOOD PERMEABILITY - Segregated Sample
33	2542.0	2541.8	4241.8	3711.8	25.592	79.0	GOOD PERMEABILITY
34	2553.5	2553.3	4260.5	3728.1	25.704	80.1	GOOD PERMEABILITY
35	2564.0	2563.8	4276.5	3743.3	25.809	80.3	GOOD PERMEABILITY
36	2571.0	2570.8	4288.2	3753.8	25.881	80.4	GOOD PERMEABILITY
37	2577.0	2576.8	4297.8	3762.4	25.941	80.7	GOOD PERMEABILITY
38	2582.0	2581.8	4306.0	3770.0	25.993	81.0	GOOD PERMEABILITY
39	2588.5	2588.3	4322.6	3793.5	26.156	81.7	GOOD PERMEABILITY
1 SEPT 92							
40	2617.0	2616.8	4361.8	3820.1	26.339	80.0	GOOD PERMEABILITY
41	2622.5	2622.3	4378.8	3828.2	26.394	80.1	GOOD PERMEABILITY
42	2641.0	2640.8	4409.5	3855.0	26.579	82.5	GOOD PERMEABILITY
43	2657.0	2656.8	4436.8	3876.2	26.730	83.0	GOOD PERMEABILITY
44	2666.5	2666.3	4440.0	3890.6	26.826	83.1	GOOD PERMEABILITY
45	2679.0	2678.8	4461.8	3910.4	26.961	83.7	GOOD PERMEABILITY
46	2715.5	2715.2	4521.1	3965.7	27.340	84.4	GOOD PERMEABILITY
47	2770.5	2770.2	4609.5	4056.1	27.966	86.4	FAIR PERMEABILITY - Supercharged

MOBIL EXPLORATION NORWAY INC.
WELL 35/11-7

FMT RESULTS

DATE RUN No TEST No.	DEPTH (mRKB) MD	DEPTH (mRKB) TVD	HYDSTAT MUD PRESSURE psia	FM PRESSURE (HP GAUGE) psia	FM PRESSURE (HP GAUGE) Mpa	TEMP deg C	REMARKS
1 SEPT 92 RUN 3C							
48	2784.5	2784.2	4632.0	4086.2	28.173	87.3	GOOD PERMEABILITY
49	2793.5	2793.2	4646.8	4079.9	28.130	88.6	GOOD PERMEABILITY
50	2800.8	2800.7	4657.2	4088.8	28.192	89.2	GOOD PERMEABILITY
51	2845.0	2844.7	4729.8	3980+	25.442	91.0	POOR PERMEABILITY - Abandon Test
52	2846.5	2846.2	4730.2	4154.4	28.644	91.4	GOOD PERMEABILITY
53	2852.5	2852.2	4741.8	4166.0	28.717	91.8	GOOD PERMEABILITY
54	2860.8	2860.7	4753.0	4175.6	28.790	92.5	GOOD PERMEABILITY
55	2871.0	2870.7	4770.0	4180.7	28.804	93.0	GOOD PERMEABILITY
56	2879.0	2878.7	4782.4	4202.0	28.973	93.5	GOOD PERMEABILITY
1 SEPT 92 RUN 3D							
57	1868.0	1867.9	3141.4	2724.1	18.782	64.5	SEGREGATED SAMPLE
1 SEPT 92 RUN 3E							
58	2462.0	2461.8	4118.1	3626.0	25.000	79.4	SEGREGATED SAMPLE
1 SEPT 92 RUN 3F							
59	2475.0	2474.8	4131.7	3632.9	25.048	80.3	SEGREGATED SAMPLE
1 SEPT 92 RUN 3G							
60	2437.0	2436.8	4071.2	3616.8	24.937	76.7	SEGREGATED SAMPLE
1 SEPT 92 RUN 3H							
61	1809.0	1808.8	3046.8	2684.8	18.511	63.1	SEGREGATED SAMPLE

NB15 NEW BIT NUMBER

RR RE RUN BIT

CB CORE BIT

30" csg at 409 mRKB — CASING SHOE

3253m — TOP LINER

LINER

3850m — BOTTOM LINER

3042m

C2 — CORED INTERVAL

3046m

☼ ✹ GOOD SHOW GAS OIL

☼ ✹ MINOR SHOW GAS OIL

◁ SIDEWALL CORE - NOT RECOVERED

◀ SIDEWALL CORE - RECOVERED

→ RFT

Ⓢ→ RFT SAMPLE

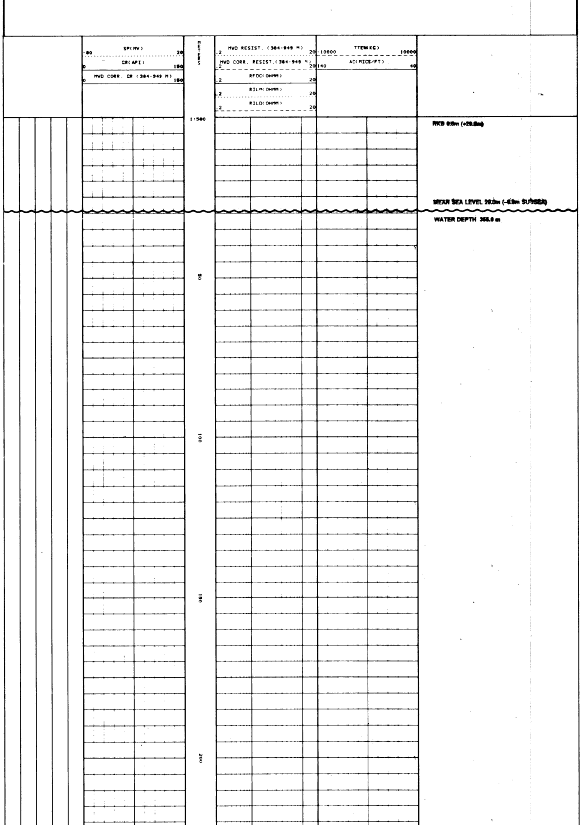
DIPMETER ROSE

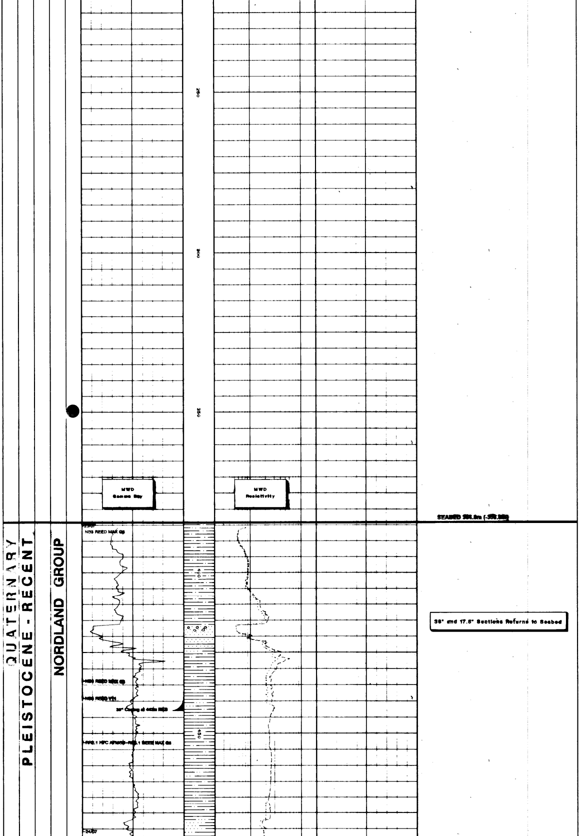
PERFORATED INTERVAL

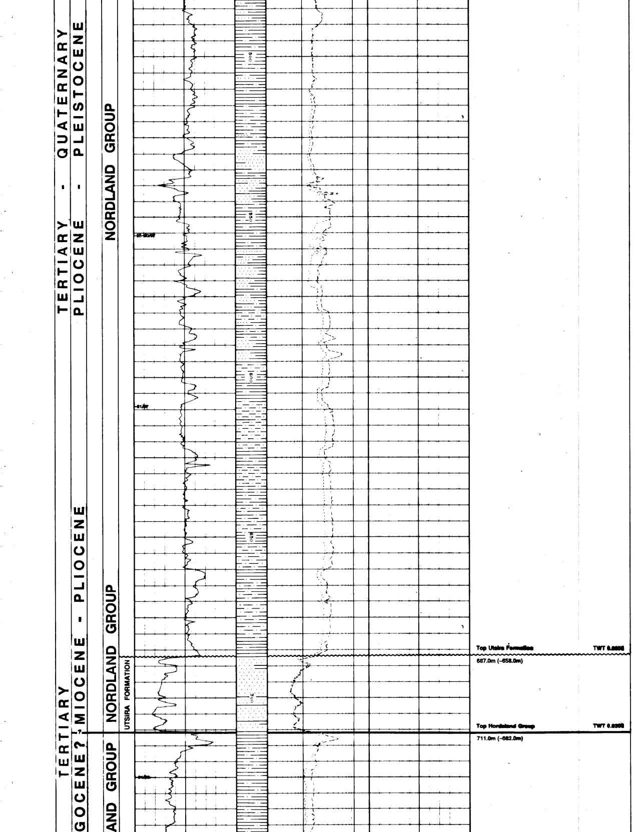
DST PRODUCTION TEST

LIGNITE / COAL	SHALE	ANHYDRITE
CONGLOMERATE	SHALEY	GYPSUM
SANDSTONE	CLAYSTONE	HALITE
SANDY	ARGILLACEOUS	
SILTSTONE	MARL	VOLCANICS ASH / LAVA
SILTY	LIMESTONE	IGNEOUS INTRUSIVES
CALCAREOUS DOLOMITIC	DOLOMITE	METAMORPHIC

