NATIONAL PETROLEUM RESERVE IN ALASKA

HISTORY
OF
DRILLING OPERATIONS

PEARD TEST WELL NO. 1

HUSKY OIL NPR OPERATIONS, INC.
Prepared by: Drilling Department
Edited by: S. L. Hewitt and C. C. Livingston

For the

U. S. GEOLOGICAL SURVEY
Office of the National Petroleum Reserve in Alaska
Department of the Interior
SEPTEMBER, 1982

TABLE OF CONTENTS

LIST OF FIGURES

PEARD TEST WELL NO. 1

INTRODUCTION

Peard Test Well No. 1 is located in the National Petroleum Reserve in Alaska, formerly designated Naval Petroleum Reserve No. 4. The well is located 1,106 feet from the north line and 1,836 feet from the west line of protracted Section 25, Township 16 North, Range 28 West, Umiat Meridian (Latitude: 70°42'56.321"N; Longitude: 159°00'02.518"W). Alaska State Plane Coordinates are: X = 378,949.07 and Y = 6,112,416.92, Zone 6. Elevations: Pad - 75 feet, Kelly Bushing - 101 feet. Drilling related operations commenced with rig-up on January 2, 1979, and the rig was released on April 13, 1979.

The well was drilled to a total depth of 10,225 feet. The primary objective of the well was to test the anomalous conditions noted on the seismic sections of the energy reflected from within the Cretaceous, Jurassic, and Carboniferous age zones. At the conclusion of the drilling and evaluation operations, the well was plugged and abandoned with cement and mechanical plugs set at selected intervals. The top of the last plug was at 1,900 feet and diesel was left in the hole from 1,900 feet to within a few feet of the surface.

Husky Oil NPR Operations, Inc. supervised and directed the drilling and support operations as prime contractor to the U. S. Geological Survey, Department of the Interior. Nabors Alaska Drilling, Inc. was the drilling contractor and Nabors Rig 17, an Oilwell 860, was the rig used to drill the well.

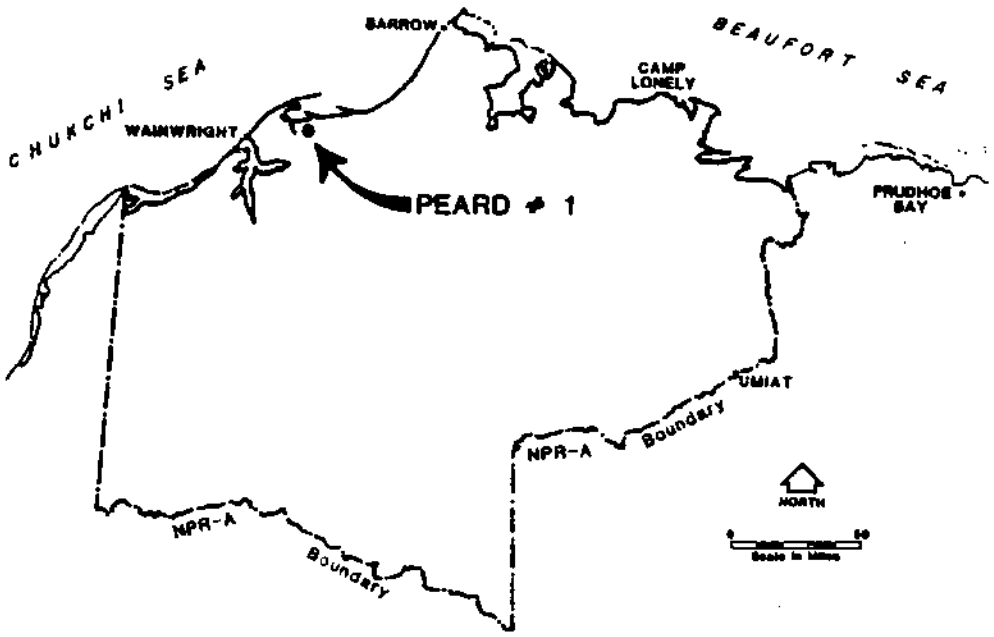


FIGURE NO. 1 - WELL LOCATION MAP - PEARD NO. 1

DRILLING SUMMARY

Field operations at the Peard Test Well No. 1 location commenced on November 22, 1978, with the mobilization of construction crews and equipment required to build the drilling pad and an ice airstrip to accommodate C-130 Hercules aircraft. Construction work was completed on December 29, 1978, and the crews and equipment moved to another location.

On December 19, Nabors, Kodiak, and Husky personnel arrived at Peard and Lonely to begin the rig move. The movement of support equipment began on December 19, with actual rig move starting December 22. The move of Nabors Rig 17 from Lonely to Peard was completed on January 1, 1979, with 98 Herc loads of rig and 13 Herc loads of Kodiak equipment received. Rig-up commenced January 2 and included assembly of the camp. The 20" conductor was cemented to 88 feet with 225 sacks of Permafrost II cement at 14.9 ppg. The cement was in place January 20 at 5:30 p.m. General rig-up continued and the well was spudded January 26, 1979, at 4:30 p.m.

A 17-1/2" hole was drilled out below the 20" conductor to 2641' and conditioned for logs. The hole was logged from 2636' to 109' with the DIL/SP and BHCS/GR logs. After logging, 66 joints of 13-3/8", 72#, S-95 BTC casing was run and landed at 2632'. While making up and running the duplex cementing string, the stinger and eleven joints of drill pipe were dropped into the hole. The first fishing attempt was successful and the fish was recovered. A 13-3/8" RTTS packer was run and set at 2469'. The casing was cemented with 2,800 sacks of Permafrost cement. Cement was in place February 2, 1979, at 1:05 p.m. Casing slips were installed and the casing was landed. The packoff assembly was installed and tested to 2,000 psi.

A National 13-5/8" split unihead and a 13-5/8", 5,000 psi blowout preventer stack (SRRA arrangement) were installed. A 5,000 psi choke manifold and kill line were also installed. The 13-3/8" casing was tested to 2,500 psi and the shoe was drilled out with a 12-1/4" bit. The formation was tested to a 0.70 psi/ft. gradient.

A 12-1/4" hole was drilled to 3034.5', where the drilling jars parted, leaving the top of the fish at 2501'. An overshot was run and the fish was recovered. After conditioning the hole, Core No. 1 was cut from 3034.5' to 3065'. The 12-1/4" hole was drilled to 4277' where Core No. 2 was cut, 4278' to 4294'. The wear bushing stuck preventing the testing of the blowout preventer equipment. The hole was then drilled to 5409' while waiting on a 13-3/8" retrievable bridge plug. The bridge plug was set at 1990', the blowout preventer stack was picked up, and the wear bushing cut out. The blowout preventer stack was nippled up and tested and the bridge plug was retrieved. Core No. 3 was cut, 5409' to 5421'; and drilling resumed to 5860', where the drill pipe stuck on a connection. It was worked free and drilling resumed to 5906'. Core No. 4 was cut from 5906' to 5916.4'. Drilling continued to 6119'. Core No. 5 was cut from 6119' to 6129.4'. Drilling continued to 6403'. Core No. 6 was cut from

6403' to 6413'. The wear bushing stuck again and drilling continued to 7345' while waiting on a bridge plug. The retrievable bridge plug was set at 1990'. The blowout preventer was picked up and the wear bushing cut out. After nippling up and testing the blowout preventer equipment, drilling resumed to 7837'. Core No. 7 was cut from 7837' to 7868.5'. Drilling continued to 8275'. Core No. 8 was cut from 8275' to 8289.5'. Drilling continued to 8440' where full returns were lost. A lost circulation material pill was mixed, pumped in, and returns regained. Drilling resumed to 8451'. Core No. 9 was cut from 8451' to 8481'. Drilling continued to 8610'.

The 12-1/4" hole was logged with DIL/SP/GR, FDC/CNL/GR, BHC-Sonic/GR, Dipmeter, and Velocity Survey. Eighty sidewall cores were shot; seventy-seven were recovered. The hole was conditioned for casing. One hundred ninety-six joints of 9-5/8", 53.5#, S-95 BTC casing were run and landed with shoe at 8600'. Two FO cementers were run in the string and landed at 2110' and 2378' for use if Arctic Pack procedures became necessary.

The 9-5/8" casing was cemented with 1,000 sacks of Class "G" cement. The cement contained friction reducer and retarder. The cement was in place March 18, 1979, at 11:40 p.m. The 9-5/8" casing was hung on slips and the pack-off assembly tested to 5,000 psi. Three hundred sacks of Permafrost cement was then down squeezed through the lower FO at 2378'. The cement was in place March 19, 1979, at 12:35 p.m. The 9-5/8" casing was then cleaned out and tested to 3,000 psi.

An 8-1/2" hole was drilled to 8610' and the formation tested to 12.7 ppg equivalent gradient. Drilling continued to 8977'. Core No. 10 was cut from 8977' to 9008'. The hole was drilled to 9490' and returns lost. A lost circulation material pill was mixed and mud volume built up. Returns were regained and the hole conditioned to core. Core No. 11 was cut from 9490' to 9520'. Drilling of the 8-1/2" hole continued to 10,215'. Core No. 12 was cut from 10,215' to 10,225' (total depth).

The pipe was tripped in and the hole conditioned for logs. The well was logged with Temperature Survey, DIL/SP, FDC/CNL/GR, BHCS/GR, HDT, and Temperature Survey No. 2. Forty-five sidewall cores were shot and 31 recovered. The mud and hole were conditioned for plugging.

All logs were recorded on magnetic tape. A magnetic single-shot deviation survey was conducted from surface to total depth. The hole remained fairly straight with a maximum deviation of 03°45'. Based on the magnetic single-shot deviation survey, the bottom hole location is 53.1 feet north and 125.4 feet west of the surface-hole location.

At the conclusion of logging, cement plugs were placed across selected intervals in the 8-1/2" open hole as follows: Plug No. 1: 9700' to 9400', with 150 sacks of Class "G"; Plug No. 2: 8800' to 8500', with 160 sacks of Class "G". A cement retainer was set at 8200' in the 9-5/8" casing, and 50 sacks of Class "G" cement were placed on top of the retainer. The 9-5/8" casing was cut at 2170'. A 13-3/8" retainer was set above the

9-5/8" stub at 2140'. One hundred sacks of Permafrost cement were spotted on top of the retainer. The mud was reversed out to water, the water to diesel at 1900'. The abandonment marker was set and the rig released April 13, 1979, at 12:00 noon. The rig was disassembled and prepared for the move to the Lisburne drill site.

Detailed drilling information, in the form of bit records, mud summary, time analysis, and casing and cementing reports, is included in the body of the history.

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NOTICE OF INTENT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL ☐ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ OTHER — SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: National Petroleum keserve in Alaska (through Husky Oil NPR Operations, Inc.)

3. ADDRESS OF OPERATOR: 2525 C Street, Suite 400, Anchorage, AK 99503

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1106' FNL; 1836' FWL
At proposed prod. zone: Same (straight hole)

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 24 miles east of Wainwright, Alaska

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
63,360'	23,680,000	N/A
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
64,680'	10,000'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): Ground 70'; Pad 75'; KB 101'

22. APPROX. DATE WORK WILL START*: December 1, 1978

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	20"	133# (K-55)	± 100 ' KB	To surface - Permafrost
17 1/2"	13 3/8"	72# (S-95)	± 2600'	± 1900 Sx Permafrost to Surface
12 1/4"	9 5/8"	53.5# (S-95)	± 8400'	± 250 Sx Class "G", 500' fill. Second stage: Down squeeze ± 300 Sx Class "G" cement at 2350'.
8 1/2"	7"	32# (N-80)	Liner ± 8100' to TD	± 200 Sx Class "G" as required to cement entire liner.

