HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/11/78 Time 06:00

Present Depth 510' Previous Depth 106' Footage 24 Hrs. 404'

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Logging, ran DLL 111-503', BHC/GR 111-501', Schlumberger TD 509'

LITHOLOGIC DESCRIPTION

Interval Reported 106-510' Sampling Interval 30' ft. Sample Quality fair

Lag Time: 19.3 min. @ 500 ft.

Spud 0715 11/10

Interval	Description	Avg. Drill Rate min./ft.
106-210'	Cly and Clyst: sft, soluble, occ lumpy - blky, slty w/frequent thin bds coal, blk, impure, arg, sub bituminus, tr Ss, S&P from med-grnd clast coal and carb material, slty, arg.	7.0
210-270'	Cly and Clyst: a/a coal a/a, w/dol tan - brn, blky, dense, becoming v. calc and grdy to Ls below 240'; 240-270', 40% Ss gy, f - med-grnd, SA-SR, frosted qtz, weakly cmtd w/Cly	5.5
270-450'	Ls and Coal: tan - brn dol, blky, dense, slty, arg; coal becoming pure and vitreous below 340'; soluble Cly a/a and Ss a/a, arg and slty, nil porosity.	6.0
480-510'	Ls: tan - brn and reddish brn, dol, sideritic, blky, dense, hd, occ angular and splty, microxl, frequent calc xls on fracs, nil vis porosity, occ coal a/a, v. mnr Cly a/a.	6.5

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 0 Connection 0 Trip 0 Peaks 0

Mud: Wt. 9.2 Vis 100 W.L. 16 ph 10.5 cc Oil ____ % Cl_2 600 Temp. 100 °F. in 102 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
150		.855	
200		.995	
250		.94	
300		1.07	
350		1.00	
400		1.10	
450		1.04	
500		0.98	

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/12/79 Time 06:00

Present Depth 510' Previous Depth 510' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Opening hole (26" to 36" @ report time)

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units):
Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/13/78 Time 06:00

Present Depth 513' Previous Depth 513' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: P.O.H. to run 30' csg.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/75

[illegible] EXPLORATIONS, INC.
[illegible] DAILY/CONTRA

[illegible] DAILY REPORT

Well: TUNALIK #1 Date: 11/14/78 Time: 06:00

Present Depth: 513' Previous Depth: 513' Footage 24 Hrs.: 0

Formation: LOWER CRETACEOUS Dip: Surface

Activity: W.O.C., Ran 30" csg to 511', cmtd, w.o.c. @ report time.

DESCRIPTION

Drilled [illegible] Sampled [illegible] ft. Sample Quality [illegible]

[illegible] min. @ [illegible]

Avg. [illegible]

SHOW DESCRIPTION (Gas and/or Oil)

Gas: Background [illegible] Connection [illegible] Trip [illegible] Peaks [illegible]

Mud: Wt. [illegible] Vis [illegible] W.L. [illegible] ph [illegible] % Cl [illegible] % Cl_2 [illegible] Temp. [illegible] °F. in [illegible]

Pressures

Depth	Shale Density	Dc Exponent	Pore Pressure

Washed Samples:

Type	Interval	No. of Boxes	Set No.
[illegible] Dried Ditch			
[illegible] Ditch (Paleo)	80-510'	1	
[illegible] Ditch (USGS)	80-510'	1	
[illegible] (canned)	80-510'	1	
[illegible]	No.		

GORDON LEGG

TUNALIK #1 Date 11/15/78 Time 06:00

513' 513' Footage 24 Hrs. 0

LOWER CRETACEOUS Surface

Nippling up 30" csg.

DESCRIPTION

ft. Sample Quality

min. &

CONDITION (Gas and/or Oil)

Ditch Gas (Units): Background Connection Trip Peaks

Mud: Wt. Vis W.L. pH Ca Cl Temp. °F. in

Data Grid:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type		No. of Boxes	Set No.
Washed & Dried Ditch			
Washed & Dried (Paleo)			
Washed & Dried (USGS)			
Washed (Stained)			
Cores	No.		

GORDON LEGG

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date: 11/16/78 Time: 06:00

Present Depth: 565' Previous Depth: 516' Footage 24 Hrs.: 49'

Formation(s): LOWER CRETACEOUS Top: Surface

Present Activity: Drilling, connected 30" csg shoe depth to 516'

LITHOLOGIC DESCRIPTION

Interval Reported: 516-540' Sampling Interval: 30 ft. Sample Quality: v. poor
Lag Time: 24 min. @ 520 ft.

Interval	Description	Avg. Drill Rate min./ft.
510-540'	Predominantly cmt, w/mnr coal, entire sample appears to be slough and cmt from 30" csg job.	0.4 - 0.8

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background: 0 Connection: - Trip: - Peaks: -

Mud: Wt. 9.8 Vis 37 W.L. 15.5 ph 7.5 cc Oil ____ % Cl_2 700 Temp. N/R °F. in N/R °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist: GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL Tunalik #1 Date 11-17-78 Time 06:00

Present Depth 1534' Previous Depth 565 Footage 24 Hrs. 969'

Formation(s) Lower Cretaceous Top surface

Present Activity: Surveying, dev. 3/4 degrees @ 1534'

LITHOLOGIC DESCRIPTION

Interval Reported 540-1500' Sampling Interval 30' ft. Sample Quality fair
Lag Time: 48 min. @ 1500 ft.