∼	SHELL FRAGMENTS
P	PYRITE
G	GLAUCONITE
♂	MICROFOSSILS
◇	CALCITE
▲	CHERT
▰	CARBONACEOUS MATERIAL
M	MICACEOUS
●	OOLITIC PELOIDAL
S	SIDERITE
〰	MINERAL VEINS
ʊ	BURROWS
K	KAOLINITE







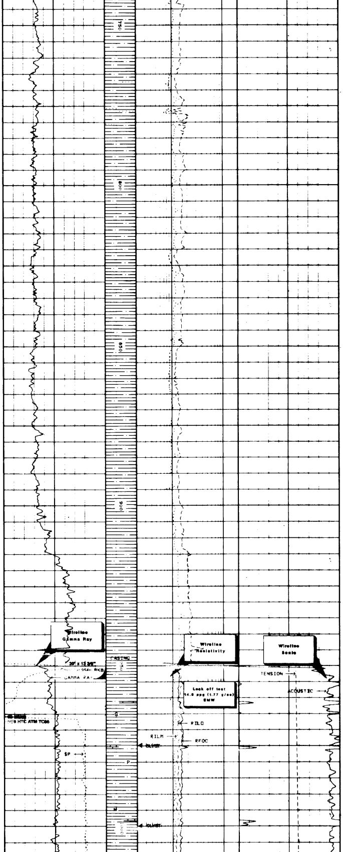
TERTIARY

LOWER OLIGOCENE

OLI

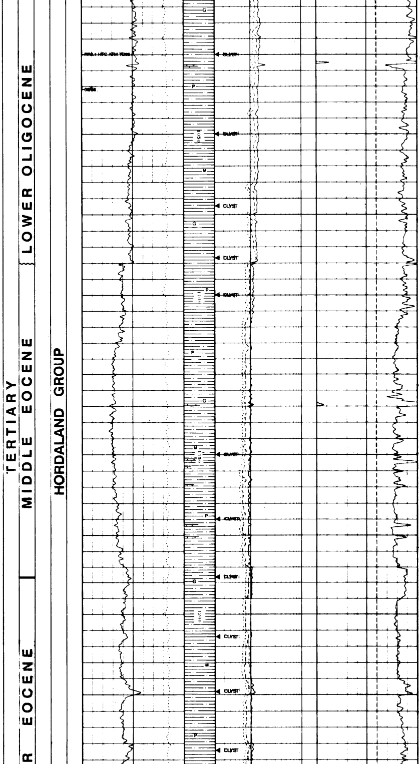
HORDALAND GROUP

HORDAL



FIRST SAMPLES COLLECTED FROM 960m RKB

CLAYSTONE: light to medium olive gray, medium dark gray, locally gray brown, very soft to soft, amorphous, hydrated and washable, sticky, silty with very fine sand grains, micromicaceous, trace glauconite and pyrite, non calcareous.



LIMESTONE: trace only, pale yellow brown, gray brown, generally hard, sub-blocky to subangular fracture, microcrystalline to cryptocrystalline, locally argillaceous and silty, rare pyrite.

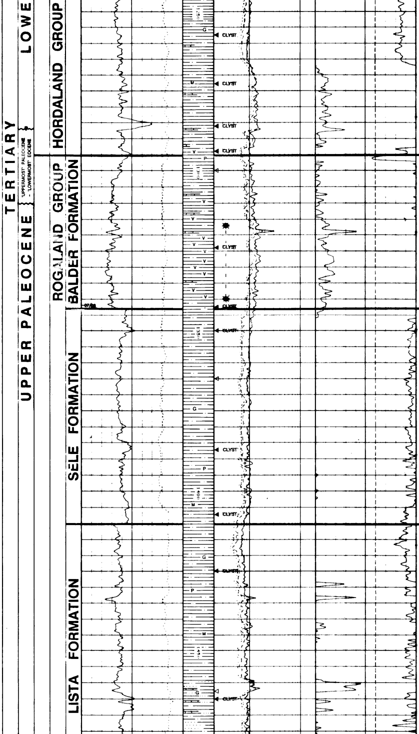
CLAYSTONE: green gray, gray brown to moderately brown, very soft to soft, sticky, washable, hydrated amorphous, locally sub-blocky, locally micromicaceous, slightly to moderately silty, trace pyrite and glauconite, non calcareous.

CLAYSTONE: light to dark grey, soft to firm, amorphous to blocky, slightly hydrated in part, silty, micromicaceous, glauconite, micropyrite, non calcareous.

LIMESTONE: occurring as thin stringers, light to medium gray to yellow brown, hard, blocky, brittle fracture, microcrystalline slightly argillaceous, locally silty.

CLAYSTONE: light to dark gray, gray brown, soft to firm, blocky, slightly hydrated and amorphous in part, slightly silty, local very fine sand grains, micromicaceous, glauconite, micropyrite, non calcareous.

CLAYSTONE: light to medium green gray, brown gray, slightly mottled texture, subwaxy, amorphous to blocky, slightly hydrated, locally silty, trace micromica, disseminated pyrite, glauconite, local black carbonaceous specs, non calcareous.



CLAYSTONE: varied colored, [illegible] to moderate brown, light to medium green gray, locally light to medium blue gray, soft to firm, slightly hydrated, amorphous to blocky, soapy to subwaxy, silty in part, local slightly tuffaceous, common glauconite, local micromica, pyrite, non calcareous.

DOLOMITE/LIMESTONE: occurring as thin stringers, light medium gray to yellow brown, hard to very hard, blocky, brittle fracture, microcrystalline, slightly argillaceous, slightly silty.

Top Rogaland Group (Balder Formation) TWT 1.415S

1295.0m (−1266.0m)

CLAYSTONE: varied colored, becoming brown gray to olive gray, light to medium green gray, locally light blue gray, locally red brown to moderate brown, soft, locally slightly firm, amorphous to blocky, slightly hydrated, locally subwaxy, slightly tuffaceous in part, trace pyrite, local glauconite, chlorite?, non to slightly calcareous.

TUFF: light to medium gray, light green gray to light blue gray, speckled with white and black inclusions, local red specs, soft, sticky in part, amorphous to blocky, slightly hydrated, ashy texture, trace pyrite, local glassy shards, silty and argillaceous in part, generally non calcareous, locally slightly to moderately calcareous, local very fine to fine grained quartz sand.
SHOW: local very poor, rare pale yellow direct fluorescence, slow diffuse blue white cut, blue white residue fluorescence.

Top Sele Formation TWT 1.459S

1343.5m (−1314.5m)

CLAYSTONE: dark gray to olive gray, locally medium to dark green, locally brown gray, soft to firm, slightly hydrated, predominately blocky, locally subwaxy texture, locally micromicaceous, trace pyrite, slightly glauconitic, local black carbonaceous material, generally non calcareous.

CLAYSTONE: dark gray to olive gray, soft to firm, locally moderately hard, slightly hydrated, blocky, slight to moderately silty, carbonaceous, glauconite, trace micropyrite, local micromica, non calcareous.