Blowout Preventer Program-

From ± 100' to ± 2600':
20", 2000 psi, SA Diverter Assembly

From ± 2600' to TD:
13 5/8", 5000 psi, SRRA BOP Assembly
w/5000 psi Choke Manifold and Kill Lines

RECEIVED
ONSHORE DIST. OFFICE
DEC 15 1978
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

See Drilling Program for details.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Max C Brewer TITLE Chief of Operations DATE 15 December 78

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY Wm James Gilbreth TITLE Acting District Supervisor DATE 1/15/79

CONDITIONS OF APPROVAL, IF ANY:

See attached conditions.

*See Instructions On Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

JAN 24 [illegible]

[illegible] DIVISION
GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)

3. ADDRESS OF OPERATOR
2525 C Street, Suite 400, Anchorage, AK 99503

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1106' FNL; 1836' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Straight hole.

5. LEASE
N/A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME National Petroleum Reserve in Alaska

9. WELL NO.
Peard Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 25, T16N, R28W, UM

12. COUNTY OR PARISH: North Slope
13. STATE: Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB AND WD)
Pad: 75'; KB: 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Request for Variance -- Test Pressure Annular BOP			

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Item 11.a.(1) of the Conditions for Drilling Approval for this well requires that annular type BOP shall be pressure tested to 70% of the rated working pressure. Variance to test annular-type BOP to 50% of rated working pressure is requested.

Testing wear to annular sealing elements from applied test pressure and required hydraulic pressure at 70% is rapid and costly. The useful life, and thus the operational reliability, of the sealing element decreases in proportion to the frequency and magnitude of applied test pressure and required hydraulic closing pressure to which it is subjected.

Testing to 50% of rated working pressure has in the past proved satisfactory, reliable, and an accepted practice.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ FL

18. I hereby certify that the foregoing is true and correct

SIGNED Max S. Brewer TITLE Chief of Operations DATE 22 January 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Robert E. Luff DISTRICT SUPERVISOR DATE 1/29/79

*See Instructions on Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEB 5
CONSERVATION DIVISION

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)

3. ADDRESS OF OPERATOR 2525 C Street, Suite 400, Anchorage, AK 99503

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1106' FNL; 1836' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same (straight hole)

5. LEASE N/A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A

7. UNIT AGREEMENT NAME N/A

8. FARM OR LEASE NAME National Petroleum Reserve in Alaska

9. WELL NO. Peard Test Well No. 1

10. FIELD OR WILDCAT NAME Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 25, T16N, R28W, UM

12. COUNTY OR PARISH North Slope | 13. STATE Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD) Pad: 75'; KB: 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Subsequent Report of Spud			

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well spudded at 4:30 PM, January 26, 1979. Hole size at spud: 17 1/2"

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED J. Mary Brewer TITLE Chief of Operations DATE 2 February 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

APPROVED BY James W. Webb TITLE DISTRICT SUPERVISOR ACTING DATE 2/6/79

*See Instructions on Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEB 21 1979
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☒ gas well ☐ other Wildcat
2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)
3. ADDRESS OF OPERATOR 2525 C Street, Suite 400, Anchorage, AK 99503
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
   AT SURFACE: 1106' FNL; 1836' FWL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH: Same (straight hole)
5. LEASE N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A
7. UNIT AGREEMENT NAME N/A
8. FARM OR LEASE NAME National Petroleum Reserve in Alaska
9. WELL NO. Peard Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 25, T16N, R28W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) Pad: 75'; KB. 101'
16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐

(other) Subsequent Notice of Running and Cementing 13 3/8" Surface Casing

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

A 17 1/2" hole was drilled to 2641' and logged. Ran 66 joints of 13 3/8", 72 lb/ft, S-95 Buttress casing and landed with the float shoe at 2632' and the duplex float collar at 2550'. Cemented with 2800 sacks of Permafrost cement at 14.9 to 15.2 ppg, cement returns at 14.9 ppg slurry weight. Cement in place at 1:05 PM, 2/2/79. Installed National wellhead and nippled up 13 5/8", 5000 psi SRRA BOP arrangement. Tested BOPs to 5000 psi, Hydril to 2500 psi, casing to 2500 psi. Drilled out cement, float collar, float shoe, and formation to 2650'. Tested formation to 0.70 psi/ft gradient with no observed leak off.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Max S. Brewer TITLE Chief of Operations DATE 17 February 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

APPROVED James A. Gleko DISTRICT SUPERVISOR ACTING DATE 2/26/79

*See Instructions on Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MAY 11 1979
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well [X] gas well [ ] other Wildcat
2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)
3. ADDRESS OF OPERATOR 2525 C Street, Suite 400, Anchorage, AK 99503
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
   AT SURFACE: 1106' FNL; 1836' FWL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH: Straight hole
5. LEASE N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A
7. UNIT AGREEMENT NAME Petroleum Reserve in Alaska
8. FARM OR LEASE NAME Peard Test Well No. 1
9. WELL NO. Wildcat
10. FIELD OR WILDCAT NAME Sec 25, T16N, R28W, UM
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 25, T16N, R28W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF KDB AND WD) Pad 75'; KB 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other) Subsequent Report of Running and Cementing 9 5/8" Casing			

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

A 12 1/4" hole was drilled to 8610' KB and logged. Ran 196 joints of 9 5/8", 53.5 lb/ft, S-95, Buttress casing and landed with float shoe at 8600'. Float collar at 8505'. FO cementing sleeves were located at 2378' and 2110'. Twenty centralizers were run. Circulated and conditioned mud for cementing. Cemented first stage with 1000 sacks of Class "G" cement containing 0.2% HR7 and 1% CFR 2, slurry wt 15.8 ppg. Displaced cement with 493 bbls mud, bumped plug with 3000 psi. Float held. CIP at 11:40 PM, 3/18/79. Hung casing on slips w/350,000 lbs. Nipplied up BOP and tested packoff. Down squeezed second stage through FO at 2378' with 300 sacks of Permafrost cement at 14.9 ppg. Broke down formation with 300 psi. CIP at 12:35 PM, 3/19/79. Closed FO and tested to 3000 psi. Pulled out of hole; tested BOP and choke manifold. Picked up the bottom hole assembly and drilled out the cement. Tested the formation at the shoe to the equivalent gradient of 0.66 psi/ft with no leak off. Resumed drilling.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED J. Max Doerner TITLE Chief of Operations DATE 9 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Robert A. Hoff DISTRICT SUPERVISOR DATE 5/14/79

*See Instructions on Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
ONSHORE DIST. OFFICE
MAY 10 1979
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR: National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)

3. ADDRESS OF OPERATOR: 2525 C Street, Suite 400, Anchorage, AK 99503

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1106' FNL; 1836' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same (straight hole)

5. LEASE: N/A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: National Petroleum Reserve in Alaska

9. WELL NO.: Peard Test Well No. 1

10. FIELD OR WILDCAT NAME: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 25, T16N, R28W, UM

12. COUNTY OR PARISH: North Slope

13. STATE: Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD): Pad: 75'; KB: 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Change Plans			

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The original Notice of Intent to Drill indicated the proposed TD to be 10,000'. Due to thickened geologic sequences, the objective TD is expected to be deeper. The operator plans to continue drilling. It is expected that final TD will be at or near 10,500'.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Max Brewer TITLE Chief of Operations DATE 9 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Robert A. Stoff DISTRICT SUPERVISOR DATE 5/11/79

*See Instructions on Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MAY 10 1979
CONSERVATION DIVISION
GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other Wildcat
2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)
3. ADDRESS OF OPERATOR 2525 C Street, Suite 400, Anchorage, AK 99503
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
   AT SURFACE: 1106' FNL; 1836' FWL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH: Straight hole
5. LEASE N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A
7. UNIT AGREEMENT NAME N/A
8. FARM OR LEASE NAME National Petroleum Reserve in Alaska
9. WELL NO. Peard Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 25, T16N, R28W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF KDB AND WD) Pad: 75'; KB: 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☒		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This is a confirming notice to abandon Peard Test Well No. 1. The plan was discussed with and verbally approved on 4/8/79 by Jim Weber. The well was drilled to a total depth of 10,225' and logged. As a result of the evaluation, plans were developed to abandon the well. The abandonment procedure is attached.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Max Brewer TITLE Chief of Operations DATE 9 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Robert A. Wall TITLE DISTRICT SUPERVISOR DATE 5/11/79

*See Instructions on Reverse Side

PEARD TEST WELL NO. 1
Abandonment Procedure

1. When finished with the open hole logging program, trip in with drill pipe open ended to 9700'.

2. Condition mud to assure uniform weight and viscosity for plugging.

3. Spot a 155 sack Class "G" cement plug with 1% CFR-2 and 0.3% HR-7 mixed at 15.8 ppg. This is a 300' plug, calculated from the caliper log. Spot a balanced plug with 6 bbls water ahead and 2 bbl water spacer behind cement.

4. Pick up slowly out of the slurry plug. Pick up to 8800'. Circulate and condition mud for Plug No. 2. Circulate 4 hours to let Plug No. 1 set. Limit pump pressure and circulation rate.

5. Spot a 160 sack Class "G" cement plug with 1% CFR-2 and 0.2% HR-7 mixed at 15.8 ppg. This is a 300 ft plug, leaving 100' of cement above the 9 5/8" casing shoe. Spot a balanced plug with 5.25 bbls water ahead and 2 bbl water spacer behind cement.

6. Pick up slowly out of the cement plug. Pick up to 8250' and condition mud.

7. Trip in with 8 1/2" bit and 9 5/8", 53.5 lb scraper to 8210'. Circulate and condition mud.

8. Trip out and pick up a Halliburton 9 5/8", 53.5# cement retainer on drill pipe. Trip in and set retainer at 8200'. Condition mud.

9. Spot a 50 sack, Class "G" cement plug with 1% CFR-2 and 0.2% HR-7 on top of the retainer. This is 145' inside the casing. Spot a balanced plug with 5.25 bbls water ahead and 2 bbl water spacer behind cement.

10. Pick up out of the cement plug 5 stands and condition mud. Trip out, laying down drill pipe. Keep ± 2400' of drill pipe for cutting casing and reversing out. Lay down collars.

11. Pick up Tristate 9 5/8" casing cutter. Trip in and cut casing at 2170'. Recover upper FO at 2110'.

12. After cutting the casing, open the 9 5/8" X 13 3/8" annulus and equalize any differential pressure. Note mud weight in 9 5/8" X 13 3/8" annulus 10.7 ppg.

13. Part the National split unihead and pick up the BOP stack and upper head. Hang off stack.

14. Pick up Tristate spear, packoff, and stop plate. Pick up 9 5/8" casing, unseating packoff rings and casing slips. The 9 5/8" string weight at 2170' in 10.3 ppg mud is ± 97,900#. Cut off packing support rings and packing. Remove slips.

15. Strip casing up through BOP and set rotary slips. Set down and nipple up BOP stack. Lay down 9 5/8" casing.

16. Trip in with 12 1/4" bit and 13 3/8", 72# scraper to 2150'. Circulate and condition mud, removing any cuttings or junk in the hole.

17. Pick up Halliburton 13 3/8", 72# cement retainer on drill pipe. Set retainer at 2140'.

18. Spot a 100 sack Permafrost cement plug on top of the retainer mixed at 14.9 ppg. This is a 114' plug inside 13 3/8" casing. Spot a balanced plug with 14 bbls water ahead and 2 bbls water behind.

19. Pick up slowly out of the cement plug to 1900'. Circulate and condition mud.

20. Reverse out mud with water. Reverse out water with diesel. The appropriate capacity of the 13 3/8" from 1900' to surface is 281 bbls. Trip out laying down drill pipe. Do not fill casing to surface. Leave ± 25' of 13 3/8" casing empty.

21. Nipple down BOP and wellheads to the 20" head.

22. Rig up the 4" line pipe 20" head cover and dry hole marker. Set the 4" line pipe ± 10' below the surface. Put a flared wire line entry guide on the bottom of the 4".