Interval	Description	Avg. Drill Rate min./ft.
540-1140'	Predominently coal: w/intrbdd Ss, frequent loose grain, v.f. - med grnd when consolidated, v. silty gradg to sltst, calc, carb, w/occ salt & pepper appearance, poor to nil Ø; and intrbdd Ls, tan, gy, and brn dolomitic, arg, typically silty, occ blocky and dense, NOSCF.	0.3-1.4
1140'-1500'	Predominently Ss, w/intrbdd marly Ls and mnr coal; Ss, gy, off wht to tan, v.f. grnd, occ med grnd, p. srtd, occ salt & pepper w/ coal and carb material, v. calc: becoming more f.- med grnd below 1290', with secondary qtz overgrowths and wht interstitial clay; p. intergranular Ø, becoming p.-f. below 1440';NOSCF.	0.3-1.5

SHOW DESCRIPTION (Gas and/or Oil)

Peaks as Follows, associated w/ coal bds:

1130'	88 units
1149'	160 "
1180'	96 "
1410'	118 "
1450'	124 "

Ditch Gas (Units): Background 6-8 Connection 10-12 Trip -- Peaks see above

Mud: Wt. 10.1 Vis 33 W.L. 11.5 ph 8.5 cc Oil ____ % Cl_2 700 Temp. 86 °F. in 90 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
600'		0.848	8.7
800'		0.926	8.7
1000'		1.025	8.7
1200'		1.250	8.7
1400'		1.220	8.7
1500'		1.300	8.7

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist G. Legg

8/78

...LLIGGS, INC.
...NVEYONPRA

...L REPORT

TUNALIK #1 Date 11/18/78 Time 06:00

1942' Previous 1533' Footage 24 Hrs. 409'

LOWER CRETACEOUS Surface

Drilling

DESCRIPTION

1500-1920 30 ft. Sample Quality fair

58 min. @ 1900

		Avg.
1500-1650'	Pred Ss, tn - wh, v.f. - f-grnd, occ med-grnd, poor-fair porosity, w/interbdd Ls, marly & slty, w/interbdd coal.	1.3
1650-1695'	Ss: off wh - gy to bf, v.f. - f.-grnd, rr loose med-grnd, poor srtd, abnt carb material, fair intergran porosity, NOSCF, becomes mostly Ss med-grnd, aggregated, fri, fair-good porosity @ 1680, NOSCF.	0.4
1695-1830'	Ss: a/a w/less porosity, w/coal and marly Ls.	1.3
1830-1920'	Ss: gy - wh, v. f.-grnd - slty, SA-SR, sl S&P, w/carb material, poor-nil porosity, interbdd w/Dol, v. calc grdy to Dol Ls, tn - brn, hd, dense, microzl, no porosity and w/coal a/a.	1.5

DESCRIPTION (Gas and/or Oil)

Background 30 Conn. 25-106 Trip 100 Peaks 220 @ 1835' 212 @ 1910

Wt. 9.9 Vis 34 W.L. 11.0 pH 8.5 0 % Cl2 400 Temp. 80 °F. in 88 °F.

Depth	Shale Density	Dc Exponent	Pore Pressure
1550'		1.26	9.18
1600'		1.28	
1650'		1.28	
1700'		1.16	
1750'		1.31	
1800'		1.25	
1850'		1.19	
1900'		1.24	9.27

Collected Samples

Type		No. of Boxes	Set No.
Dried Ditch			
(Video)	510-1110'	1	2
(USGS)	510-1500'	1	2
(Combd)	420-1500'		
	No.		

GORDON LEGG

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/CONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/19/78 Time 06:00

Present Depth 2475' Previous Depth 1942' Footage 24 Hrs. 533'

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 1920-2460' Sampling Interval 30 ft. Sample Quality fair

Lag Time: NR min. @ ft.

Interval	Description	Avg. Drill Rate min./ft.
1920-2040'	Coal & Dol: Dol, tn - bf - brn & gy, typically calc, often earthy, microxl, interbd w/mnr Ss, v.f. - f.-grnd, slty & arg, calc, poor - nil porosity.	1.6
2040-2190'	Ss: Clear - off wh - tn, v.f. - f.-grnd, poorly consolidated, v. friable, sl carb, SA-SR, fair intergran porosity, NOSCF, interbdd w/dol and coal a/a.	1.4
2190-2370'	Interbdd Ss, Dol & Coal a/a; Ss becoming more well indurated, Dol, v. well indurated, ptly sil, grdgs to Ss and Sltst.	3.5
2370-2460'	Dol: tn - brn, microxl, hd, dense, sil in part, some w/sub-conchoidal frac, becomes v. calc in part below 2430', thnly interbdd w/Ss, v. f.-grnd, loose and fri, calc, well cmt w/poor porosity and Coal a/a.	3.8

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10-11 Connection 150 @ 2453' Trip - Peaks 216 @ 2365' (coal)

Mud: Wt. 10.0 Vis 37 W.L. 12 ph 8.3 cc Oil - % Cl_2 350 Temp. 92 °F. in 98 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
1950'		1.27	NR
2050'		1.233	
2150'		1.275	
2250'		1.355	
2350'		1.50	
2450'		1.59	

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	90-1770'	2	1 & 2
Unwashed Ditch (Paleo)	1110-1470'	1	
Unwashed Ditch (USGS)	1110-1470'	1	
Geochem (canned)	1500-1860'	1	
Cores	No.		

Geologist GORDON LEGG

8/70

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY, ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date: 11/20/78 Time: 06:00

Present Depth: 2630' Previous Depth: 2475' Footage 24 Hrs.: 155'

Formation(s): LOWER CRETACEOUS Top: surface

Present Activity: RIH

LITHOLOGIC DESCRIPTION

Interval Reported: 2460-2630' Sampling Interval: 20 ft. Sample Quality: fair
Lag Time: 70 min. @ 2500 ft.

Interval	Description	Avg. Drill Rate min./ft.
2460-2520'	Dol: tn - brn microxl, hd, dense, ptly sil, v.calc grdg to Ls, interbdd w/Ss, gy - off wh, occ loose grns, f. - med-grnd, calc, v. well cmtd, hd, w/Coal a/a.	3.5
2520-2580'	Dol, Ss and Coal, Interbdd a/a, w/Clyst, gy, sft in part, v. finely mica, slty, grdg to Slrst.	1.6
2580-2630'	Ss: gy - off wh, occ bf, f.-grnd, SA-SR, slty, arg, carb, occ inclusions of wh cly in matrix, calc cmt, poor-nil porosity, NOSCF.	1.8
NOTE: RAN SCHLUMBERGER LOGS AS FOLLOWS:		
	DIL/GR/SP 2630-520'	
	BHC/GR 2629- 520'	
	Good logs, Schlumberger TD @ 2636'.	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 15 Connection 220 @ 2580' Trip Peaks 198 @ 2585' 220 @ 2590'

Mud: Wt. 9.8 Vis 44 W.L. 12 ph 8.3 cc Oil - % Cl_2 250 Temp. 85 °F. in 90 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
2500		1.538	8.7
2550		1.375	8.7
2600		1.450	8.7

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	1770-2430'	1	
Unwashed Ditch (USGS)	1770-2430'	1	
Geochem (canned)	1860-2580'	2	
Cores	No.		