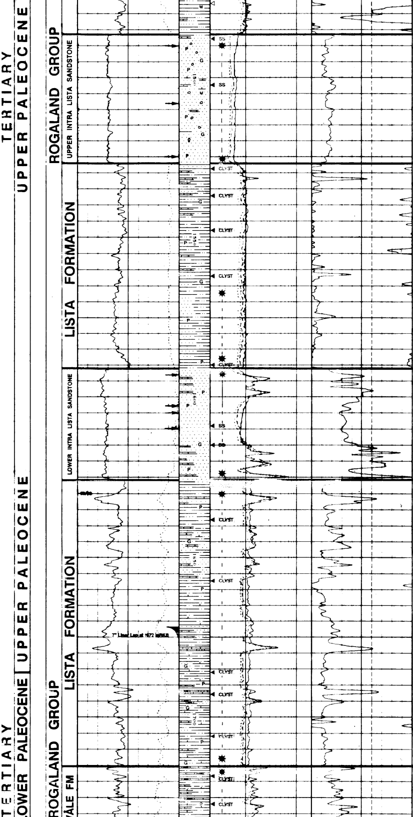
Top Lista Formation TWT 1.522S

1410.0m (−1391.0m)

CLAYSTONE: dark gray to olive gray becoming medium to dark green gray, soft to firm, blocky, silty to very silty, locally grading to SILTSTONE, local very fine to fine quartz sand, glauconite, non calcareous.

CLAYSTONE: dark gray to olive gray, gray brown, light to medium dark green gray, soft to firm, blocky, micromicaceous, glauconite, micropyrite, silty grading to SILTSTONE with very fine to fine sand grains, locally grading to argillaceous SANDSTONE.

SANDSTONE: green gray, firm, friable, very fine to fine grained, angular to subrounded, moderately sorted, argillaceous, no SHOW.



Top Upper Lista Sandstone Unit **TWT 1.588S**

1486.5m (−1457.5m)

SANDSTONE: very light gray, locally light green gray, predominately loose colorless, translucent and locally opaque grains, locally moderately hard to hard, friable in part, very fine to very coarse grained, locally granular, subangular to rounded, poorly sorted, calcite cement, trace silica cement, local pyrite cement, common glauconite and pyrite, local mica flakes, no visible porosity.
SHOW: local dark yellow brown oil stain, dull orange brown to pale yellow direct fluorescence, moderately streaming to blooming pale yellow to blue cut, dull orange brown residue fluorescence, local dark yellow brown residue.

LIMESTONE: light to medium gray, hard to very hard, blocky, microcrystalline, locally argillaceous.
SHOW: local, **rare dark brown oil stain, dull orange brown direct fluorescence, slow streaming blue white cut, orange brown residue fluorescence.**

Base Upper Lista Sandstone Unit **TWT 1.626S**

1527.0m (−1498.0m)

CLAYSTONE: medium dark gray to gray black, dark green gray to green black, firm, soft to moderately hard in part, locally silty, rarely grades to **SILTSTONE**, non calcareous, local glauconite, trace disseminated and massive pyrite, trace micromica.
LIMESTONE: occurring as thin **stringers, light gray, light brown gray, locally** gray brown, firm to moderately hard, blocky, cryptocrystalline, rarely microcrystalline, argillaceous in part.

SAND: loose colorless translucent light gray and locally opaque quartz, fine to coarse grained, very fine in part, subangular to subrounded, no visible cement, trace glauconite, trace massive pyrite.
SHOW: poor local dull orange direct fluorescence, slight to moderately streaming pale yellow cut, moderate pale yellow to gold residue fluorescence.

CLAYSTONE: medium dark gray to gray black, dark green gray to green black, firm, soft to moderately hard in part, locally silty, rarely grades to **SILTSTONE**, non calcareous, local glauconite, trace disseminated and massive pyrite, trace micromica.

Top Lower Lista Sandstone Unit **TWT 1.684S**

1591.0m (−1562.0m)

SANDSTONE: off white to light gray, predominately loose colorless translucent pale gray and opaque grains, firm, slightly friable, fine to medium grained, locally coarse to very coarse, subangular to subrounded, locally rounded, poor to moderately sorted, locally well sorted, calcite cement in part, local silica and pyrite cement, slightly argillaceous, common glauconite, trace massive pyrite, generally poor visible porosity.
SHOW: poor to fair, local light to dark brown oil stain, appears to be mainly residual dead oil, 30 to 80% pale yellow to gold direct fluorescence, pale yellow blue streaming to blooming cut, moderate gold residue fluorescence.

Base Lower Lista Sandstone Unit **TWT 1.708S**

1626.0m (−1597.0m)

CLAYSTONE: light to dark gray, locally green gray, firm, blocky, subplaty in part, trace disseminated pyrite, slightly micromicaceous, non calcareous.

SANDSTONE: off white to very light gray, firm, slightly friable, loose in part, fine to coarse grained, angular to subrounded, moderately sorted, moderate calcite/dolomite cement, silica/pyrite cement in part, trace glauconite, slightly argillaceous, locally micromicaceous, poor visible porosity.
SHOW: poor, local brown oil stain, 20% dull orange direct fluorescence, moderate streaming yellow orange cut, moderate orange residue fluorescence.

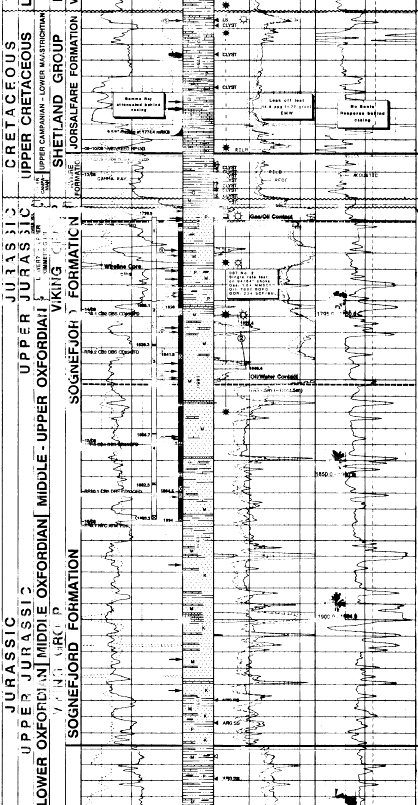
CLAYSTONE: light to dark gray, locally green gray, firm, blocky, subplaty in part, trace disseminated pyrite, slightly micromicaceous, moderately silty, slightly to very calcareous.

LIMESTONE: predominately light gray, local white to light brown, soft, locally firm, trace glauconite and pyrite, locally very fine to fine quartz, moderately to very argillaceous grading to calcareous CLAYSTONE.
SHOW: very poor, slight dull locally moderate **gold direct fluorescence, diffuse yellow blue cut, orange gold residue fluorescence.**

Top Våle Formation **TWT 1.773S**

1715.0m (−1686.0m)

CLAYSTONE: medium to dark gray, brown black to gray black, predominately firm, blocky, slightly to moderately silty, disseminated pyrite, local glauconite, slightly to very calcareous, slight marly texture, grading to argillaceous LIMESTONE.



Top Shetland Group (Jorsalfare Formation) TWT 1.787S

1734.5m (–1705.5m)

SANDSTONE: very light gray to light brown, hard, local loose colorless translucent quartz grains, fine to coarse grained, locally very coarse, angular to subrounded, poorly to moderately sorted, common pyrite cement, local silica and calcite cement, trace glauconite, local mica, slightly argillaceous, no to poor visible porosity.
SHOW: poor dull yellow direct fluorescence, diffuse streaming blue white cut, orange gold residue fluorescence.

CLAYSTONE: medium to dark gray, gray black in part, soft to firm, locally moderately hard, blocky to platy, locally subfissile, slightly to moderately silty, trace disseminated pyrite, local carbonaceous material, trace glauconite, slightly to very calcareous grading to argillaceous LIMESTONE.

LIMESTONE: white to light brown, light gray, locally dark gray brown, soft to hard, amorphous to blocky, cryptocrystalline, locally microcrystalline, chalky texture in part, slight to moderately argillaceous in part, local very fine to fine grained quartz sand grading to calcareous SANDSTONE in part, trace glauconite.
SHOW: poor dull to bright pale yellow green direct fluorescence, diffuse blue white cut, pale blue residue fluorescence.

Top Kyrre Formation TWT 1.819S

1779.0m (–1750.0m)

CLAYSTONE: medium dark gray, olive gray to olive black and locally green gray in sidewall cores, firm, subfissile, flaky, silty in part, slightly micromicaceous, local glauconite, trace pyrite, local carbonaceous material, generally non calcareous, locally slight to very calcareous.