23. Release rig and rig down for movement to Lisburne Test Well No. 1. Clean location.

Information for well marker identification:

USGS - ONPRA
Peard Test Well No. 1
1106' FNL, 1836' FWL
Sec 25, T16N, R28, UM

H. M. Peterson
Drilling Engineer
April 9, 1979

4/9/79

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other Wildcat
2. NAME OF OPERATOR National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)
3. ADDRESS OF OPERATOR 2525 C Street, Suite 400, Anchorage, AK 99503
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
   AT SURFACE: 1106' FNL; 1836' FWL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH: Straight hole.

5. LEASE N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A
7. UNIT AGREEMENT NAME N/A
8. FARM OR LEASE NAME National Petroleum Reserve in Alaska
9. WELL NO. Peard Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 25, T16N, R25W, UM
12. COUNTY OR PARISH North Slope 13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) Pad 75'; KB 101'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☒
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been plugged and abandoned. The well was drilled to a total depth of 10,225' and logged. After logs were evaluated, the well was plugged and abandoned as follows: Trip in open ended to 9700'. Circulated and conditioned mud. Spotted Plug No. 1, 150 sacks Class "G" cement at 15.8 ppg w/1% CFR-2 and 0.2% HR-7 from 9700' to 9400' in open hole. CIP 4/9/79 at 3:00 PM. Picked up to 8800'. Circulated and conditioned mud. Spotted Plug No. 2, 160 sacks Class "G" cement at 15.8 ppg w/1% CFR-2 and 0.2% HR-7 from 8800' to 9 5/8" shoe at 8600' to 8500' in casing. CIP 4/9/79 at 8:10 PM. Trip out, picked up bit and casing scraper. Cleaned out to 8520', tagged cement and circulated and conditioned mud at 8500'. Trip out. Picked up 9 5/8" Howco E-Z Drill retainer. Tripped in and set retainer at 8200'. Circulated and conditioned mud. Spotted Plug No. 3, 50 sacks Class "G" cement at 15.8 ppg w/1% CFR-2 and 0.2% HR-7 from 8200' to 8055' in the casing. CIP 4/10/79 at 6:10 PM. Tripped out. Picked up casing cutter. Cut casing at 2170'. Layed down

Subsurface Safety Valve: Manu. and Type _____ (See Attached) Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Max Doerner TITLE Chief of Operations DATE 11 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Robert A. Hoff IV DISTRICT SUPERVISOR DATE 5/13/79

AREA FILE

*See Instructions on Reverse Side

9 5/8" casing. Ran 12 1/4" bit and 13 3/8" scraper to 2150'. Set 13 3/8" Howco cement retainer at 2140'. Pumped 14 bbls water, 100 sx Permafrost cement at 14.8 ppg, followed w/2 bbls water and 34 bbls mud. CIP 4/12/79 at 10:55 AM. Pulled out of hole to 1900' and reversed out mud to water and water to diesel. Rigged down wellhead and installed abandonment marker. Released rig 4/13/79 at 12:00 PM.

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
7. UNIT AGREEMENT NAME: N/A
8. FARM OR LEASE NAME: National Petroleum Reserve in Alaska
9. WELL NO.: Peard Test Well No. 1
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 25, T16N, R28W, UM
12. COUNTY OR PARISH: North Slope
13. STATE: Alaska

RECEIVED
MAY 14
CONSERVATION DIVISION
ONSHORE DIST. OFFICE

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other Wildcat

1b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: National Petroleum Reserve in Alaska (through Husky Oil NPR Operations, Inc.)

3. ADDRESS OF OPERATOR: 2525 C Street, Suite 400, Anchorage, AK 99503

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements*)
At surface: 1106' FNL; 1936' FWL
At top prod. interval reported below:
At total depth: Same (straight hole)

14. PERMIT NO.: N/A — DATE ISSUED: N/A

15. DATE SPUDDED: 1/26/79 — 16. DATE T.D. REACHED: 4/7/79 — 17. DATE COMPL. (Ready to prod.): N/A — 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: Pad 75'; KB 101' — 19. ELEV. CASINGHEAD: 73'

20. TOTAL DEPTH, MD & TVD: 10,225' TVD — 21. PLUG, BACK T.D., MD & TVD: 2026' — 22. IF MULTIPLE COMPL., HOW MANY*: N/A — 23. INTERVALS DRILLED BY: → — ROTARY TOOLS: Rotary Tools — CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: N/A - Dry Hole

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: SP/GR/DIL; GR/BHCS/TTL; CNL/FDC/GR/Caliper; HDT; Temperature Log

27. WAS WELL CORED: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD*	AMOUNT PULLED
20"	133#/ft	88'	26"	Permafrost to Surface	None
13 3/8"	72#/ft	2641'	17 1/2"	2800 Sx Pmfst to Surface	None
9 5/8"	53.5#/ft	8600'	12 1/4"	1000 Sx Class "G" w/.2% HR7 & 1% CFR2. Squeezed 300 Sx Pmfst thru FO @ 2378'	2170'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

31. PERFORATION RECORD (Interval, size and number): N/A

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
N/A	

33.* PRODUCTION

DATE FIRST PRODUCTION: N/A — PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump): — WELL STATUS (Producing or shut-in):

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): N/A — TEST WITNESSED BY:

35. LIST OF ATTACHMENTS:

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED J. Max Brewer — TITLE Chief of Operations — DATE 11 May 79

*(See Instructions and Spaces for Additional Data on Reverse Side)

AREA FILE

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement"*: Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Kuparuk River equivalent	6526'	6548'	Ss, fine grain, log porosity of 16.5%, water saturation of 93-100%, no sample indications of hydrocarbon.
"Kugrua" Ss	7820'	7909' gross	Ss, fine grain, no hydrocarbons indicated in samples, log porosity of less than 6.5% water saturation of 100%.
Echooka	9471'	9639' gross	Ss, fine grain, with some conglomerate, no indications of hydrocarbon were noted in cores or samples. Preliminary log analysis indicates porosities of 9-22%, water saturation of 77-100%.

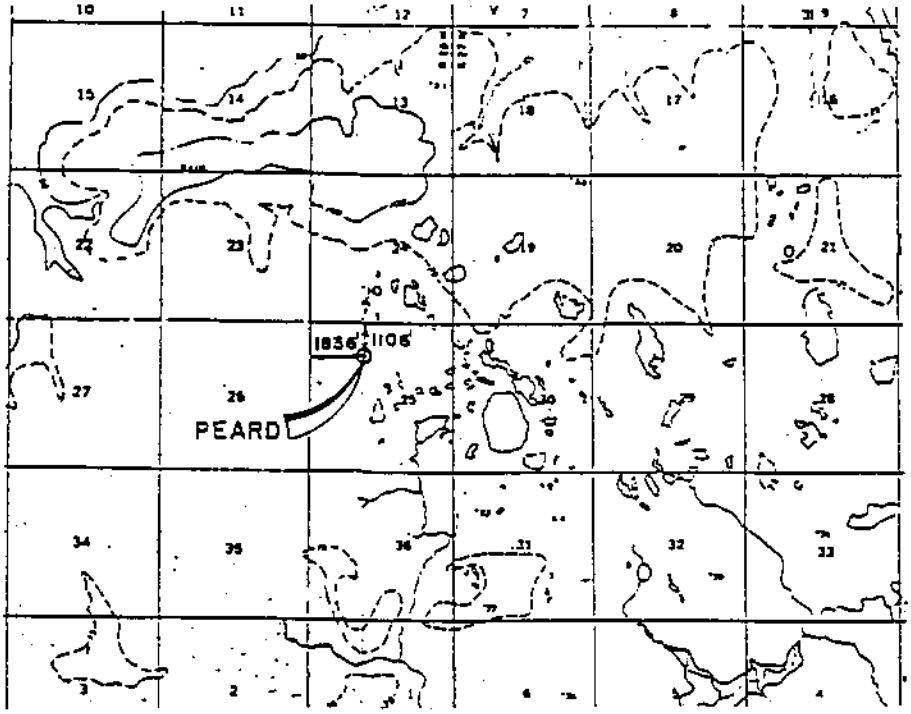
38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
	(BKB)	
Torok Sh	4530'	
GR/Pebble Sh	6195'	
Kuparuk Ss equivalent	6526'	
Kingak Sh	6576'	
"Kugrua" Ss	7820'	
Sag River	8430'	
Shublik	8463'	
Sadlerochit	8741'	
Kavik Sh	9357'	
Echooka	9471'	
Argillite	9639'	

Well Completion Report
National Petroleum Reserve in Alaska
Peard Test Well No. 1
Continuation of Item 37

SUMMARY OF CORED INTERVALS

Formation	Top	Bottom	Description, Contents, Etc.
Cores			
No. 1 - Nanushuk	3034.5'	3065'	Interbedded Sltst, Ss and Clyst, nil to very poor porosity, no indication of hydrocarbons.
No. 2 - Nanushuk	4278'	4294'	Recovered 14' Sh; black with carbonized wood. 2'. No recovery.
No. 3 - Torok	5409'	5421'	Ss and Sh interbedded, nil to poor porosity. No indication of hydrocarbon.
No. 4 - Torok	5906'	5916.4'	Ss: with interlaminated and discontinuous Sh, nil porosity, no indication of hydrocarbon.
No. 5 - Torok	6119'	6129.4'	Sltst: grey - brown with wood fragments.
No. 6 - Pebble Shale	6403'	6413'	Sh: black, with black chert grains.
No. 7 - "Kugrua Ss"	7837'	7868.5'	Ss: brown, fine grain with abundant glauconite and siderite. Nil porosity. No indication of hydrocarbons.
No. 8 - Kingak	8275'	8289.5'	Ss: very fine grain with interbedded Sltst. Nil porosity. No indications of hydrocarbons.
No. 9 - Sag River /Shublik	8451'	8481'	Ss and Sltst interbedded. Nil porosity. No significant indications of hydrocarbons.
No. 10 - Sadler-ochit	8977'	9008'	Interbedded Sh and Sltst with occasional Ss, very poor - nil porosity. No indications of hydrocarbons.
No. 11 - Echooka	9490'	9520'	Ss: grey, fine - coarse grained, with occasional Sh interbeds, poor - fair porosity, traces of black dead ? hydrocarbon.
No. 12 - Argillite	10215'	10225'	Argillite, dark grey, submetallic luster.



PEARD 3-79

LAT. = 70° 42' 56.321"
LONG. = 159° 00' 02.518"
Y = 6,112,416.92
X = 378,949.07
ZONE 6

CERTIFICATE OF SURVEYOR

I hereby certify that I am properly registered and licensed to practice land surveying in the State of Alaska and that this plat represents a location survey made by me or under my supervision, and that all dimensions and other details are correct.