Geologist: GORDON LEGG

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/21/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 591' opening hole

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Fishing for 17 1/2" pilot bit

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	NOTE: Opened 17 1/2" hole to 26" hole 516' to 1107'. Lost 17 1/2" pilot bit in hole; fishing for same at report time.	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/22/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Fishing for 17 1/2" bit (hole opened to 26" to 1107')

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date 11/23/78 Time 06:00

Present Depth: 2630' Previous Depth: 2630' Footage 24 Hrs. 0

Formation(s): LOWER CRETACEOUS Top surface

Present Activity: Fishing for pilot bit; fish @ 1160'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 9.8 Vis 37 W.L. 11.5 ph 8.3 cc Oil 0 % Cl_2 300 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dimensional Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
Core Chips (canned)			
Core	No.		

Geologist: H. C. HAYWOOD

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date: 11/24/78 Time: 06:00

Present Depth: 2630' Previous Depth: 2630' Footage 24 Hrs.: 0

Formation(s): LOWER CRETACEOUS Top: Surface

Present Activity: Fishing for pilot bit

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
Microform (canned)			
Cores	No.		

Geologist: H. C. HAYWOOD

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date 11/25/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Open hole; wash over fish @ 1160-1163'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 9.7 Vis 37 W.L. 11 ph 8.3 cc Oil 0 % Cl_2 300 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
Geochem (canned)			
Cores	No.		

Geologist H. C. HAYWOOD

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL: TUNALIK #1 Date: 11/26/78 Time: 06:00

Present Depth: 2630' (17 1/2") 1165' (20") Previous Depth: _____ Footage 24 Hrs.: 0

Formation(s): LOWER CRETACEOUS Top: Surface

Present Activity: Attempt to wash over fish @ 1165'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units):
Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 9.8 Vis 41 W.L. 11.5 ph 8.5 cc Oil 0 % Cl_2 300 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist: H. C. HAYWOOD

8/79

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONTRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/27/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Fishing

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	NOTE: RIH w/24" rotary shoe to 1172' w/spring catcher welded inside; no recovery. Fabricating rotary shoe @ report time.	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist S. HEWITT

8/73

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/28/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Fishing, washing over fish @ 1169' @ report time.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units):
Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8-78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/29/78 Time 06:00

Present Depth 2630' (17½") 1319' (26") Previous Depth 2630' 1169' Footage 24 Hrs. 150'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Recovered fish; opening 17½" hole to 26"

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

R. HAYWOOD

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 11/30/78 Time 06:00

Present Depth 1877' (26") Previous Depth 1319' (26") Footage 24 Hrs. 516'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Dress reamer

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 9.8 Vis 41 W.L. 11.5 ph 8.5 cc Oil 0 % Cl_2 300 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist H. C. HAYWOOD

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HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/1/78 Time 06:00

Present Depth 2185 (26" hole) Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Opening hole to 2185'.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 9.9 Vis 38 W.L. 11.5 ph 8.5 cc Oil 0 % Cl_2 300 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist H. HAYWOOD

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/2/78 Time 06:00

Present Depth 2630' Previous Depth 2630' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Opening 17½" hole to 26" hole @ 2446' (264' last 24 hrs.)

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8/73

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/3/78 Time 06:00

Present Depth 2626' (26" hole) Previous Depth 2630 (17½" hole) Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Circ bottoms up; opened 180' 17½" hole to 26" hole last 24 hrs.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/4/78 Time 06:00

Present Depth 2626' Previous Depth 2626' (26" hole) Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Running 20" csg.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist SAM HEWITT

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY ONPRA

DAILY GEOLOGICAL REPORT

Well: CHUKLIK #1 Date 12/7/76 Time 06:00

Present Depth 2626' Previous Depth 2626' Footage 24 Hrs. 0

Formation: LOWER CRETACEOUS Top surface

Present Activity: Prep to cmt 20" csg; ran 20", shoe @ 2584'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min/ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist: GORDON LEGG

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/6/78 Time 06:00

Present Depth 2626' Previous Depth 2626' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: WOC

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units):
Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/7/78 Time 06:00

Present Depth 2626' Previous Depth 2626' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Nippling up.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/8/78 Time 06:00

Present Depth 2626' Previous Depth 2626' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Testing BOP's

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/9/78 Time 06:00

Present Depth 2626' Previous Depth 2626' Footage 24 Hrs. 0

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling on Junk.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl_2 _____ Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores Washover core	No. 1165-1172'	4 (10"x10")	

Geologist GORDON LEGG

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HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/10/78 Time 06:00

Present Depth 2656' Previous Depth 2626' Footage 24 Hrs. 30

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 2630-2640' & GB core Sampling Interval 30 ft. Sample Quality good
Lag Time: 55 min. @ 2625 ft.

Interval	Description	Avg. Drill Rate min./ft.
2630-2640'	Ls: tn, microxl, earthy - dns, nil porosity, w/intrbdd Ss grdg to Sltst: gy - brn: v.f.-grnd, slty, arg, occ S&P appearance from carb ptg and frags, well indurated, poor - nil porosity; mnr coal.	6.0
2651-2654'	Globe Basket Core: Cut 3', Rec 2.5'	18.0
	2651-2652' - Sh: med gy, calc, micromica, occ coal, seams & blebs, sl fis - fis, mod indurated, becomes slty.	
	2652-2653.5' - Sltst: med gy, calc, occ sdy, v. arg, v. carb, w/occ coal & carb wood frag, some original cellular wood structure, becomes sl macro-mica w/visible muscovite flakes.	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background NR Connection NR Trip NR Peaks NR

Mud: Wt. 8.7 Vis 60 W.L. 12 ph - cc Oil - % Cl_2 7200 Temp. 90 °F. in 85 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
2650'		1.20	9.9

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores Globe Backet	No. 2651-2654'	3 (10"x10")	

Geologist GORDON LEGG

8/7.