Top Viking Group (Draupne Formation) TWT 1.829S

1792.5m (–1763.5m)

Top Sognefjord Formation TWT 1.891S

1796.0m (–1767.0m)

SANDSTONE: dark olive gray, moderately hard, slightly friable, silt to medium grained, local coarse grained, angular to subrounded, poorly to moderately sorted, weak silica cement, local calcite cement, local argillaceous matrix, carbonaceous material, trace mica, feldspar, poor to fair visible porosity.
SHOW: fair, good hydrocarbon odor, light brown oil stain, even to pinpoint pale yellow direct fluorescence, instant streaming to blooming blue cut, good yellow white residue fluorescence.

SANDSTONE: light olive gray, pale yellow brown, very friable, very fine to fine grained, angular to subrounded, well sorted, weak silica cement, slight argillaceous/carbonaceous matrix, mica, very good visible porosity.
SHOW: good, moderate hydrocarbon odor, light brown oil stain, even bright yellow direct fluorescence, instant flash blue white cut, yellow blue residue fluorescence, light brown residue.

SANDSTONE: olive gray to brown gray, firm, friable to loose, predominantly medium to coarse grained, locally very fine to very coarse, subangular to subrounded, poor to well sorted, weak silica cement, local calcite cement, local argillaceous matrix, local lithic fragments, mica, good visible porosity.
SHOW: fair to good, good hydrocarbon odor, gas bubbles, good light brown oil stain, bright even yellow white direct fluorescence, instant streaming to blooming yellow white cut, fair to good yellow white residue fluorescence, good light brown residue.

SANDSTONE: light gray to light brown gray, pale to dark yellow brown, friable, fine to coarse grained, locally very coarse, subangular to subrounded, moderately to well sorted, weak silica cement, slight calcite cement, local kaolinite/argillaceous matrix and clay laminations, mica, trace lithic fragments, good to very good visible porosity.
SHOW: good, fair to good hydrocarbon odor, light brown oil stain, even bright yellow white direct fluorescence, instant streaming to blooming yellow white cut, good blue white residue fluorescence, good light brown residue.

SANDSTONE: medium gray to brown gray, friable, fine to medium grained becoming medium to coarse, subangular to subrounded, moderately to well sorted, weak calcite cement, local argillaceous matrix, locally silty, trace mica, local carbonaceous material, mica and carbonaceous material and laminations, fair to good visible porosity.
SHOW: fair to good, moderate hydrocarbon odor, patchy light brown oil stain, pinpoint to even yellow direct fluorescence, moderately fast streaming blue white cut, good blue white residue fluorescence, moderate light brown residue.

SANDSTONE: light to medium gray, as lenses and bands with claystone laminations, friable to very hard, very fine to medium grained, subangular to subrounded, moderately sorted, silica cement, calcite cement, argillaceous/kaolinite matrix, abundant mica, trace pyrite, trace siderite, carbonaceous material, no SHOW.

SEE BELOW FOR FULL CORE DESCRIPTION

SANDSTONE: light gray to off white, moderately hard, friable, colorless milky and frosted quartz, fine to medium grained, angular to subrounded, poor to moderately sorted, good calcite/limestone cement, local good kaolinite and argillaceous matrix, trace mica, trace carbonaceous specs, local lithic fragments, no SHOW.

CLAYSTONE: medium gray, slight to moderately hard, blocky to sub blocky, slightly micromicaceous, trace micropyrite, silty grading to argillaceous SILTSTONE, non to slightly calcareous.

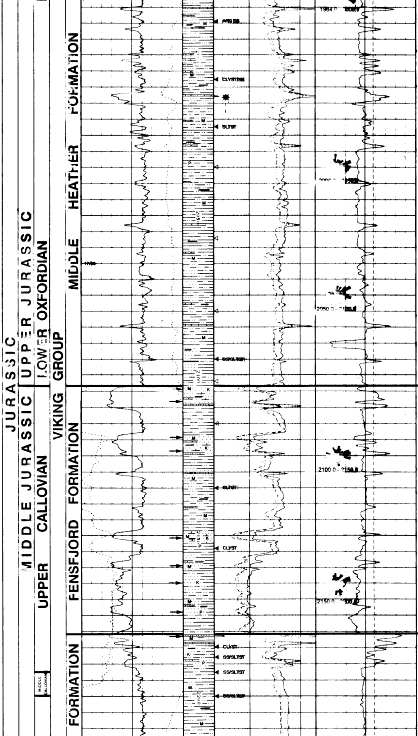
LIMESTONE: white with argillaceous streaks; firm, blocky to platy, cryptocrystalline, also pale to moderate brown, firm to moderately hard, earthy, blocky to elongate, crumbly to angular.

SANDSTONE: very light gray to medium gray, poorly consolidated to moderately hard, loose to friable, translucent milky and frosted quartz, fine to medium grained, angular to subrounded, poorly sorted, cryptocrystalline and crystalline calcite cement, local pyrite cement, argillaceous and kaolinite matrix, mica, carbonaceous material, no to poor visible porosity, no SHOW.

Top Middle Heather Formation TWT 1.937S

1964.0m (–1935.0m)

CLAYSTONE: light to medium gray, soft to firm, blocky, micromicaceous, trace micropyrite, carbonaceous specs and streaks, grading to argillaceous SANDSTONE: light to medium gray, soft to firm, silt to medium grained, subangular to subrounded, moderately sorted, argillaceous matrix, no SHOW.



LIMESTONE: off white to light gray, locally medium gray, firm, locally moderately hard, chalky texture, cryptocrystalline, locally microcrystalline, carbonaceous streaks, argillaceous in part, sandy in part.

SANDSTONE: medium gray, brown gray, brown black, firm to moderately hard, silt to medium grained, subangular to subrounded, calcite cement, carbonaceous, trace micromica, very argillaceous grading to sandy CLAYSTONE.
SHOW: very poor, pale yellow green direct fluorescence, very slow streaming blue white cut, improves on crushing; faint blue white residue fluorescence.

CLAYSTONE: medium gray to medium brown, brown black, soft, hydrated, soluble, amorphous, lumpy, silty, trace micromica, trace carbonaceous material, locally slightly calcareous, local abundant very fine to fine grained quartz sand locally grading to argillaceous SANDSTONE.

SANDSTONE/SILTSTONE: off white to light gray, locally medium to dark gray, firm to moderately hard, silt to fine grained, subangular to subrounded, moderately sorted, local calcite cement, very argillaceous in part grading to sandy/silty CLAYSTONE.

LIMESTONE: as thin stringers, off white, buff, soft to firm, sub blocky, crumbly, microcrystalline, argillaceous.

CLAYSTONE/SILTSTONE: medium gray to brown gray, dark gray to brown black, soft, soluble, hydrated, amorphous to blocky, trace carbonaceous material, trace micromica, non to slightly calcareous, silty grading to SILTSTONE, local abundant very fine to fine sand grains.

Top Fensfjord Formation **TWT 2.024S**

2103.5m (−2074.5m)

SANDSTONE: olive gray to light brown gray, firm, friable to very friable, very fine to fine grained with loose medium to coarse grains, angular to subrounded, moderately sorted, weak to fair calcite cement, mica, argillaceous, silty grading to SILTSTONE, no SHOW.

LIMESTONE: as thin stringers, white, with local black streaks, pale brown, cryptocrystalline to microcrystalline, earthy, blocky to platy, argillaceous in part, common very fine to medium sand grains.

SILTSTONE/SANDSTONE: light gray to light brown gray, soft to firm, crumbly, common very fine sand grading to SANDSTONE, micromicaceous, calcite cement, pyrite cement, carbonaceous, argillaceous grading locally to silty/sandy CLAYSTONE.

SANDSTONE: olive gray to light brown gray, firm, friable to very friable, very fine to fine grained with loose medium to coarse grains, angular to subrounded, moderately sorted, weak to fair calcite cement, mica, argillaceous, silty grading to SILTSTONE, no SHOW.

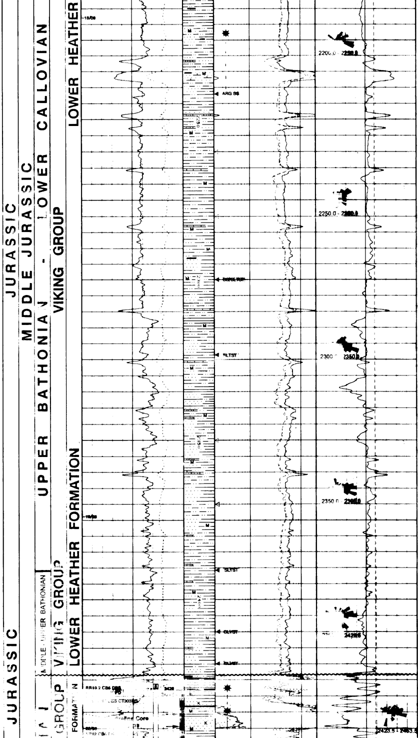
CLAYSTONE/SILTSTONE: light gray to light brown gray, soft, soluble, sticky, locally plastic, amorphous to sub blocky, slightly to moderately calcareous, micromicaceous, carbonaceous, silty grading to SILTSTONE, common floating very fine to medium sand grains grading to argillaceous SANDSTONE.