July 16, 1978

STATE OF ALASKA
No. 953-S

SCALE: 1" = 1 MILE

AS STAKED

PEARD 3-79

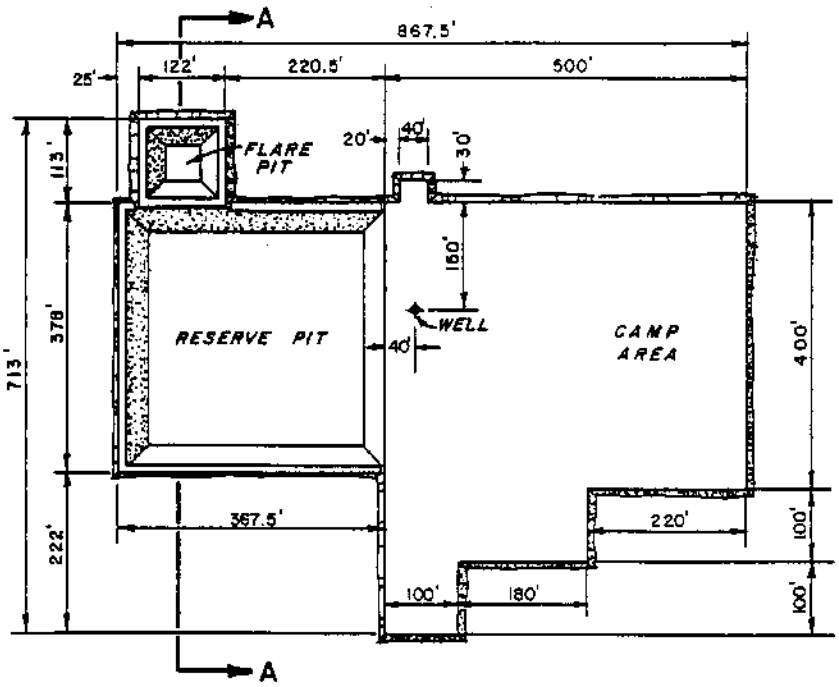
NW 1/4 PROTRACTED SEC. 23, T 16 N., R 28 W., UMIAT MERIDIAN

Surveyed for

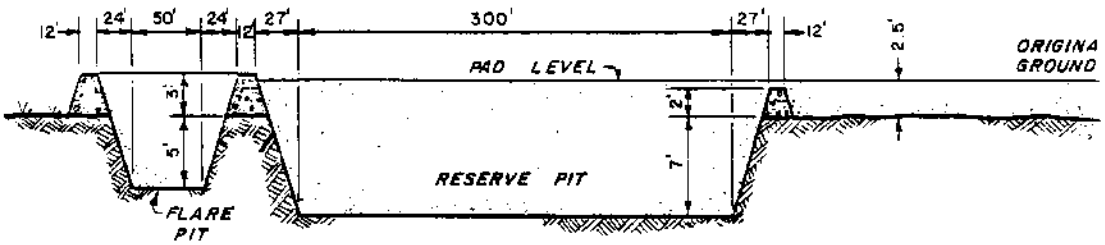
HUSKY OIL
N.P.R. OPERATIONS INC.

Surveyed by

Bell, Herring and Associates
ENGINEERS AND LAND SURVEYORS
801 West Fireweed, Suite 102



PLAN VIEW



SECTION A-A

PEARD DRILLSITE

OPERATIONS HISTORY

DATE AND FOOTAGE DRILLED AS OF 6:00 A.M.	ACTIVITY
12/21/78	Moving in equipment from LIZ C.
12/22/78	Moving in equipment. Four Husky, 2 Nabors and 4 Kodiak people on site.
12/23/78	Moving in equipment; 7 loads camp equipment and 4 loads equipment.
12/24/78	Moving in equipment. Setting up camp units.
12/25/78	Moving in equipment; 45 Herc loads to date. Setting up camp. Fourteen Nabors, 1 Husky and 8 Kodiak people on site.
12/26/78	Moving in rig; 64 Herc loads to date.
12/27/78	Moving in rig. Camp set; hooking up plumbing, wiring and sewer plant.
12/28/78	Moving in rig. Working on camp.
12/29/78	Moving in rig. Total Herc loads - 79 rig and 12 equipment.
12/30/78	Moving in rig. Camp in operation. Eighty-nine Herc loads of rig and 12 Herc loads equipment to date. One Husky, 8 Kodiak and 27 Nabors people on site.
12/31/78	Moving in rig. Laying matting boards.
1/1/79	Moving in rig. Ninety-seven Herc loads rig, 12 Herc loads equipment. Setting in substructure. Assembling rig.
1/2/79	Rigging up. Eighty-eight loads rig equipment, 13 loads equipment. Subbase complete and set. Assembling rig. Two Husky, 12 Kodiak and 31 Nabors people on site.
1/3/79	Rigging up. Derrick assembled; draw works assembled; elevators assembled. Working on road to water hole.

1/4/79	Rigging up. Working on rig engines. Rigged up elevators and set and tightened bolts on derrick. Set motors on floor.
1/5/79	Rigging up. Set dog house. Set and lined up pumps. Set mud mixer and shale shaker. Rig-up lights on derrick.
1/6/79	Rigging up. Installed desilter, desander, and degasser sheds on tanks. Set derrick on floor and raised A frame.
1/7/79	Rigging up. Set water and fuel tanks. Set generator and Tioga heater. Set boiler house and parts house. Rigging up lights and mud lines from pumps. Thirty-nine Nabors, 2 Husky, 2 pilots, 2 weathermen, 17 Kodiak and 3 ASAG people on site.
1/8/79	Rigging up. Rigged up hot air ducts. Worked on mud, water, steam and glycol lines.
1/9/79	Rigging up. Worked on mud, water, steam and glycol lines. Rigged up fuel lines and rig fuel tank. HOWCO house arrived.
1/10/79	Rigging up. Worked on steam, air and fuel lines. Heater running and piped to subbase.
1/11/79	Rigging up. Building steam, water and condensate lines. Installed doors. Boiler fired up and circulating.
1/12/79	Rigging up. Worked on water and air lines and draw works. Started and ran No. 1 engine.
1/13/79	Rigging up. General rig-up. Repaired air and steam lines. Strung and raised derrick.
1/14/79	Rigging up. Shaft out on draw works input power shaft; bearings are out. Boiler in operation.
1/15/79	Rigging up. Put up windwalls. General rig-up.
1/16/79	General rig-up.
1/17/79	Rigging up. Completed work on low pressure mud system. Tested OK. Working on high pressure mud system.
1/18/79	Rigging up. Working on pumps, blowout preventer control lines and high pressure mud system. Set in HOWCO pumps and tanks.

1/19/79	Rigging up. Installed jack shaft in draw works. Started and ran rig engines. Rigged up B&G mud loggers.
1/20/79	Rigging up. Worked on input power shaft. Worked on stand pipe and blowout preventer hydraulic lines. Changed desilter suction from sand trap to next compartment. Installed Totco pressure volume temperature equipment.
1/21/79	Rigging up. Worked on pits, desander, and desilter. Ran 1" pipe inside 20" casing. Melted ice plug. Pumped 15 sacks Permafrost cement inside. Ran 1" pipe outside 20" casing. Pumped 225 sacks Permafrost cement. Slurry weight: 14.9 ppg. cement in place at 5:30 p.m. Repaired input power shaft on draw works.
1/22/79	Rigging up. Insulated and wrapped steam water lines in pit rooms. Desilter and desander lines completed. Worked on shaker dumps. Insulated and heat-taped pump suction. Installed National 20" x 2,000 psi starting head; tested weld to 750 psi. Worked on oil and air lines. Draw works were set. Set diverter spool and Hydril. Worked on flow line.
1/23/79	Rigging up. Hooked up accumulator lines to Hydril. Rigged up flow nipple, flow line, stand pipe, kelly hose, and Totco equipment. Began rigging up floor.
1/24/79	Rigging up. Worked on leaks in mud tanks. Rigged up rig floor. Worked on flow line and heat ducts to premix tank. Began filling mud tanks. Worked on fill up line, diverter lines, rat hole and mouse hole. Filled table and swivel with oil.
1/25/79	Rigging up. Set 20" casing at 88'. Worked on rat hole, mouse hole, diverter line, and handrails. Repaired leaks on pits. Picked up 17-1/2" bit and drill collars. Circulated; repaired leaks. Primed pumps and worked on pump guard.
1/26/79	Rigging up. Worked on pump suction leaks. Had wrong gaskets on line cages. Waited on correct gaskets. Removed suction screens and welded closed. Completed handrails and shaker tanks to rig flow. Replaced gasket in pump and assembled No. 1 pump. Changed seals in No. 2 pump. Spudded well at 4:30 p.m.
1/27/79 403'	Total Depth: 491'; Mud Weight: 9.2; Viscosity: 32. Completed repairs to pump and swivel. Tested 20" Hydril to 250 psi. Tested OK. Drilled ahead.

1/28/79 982'	TD: 1473'; MW: 10.0; Vis: 33. Drilled to 1000'; made wiper trip. Drilled to 1473'; tripped for bit.
1/29/79 697'	TD: 2170'; MW: 9.9; Vis: 32. Ran in hole. Drilled ahead. Drilled with one pump 50 percent of the time.
1/30/79 401'	TD: 2571'; MW: 10.1; Vis: 31. Drilled to 2196'. Dropped survey. Drilled 2217'; tripped for bit. Drilled to 2571'. Repaired fuel system to rig engines.
1/31/79 70'	TD: 2641'; MW: 10.2; Vis: 60. Drilled to 2641'. Conditioned to log. Tripped out. Ran DIL; stopped at 2500'. Pulled out of hole. Tripped in with bit. Reamed 2500' to 2641'. Conditioned to log. Tripped out; rigged up to log.
2/1/79 0'	TD: 2641'; MW: 10.2; Vis: 57. Logged hole with DIL/SP and BHCS/GR, 2636' to 109'. Tripped in and conditioned for casing. Tripped out. Rigged up and ran 13-3/8" casing. Casing set at 2632'.
2/2/79 0'	TD: 2641'; MW: 10.2; Vis: 50. Ran 66 joints 13-3/8", 72#, S-95 Buttress casing; shoe at 2632'; float collar at 2500'. Tripped in with stinger on 5" drill pipe. Dropped tool and 11 singles in hole. Tripped in and screwed into fish. Broke circulation with 20 barrels around shoe. Tripped out and laid down three bent singles. Rigged up circulating swedge. Circulated 400 barrels through shoe. Made up Howco RTTS packer. Tripped in SLM with RTTS.
2/3/79 0'	TD: 2641'; MW: 10.2; Vis: 39. Ran 13-3/8" RTTS packer on 5" DP and set at 2469'. Circulated casing with 200 barrels mud. Cemented casing with 20 barrels water and 2,800 sacks Permafrost II cement at 14.9 to 15.2 ppg. Displaced with 2 barrels water and 55 barrels mud. Last 50-barrel returns were clean, 14.9 ppg cement. Cement in place 2/2/79 at 1:05 p.m. Floats held OK. Released packer; tripped out 5 stands. Picked up 20" blowout preventer. Installed casing slips. Tripped out with packer. Waited on cement.
2/4/79 0'	TD: 2641'. Cleaned mud tanks. Waited on cement. Landed casing and cut off. Removed 20" blowout preventer. Installed 13-3/8" packoff and tested to 2,000 psi OK. Nippled up 13-3/8", 5,000 psi blowout preventer equipment.

2/5/79 0'	TD: 2641'. Nippled up blowout preventer. Hooked up choke manifold. Changed rams. Hooked up Hydril lines.
2/6/79 0'	TD: 2641'; MW: 8.6; Vis: 32. Finished changing rams to 5". Picked up blowout preventer stack and adjusted. Hooked up hydraulic lines and kill lines; installed new rubbers on blind rams. Hooked up HCR line and valve.
2/7/79 0'	TD: 2641'; MW: 8.6; Vis: 33. Finished nippling up. Ran in test plug. Hydril would not close. Thawed out hydraulic lines; closed and tested to 2,500 psi. Tested pipe rams.
2/8/79 0'	TD: 2641'; MW: 9.3; Vis: 36. Pressured 5" pipe rams. Wing valve leaked. Changed valve; tested rams to 5,000 psi. Pressured blind rams to 3,700 psi; test plug leaked. Changed 0 ring on plug; tested blind rams to 5,000 psi. Tested choke manifold to 5,000 psi. Installed wear bushing. Filled choke manifold with glycol. Ran in hole; top of cement at 2548'. Drilled cement 2548' to 2560'. Circulated; tested casing to 2,500 psi. Drilled cement.
2/9/79 394'	TD: 3035'; MW: 9.4; Vis: 32. Drilled cement 2580' to 2636'. Ran in hole to 2641'; drilled to 2650'. Pressured formation to 575 psi, 0.70 psi/ft. equivalent gradient; no leak off. Drilled to 3035'. Twisted off, jars parted at top of packing element. Chained out; top of fish at 2501'. Picked up Bowen 10-5/8" x 7-5/8" overshot on Jarco jars and three drill collars. Ran in hole to fish at 2501'. Circulated, picked up fish, chained out.
2/10/79 0'	TD: 3035'; MW: 9.5; Vis: 34. Chained out of hole. Laid down jars, dropped one stand of drill collars through rig floor. Picked up stabilizer; ran in hole; reamed 180' to bottom. Circulated; pulled out of hole; picked up 30 foot core barrel. Ran in hole.
2/11/79 40'	TD: 3075'; MW: 9.3; Vis: 35. Ran in hole with core barrel. Cut Core No. 1: 3034.5' to 3065'. Pulled out of hole, steel line measured. Recovered 30.5 foot core. Ran in hole with 12-1/4" bit; reamed core hole. Drilled ahead.
2/12/79 588'	TD: 3663'; MW: 9.5; Vis: 36. Drilled to 3094'. Circulated bottoms up. Drilled 3094' to 3305'. Surveyed. Drilled to 3462'. Tripped in. Drilled ahead.