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/11/78 Time 06:00

Present Depth 2821' Previous Depth 2656' Footage 24 Hrs. 165'

Formation(s) LOWER CRETACEOUS Top Surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 2640-2790' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 56 min. @ 2725 ft.

Interval	Description	Avg. Drill Rate min./ft.
2640-2670'	Ss and Sltst: gy - brn, v.f.-grnd to Slt, arg, becoming more slty downward; intrbdd w/Ls, tn, microxl, earthy, nil porosity, w/occ mnr coal strgs.	5.0
2670-2790'	Sh and Clvst: lt - med gy, lumpy to sub-fis, micromica, v. slty, grdg to Sltst, frequently v. carb, intrbdd w/Sltst, occ sdy - grdg to Sh and Sltst; w/occ free med - crs-grnd frosted qtz; mnr Ls a/a; coal strg, ranges from blk vitreous to blk earthy.	8.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 0 Connection 0 Trip correlates w/coal Peaks (108 @ 2810' (48 @ 2790' (200 @ 2765'

Mud: Wt. 8.8 Vis 115 W.L. 18.5 ph 9.5 cc Oil % Cl_2 27,000 Temp. 81 °F. in 110 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
2700'		1.70	8.8
2750'		1.78	9.2
2800'		1.79	8.8

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 2651-2654 - 3 boxes Globe basket core.		

Geologist GORDON LEGG

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/12/78 Time 06:00

Present Depth: 3017' Previous Depth 2821' Footage 24 Hrs. 196'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 2790-3000' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 38 min. @ 3090 ft.

Interval	Description	Avg. Drill Rate min./ft.
2790-2850'	Ss: wh, lt gy, v.f. - f.-grnd slty, arg, calc, feldspathic, rexlized qtz faces on grns, sil, well indurated, poor - nil porosity, grds to Sltst in part; w/coal and tr Ls a/a.	2.0 - 12.0
2850-2940'	Ss and Sltst: Ss; wh - lt gy, v. slty, grdg to Sltst, tight, abnt interstitial wh cly, poor - nil porosity; becoming v.f. - f.-grnd, fri, fair intergran porosity 2880-2910', intrbdd w/Clyst and Sh, gy, fis in part, slty, and w/coal a/a.	1.3 - 5.0
2940-3000'	Clyst and Sh: a/a, intrbdd w/Sltst and occ Ss a/a and w/mnr coal.	2.0 - 5.5

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10 Connection Trip 25 @ 2827' Peaks 280 @ 2980' (cos

Mud: Wt. 8.7 Vis 41 W.L. 16.0 ph 9.5 cc Oil % Cl_2 26,000 Temp. 97 °F. in 104 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
2850'	2.48	1.50	9.19
2900'	2.50	1.49	9.19
2950'	2.55	1.69	9.19
3000'	2.61	1.65	9.24

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

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HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/13/78 Time 06:00

Present Depth 3280' Previous Depth 3017' Footage 24 Hrs. 263'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 3000-3270' Sampling Interval 30 ft. Sample Quality fair
Lag Time: 52 min. @ 3250 ft.

Interval	Description	Avg. Drill Rate min./ft.
3000-3030'	Intrbdd Clyst and Sh: gy, v. slty, grdg to Sltst, w/Sltst and Ss, arg, grdg to Sh, poor - nil porosity, occ coal.	2.5 - 4.5
3030-3270'	Sh and Clyst: a/a w/Sltst and Ss a/a grdg to Sh, and w/dol tn - brn microxl, becoming v. calc in part, in part dol Ls, rr vugs w/calcite xls, nil porosity, occ v. arg; and w/mnr amounts of coal.	4.0 - 6.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 4 Connection - Trip - Peaks Coals: (80 @ 3260' (630 @ 3175'

Mud: Wt. 8.9 Vis 52 W.L. 12.4 ph 10 cc Oil ____ % Cl_2 27000 Temp. 110 °F. in 120 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
2850'	2.50	1.50	9.19
2900'	2.50	1.49	9.19
2950'	2.55	1.69	9.19
3000'	2.61	1.65	9.24
3050'	2.54	1.51	9.19
3100'	2.52	1.71	9.19
3150'	2.44	1.72	9.21
3200'	2.46	1.76	9.23
3250'	-	1.77	9.24

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	2430-3000'	1	1
Unwashed Ditch (USGS)	2430-3000'	1	2
GeoChem (canned)	2580-2940'	1	
Cores	No.		

Geologist CORDON LEGG

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HUSKY

[illegible] OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

[illegible] GEOLOGICAL REPORT

Well TUNALIK #1 Date 12/24/78 Time 06:00

Present Depth 3340' Previous Depth 3280' Footage 24 Hrs. 60'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 3270-3308' Sampling Interval 30 ft. 20 ft. Sample Quality fair

Lag Time: 52 min. @ 3300 ft.

Interval	Description	Avg. D[illegible] min.
3270-3280'	Intrbdd Sh and Ss; Sh gy, Ss gy, v.f.-grnd - slty, grdg to Sltst, and w/coal.	4.0-6.0
3280-3308'	Core #1, Cut 28', Rec. 26': Intrbdd Sh, med gy to dk gy (varying w/organic content), frequent plant debris and impressions, in part coaly, w/a 2 ft. coal bd; and Ss, gy, v.f.-grnd to slty, SA-SR, grdg to Sltst, v. arg, v. sl calc, occ carb inclusions; dip is horizontal w/xbdg 3289.5-3292' w/dips 15-20°. Nil porosity. NOSCF.	9.0-10.0
	REQUEST: 25 Core Boxes	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10-18 Connection none Trip 92 @ 3280' Peaks 52 @ 3285' (coal)

Mud: Wt. 8.9 Vis 52 W.L. 10.8 ph 9.5 cc Oil ____ % Cl_2 24,000 Temp. 112 °F. in 114 °F.
Max temp on trip 110° @ 3280'

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
3300'	2.46	1.76	9.23

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	Core #1 3280-3308'	1	
Cores	No.1 3280-3308'	9	

Geologist GORDON LEGG

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/15/78 Time 06:00

Present Depth 3786' Previous Depth 3340' Footage 24 Hrs. 446

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 3308-3760' Sampling Interval 20 ft. Sample Quality fair
Lag Time: 46 min. @ 3653 ft.