Top Lower Heather Formation **TWT 2.089S**

2180.5m (−2151.5m)

LIMESTONE: as thin stringers, light to medium brown, moderately hard, cryptocrystalline to microcrystalline, blocky to angular, slightly argillaceous, local very fine sand grains, grading to calcareous SANDSTONE.
SANDSTONE: off white, light medium gray, firm to moderately hard, very fine to medium grained with common loose medium to very coarse sand and granules, subangular to subrounded, poorly to moderately sorted, weak to moderate calcite cement, local pyrite cement, common mica, common carbonaceous streaks, argillaceous and silty matrix grading to SILTSTONE, no SHOW.

CLAYSTONE/SILTSTONE: medium brown, brown gray, olive gray, soft, soluble, hydrated, non calcareous, trace micromica, abundant very fine to fine sand grains, silty laminations grading locally to SILTSTONE.



SANDSTONE: white to light gray, firm to moderately hard, very fine to coarse grained, subangular to subrounded, poorly sorted, good calcite cement, possible silica cement/quartz overgrowth, trace pyrite, local micromica and carbonaceous material, slightly argillaceous.
SHOW: poor, pale yellow orange direct fluorescence, slow streaming blue white cut, moderate yellow blue residue fluorescence, trace brown residue.

LIMESTONE: as thin stringer, light brown, off white, moderately hard, microcrystalline, locally crystalline, blocky to angular fracture, slightly argillaceous.

SILTSTONE: brown gray, soft, soluble, amorphous, local carbonaceous specs, non to slightly calcareous, argillaceous grading to silty CLAYSTONE.

LIMESTONE: as thin stringer, light brown, off white, moderately hard, microcrystalline, locally crystalline, blocky to angular fracture, slightly argillaceous.

SANDSTONE: light gray, brown gray, white calcite and dark gray argillaceous laminations, mottled, soft to firm, friable, fine grained with local medium to coarse grains, subangular to subrounded, well sorted, moderate calcite cement, local crystalline calcite, common mica, local carbonaceous partings, argillaceous to very argillaceous, no SHOW.

LIMESTONE: as thin stringer, off white to light brown, soft to moderately hard, cryptocrystalline to microcrystalline, sub blocky, sandy, slightly argillaceous.

CLAYSTONE: light brown gray to olive gray, white mottled in part, soft, soluble, sticky, amorphous to blocky, non to slightly calcareous, micromicaceous, silty to very silty grading to SILTSTONE, common carbonaceous specs, micaceous and carbonaceous laminations, local very fine sand grains grading to argillaceous SANDSTONE.

SANDSTONE: light gray to light brown, dusky brown, friable, blocky, locally very hard, very fine to fine grained, silty, subangular to subrounded, moderately sorted, weak to fair calcite cement, moderately to very argillaceous, micromicaceous and carbonaceous laminations, locally grading to sandy CLAYSTONE and SILTSTONE, no SHOW.

LIMESTONE: as thin stringers, light gray to light brown gray, soft to hard, amorphous to blocky, chalky to earthy texture, moderately to very argillaceous, microcrystalline to cryptocrystalline, silty, common very fine sand grains

SANDSTONE: brown gray to dusky brown, light gray to off white, soft to firm, friable, very fine to fine grained, silty, subangular to subrounded, well sorted, weak calcite cement, very argillaceous, abundant mica, common carbonaceous material, grading locally to SILTSTONE and CLAYSTONE, no SHOW.

CLAYSTONE: medium to dark gray, brown gray, soft to firm, amorphous, soluble, hydrated, slight to moderately calcareous, micropyrite, trace micromica, carbonaceous material, silty grading locally to SILTSTONE.

SEE BELOW FOR FULL CORE DESCRIPTION

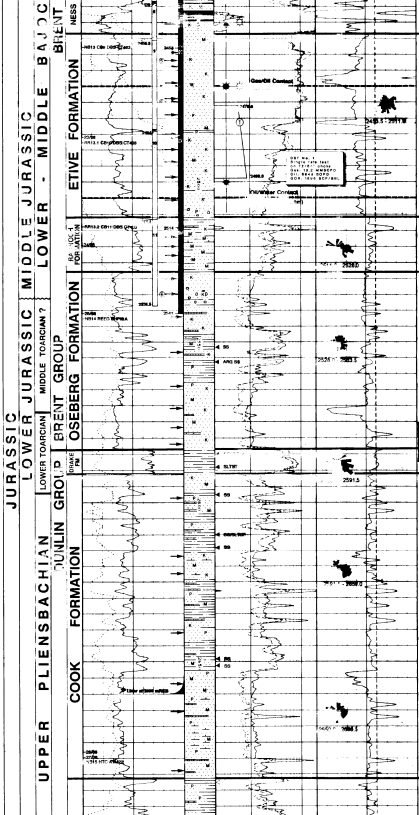
Top Brent Group (Ness Formation) TWT 2.215S

2423.5m (-2394.5m)

COAL: brown black, firm to hard, brittle to flaky, dull/earthy to greasy/waxy, bright and lustrous in part, woody texture, plant remains, local mica interlaminations.

SANDSTONE: gray brown, firm, friable, very fine to coarse grained, subangular to subrounded, moderately to well sorted, abundant kaolinite matrix, mica, carbonaceous, poor to good visible porosity.

SHOW: poor to fair, slight hydrocarbon odor, dull gold direct fluorescence, instant streaming yellow milky white cut, yellow milky white residue fluorescence.



Top Etive Formation **TWT 2.238S**

2453.5m (−2424.5m)

SANDSTONE: light yellow brown to light brown gray, moderately hard, indurated to friable, fine to coarse grained, locally very coarse, subangular to subrounded, poorly to moderately sorted, weak to fair silica cement, kaolinite matrix, common mica, carbonaceous and pyrite specs, fair to good visible porosity.

SHOW: poor, slight hydrocarbon odor, even dull gold direct fluorescence, slow clouding to streaming yellow white cut, trace yellow white residue fluorescence.

SANDSTONE: light yellow brown to light brown gray, moderately hard, friable, fine to coarse, predominately medium, subangular to subrounded, moderately sorted, fair silica cement, kaolinite matrix, mica, fair to good visible porosity.

SHOW: fair to good, fair hydrocarbon odor, even to patchy yellow milky white direct fluorescence, moderate streaming to blooming blue white cut, good milky white residue fluorescence.

SANDSTONE: light brown gray to brown gray, firm, friable, crumbly, predominately fine to medium, locally fine to coarse with very coarse grains, subangular to subrounded, locally angular, poorly to moderately sorted, weak silica cement, slight to locally abundant kaolinite matrix, local micropyrite matrix, feldspar, mica, fair visible porosity.

SHOW: generally good, slight hydrocarbon odor, even to patchy bright pale yellow direct fluorescence, instant clouding to streaming diffuse bright milky white to pale yellow cut, milky white to pale yellow residue fluorescence.

SANDSTONE CONGLOMERATE: light brown gray, friable, crumbly, fine to very coarse with granules >6mm, angular to subrounded, kaolinite matrix supported, weak silica cement, feldspar, mica, fair to good visible porosity.

SHOW: fair to good, slight hydrocarbon odor, patchy bright pale yellow direct fluorescence, instant slow clouding dull milky white cut, dull milky white to pale yellow residue fluorescence.

Top Rannoch Formation **TWT 2.270S**

2511.0m (−2482.0m)

SANDSTONE: light to medium gray, hard, subfissil to fisky, brittle, very fine to fine, locally fine to medium, subangular to subrounded, well sorted, kaolinite matrix, abundant mica laminations and partings, local pyritised wood, carbonaceous, poor visible porosity, no **SHOW**.

Top Oseberg Formation **TWT 2.279S**

2528.0m (−2499.0m)

SANDSTONE: light to medium gray, friable, crumbly, fine to very coarse grained with floating angular granules >3mm, subangular to subrounded, poorly sorted, kaolinite matrix locally abundant, feldspar, mica, good visible porosity, no **SHOW**.

CLAYSTONE: light gray, light olive gray, light brown gray, soft, amorphous, hydrated, locally firm waxy, non calcareous, silty, micromicaceous, carbonaceous.