2/13/79 614'	TD: 4277'; MW: 9.8; Vis: 35. Drilled 3462' to 3808'; surveyed. Wireline broke. Pulled 13 stands; recovered wire. Ran in hole; reamed 3538' to 3598'. Drilled 3808' to 4199'. Repaired swivel. Drilled 4199' to 4277'. Pulled out of hole.
2/14/79 17'	TD: 4294'; MW: 9.8; Vis: 34. Pulled out of hole for core barrel. Ran in hole with core barrel; reamed tight hole, 3426' to 3467' and 3709' to 4277'. Cut Core No. 2: 4278' to 4294'. Circulated; pulled out of hole. Recovered 14 feet of core.
2/15/79 507'	TD: 4801'; MW: 9.9; Vis: 41. Attempted to test blowout preventer; unable to pull bowl protector. Ran in hole; reamed core hole. Drilled; circulated; surveyed; pulled out of hole. Tight hole, 4550' to 4647'.
2/16/79 384'	TD: 5185'; MW: 9.8; Vis: 43. Rigged up and attempted to pull bore protector. Ran in hole to 4801'; drilled to 5185'.
2/17/79 223'	TD: 5408'; MW: 9.8; Vis: 40. Drilled to 5319'; replaced swivel. Drilled to 5408'; circulated out drilling break. Had 650 units gas on bottoms up. Tripped to core. Attempted to pull wear bushing. Ran in and set 13-3/8" retrievable bridge plug at 1990'. Pulled out of hole. Picked up blowout preventer and cut out wear bushing.
2/18/79 0'	TD: 5408'; MW: 9.8; Vis: 44. Nippled up and tested blowout preventer equipment. Repacked swivel. Retrieved bridge plug at 1990'. Picked up core barrel. Tripped in, circulated to core.
2/19/79 12'	TD: 5420'; MW: 9.9; Vis: 43. Reamed to bottom. Swivel started leaking. Pulled out of hole; tight at 5348' to 5118'. Changed out swivel. Tripped in; reamed 60 feet to bottom. Cut Core No. 3: 5409' to 5421'.
2/20/79 424'	TD: 5844'; MW: 10.0; Vis: 50. Pulled out of hole with Core No. 3. Recovered 12 feet. Ran in hole with bit to 1200'; cut drilling line. Ran in hole; washed 30 feet to bottom; reamed 8-1/2" core hole. Drilled 5420' to 5778'. Circulated bottoms up; maximum gas: 2,600 units.
2/21/79 72'	TD: 5916'; MW: 9.8; Vis: 43. Circulated; drilled 5844' to 5906'. Stuck pipe on connection at 5860'; worked free. Dropped survey. Pulled out of hole; picked up core barrel. Ran in hole; bridge at 5786' to 5826'; worked to bottom. Cut Core No. 4: 5906' to 5916.4'.

2/22/79 203'	TD: 6119'; MW: 9.7; Vis: 46. Pulled out of hole with core; recovered 10.4 feet. Ran in hole with Bit No. 9; washed to bottom. Reamed core hole 5906' to 5916'; drilled 5916' to 6119'. Circulated; surveyed. Pulled out of hole for Core No. 5. Picked up core barrel. Ran in hole; hit bridge at 5720'. Ran in hole; circulated.
2/23/79 284'	TD: 6403'; MW: 9.7; Vis: 45. Circulated at 6119'. Cut Core No. 5: 6119' to 6129.4'. Circulated; pulled out of hole; recovered 10.4 feet of core. Ran in hole with Bit No. 10; reamed 60 feet to bottom. Reamed core hole; drilled to 6403'. Circulated for core.
2/24/79 10'	TD: 6413'; MW: 9.8; Vis: 48. Circulated at 6403'; surveyed. Pulled out of hole for Core No. 6. Picked up core barrel. Ran in hole; reamed 6133' to 6403'; circulated. Cut Core No. 6: 6403' to 6413'. Circulated; pulled out of hole with core; recovered 8 feet. Attempted to pull wear bushing.
2/25/79 316'	TD: 6729'; MW: 10.0; Vis: 51. Could not pull wear bushing. Ran in hole; reamed 60 feet; reamed core hole. Circulated; drilled. Circulated drilling break at 6413'. Drilled to 6528'; circulated drilling break. Drilled; circulated.
2/26/79 116'	TD: 6845'; MW: 10.2; Vis: 50. Surveyed; pulled out of hole; attempted to pull bore protector. Ran in hole; bridge at 6326'. Reamed and washed 113 feet to bottom. Drilled ahead.
2/27/79 281'	TD: 7126'; MW: 10.4; Vis: 52. Drilled 6845' to 6870'; circulated bottoms up. Surveyed; pulled out of hole. Ran in hole; reamed at 6448' and 6870'. Ran in hole; had 80 feet of fill; circulated.
12/28/79 219'	TD: 7345'; MW: 10.5; Vis: 55. Drilled 7126' to 7152'. Circulated; made short trip; reamed and washed to bottom, 6828' to 7152'. Circulated. Drilled 7152' to 7345'; circulated bottoms up; surveyed. Pulled out of hole. Hole tight 8 stands off bottom. Attempted to pull wear bushing.
3/1/79 63'	TD: 7408'; MW: 10.6; Vis: 55. Set bridge plug at 1900'. Picked up blowout preventer; cut out bore protector. Nippled up blowout preventer; tested blowout preventer. Set bore protector. Pulled bridge plug. Ran in hole; reamed and washed 7245' to 7345'; circulated. Drilled ahead.

3/2/79 265'	TD: 7673'; MW: 10.8; Vis: 60. Drilled to 7533'; made short trip. Drilled to 7597'; circulated drilling break. Drilled to 7673'. Prepared for trip.
3/3/79 40'	TD: 7713'; MW: 10.9; Vis: 55. Trip for bit. Ran in hole to 7590'; could not circulate. Pulled out of hole; found hole bridged at 7570'. Worked up to 7511'. Washed and reamed 7511' to bottom. Drilled 7673' to 7703'. Lost 200 barrels of mud while drilling at 7681'. Drilled to 7713'.
3/4/79 124'	TD: 7837'; MW: 10.9; Vis: 53. Drilled 7713' to 7823'. Made short trip with 15 feet of fill. Drilled 7823' to 7837'. Made short trip; reamed 37 feet to bottom. Conditioned hole for core.
3/5/79 31'	TD: 7868'; MW: 11.0; Vis: 55. Pulled out of hole. Picked up and ran in hole with core barrel to 7751'. Worked to bottom at 7837'. Circulated. Cut Core No. 7: 7837' to 7868.5'. Circulated. Pulled out of hole. Recovered 31.5 feet. Made up bottom hole assembly.
3/6/79 200'	TD: 8068'; MW: 10.9; Vis: 58. Ran in hole; reamed core hole. Drilled to 7896'; circulated samples. Drilled to 8068'; circulated samples. Drilling break at 7880'; lost approximately 50 barrels mud.
3/7/79 205'	TD: 8273'; MW: 10.9; Vis: 57. Circulated at 8068'; pulled out of hole. Ran in hole; washed 60 feet to bottom; drilled to 8273'; circulated samples.
3/8/79 16'	TD: 8289'; MW: 10.9; Vis: 55. Circulated samples at 8275'. Pulled out of hole. Picked up core barrel. Ran in hole; washed 60 feet to bottom. Cut Core No. 8: 8275' to 8289.5'. Recovered 9.8 feet of core.
3/9/79 99'	TD: 8388'; MW: 10.9; Vis: 58. Laid down core barrel; tested blowout preventer equipment. Ran in hole; reamed core hole. Drilled 8289' to 8388'. Drilled ahead.
3/10/79 62'	TD: 8450'; MW: 10.7; Vis: 50. Tripped in; reamed 60 feet. Lost 50 barrels of mud on trip. Drilled 8440'; lost complete returns 5 feet into drilling break. Pulled out of hole to 8223'. Mixed 150-barrel lost circulation material pill. Pumped down and recovered full returns. Drilled to 8450'; circulated. Lost total of 296 barrels of mud.

3/11/79 30'	TD: 8480'; MW: 10.7; Vis: 62. Circulated at 8450'. Tripped for core barrel. Cut Core No. 9: 8451' to 8481'; recovered 27.5 feet of core. Tripped in with bit
3/12/79 130'	TD: 8610'; MW: 10.7; Vis: 53. Ran in hole; reamed core hole; drilled to 8610'. Circulated samples.
3/13/79 0'	TD: 8610'; MW: 10.8; Vis: 46. Circulated for logs. Pulled 30 stands; short trip. Ran in hole; no fill. Circulated bottoms up; surveyed steel line measure. Pulled out of hole; rigged for logs. Ran DIL, SP/GR to 8613' (logger's depth). Began running FDC/CNL.
3/14/79 0'	TD: 8610'; MW: 10.8; Vis: 9.0. Finished running FDC/CNL, HDC, Dipmeter, Velocity Survey. Ran Sidewall Core Run No. 1. Shot 40 sidewall cores; recovered 39. Continued running Sidewall Core Run No. 1.
3/15/79 0'	TD: 8610'; MW: 10.7; Vis: 65. Finished Sidewall Core Run No. 1. Shot 40 sidewall cores; recovered 38 (some sidewall cores double shot). Rigged down Schlumberger. Ran in hole to 6365'; lost returns. Picked up kelly; regained circulation. Reamed and washed to 7303'.
3/16/79 0'	TD: 8610'; MW: 10.7; Vis: 58. Reamed and washed 7303' to 8610'. Circulated and conditioned mud.
3/17/79 0'	TD: 8610'; MW: 10.7; Vis: 55. Pulled out of hole; tight at 4466'. Laid down stabilizers. Tripped in 25 feet of fill. Conditioned hole for casing. Chained out 24 stands. Tripped out. Rigged up to run 9 5/8" casing. Changed to 9 5/8" rams in blowout preventer.
3/18/79 0'	TD: 8610'; MW: 10.7; Vis: 55. Pulled wear bushing; ran 96 joints of 9-5/8", 53.5#, S-95 BTC. Tagged fill at 8552'; washed to total depth. Shoe at 8600'. Conditioned hole for cementing.
3/19/79 0'	TD: 8610'; MW: 10.7; Vis: 47. Circulated and conditioned mud. Float collar at 8505'. Mixed and pumped 1,000 sacks Class "G" cement with 0.2% HR-7 and 1% CFR-2; slurry weight: 15.8 ppg; mixing time: 37 minutes. Displaced with 602 barrels mud in 57 minutes. Bumped plug with 3,000 psi. Float held. Cement in place 3/18/79 at 11:40 p.m. Hung casing on slips with 350,000 lbs. Nippled up blowout preventer; changed rams to 5". Tested packoff to 5,000 psi. Picked up RTTS and shifting tools. Ran in hole.