Interval	Description	Avg. Drill Rate min./ft.
3308-3720'	Predominantly Sh: lt-med gy, occ dk gy w/increase in organic content, lumpy to subfis, occ fis, typically slty, w/intrbdd mnr Ss and Sltst; Ss wh - lt gy, v.f.-grnd - slty, SA-SR, wh cly matrix, v. arg, poor - nil porosity, no show, w/occ thin seams of coal.	3.0 - 4.0
3720-3760'	Ss: wh - off-wh, v.f. - f.-grnd, S&P from carb particles, wh cly matrix, sl fri, fair intergran porosity, no show w/Kaolinitic clay matrix, intrbdd w/Sh a/a, becoming bentonitic below 3740'.	2.0 - 4.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 20-30 Connection - Trip - Peaks 238 @ 3695' 100 @ 3670'

Mud: Wt. 9.5 Vis 5.9 W.L. 9.2 ph 9.0 cc Oil ____ % Cl_2 28,000 Temp. 126 °F. in 134 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
3350'	2.46	1.63	9.19
3400'	2.58	1.60	9.17
3450'	2.52	1.63	9.19
3500'	2.36	1.97	9.18
3550'	2.41	1.85	9.23
3600'	2.48	1.83	9.23
3650'	2.54	1.75	9.23
3700'	2.56	1.78	9.20
3750'	-	1.60	9.20

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	3000-3500'	1	1
Unwashed Ditch (USGS)	3000-3500'	1	2
GeoChem (canned)	3300-3540'	1	
Cores	No.		

Geologist GORDON LEGG

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/16/78 Time 06:00

Present Depth 3830' Previous Depth 3786' Footage 24 Hrs. 46

Formation(s) LOWER CRETACEOUS - Top surface

Present Activity: POH w/Core #2

LITHOLOGIC DESCRIPTION

Interval Reported 3760-3820' Sampling Interval 20 ft. Sample Quality fair
Lag Time: 45 min. @ 3820 ft.

Interval	Description	Avg. Drill Rate min./ft.
3760-3820'	Intrbdd Sh, med gy, subfis, sl bentonitic w/Ss wh - off wh, v.f. - f.-grnd, abnt Kaolinitic cly matrix, fair intergran porosity in less cly portions, no show; w/mnr Dol, brn, dns, hd.	4.0 - 5.0
3820-3830'	Cut Core #2 POH @ report time.	
	REQUEST: 8½ x 14" carbon paper	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10 Connection - Trip 14 @ 3820' Peaks -

Mud: Wt. 9.5 Vis 59 W.L. 9.2 ph 9.0 cc Oil ____ % Cl_2 28,000 Temp. 126 °F in 136 °F out
Map temp 116° during trip

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
3750'	2.60	-	-
3800'	2.50	1.85	9.28

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/7

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/17/78 Time 06:00

Present Depth 4058' Previous Depth 3830' Footage 24 Hrs. 228'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 3820-4040' Sampling Interval 20 ft. Sample Quality fair
Lag Time: 44 min. @ 4007 ft.

Interval	Description	Avg. Drill Rate min./ft.
3820-3830'	Core #2, Cut 10', Rec. 9': Sh, lt gy - med gy, v.f. mica, fis - subfis, sl calc, mod ind, becoming sl slty in part.	10.0 - 11.0
3830-4040'	Predom Sh: lt - med gy, occ dk gy w/organic carb content, occ slty, subfis - fis, intrbdd w/Sltst, gy, v. arg, grdg to Sh; occ Ss, wh - gy, v.f.-grnd - slty, grdg to Sltst.	2.5 - 4.0
	REQUEST: 200 qt cans w/lids	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 5-10 Connection - Trip - Peaks -

Mud: Wt. 9.4 Vis 45 W.L. 12.4 ph 9.5 cc Oil ____ % Cl_2 24,000 Temp. 112 °F. in 126 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
3850'	2.52	1.68	9.34
3900'	2.54	1.80	9.18
3950'	2.54	1.56	9.28
4000'	2.62	1.75	9.26

Unwatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	3500-4020'	1	
Unwashed Ditch (USGS)			
GeoChem (canned)	3820-3829' (Core #2) 3780-4020'	2	
Cores	No. 2 3820-3829'	4	

Geologist GORDON LEGG

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

Well TUNALIK #1 Date 12/18/78 Time 06:00

Present Depth 4220' Previous Depth 4058' Footage 24 Hrs. 162

Formation(s) LOWER CRETACEOUS - Top surface

Present Activity: Reaming

LITHOLOGIC DESCRIPTION

Interval Reported 4040-4200' Sampling Interval 20 ft. Sample Quality fair
Lag Time: 49 min. @ 4200 ft.

Interval	Description	Avg. Drill Rate min./ft.
4040-4100'	Sh: lt - med gy, occ dk gy w/carb material, sometimes becoming Clyst, in part soluble; w/mnr Sltst, gy, v. shly, occ sdy	4.0 - 5.0
4100-4125'	Ss: wh - off wh, in part mottled, v.f.-grnd - f.-grnd, SA-SR, v. calc, w/matrix wh cly and some chalky Ls, v. fri, poor - fair intergran porosity, restricted by chalk and Cly, v. sl tr spl fluor, v. faint cut; mnr Sh.	1.0 - 2.5
4125-4200'	Sh: a/a, no longer cly, mnr Sltst and Ss a/a.	3.5 - 5.0

HYDROCARBON DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 7 Connection - Trip - Peaks -

Mud: Wt. 9.5 Vis 58 W.L. 14 ph 9.5 cc Oil ____ % Cl_2 25,000 Temp. 128 °F. in 132 °F. out
Peak during trip 122°.

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
4050'	2.62	1.85	9.19
4100'	2.66	1.78	9.19
4150'	2.59	1.77	9.20
4200'	2.57	1.78	9.19

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

S-78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/19/78 Time 06:00

Present Depth 4460' Previous Depth 4220' Footage 24 Hrs. 240

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 4200-4400' Sampling Interval 20 ft. Sample Quality fair
Lag Time: 51 min. @ 4450 ft.