SANDSTONE: off white to light gray brown, firm to moderately hard, fine to very coarse grained, angular to subrounded, poorly sorted, locally good calcite cement, silica cement in part, kaolinite matrix, common mineral inclusions, quartz overgrowth, local lithic fragments, transparent milky and frosted quartz, trace pyrite, no **SHOW**.

CLAYSTONE: light gray to light olive gray, very soft, amorphous, hydrated, also firm, silty, micromicaceous, trace micropyrite, local carbonaceous material, non calcareous.

Top Dunlin Group (Drake Formation) **TWT 2.311S**

2583.5m (−2554.5m)

Top Cook Formation **TWT 2.315S**

2591.5m (−2562.5m)

SANDSTONE: generally loose milky transparent and colorless translucent quartz, fine to coarse grained, subangular to subrounded, also as **SANDSTONE**; light gray to white gray, hard, brittle, very fine to medium grained, locally coarse, subangular to subrounded, well sorted, calcite cement, silica cement with quartz overgrowth in part, common biotite, muscovite and chlorite, lithic fragments, residual argillaceous matrix, feldspar, pyrite, no visible porosity, no **SHOW**.

CLAYSTONE: light gray, light olive gray to light gray brown, soft sticky, amorphous to blocky, also light to medium gray brown, firm to hard and brittle, blocky to platy, common mica, locally very silty grading to SILTSTONE.

SANDSTONE: predominately loose colorless milky white transparent and translucent quartz, very fine to very coarse with local granules >3mm, angular to subrounded, residual calcite and silica cement, abundant loose biotite, muscovite and chlorite flakes, pyrite, lithic fragments, feldspar, residual argillaceous matrix, as SANDSTONE: light gray to gray brown, light gray to gray white, very fine to medium grained, locally fine to very coarse, good calcite cement in part, silica cement and quartz overgrowth in part, argillaceous matrix, lithic fragments common mica, common pyrite, no visible porosity, no **SHOW**.

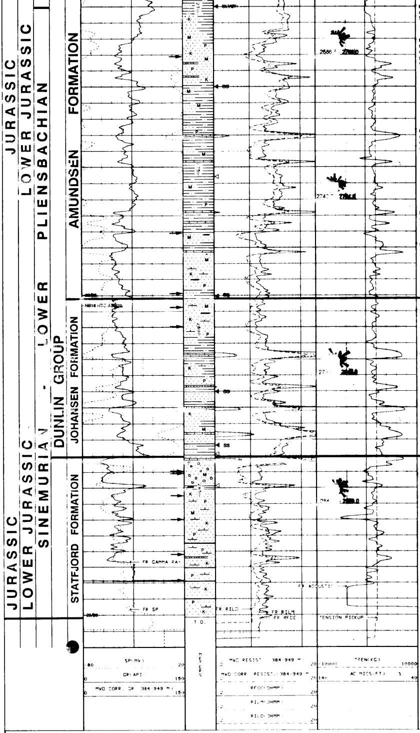
CLAYSTONE: light gray, light olive gray to light gray brown, soft sticky, amorphous to blocky, also light to medium gray brown, firm to hard and brittle, blocky to platy, common mica, locally very silty grading to SILTSTONE.

SANDSTONE: predominately loose colorless milky white transparent and translucent quartz, very fine to very coarse with local granules >3mm, angular to subrounded, residual calcite and silica cement, abundant loose biotite, muscovite and chlorite flakes, pyrite, lithic fragments, feldspar, residual argillaceous matrix, as **SANDSTONE:** light gray to gray brown, light gray to gray white, very fine to medium grained, locally fine to very coarse, good calcite cement in part, silica cement and quartz overgrowth in part, argillaceous matrix, lithic fragments common mica, common pyrite, no visible porosity, no **SHOW**.

Top Amundsen Formation **TWT 2.368S**

2686.5m (−2657.5m)

SANDSTONE: off white, light gray, soft to moderately hard, friable, crumbly, fine to coarse grained, subangular to subrounded, poorly sorted, good crystalline to cryptocrystalline calcite cement, local pyrite cement, mica, argillaceous patches and streaks, no visible porosity, no **SHOW**.



CLAYSTONE: light to medium gray, gray brown to moderate brown, very soft, sticky, amorphous, plastic, hydrated, washable, very silty grading locally to **SILTSTONE**, mica, pyrite, non calcareous.

SANDSTONE: light gray to light olive gray, whitish, soft to firm, friable, very fine to medium grained, subangular to subrounded, moderately sorted, local calcite cement, locally abundant kaolinite matrix, locally argillaceous in part grading to sandy **CLAYSTONE**, common mica and carbonaceous specs, no visible porosity, no **SHOW**.

CLAYSTONE: light to medium gray, gray brown to moderate brown, very soft, sticky, amorphous, plastic, hydrated, washable, non calcareous, mica, pyrite, common silt to fine sand grains grading locally to **SILTSTONE** and argillaceous **SANDSTONE**.

LIMESTONE: as thin stringers, white to off white, soft to firm, blocky, cryptocrystalline, argillaceous.

SANDSTONE: light to medium gray, white, gray brown, friable and crumbly in part, hard and brittle in part, very fine to medium grained, silty, angular to subrounded, poorly sorted, local good calcite cement, crystalline calcite matrix, local silica cement with quartz overgrowth, local argillaceous and kaolinite matrix, local argillaceous and micaceous matrix, disseminated pyrite, common mica, lithic fragments, carbonaceous fragments, pyrite, feldspar, no visible porosity, no **SHOW**.

Top Johansen Formation **TWT 2.424S**

2791.0m (-2762.0m)

SANDSTONE: white to light gray, light gray brown, locally hard and brittle, locally friable and crumbly, very fine to medium grained, angular to subrounded, poor to moderately sorted, local good calcite cement, local good silica cement with quartz overgrowth/mineral inclusions, pressure solution, kaolinite and argillaceous matrix in part, local mica/pyrite matrix, local abundant disseminated pyrite, lithic fragments, feldspar, no visible porosity, no **SHOW**.

CLAYSTONE: light to medium gray, gray brown to moderate brown, very soft, sticky, amorphous, plastic, hydrated, washable, non calcareous, mica, pyrite, common silt to fine sand grains grading locally to **SILTSTONE** and argillaceous **SANDSTONE**.

LIMESTONE: white to off white, soft to firm, cryptocrystalline, sandy grading to calcite cemented **SANDSTONE**, local carbonaceous and argillaceous laminations, locally crystalline.

SANDSTONE: white to light gray, light gray brown, locally hard and brittle, locally friable and crumbly, very fine to medium grained, angular to subrounded, poor to moderately sorted, local good calcite cement, local good silica cement with quartz overgrowth/mineral inclusions, pressure solution, kaolinite and argillaceous matrix in part, local mica/pyrite matrix, local abundant disseminated pyrite, lithic fragments, feldspar, no visible porosity, no **SHOW**.

Top Statfjord Formation **TWT 2.448S**

2840.0m (-2811.0m)

SANDSTONE: white to light gray, locally friable and crumbly, locally hard and brittle, very fine to very coarse grained, local scattered granules >4mm and angular quartz fragments, angular to subrounded, poorly to moderately sorted, local good calcite cement, local good silica cement, abundant quartz overgrowth, local pyrite cement, argillaceous/kaolinite matrix increasing with depth, detrital pyrite, pyrite inclusions, common mica, lithic fragments, feldspar, carbonaceous material, pressure solution, pitted quartz surfaces, fluid inclusions, no visible porosity, no **SHOW**.

COAL: black, brown black, hard, brittle angular fracture, lustrous, greasy.