3/20/79 0'	TD: 8610'; MW: 10.7; Vis: 50. Ran in hole with RTTS tool and shifting fingers. Tested casing to 3,000 psi; shifted FO at 2378'; circulated 13-3/8" x 9-5/8" annulus. Closed FO; tested to 3,000 psi. Pulled out of hole to FO at 2110'. Opened FO; circulated annulus; closed and tested FO to 3,000 psi. Ran in hole to 2378'. Opened psi at 4 BPM. Mixed and pumped 300 sacks Permafrost cement; slurry weight: 14.9 ppg. Final pressure: 100 psi; bled to 0. Cement in place 3/19/79 at 12:35 p.m. Closed FO, reversed out. Received 4 barrels cement. Tested FO to 3,000 psi. Pulled out of hole to 2110'. Circulated 9-5/8" x 13-3/8" annulus; no cement. Closed and tested to 3,000 psi. Pulled out of hole; laid down 7-3/4" drill collars. Tested blowout preventer equipment.
3/21/79 45'	TD: 8655'; MW: 10.4; Vis: 39. Tested blowout preventer equipment. Picked up bottom hole assembly. Ran in hole; steel line measured; tagged float collar to 8503'. Circulated and conditioned mud; cleaned out to 8590'; tested casing to 2,500 psi. Drilled shoe at 8598'; cleaned to 8610'; drilled to 8620'. Tested formation to 0.66 gradient. Drilled ahead.
3/22/79 118'	TD: 8773'; MW: 10.4; Vis: 38. Drilled 8655' to 8723'; circulated 200 units gas off bottom. Pulled out of hole. Ran in hole; circulated. Drilled ahead.
3/23/79 187'	TD: 8960'; MW: 10.4; Vis: 37. Drilled 8773' to 8960'.
3/24/79 28'	TD: 8988'; MW: 10.4; Vis: 38. Drilled to 8977'; circulated for core. Pulled out of hole to bottom hole assembly and inspected. Picked up core barrel and Sperry Sun orienting tools. Ran in hole for Core No. 10. Began coring.
3/25/79 68'	TD: 9056'; MW: 10.4; Vis: 36. Cut Core No. 10: 8977' to 9008'. Pulled out of hole; laid down core barrel. Recovered 31-foot core. Ran in hole; reamed core hole. Drilled ahead.
3/26/79 43'	TD: 9099'; MW: 10.4; Vis: 39. Drilled to 9056' to 9097'. Surveyed; pulled out of hole. Picked up junk sub. Ran in hole; reamed 9005' to 9097'. Drilled ahead.
3/27/79 110'	TD: 9209'; MW: 10.4; Vis: 38. Drilled ahead.

3/28/79 36'	TD: 9245'; MW: 10.2; Vis: 36. Drilled to 9245'; pulled out of hole. Tested blowout preventer equipment. Ran in hole; washed and reamed 9153' to 9245'.
3/29/79 122'	TD: 9367'; MW: 10.2; Vis: 36. Drilled to 9306'; circulated samples. Drilled ahead.
3/30/79 123'	TD: 9490'; MW: 10.1; Vis: 38. Drilled to 9470'; circulated samples. Drilled to 9490'; circulated samples. Lost approximately 172 barrels mud. Circulated; mixed lost circulation material and built volume.
3/31/79 30'	TD: 9520'; MW: 10.0; Vis: 39. Pulled out of hole. Laid down shock sub, roller reamer, and junk basket. Picked up core barrel. Ran in hole; dropped ball. Cut Core No. 11: 9490' to 9520'. Pulled out of hole; laid down core barrel. Recovered 30 feet of core. Picked up bottom hole assembly; ran in hole to shoe.
4/1/79 154'	TD: 9674'; MW: 10.0; Vis: 38. Tripped in to shoe. Strung new drilling line. Tripped in to 9490'; reamed to 9520'. Drilled to 9532'. Worked on pumps. Drilled to 9559'. Circulated samples. Drilled to 9674'.
4/2/79 90'	TD: 9764'; MW: 9.9; Vis: 38. Drilled 9674' to 9764'.
4/3/79 133'	TD: 9897'; MW: 9.9; Vis: 37. Drilled ahead.
4/4/79 50'	TD: 9947'; MW: 9.9; Vis: 36. Drilled to 9947'; circulated samples. Pulled out of hole. Changed bit and roller reamer. Tested blowout preventer equipment. Ran in hole.
4/5/79 150'	TD: 10,097'; MW: 9.8; Vis: 37. Ran in hole; reamed 50 feet to bottom. Drilled ahead.
4/6/79 118'	TD: 10,215'; MW: 9.8; Vis 37. Drilled to 10,215'. Circulated bottoms up; surveyed. Pulled out of hole. Laid down shock sub, roller reamer, and junk basket. Picked up core barrel. Ran in hole.
4/7/79 10'	TD: 10,225'; MW: 10.0; Vis: 39. Ran in hole with core barrel. Cut Core No. 12: 10,215' to 10,225'. Circulated; pulled out of hole; full recovery. Ran in hole; reamed core hole. Circulated and conditioned mud for logs. Pulled out of hole.

4/8/79 0'	TD: 10,225'; MW: 10.0; Vis: 39. Pulled out of hole to log. Rigged up Schlumberger. Ran Temperature Log, DIL, CNL, and BHC/Sonic. Logger's depth: 10,229'.
4/9/89 0'	TD: 10,225'; MW: 10.0; Vis: 39. Ran BHC, Velocity Survey and Dipmeter. Shot 45 sidewall cores; recovered 31. Temperature Survey: 221° maximum. Rigged down Schlumberger. Ran in hole; reamed 30 feet to bottom; no fill. Circulated bottoms up.
4/10/79 0'	TD: 10,225'; MW: 9.9; Vis: 39. Pulled out of hole; laid down jars, monel, and 12 drill collars. Ran in hole with open ended drill pipe to 9700'. Circulated 3 hours. Pumped 6 barrels water, 150 sacks Class "G" with 1% CFR-2 and 0.2% HR-7, and 2 barrels water. Slurry weight: 16 ppg. Displaced with 162 barrels mud. Cement in place 4/9/79 at 3:00 p.m. Pulled out of hole to 8800'; circulated and conditioned mud. Pumped 5-1/4 barrels water and 160 sacks Class "G" cement with 1% CFR-2 and 0.2% HR-7. Followed with 2 barrels water. Slurry weight: 15.8 ppg. Displaced with 149 barrels mud. Cement in place 4/9/79 at 8:10 p.m. Ran in hole with bit and casing scraper. Tagged cement at 8520'. Circulated at 8500'. Pulled out of hole.
4/11/79 0'	TD: 10,225'; MW: 9.9; Vis: 50. Circulated at 8500'. Pulled out of hole; picked up 9-5/8" E-Z drill retainer. Ran in hole and set at 8200'; circulated and conditioned mud. Pumped 5-1/4 barrels water and 50 sacks Class "G" cement with 1% CFR-2 and 0.2% HR-7 mixed at 15.8 ppg. Followed with 2 barrels water; displaced with 140 barrels mud. Cement in place 4/10/79 at 6:10 p.m. pulled 9 stands; laid down 230 joints of drill pipe. Picked up 9-5/8" casing cutter. Ran in hole; cut casing at 2170'. Pulled out of hole.
4/12/79 0'	TD: 10,225'; MW: 9.9; Vis: 55. Pulled out of hole with casing cutter. Pulled bore protector. Picked up and hung off blowout preventer. Picked up casing to rotary and set slips. Pulled and laid down 42 joints 9-5/8" drill pipe, 2 cut offs, and FO collar. Ran in hole with 12-1/4" bit and 13-3/8" scraper to 2150'. Circulated and conditioned mud. Pulled out of hole.
4/13/79 0'	TD: 10,225'. Pulled out of hole with 13-3/8" casing scraper. Ran in hole with Howco 13-3/8" cement retainer; set at 2140'. Pumped 14 barrels water, 100 sacks Permafrost cement at 14.8 ppg, and followed with 2 barrels water and 34 barrels mud. Cement in

place 4/12/79 at 10:55 a.m. Pulled out of hole to 1900'; reversed out mud to water, water to diesel. Pulled out of hole, laid down drill pipe and kelly. Nippled down blowout preventer and wellhead.

4/14/79 Began rigging down. Completed rigging down wellhead equipment to 20" starter head. Cleaned mud tanks; removed Halliburton pumping unit and equipment from house. Took rig pumps apart. Continued general rig down and movement of equipment to airstrip. Released rig April 13, 1979, at 12:00 noon.

DRILLING TIME ANALYSIS

PEARD TEST WELL NO. 1

NABORS ALASKA DRILLING, INC., RIG 17

Spud 1/26/79; Rig Released 4/13/79

Total Depth 10,225 Feet

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 1 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1978 12-23																							24		Began Setting Up Camp
12-24																							24		Setting Up Camp
12-25																							24		Setting Up Camp
12-26																							24		Setting Up Camp
12-27																							24		Setting Up Camp
12-28																							24		Setting Up Camp
12-29																							24		Setting Up Camp
12-30	24																								Began Rigging Up
12-31	24																								Rigging Up
1979 1-1	24																								Rigging Up
1-2	24																								Rigging Up
1-3	24																								Rigging Up
1-4	24																								Rigging Up
1-5	24																								Rigging Up
1-6	24																								Rigging Up

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 2 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1-7	24																								Rigging Up
1-8	24																								Rigging Up
1-9	24																								Rigging Up
1-10	24																								Rigging Up
1-11	24																								Rigging Up
1-12	24																								Rigging Up
1-13	24																								Rigging Up
1-14	24																								Rigging Up
1-15	24																								Rigging Up
1-16	24																								Rigging Up
1-17	24																								Rigging Up
1-18	24																								Rigging Up
1-19	24																								Rigging Up
1-20	24																								Rigging Up
1-21	24																								Rigging Up

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST NO. 1 Page 3 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1-22	24																								Rigging Up
1-23	24																								Rigging Up
1-24	24																								Rigging Up
1-25	24																								Set 20" Casing
1-26	12	4½	4½																		3				Spudded Well at 4:30 p. m.
1-27		20		1¾	½				¼														1½	Drilling	
1-28		18¼		3½	¾		1¼																	Tripping	
1-29		15¼		7½	1			¼																Drilling	
1-30		7	1½	6¾	¼		3	2½	3															Repairing Rig	
1-31			½	12¼				1½	8¼	1½														Rigging Up to Log	Ran Schlumberger Logs
2-1				4				2		14						4								Running Casing	13 3/8" Casing Set at 2632'
2-2		6½		5				4½		4½		3½												Tripping	
2-3											12	12												Waiting on Cement	
2-4												24												Picking Up Hydril	
2-5												24												Working on control lines	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 4 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
2-6												24												Installing lines to HCR Valve	
2-7				6			2					12	4											Changing Valve on Kill Lines	
2-8		9		4	2¼		5¼	1															2½	Drilling Cement	
2-9			1½	8½				2												12				Squeezing Cement	
2-10				12½				1½									10¾							Tripping	Cut Core No 1: 3034.5'-3065'
2-11		10¾	2	4	¾		4	1															1½	Drilling	
2-12		15½		3¾	2½	½	1																¾	Drilling	
2-13		2	2	8¾		¼											6						5	Tripping	Cut Core No. 2: 4278' - 4294'
2-14		9½	1	6¼		¼		1									½						5½	Laying down core barrel	
2-15		12		5	1	½	1½	2															2	Drilling	
2-16		8½		8	2	½		1															4	Tripping	
2-17				8		¼	1					6¾	7						¼				¾	Working on BOP	
2-18			½	14¼				2½															6¾	Circulating	
2-19		8½	½	7¼		½		2									3¾						1½	Tripping	Core No.3: 5409' - 5421'
2-20		5¼	1	8½	¼			6¾															2	Circulating Gas	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 5 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
2-21		6	½	8½	¼			2¾									4 ¾						1	Tripping	Core No. 4: 5906' - 5916.4'
2-22		3½	1¼	11½				1¾									4½						1¾	RIH With Core Barrel	Core No. 5: 6119' - 6129.4'
2-23		5¼	2¼	6¼	¼			5¼									4¼							Drilling	
2-24		7	2	5¾				5					3				1¼							Testing BOP	Core No. 6: 6403' - 6413'
2-25		7½	5	6½	¼			1¾					2½										½	Circulating	
2-26		13¼	2½	6	¼			2																Drilling	
2-27		16½	2	1¼	½			3¼																Drilling	
2-28				11¼		¼						6¼	6¼											Tripping	
3-1		17½	2½	1¼				2¾																Drilling	
3-2		6	5	8	¼			2¾															2	Surveying	
3-3		16¼	½	1	1¼	¼		4¼															½	Drilling	
3-4			¾	8½	1¼	¼		8									3½						1¾	Circulating	Core No. 7: 7837' - 7868.5'
3-5		10¼	3	7½				¼															2	Laying down Core Barrel	
3-6		13	½	7½	½			2¼															¼	Circulating	
3-7		4	1½	8	½	½		3¼									3½						1¼	Circulating	Core No. 8: 8275' - 8289.5'