Interval	Description	Avg. Drill Rate min./ft.
4200-4400'	Sh and Clyst: med gy, occ dk gy, subfis to blky and lumpy, partially disolves in water, occ organic to carb; w/mnr Sltst and Ss, off wh to wh to gy, rr clear, v.f. - f.-grnd, SA-SR, mod well ind, poor porosity, occ fair porosity. No shows.	2.5 - 6.5
	NOTE: Finished loading shot holes for velocity surveys. GeoChem samples caught on 20' intervals 3280-4300' (30' samples below 4300')	

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 5-10 Connection - Trip - Peaks 40 @ 4225'

Mud: Wt. 9.7 Vis 57 W.L. 12.4 ph 9.0 cc Oil ____ % Cl_2 24,000 Temp. 122 °F. in 141 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
4250'	2.54	1.73	9.24
4300'	2.54	1.83	9.21
4350'	2.52	1.71	9.20
4400'	2.50	1.92	9.28
4450'	2.61	1.70	9.25

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	3280-4300'	2	1 & 2
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	4020-4260'	1	
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/20/78 Time 06:00

Present Depth 4601' Previous Depth 4460' Footage 24 Hrs. 141'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 4440-4580' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 67 min. @ 4595 ft.

Interval	Description	Avg. Drill Rate min./ft.
4440-4480'	Sh: a/a w/mnr Ss, gy, mottled blk w/carb inclusions, occ pink to orange from probable feldspar, f.-grnd, SR-SA, heavy Cly matrix, v. heavy calc cmt; poor intgran porosity. No show.	1.8 - 7.0
4480-4560'	Ss: Clear w/wh matrix, inclusions of gy Sh, blk carb material and rust colored iron stnd matter, f.-grnd - v.f.-grnd, v. fri, fair intgran porosity. No show; intrbdd w/Sh a/a.	3.2 - 6.4
4560-4580'	Sh: gy, slty, occ carb, mnr Ss, mostly becoming slty and arg, nil - poor porosity.	2.0 - 6.8

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 5 Connection none Trip 8 @ 4590' Peaks none

Mud: Wt 9.5 Vis 55 W.L. 16.5 ph 9.5 cc Oil ____ % Cl_2 2500 Temp. 106 °F. in 122 °F. out
Max temp 141° on trip.

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
4500'	2.62	1.69	9.30
4550'	2.59	1.74	9.26

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	4260-4500'	1	
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/21/78 Time 06:00

Present Depth 4890' Previous Depth 4601' Footage 24 Hrs. 289'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 4580-4880' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 57 min. @ 4830 ft.

Interval	Description	Avg. Drill Rate min./ft.
4580-4880'	Sh: (80-100%) gy - dk gy, calc, subfis - fis, occ splintery, occ carb and slty, intrbdd w/mnr Sltst and Ss typically w/abnt wh cly and calc matrix, v.f.-grnd - slty, carb inclus, generally poor porosity. No show.	2.0 - 6.6

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 9 Connection - Trip - Peaks -

Mud: Wt. 9.8 Vis 40 W.L. 10.0 ph 9.0 cc Oil ____ % Cl_2 24,000 Temp. 120 °F. in 131 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
4650'	2.59	1.65	corrected 9.00
4700'	2.59	1.71	9.00
4750'	2.52	1.65	9.05
4800'	2.54	1.76	9.05
4850'	2.60	1.75	9.05

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	4020-4620'	1	
Unwashed Ditch (USGS)	4020-4620'	1	
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12-22-78 Time 0600

Present Depth 5055' Previous Depth 4890 Footage 24 Hrs. 165'

Formation(s) Lower Cretaceous Top surface

Present Activity: DRILLING

LITHOLOGIC DESCRIPTION

Interval Reported 4880'-5040' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 58 min. @ 4962 ft.

Interval	Description	Avg. Drill Rate min./ft.
4880'-5033'	Sh: lt. gy-med gy, occ dk gy, occ slty, grdg to sltst, subfissile-fiss, occ clyey, lumpy and partly soluable; interbdd w/mnr sltst, gy-dk gy, v. argil. and carb; w/Ss, wh to off wh to gy, carb inclus., v.f. - f. grnd, frequently silty and grads to sltst, abunt wh cly and calc cmt in matrix, mod-well indurated; poor-nil Ø, no show.	3.7 - 7.9
5033'-5040'	Ss: gy-off wh, v.f. grnd, SA-SR, abund wh cly and calc cmt matrix, carb inclus, mod well indurated, sli fri, poor intrgranular Ø, 20% bright yellow spl flwer, yellow cut flour on crushing, ring resicue in spot plate.	2.3 - 3.0

SHOW DESCRIPTION (Gas and/or Oil)

5033'-5040'	spl show a/a/, w/ 74 units ditch gas, CHROMATOGRAPH READINGS on tomorrow AM report.	

Ditch Gas (Units): Background 8-10 Connection - Trip 40 @ Peaks 74 @ 5035'

Mud: Wt. 9.8 Vis 43 W.L. 10.5 ph 9.5 cc Oil ____ % Cl_2 25,000 Temp. 108 °F. in 118 °F. out
max. temp trip 126 degree

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
4900'	2.59	1.77	9.05
4950'	2.58	1.78	9.00
5000'	2.59-2.61	1.62	9.00

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	4300-4950	2	1 & 2
Unwashed Ditch (Paleo)	4620-4910	1	
Unwashed Ditch (USGS)	4620-4910	1	
GeoChem (canned)	4500-4820	1	
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/23/78 Time 06:00

Present Depth 5310' Previous Depth 5055' Footage 24 Hrs. 255'

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 5040-5300' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 67 min. @ 5275 ft.

Interval	Description	Avg. Drill Rate min./ft.
5040-5300'	Sh: gy - occ dk gy, subfis - fis to occ lumpy and sft, calc, intrbdd w/Ss: wh - off wh to occ clr grns, varying amounts of wh cly matrix and calc cmt, mottled S&P from carb specks and Sh inclusions, v.f. - f.-grnd, occ med-grnd, SA-SR, intermittent tr of dull to bright yel fluor, occ slow strm cut, generally v.weak crushed cut, fair bright yel residue, por generally poor - v.poor, occ fair, fair por; unit is apparently water wet.	2.4 - 7.0

SHOW DESCRIPTION (Gas and/or Oil)

5040-5300'	See Lithology Description above.	