Drillers TD 2895.0 mRKB

Loggers TD 2891.7 mRKB

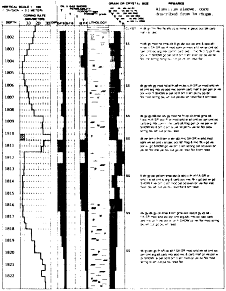
PAGE 1 OF 2

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD Wildcat DATE 14/08/92
CORE NO 1 FROM 1801 M TO 1828 M RECOVERED 26.46 M 98 %
FORMATION Sognefjord DESCRIBED BY Howes/Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



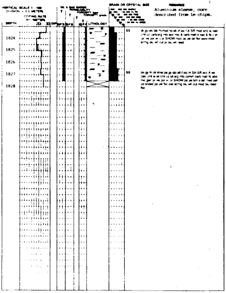
PAGE 2 OF 2

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD Wildcat DATE 14/08/92
CORE NO 1 FROM 1801 M TO 1828 M RECOVERED 26.46 M 98 %
FORMATION Sognefjord DESCRIBED BY Howes/ Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



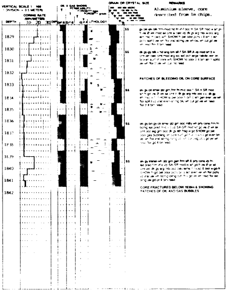
PAGE 1 OF 1

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD Wildcat DATE 14/08/92
CORE NO 2 FROM 1828 M TO 1841.5 M RECOVERED 13.64 M 100+ %
FORMATION Sognefjord DESCRIBED BY Lochtie/Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



PATCHES OF BLEEDING OIL ON CORE SURFACE

CORE FRACTURED BELOW 1839m & SHOWING PATCHES OF OIL AND GAS BUBBLES

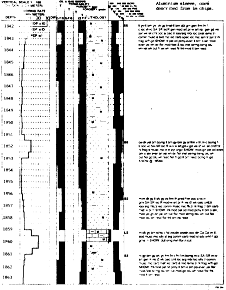
PAGE 1 OF 2

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD Wildcat DATE 15/08/92
CORE NO 3 FROM 1841.5 M TO 1868.5 M RECOVERED 27.26 M 100+ %
FORMATION Sognefjord DESCRIBED BY Lochtie/Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



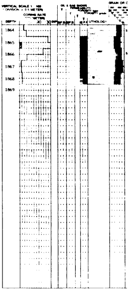
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

PAGE 2 . 2

WELL NO 35/11-7 FIELD Wildcat DATE 15/08/92
CORE NO 3 FROM 1841.5 M TO 1868.5 M RECOVERED 27.26 M 100+ %
FORMATION Sognefjord DESCRIBED BY Lochtie/Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



SS [illegible] SHOW [illegible]

SS [illegible] SHOW

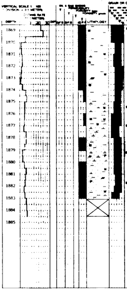
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

PAGE 1 . 1

WELL NO 35/11-7 FIELD Wildcat DATE 15/08/92
CORE NO 4 FROM 1868.5 M TO 1884.5 M RECOVERED 14.6 M 91.3 %
FORMATION Sognefjord DESCRIBED BY Lochtie/Greidanus

REMARKS
Aluminium sleeve, core described from 1 m chips.



SS [illegible] SHOW

SS [illegible] SHOW

SS [illegible] SHOW

SS [illegible] SHOW

SS [illegible] SHOW

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

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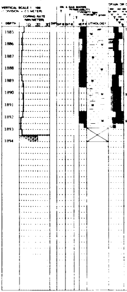
WELL NO 35/11-7 FIELD Wildcat DATE 15/08/92
CORE NO 5 FROM 1884.5 M TO 1894.0 M RECOVERED 8.35 M 87.9 %
FORMATION Sognefjord DESCRIBED BY Lochtie/Greidanus

REMARKS
Aluminium sleeve, core described from 1m chips.



SS [illegible] SHOW

SS [illegible] SHOW

SS [illegible] SHOW

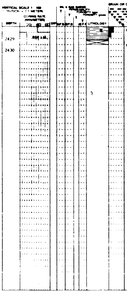
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

PAGE 1 . 1

WELL NO 35/11-7 FIELD Wildcat DATE 21/08/92
CORE NO 6 FROM 2428.0 M TO 2429.5 M RECOVERED 1.2 M 80 %
FORMATION Ness DESCRIBED BY Greidanus/Lochtie

REMARKS
Core catcher failed at surface.
Core recovered conventionally.
Described from chips.



CLYST [illegible] SHOW

CLYST dk gy-dk brn gy,mod hd brit,ang frac [illegible] SHOW

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

PAGE 1 . 1

WELL NO 35/11-7 FIELD WILDCAT DATE 22/08/92
CORE NO 7 FROM 2429.5 M TO 2440.0 M RECOVERED 10.5 M 100 %

Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

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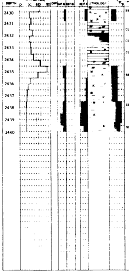
WELL NO 35/11-7 FIELD WILDCAT DATE 22/08/92
CORE NO 8 FROM 2440 M TO 2458 M RECOVERED 16.96 M 94.2 %

FORMATION NESS

DESCRIBED BY LOCHTIE/KELMAN

REMARKS
Aluminium sleeve, core described from 1m chips.



SS lt gy brn fnn [illegible] SA-SR well srt occ kao/arg mtx carb mat mica [illegible] SHOW [illegible] dir flor slow strmg dull gold cut [illegible] yel-gold resd flor

CLYST brn blk frm fiss-flky v mica v carb non calc grdg to COAL

COAL brn blk blk frm brit flky dull rthy occ bright lustrous

CLYST olv gy frm fiss dull rthy micmic tr pll [illegible] micpyr sl carb mat non calc

SS gy brn fnn vf-f occ m grns SA-SR well srt abd kao/arg mtx mica tr carb mat [illegible] vis por pr SHOW sl hydc odor [illegible] gold dir flor pr inst strmg yel-milky wh cut flor pr yel resd

SS gy brn fn [illegible] f-c pred m SA-SR pr-mod srtd sl kao/arg mtx gd vis por pr [illegible] SHOW hydc odor pr [illegible] dull gold dir flor inst strmg-bmg [illegible] yel-milky wh cut flor yel-milky wh resd

SS gy brn [illegible] SA-SR mod srtd sl kao/arg mtx mic carb mat pr [illegible] vis por pr SHOW dull gold-yel dir flor inst cldg-bmg [illegible] wh cut flor [illegible] yel-milky wh resd

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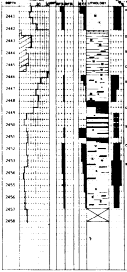
FORMATION BRENT - NESS

DESCRIBED BY LOCHTIE/KELMAN

REMARKS
Aluminium sleeve, core described from 1m chips.



SS lt yel gy mod hd fn pred m occ f-c mod srt A-SR mod cmt wk/sl cmt sl kao sl mic occ carb spec fr-gd vis por pr [illegible] SHOW n-fnt gassy odor [illegible] dull yel pp flor tr-fr slow-mod strmg-bmg yel wh cut tr-mod yel wh resd flor no resd

DOL lt brn gy-olv gy hd-v hd crpxln blky ang-conch brk sl slty sl arg tr SHOW [illegible] fnt dull gold flor on fresh surf v sl tr fnt slow cldg blu wh cut, sl crm resd flor no resd

SLTST olv gy-brn gy mod hd subfiss-blky n calc arg carb spec vp abd musc mica lams grdg vf SS v sl SHOW no odor no flor v fnt tr slow even blu wh cut

CLYST m gy-olv gy mod hd-hd gsy-waxy app broken & frac vp wrkd surf sl slty carb & mica strk occ vis pl rmn sl micpyr

SS dk brn gy fnn fn vf-m SA-SR mod srtd kao/arg mtx abd mica abd coal debris coal & mica interlams [illegible] vis por pr SHOW sl hydc odor v dull yel grn dir flor inst strmg yel-milky wh cut flor yel-milky wh resd

COAL blk hd fiss-flky greasy lustrous woody text pll [illegible] interlaminated w/mica

SS brn gy fn-v fn crmly f-m occ c grns SA-SR pr-mod srtd sl kao-arg mtx sl mica gd vis por pr SHOW sl hydc odor n dir flor slow diff cldg yel cut flor sl improves on crush yel resd

COAL brn blk hd brit-flky dull rthy abd pll rems grdg to v carb/sandy micaceous lams

SS brn gy fn f-m occ vf-c pr-mod srtd ver kao/arg mtx mica occ abd coal clsts fr-n vis por pr SHOW sl hydc odor n dir flor inst strmg-cldg yel-milky wh cut flor pa yel resd

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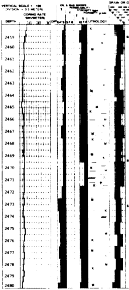
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD WILDCAT DATE 23/08/92
CORE NO 9 FROM 2458.0 M TO 2486.0 M RECOVERED 28.5 M 100 %
FORMATION BRENT - NESS/ETIVE DESCRIBED BY Lochtie/Kelman

REMARKS
Aluminium sleeve, core described from 1m chips



SS lt yel gy-lt brn gy mod hd ind-fn gen f-c occ vc crs-[illegible] SA-SR [illegible] SHOW [illegible] hydc gassy od [illegible] slow even cldg [illegible] resd flor no resd col