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 6 of 8

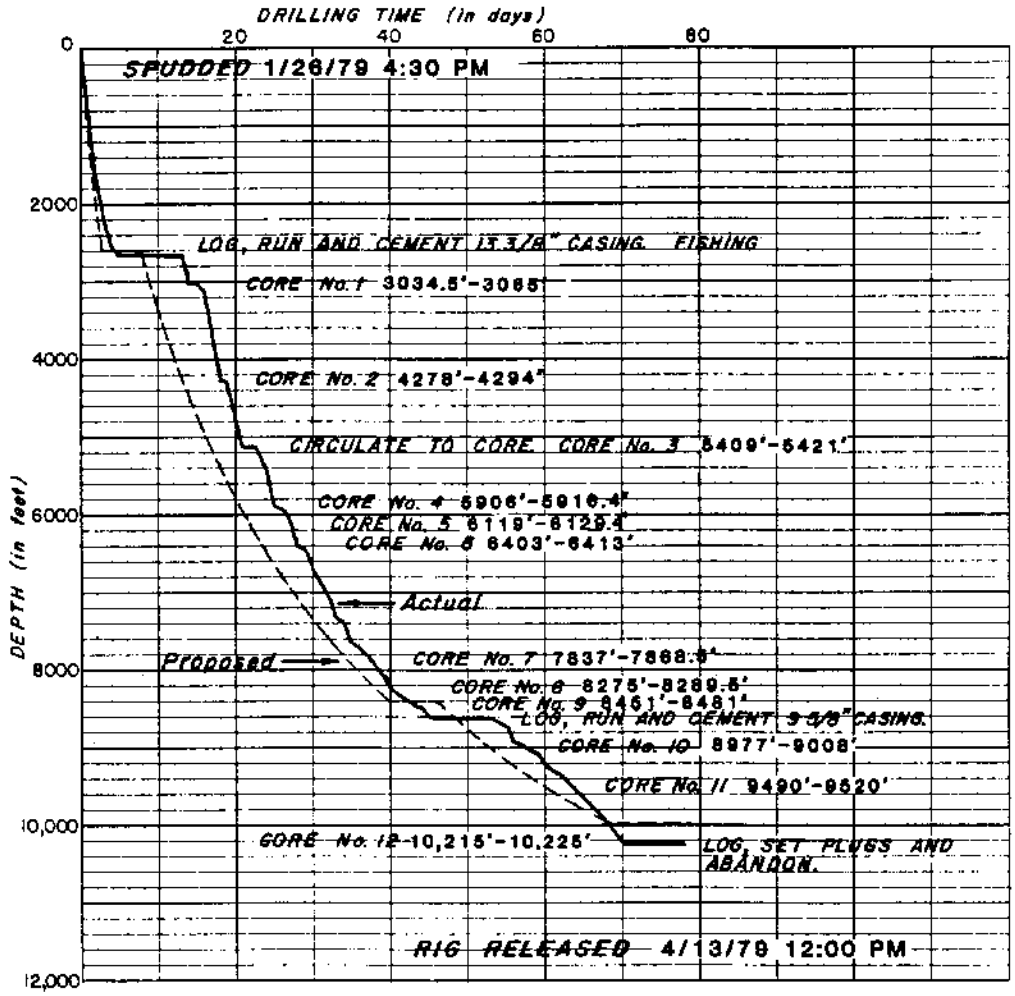
DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
3-8		7½	1½	6		¼		¼					5										2	Laying Down Core Barrel	
3-9		9½	1½	9½			2½	1																Circulating	
3-10		2		10¾				4½									3¾						3	Circulating	Core No. 9: 8451' - 8481'
3-11		9 ¾	3½	6¼		¼	¼	½									1						2½	Laying Down Core Barrel	
3-12		5¾		7¾	¼	¼		5½	4½															Drilling	
3-13									24															Logging	Ran Schlumberger Logs
3-14			12	5					7															Logging	
3-15			24																					Reaming	
3-16			4	12			1	7																Circulating	
3-17				5						19														Running Casing	
3-18			2					5½		9		7½												Reaming	9 5/8" Set at 8600'
3-19				14½				1		3			3										2½	Tripping	
3-20		5		9½			1	2				6											½	Tripping	
3-21		13¼		8 ¾			¾	1¼																Drilling	
3-22		24																						Drilling	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST WELL NO. 1 Page 7 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
3-23		8		8				5															3	Drilling	
3-24		4	1	7¼		¼		¾									8¾						2	Coring	Core No. 10: 8977'-9008'
3-25		19		3½	½		½	½																Drilling	
3-26		18½	1½	4																				Drilling	
3-27		17		4									3											Drilling	
3-28		16¾	1	2½				1¼					2½											Reaming	
3-29		24																						Drilling	
3-30		2½		10				9½									½							Circulating	Core No. 11: 9490' - 9520'
3-31		18	1	7¼		½		1½									1						2¾	Tripping	
4-1		24																						Drilling	
4-2		23½					½																	Drilling	
4-3		14½		4½	½	½		1					2½										½	Drilling	
4-4		16		5									½										2½	Tripping	
4-5		22¼			½			1¼																Drilling	
4-6				17				2½									2½						2	Coring	Core No. 12: 10215' - 10225'

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. PEARD TEST NO. 1 Page 8 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
4-7			¼	6½		1		3½	12														1	Tripping	Ran Schlumberger logs
4-8				1½					22½															Logging	
4-9				17¼				4¼												1½			1	Circulating	
4-10				17				4		1													2	Tripping	
4-11				3¼								8½				½							11½	Tripping	
4-12				9¼			½	8		1½		3½							1¼					Circulating	
4-13	17											7												Nippling Down BOP's	Rig Released 12:00 Noon
TOTAL HOURS	821	576¾	98¼	468¾		7	26¼	148	81½	53½	12	145	39¼	-0-	4¼	61¼	-0-		1½	13½	3	-0-	108¾		



PEARD TEST WELL No. 1

1106' FNL and 1836' FWL
Sec. 25, T.16 N., R.28 W., U. M.
PAD LEVEL 75'
K.B. 101'

HUSKY OIL *N. P. R. Operations*
NATIONAL PETROLEUM RESERVE in ALASKA

DRILLING TIME CURVE

ARCTIC DRILLING SERVICES

DRILLING MUD RECORD

3139 Denali Street

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska CASING PROGRAM: 13 3/8 inch at 2632 ft.

WELL Peard Test Well No. 1 COUNTY North Slope 9 5/8 inch at 8600 ft.

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 25 TWP 16N RNG 28W ____ inch at ____ ft.

STOCKPOINT Lonely DATE ____ ENGINEER G. Monroe/W. Rintoul TOTAL DEPTH 10,225 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1979	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/10 min	Strip Meter	ml API	HTHP @ °F	Cake 32nds	P_m	PV/Ml	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
1/25	80	8.6	53	16	25	19/35	7.5			4			300	100	0	2		98		Preparing to spud.
1/26	80	8.6	50	14	21	16/24	7.5			4			300	100	0	2		98		Repair mud pumps.
1/27	450	9.2	32	5	6	7/12	7.5			5			800	100	1/4	6		94		Spudded well at 4:30 p.m., 1/26/79
1/28	1000	10.0	33	8	7	5/14	7.5			3			800	80	Tr	11		89		Run 100+ bbls H_2O per hour.
1/29	2140	9.9	32	5	2	0/1	7.5			3			700	60	Tr	11		89		
1/30	2571	10.1	31	6	0	0/0	7.5			3			800	40	Tr	12		88		Run H_2O.
1/31	2642	10.2	60	16	31	10/32	7.5			3			800	40	Tr	12		88		Logging.
2/1	2642	10.2	57	23	25	13/36	7.5			3			800	40	Tr	12		88		Run 13 3/8" casing.
2/2	2642	10.2	50	19	18	7/17	7.5			3			800	40	Tr	12		88		Fishing - 11 joints DP.
2/3	2636	10.2	39	11	4	0/2	7.5			3			800	20	0	12		88		Cement 13 3/8" casing.
2/4	2636																			Clean mud tanks.
2/5	2636																			Clean mud tanks.
2/6	2636	8.6	32	6	3	0/0	7.5			4			700	80	0	2		98		Nipple up BOPs.
2/7	2636	8.6	33	5	2	0/0	7.5			3			700	80	0	2		98		Nipple up BOPs.
2/8	2636	9.3	36	8	6	1/3	7.5			3			800	40	0	6		94		Drilling 120 feet of cement.
2/9	3029	9.4	32	5	2	0/0	11.0			4	1.9	3.6	800	260	0	7		93		Parted drill string. Fishing.
2/10	3035	9.5	34	8	5	1/3	10.5			3	1.1	2.5	800	180	0	8		92		
2/11	3068	9.3	35	7	5	1/4	10.5			2	.75	1.9	800	120	0	6		94		Cut 30' core.
2/12	3480	9.5	36	8	6	2/6	10.0			3	.4	1.7	800	120	0	8		92		
2/13	4277	9.8	35	9	8	4/9	9.0			3	.25	1.5	800	100	0	12		88		Gas sand - 1300 units gas.
2/14	4294	9.8	34	7	8	5/8	8.5			3	.05	1.4	800	80	Tr	12		88		Cut 10' core.
2/15	4800	9.9	41	11	10	3/10	8.0			2	0	1.3	700	60	Tr	12		88		Run H_2O.
2/16	4990	9.8	43	13	9	3/7	8.0			2	0	.9	600	30	Tr	12		88		Tight hole first three stands.
2/17	5408	9.8	40	11	8	3/8	8.0			2	0	.7	600	30	Tr	12		88		Set bridge plug to test BOPs.
2/18	5408	9.8	44	13	8	4/12	8.0			2	0	.65	600	30	0	12		88		RIH with core barrel.
2/19	5416	9.9	43	13	7	1/5	8.0			2	0	.65	500	20	0	12		88		POH and change swivel.
2/20	5830	10.0	50	18	17	3/11	8.0			2	0	.6	500	20	Tr	13		87		Gas sand at 5844', 2600 units.
2/21	5910	9.8	43	13	7	3/6	8.0			2	0	.5	500	20	Tr	12		88		Cut 10' core.
2/22	6119	9.7	46	14	13	3/8	8.0			2	0	.5	500	20	Tr	11		89		
2/23	6245	9.7	45	14	12	3/8	7.5			2	0	.45	500	20	Tr	11		89		Cut 10' core.
2/24	6413	9.8	48	16	15	4/8	7.5			2	0	.4	500	20	Tr	12		88		Cut 10' core.
2/25	6729	10.0	51	20	21	5/18	7.5			2	0	.4	500	20	Tr	13		87		Running H_2O for solids control.
2/26	6837	10.2	50	19	18	5/17	7.5			2	0	.3	400	20	Tr	13		87		Running shale.
2/27	7060	10.4	52	20	23	5/23	7.5			2	0	.3	400	30	Tr	14		86		
2/28	7345	10.5	55	18	18	4/23	8.0			2	0	.6	500	90	Tr	14		86		

ARCTIC DRILLING SERVICES

3139 Denali Street

DRILLING MUD RECORL

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska

WELL Peard Test Well No. 1 COUNTY North Slope

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 25 TWP 16N RNG 28W

STOCKPOINT Lonely DATE ENGINEER G. Monroe/W. Rintoul

CASING PROGRAM: 13-3/8 inch at 2632 ft.
9-5/8 inch at 8600 ft.
inch at ft.