Ditch Gas (Units): Background 10-18 Connection 19 @ 5303' Trip none Peaks 55 @ 5170'

Mud: Wt. 9.6 Vis 39 W.L. 14 ph 9.5 cc Oil 0 % Cl_2 22000 Temp. 120 °F. in 130 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5050'	2.61	1.61	9.00
5100'	2.60 - 2.62	1.68	9.05
5150'	2.54 - 2.60	1.65	9.09
5200'	2.59	1.61	9.09
5250'	2.51	1.65	9.09

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	4910-5120'	1	1
Unwashed Ditch (USGS)	4910-5120'	1	2
GeoChem (canned)	4820-5180'	1	
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/24/78 Time 06:00

Present Depth 5390' Previous Depth 5310' Footage 24 Hrs. 80

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 5300-5370' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 69 min. @ 5307 ft.

Interval	Description	Avg. Drill Rate min./ft.
5300-5370'	Predom Sh. lt gy - gy - occ dk gy, subfis - fis, becoming slty, grdg in part to Sltst. Ss: a/a but no show.	4.1 - 6.5

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10-12 Connection none Trip 24 Peaks none

Mud: Wt. 9.5 Vis 37 W.L. 13.3 ph 9.0 cc Oil 0 % Cl_2 28000 Temp. 112 °F. in 130 °F. out
Max temp on trip: 118°F.

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5300'	2.62	1.71	9.09
5350'	2.63	1.83	9.09

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/7

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/25/78 Time 06:00

Present Depth 5552' Previous Depth 5390 Footage 24 Hrs. 162

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: POH for Core #3

LITHOLOGIC DESCRIPTION

Interval Reported 5390-5552' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 69 min. @ 5550 ft.

Interval	Description	Avg. Drill Rate min./ft.
5390-5552'	Predom Sh: lt gy - gy - occ gy brn, slty, fis - blky, frequent calc, w/Sltst: gy - brn, sdy, v. arg, w/mnr Ss: off wh - gy, slty, arg, calc cmt, wh cly fill in matrix, S&P, v. poor - poor por, NOSCF.	4.3 - 6.7

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10-12 Connection - Trip - Peaks 84 @ 5515'

Mud: Wt. 9.5 Vis 40 W.L. 15 ph 9.0 cc Oil 0 % Cl_2 20,000 Temp. 118 °F. in 136 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5400'	2.65	1.73	9.09
5450'	2.60	1.77	9.24
5500'	2.58 - 2.60	1.77	9.24
5550'	2.60	1.92	9.20

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	5120-5370'	1	1
Unwashed Ditch (USGS)	5120-5370'	1	2
GeoChem (canned)			
Cores	No.		

Geologist GORDON LEGG

8/73

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/26/78 Time 06:00

Present Depth 5649' Previous Depth 5552' Footage 24 Hrs. 97

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 5552-5630' Sampling Interval 10 ft. Sample Quality fair
Lag Time: 69 min. @ 5649 ft.

Interval	Description	Avg. Drill Rate min./ft.
5552-5562'	Core #3, Cut 10', Rec. 9.5' (95%)	6.0 - 16.0
	5552-5557.5' - Sh dk gy, fis, v.f. mica, v. sl calc, sl slty, becoming subfis, micromica - nonmica and nonslty at base.	
	5557.5-5561.5' - Ss, gy - v. lt tn, f. - v.f.-grnd, mod well srtd, SA-SR, abnt feldspar, rr green mineral of prob chlorite (?), S&P from carb particles, v. heavily cmtd w/calc and wh cly, acid completely disaggregates spl, well ind, v. poor intrgran por, NOSCF, becoming slty and arg at base, w/some dead oil stn, along breakage planes. No cut, no fluor.	
5562-5630'	Sh & Ss: a/a w/Sltst, dk gy - gy - brn, shly, grds to Sh at base.	4.0 - 6.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10-12 Connection - Trip 21 @ 5562' Peaks 30 @ 5595'

Mud: Wt 9.4 Vis 36 W.L. 15 ph 9.0 cc Oil 0 % Cl_2 21,000 Temp. 108 °F. in 112 °F. out
124° max on trip.

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5600'	2.60	1.58	9.07

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	4950-5450'	2	1 & 2
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	5180-5540'	1	
Cores	No.		

Geologist GORDON LEGG

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/27/78 Time 06:00

Present Depth 5770' Previous Depth 5649' Footage 24 Hrs. 128

Formation(s) LOWER CRETACEOUS Top surface

Present Activity: Wash and ream to bottom

LITHOLOGIC DESCRIPTION

Interval Reported 5630-5760' Sampling Interval 10 ft. Sample Quality good
Lag Time: 76 min. @ 5770 ft.

Interval	Description	Avg. Drill Rate min./ft.
5630-5645'	Ss: a/a grds to Sltst, becomes blky, hd, sil, w/some wh cly filling.	5.6 - 6.0
5645-5655'	Ss: wh w/some clr grns, S&P, SA-SR, f.-grnd, fair srtd, becomes sft and fri in part, poor intrgran por, no show.	1.5 - 3.0
5655-5725'	Intrbdd Ss a/a: becomes blky and v. well cmt w/calc, occ cly; grds to Sltst in part; w/Sh v. dk gy, carb, subfis - blky, sl calc, slty in part.	4.5 - 5.5
5725-5750'	Sh: a/a w/some Sltst a/a.	5.6 - 6.7
5750-5760'	Ss: a/a sl arkosic in part, sl arg, nil - poor vis por, no show.	4.5

SHOW DESCRIPTION (Gas and/or Oil)

		66 @ 5680'
		161 @ 5675'
		74 @ 5670'
		52 @ 5665'

Ditch Gas (Units): Background 10.0-12.0 Connection - Trip not up Peaks

Mud: Wt. 9.4 Vis 36 W.L. 14 ph 9.0 cc Oil - % Cl_2 21,000 Temp. 120 °F. in 126 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5650'	2.63	1.63	9.22
5700'	2.66	1.55	9.27
5750'	2.55	1.72	9.20

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	5370-5620'	1	
Unwashed Ditch (USGS)	5370-5620'	1	
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX

8/78

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

Well: TUNALIK #1 Date 12/28/78 Time 06:00

Present Depth 5987' Previous Depth 5770' Footage 24 Hrs. 217'

Formation(s) Lower Cretaceous Top near surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 5760-5980' Sampling Interval 10 ft. Sample Quality good
Lag Time: 106 min. @ 5890 ft.