SS off wh-lt brn gy hd ind-fn f-c occ vc pred crs-lmal qtz occ vel brn grn SA-SR prly srt pr vis por w cmt weak cmt [illegible] mica comm coaly carb [illegible] SHOW [illegible] hydc [illegible] flor slow cldg-bmg [illegible] flor mod dull [illegible] crush [illegible] resd flor no resd col

SS lt brn gy-lt yel gy mod hd fn pred m f-c crs-lmal occ fros qtz SA-SR occ A mod srt gd vis por mod sl cmt w mod kao mtx sl mic n carb spec fr-gd SHOW sl-fr hydc od mod-gd even-pchy occ spec yel wh-blu wh flor mod-gd fast slow gen strmg occ cldg blu wh cut improved by crushing up fr-gd blu wh resd flor n-v crm resd

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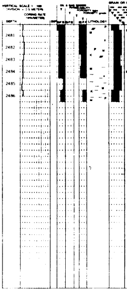
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD WILDCAT DATE 23/08/92
CORE NO 9 FROM 2458.0 M TO 2486.0 M RECOVERED 28.5 M 100 %
FORMATION BRENT NESS/ETIVE DESCRIBED BY Lochtie/Kelman

REMARKS
Aluminium sleeve, core described from 1m chips



SS lt yel gy-lt brn gy mod hd ind-fn f-c crs-lmal occ fros qtz A-SR pr-mod srtd fr-gd vis por occ pr wk-mod sl cmt occ w cmt kao comm mic tr carb/coaly specs w/assoc micpyr fr-gd SHOW n-sl hydc od mod-gd brt gen even occ solid strkd yel wh-blu wh cut mod-gd blu wh resd flor n-v flor n-v crm resd col

SS lt gy-lt yel gy mod hd-hd ind sl fn gen vf-m occ c crs-lmal qtz A-SR pr-mod srtd fr-pr por w cmt sl cmt abd kao m-dk gy arg [illegible] comm musc mic carb specs w/assoc tr mic pyr v sl-pr occ fr SHOW no od tr-sl pchy & strks dull w/brn spec yel-yel wh flor tr wk occ mod slow strmg blu wh cut sl-mod blu wh resd flor no resd col

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Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

WELL NO 35/11-7 FIELD WILDCAT DATE 24/08/92
CORE NO 10 FROM 2486 M TO 2514 M RECOVERED 27.5 M 98.2 %
FORMATION BRENT ETIVE/RANNOCH DESCRIBED BY Lochtie/Kelman

VERTICAL SCALE 1 : 100
DIVISION = 0.5 METER
OIL & GAS SHOWS
PERMEABILITY
POROSITY type
POROSITY grade
GRAIN OR CRYSTAL SIZE
REMARKS
CORING RATE MIN/METER
DEPTH 20 30 DIP LITHOLOGY

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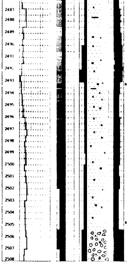
Mobil MOBIL EXPLORATION NORWAY INC

wellsite core description sheet

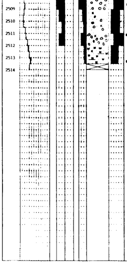
WELL NO 35/11-7 FIELD WILDCAT DATE 24/08/92
CORE NO 10 FROM 2486.0 M TO 2514.0 M RECOVERED 27.5 M 98.2 %
FORMATION BRENT ETIVE/RANNOCH DESCRIBED BY Lochtie/Kelman

VERTICAL SCALE 1 : 100
DIVISION = 0.5 METER
OIL & GAS SHOWS
PERMEABILITY
POROSITY type
POROSITY grade
GRAIN OR CRYSTAL SIZE
REMARKS
CORING RATE MIN/METER
DEPTH 0 20 30 DIP LITHOLOGY



SS lt brn gy-brn gy frm fn crmly pred f-m occ f-c wsoc vc grns SA-SR occ A pr-mod srtd sl sil cem si-abd kao mtx gen cms-tmai qtz occ smky-mlky fp mica vc occ micpyr vmic gri-ls vis por gen gd SHOW sl hydc odor even pchy brn pa yel dir flor inst cldg strmg dff brn mlky wh - vpa yel cut flor mlky wh-pa yel resd rng

SS/CGL lt brn gy fn crmly f-vc grans > 6mm gen 3-4mm A-SR prly srtd mtx supported kao mtx sl sil cem mlky wh-smky gy cms-tmai qtz fp mica chl musc biot tr micpyr fr-gd vis por fr-gd SHOW mod hydc odor pchy brn pa yel dir flor inst slow cldg dull mlky wh cut flor dull mlky wh-pa yel resd rng



SS/CGL lt brn gy fn crmly f-vc grans > 6mm gen 3-4mm A-SR prly srtd mtx supported kao mtx sl sil cem mlky wh-smky gy cms-tmai qtz fp mica chl musc biot tr micpyr fr-gd vis por fr-gd SHOW mod hydc odor pchy brn pa yel dir flor inst slow cldg dull mlky wh cut flor dull mlky wh-pa yel resd rng

SS lt brn gy-gy frm occ fn gen vf-m loc wsrt-vc grns & flg grans > 3mm SA-SR prly srtd kao mtx mic interlams bcmg vmic musc biot chl smky gy-mlky wh & clrs qtz fr-fr vis por fr SHOW mod hydc odor pchy brn pa yel dir flor inst cldg dull mlky wh-pa yel cut flor dull mlky wh-pa yel resd

SS From 2512m gy-lt brn gy frm-hd vf-m pred f, SA-SR well srtd kao mtx sil cem abd mic musc biot chl abd mic interlams fr-pr vis por - SHOW

Mobil MOBIL EXPLORATION NORWAY INC PAGE 1 OF 2

wellsite core description sheet

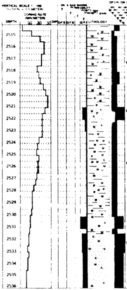
WELL NO 35/11-7 FIELD WILDCAT DATE 24/08/92

CORE NO 11 FROM 2514 M TO 2541 M RECOVERED 27 M 100 %

FORMATION BRENT RANNOCH/OSEBERG DESCRIBED BY LOCHTIE/KELMAN

REMARKS

Aluminium sleeve, core described from 1m chips



SS lt-m gy mod hd-vhd vf-m fn loc subfis vf-m SA-SR mod srtd mod sil cem kao arg mtx occ tk arg lams imsp- qtz and mic & mic interlams carb specs w occ carb lams comm biot musc pr vis por - SHOW

SS lt gy-off wh mod hd fn pred m-c occ vf-vc A-SR pr-mod srtd sl-mod sil cem kao mtx cms-mlky qtz comm mic comm pyr as cem/nod/incls occ qtz ovgth carb specs pr-fr vis por - SHOW

SS lt-m gy mod hd-hd subfis-flky occ brit vf-f SA-SR well srtd kao mtx occ mic/kao-pyr mtx occ sl-wk sil cem abd mic as flks biot chl musc & thin interlams and plgs fp cms-mlky & mlky wh qtz occ carb specs occ pyr/lead wood frags comm grdg to Micaceous SS pr vis por - SHOW

SS lt-m gy fn-c fn crmly f-c occ vc SA-SR occ A-SR pr srtd kao mtx loc abd kao mtx sl-wk sil cem/qtz ovgths cms-mlky wh qtz fp mica tr micpyr fr-gd vis por - SHOW

Mobil MOBIL EXPLORATION NORWAY INC PAGE 2 OF 2

wellsite core description sheet

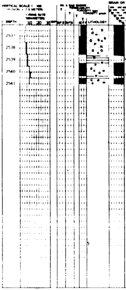
WELL NO 35/11-7 FIELD WILDCAT DATE 24/08/92

CORE NO 11 FROM 2514 M TO 2541 M RECOVERED 27 M 100 %

FORMATION BRENT RANNOCH/OSEBERG DESCRIBED BY LOCHTIE/KELMAN

REMARKS

Aluminium sleeve, core described from 1m chips



SS lt-m gy fn-c fn crmly f-vc w/flg & grans >3mm SA-SR prly srtd kao mtx loc abd kao mtx cms-mlky wh & smky gy qtz fp mica tr micpyr gen gd vis por - SHOW

CL YST dk gy blk frm-hd fis-sbfis mic occ flg and grns shaly text. [illegible]

SS lt-m gy fn-c fn crmly f-vc w/flg & grans >3mm SA-SR prly srtd kao mtx loc abd kao mtx cms-mlky wh & smky gy qtz fp mica tr micpyr gen gd vis por - SHOW