Interval	Description	Avg. Drill Rate min./ft.
5760-5820'	Intrbdd Ss and Sh: Ss, gy w/some pink feldspar grns, S&P, v.f. - f.-grnd, occ med-grnd, poor - fair srtg, SA-SR, well cmtd w/calc, some wh cly filling, occ carb lam, mod well ind w/some grdg to fri, nil - poor vis por (increases towards base), no show; Sh, dk gy, blky to plty, firm a/a, w/some Sltst a/a.	4.4 - 7.5
5820-5885'	Intrbdd Sltst and Sh a/a, becomes sdy at base.	5.0 - 7.0
5885-5930'	Ss: a/a @ 5760' v.f. - f.-grnd, nil por, no show.	5.0
5930-5980'	Intrbdd Sltst and Sh a/a: no shows.	6.0 - 7.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 15 - 20 Connection - Trip 82 @ 5770' Peaks none

Mud: Wt. 9.3 Vis 38 W.L. 13.5 ph 9.0 cc Oil - % Cl_2 23,000 Temp. 120 °F. in 131 °F. out
Max temp in trip 106°F. @ 5770'

Data Units:

Depth	Shale Density	Dc Exponent	Pore Pressure
5750'	2.55	1.67	9.22
5800'	2.60	1.72	9.20
5850'	2.60	1.65	9.24
5900'	2.59	1.64	9.26
5950'	2.60	1.68	9.20

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX

2/79

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/29/78 Time 06:00

Present Depth 6106' Previous Depth 5987' Footage 24 Hrs. 119'

Formation(s) ~~LOWER CRETACEOUS~~ Top near surface

Present Activity: Circ out kick

LITHOLOGIC DESCRIPTION

Interval Reported 5980-6106' Sampling Interval 10 ft. Sample Quality fair - good
Lag Time: 77 min. @ 6061 ft.

Interval	Description	Avg. Drill Rate min./ft.
5980-6003'	Ss: gy, S&P, a/a, v.f.-grnd, slty, grds to Sltst, v. well ind, nil vis por.	6.0 - 6.5
6003-6015'	Sh: gy, plty - blky, firm, smooth.	8.0 - 10.0
6015-6048'	Sltst: gy brn, S&P, blky, v. well ind, carb lams, becomes sdy in part; and grds to Ss, gy w/some feldspar grns, S&P, v.f. - f.-grnd, mod well ind. nil to v. poor por, no show.	4.0 - 6.0
6048-6068'	Sh: brn, v. slty, grds to Sltst, arg.	5.5 - 6.0
6068-6078'	Ss: gy, S&P a/a, v.f. - f.-grnd, fair srtd, SA-SR, v. poor por, no show; 198 units ditch gas (C_1)	4.2
6078-6096'	Sh: brn, slty, a/a, grds to Sltst a/a.	6.2
6096-6106'	Ss: gy brn, S&P, f. - med-grnd, fair srtg, SR-SA, arkosic, fri to uncons in part common carb prtgs and lam, fair - good intrgran por, No Show, 700 units ditch gas (C_1)	1.0 - 2.1

SHOW DESCRIPTION (Gas and/or Oil)

Depth	Units Ditch Gas	Chromatograph (ppm)
6105'	198	C_1 - All
6075'	700	C_1 - All

Ditch Gas (Units): Background 20 - 40 Connection 80 @ 6061' Trip 185 @ 6043' Peaks 700 @ 6105' 198 @ 6075'

Mud: Wt. 9.5 Vis 41 W.L. 14 ph 9.0 cc Oil ____ % Cl_2 19,000 Temp. 118 °F. in 122 °F. out
Max temp on trip at 6043' 122°F

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
5950'	2.60	1.68	9.23
6000'	2.61	1.73	9.22
6050'	2.59	1.64	9.28
6100'	2.61	1.50	9.35

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	5450-5920'	2	1 and 2
Unwashed Ditch (Paleo)	5620-5840'	1	
Unwashed Ditch (USGS)	5620-5840'	1	
GeoChem (canned)	5540-5900'	1	
Cores	No.		

Geologist DAVE FENEX

8/78

HUSKY

HUSKY OIL NPR OPERATIONS, INC.
U. S. GEOLOGICAL SURVEY/ONPRA

DAILY GEOLOGICAL REPORT

WELL TUNALIK #1 Date 12/30/78 Time 06:00

Present Depth 6242' Previous Depth 6106' Footage 24 Hrs. 136'

Formation(s) LOWER CRETACEOUS Top near surface

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 6106-6230' Sampling Interval 10 ft. Sample Quality fair - good
Lag Time: 86 min. @ 6220 ft.

Interval	Description	Avg. Drill Rate min./ft.
6106-6110'	Ss: a/a good intrgran por, no show.	1.7
6110-6150'	Sh: dk gy, blky, firm, smooth; w/some Sltst, brn, arg a/a.	5.6 - 6.4
6150-6225'	Ss: a/a S&P, f.-grnd, mod firm to uncons in part, abnt carb and coaly inclus, nil to occ vis intrgran por, no show; w/thn intrbdd Sltst, gy - S&P, sdy, hd, brittle, and Sh a/a.	2.4 - 6.0
6225-6230'	Ss and Sltst: a/a v.well ind, nil vis por, no show.	8.0

SHOW DESCRIPTION (Gas and/or Oil)

Depth	Total Units	Chromatograph (ppm) C_1	C_2	C_3	C_4	C_5	
6115'	1300	260,000	5000	3500	Tr	Tr	
6145'	500	148,000	5000	2000	0	0	
6195'	450	119,000	5000	1200	0	0	

Ditch Gas (Units): Background 230 - 250 Connection - Trip - Peaks see above

Mud: Wt. 10.1 Vis 39 W.L. 14.5 ph 9.0 cc Oil - % Cl_2 20,000 Temp. 120 °F. in 122 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
6100'	2.61	1.50	9.60
6150'	2.60	1.44	9.52
6200'	2.60	1.45	9.52

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

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