TOTAL DEPTH 10,225 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1979	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/10 min	Strip ☐ Meter ☐	ml API	HTHP @ °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
3/1	7380	10.6	55	16	25	5/25	8.0	7.5		2	0	.7	500	80	Tr	15		85		Trip gas 630 units.
3/2	7668	10.8	62	22	27	6/30	8.0	8.5		2	0	1.0	700	60	Tr	15		85		Short trip. No problems.
3/3	7700	10.9	55	22	24	6/28	8.0	7.0		2	0	.9	800	80	1/4	15		85		Lost 20 bbls mud.
3/4	7837	10.9	53	21	25	6/18	8.0	6.5		1	0	.9	700	70	1/4	14		86		Lost 20 bbls mud.
3/5	7868	11.0	55	22	26	7/30	8.0	7.0		1	0	.8	800	70	1/2	14		86		
3/6	8062	10.9	58	19	25	9/43	8.0	6.3		2	Tr	.85	950	40	1/4	14		86		Lost 50 bbls - sloughing shale.
3/7	8230	10.9	57	21	24	11/44	8.5	7.5		2	.1	.85	950	40	1/4	14		86		
3/8	8289	10.9	55	19	21	9/44	8.5	8.7		2	.1	.8	950	40	1/4	14		86		Cut 11' core.
3/9	8366	10.9	58	22	25	12/55	8.5	8.9		2	.1	.8	900	40	1/4	14		86		Sloughing shale.
3/10	8450	10.7	50	19	19	9/41	8.5	8.8		2	.01	1.0	1000	60	1/4	13		87		Lost 190 bbls mud.
3/11	8480	10.7	52	20	20	9/46	8.5	9.2		2	.05	.75	1000	60	1/4	13		87		Cut 30' core.
3/12	8601	10.7	53	17	22	10/50	8.5	9.0		2	.05	.75	1000	20	1/4	13		87		
3/13	8610	10.8	46	15	19	9/51	8.5	9.0		2	.1	.8	1000	20	1/4	13		87		Logging.
3/14	8610	10.8	48	16	21	5/48	8.5	9.0		2	.1	.8	1000	20	Tr	13		87		Logging.
3/15	8610	10.7	55	19	24	11/50	8.5	9.5		2	.1	1.0	1100	40	1/4	13		87		Wash and ream to bottom.
3/16	8610	10.7	58	21	25	9/52	8.5	9.6		2	.1	.8	1200	40	1/4	13		87		Logging. Sloughing shale.
3/17	8610	10.7	55	18	22	9/49	8.5	9.5		2	.1	.85	1200	40	1/2	13		87		Circulate for casing.
3/18	8610	10.7	55	18	23	10/52	8.5	10.1		2	.1	.9	1200	40	1/4	13		87		Run 9 5/8" casing to 8600'.
3/19	8610	10.7	47	18	23	10/52	8.5	10.3		2	.1	1.4	1200	40	1/4	13		87		Cement 9 5/8" casing.
3/20	8610	10.7	50	19	23	10/55	8.5	10.5		2	.1	1.5	1200	40	1/4	13		87		Cement second stage.
3/21	8647	10.4	39	10	8	2/8	10.0	12.6		2	.4	.8	1300	40	1/4	10		90		Drilled 100' cement in 9 5/8".
3/22	8771	10.4	38	11	8	3/9	9.5	9.2		2	.2	.55	1300	120	Tr	10		90		80 units of trip gas.
3/23	8905	10.4	37	10	7	3/9	10.0	8.3		2	.2	.75	1400	140	Tr	10		90		
3/24	8978	10.4	38	12	8	3/8	10.0	8.0		2	.25	.65	1400	120	Tr	11		89		Cut 30' core.
3/25	9046	10.4	36	10	7	3/8	10.5	7.9		2	.4	1.2	1400	80	Tr	10		90		Background gas - ± 10 units.
3/26	9096	10.4	39	13	9	5/10	10.0	6.8		2	.2	1.1	1400	40	Tr	10		90		Drilling.
3/27	9204	10.4	38	12	7	3/8	10.0	7.0		2	.2	1.6	1500	40	Tr	10		90		Drilling.
3/28	9245	10.2	36	11	7	3/8	10.0	6.8		2	.2	1.1	1500	40	Tr	9		91		Drilling.
3/29	9363	10.2	36	11	6	3/6	10.0	6.5		2	.2	.9	1600	40	Tr	9		91		Drilling.
3/30	9490	10.1	38	12	7	3/7	10.0	6.3		2	.2	1.1	1600	40	Tr	9		91		Lost 175 bbls mud.
3/31	9520	10.0	39	12	9	3/5	9.5	6.8		2	15	.7	1600	40	Tr	9		91		Cut 30' core.
4/1	9670	10.0	38	12	7	3/9	10.5	7.1		2	35	1.0	1600	40	1/4	9		91		Drilling.
4/2	9740	9.9	38	11	8	3/7	10.0	7.3		2	25	.9	1500	40	1/4	9		91		Drilling.
4/3	9880	9.9	37	11	7	3/9	10.5	7.4		2	25	1.1	1500	40	Tr	9		91		Drilling.
4/4	9947	9.9	36	10	7	2/6	10.0	5.5		1	.2	.85	1500	40	0	9		91		Drilling.

ARCTIC DRILLING SERVICES

3139 Denali Street

DRILLING MUD RECORD

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska

WELL Peard Test Well No. 1 COUNTY North Slope

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 25 TWP 16N RNG 28W

STOCKPOINT Lonely DATE ENGINEER G. Monroe/W. Rintoul

CASING PROGRAM: 13-3/8 inch at 2632 ft.
9-5/8 inch at 8600 ft.
_____ inch at _____ ft.

TOTAL DEPTH 10,225 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1979	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/ 10 min	Strip ☐ Meter ☐	ml API	HTHP ? °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
4/5	10,087	9.8	37	12	7	3/7	10.0	6.2		1	.15	.7	1400	60	0	9		91		Drilling.
4/6	10,219	9.8	37	11	7	3/6	10.0	6.8		2	.2	.8	1400	60	Tr	9		91		Drilling.
4/7	10,225	10.0	39	12	6	3/6	10.0	6.8		2	.2	.8	1400	60	Tr	9		91		Cut 10' core.
4/8	10,225	10.0	39	11	6	3/6	10.0	7.0		2	.2	.8	1400	60	Tr	9		91		Logging.
4/9	10,225	10.0	39	12	6	3/6	10.0	7.2		2	.2	.8	1400	60	Tr	9		91		Logging.
4/10	10,225	9.9	39	12	6	3/6	10.0	8.0		3	.2	.8	1400	100	Tr	9		91		Set cement plugs.
4/11	10,225	9.9	50	12	16	6/30	11.0	15		4	.7	1.9	1400	180	Tr	9		91		Set retainer and cement.
4/12	10,225	9.9	55	14	20	8/50	11.0	18		4	.5	1.8	1500	180	Tr	10		90		Pull casing.

BIT RECORD

COMPANY	CONTRACTOR	COUNTY	STATE
Husky Oil NPR Operations	Nabors Alaska Drilling		

LEASE	WELL NO	SEC	TOWNSHIP	RANGE	BLOCK	FIELD
	Peard Test Well No. 1					

TOOL PUSHER	DRILL PIPE				DRAW WORKS	
DAY DRILLER	TOOL JOINT	MAKE	SIZE	TYPE		UNDER SURF
EVENING DRILLER	DRILL COLLAR	NO	O D	I D	LENGTH	POWER H P	PUMP NO 1 MAKE MODEL STROKE	INT DATE
MORNING DRILLER	DRILL COLLAR	NO	O D	I D	LENGTH	PUMP NO 2 MAKE MODEL STROKE	I D DATE

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	2	3	DEPTH OUT	FTGE	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R P M	VERT DEV	PUMP PRESS	PUMPS No	Liners	SPM	MUD Wt	Vis	DULL CODE 1	2	G	REMARKS FORMATION, CIRC FLUID ETC	DATE
1	17½	Hu	OSC	PR851	15	15	15	1473	1385	27	27	51	20/50	130	2°	1800	1	6	50	10	33	4	3	1		
2	17½	Hu	OSC	PR713	15	15	15	2217	744	22	22	33.8										2	1	1		
3	17½	Hu	OSC	PR827	15	15	15	2641	424	17	66	24.9										1	1	1		
4	12¼	Hu	OSC	JH907	11	12	12	3035	394	9	76	43.7	20/50	135	3 3/4	1800	1	6	65	9.5	34	1	2	I		
CH		ACC	EHS	15634	Core #1			3065	30	10½	86.5	2.85	10/20	60	3 3/4	500	2	6	40	9.5	35	G	O	O	D	
5	12¼	HTC	OSC	X2685	12	12	11	4277	1212	34	120.5	35.6	50/65	125/175	3 3/4	2000	2	6	60	9.8	35	2	5	I		
CH		ACC	EHS	15634	Core #2			4294	17	6½	127	2.61	18/20	60	3 3/4	500	2	6	30	9.8	35	G	O	O	D	
6	12¼	HTC	OSC	PV936	12	12	11	4801	507	11½	138½	44	40/55	130	3 3/4	2000	2	6	60	9.9	41	2	5	I		
7	12¼	HTC	OSC	PV937	12	12	11	5408	607	18½	157	328	40/55	140	3 1/4	2000	2	6	60	9.8	38	2	6	I		
CH		ACC	EHS	15634	Core #3			5420	12	2¼	159½	4.8	20	75		500	2	6	39	9.9	43	G	O	O	D	
8	12¼	HTC	OSC	PW174	12	12	11	5906	486	14	173½	34.7	45/30	150	3 3/4	2000	2	6	60	9.8	42	2	6	I		
CH		ACC	EHS	15634	Core #4			5916	10	3 3/4	177¼	2.5	20	75		500	2	6	33	9.8	42	G	O	O	D	
9	12¼	HTC	OSC	PV938	12	12	11	6119	203	6	183¼	33.8	45/55	140	3 3/4	2000	2	6	60	9.7	46	28	9	I		
CH		ACC	EHS	15634	Core #5			6129	10	4½	188	2.5	20	75		500	2	6	33	9.7	45	G	O	O	D	
10	12¼	HTC	OSC	PV962	12	12	11	6403	284	9 3/4	197 3/4	29.7	45/55	140	3 1/2	2000	2	6	60	9.8	48	3	3	1		
CH		ACC	EHS	15634	Core #6			6413	10	4¼	202	2.5	20	75		500	2	6	33	9.8	48	G	O	O	D	
11	12¼	Hu	OSC	PW173	12	12	11	6729	316	11½	223½	27.3	50	130	3 1/2	2000	2	6	60	10	51					
12	12¼	HTC	OSC	JH908	12	12	11	6870	141	12¼	235 3/4	11.7	55	130	3 1/2	2000	2	6	60	10.2	50	6	5	1		
13	12¼	HTC	X-3A	PM850	12	12	11	7345	475	20½	256 1/4	23.8	55	110		2200	2	6	60	10.4	53	4	4	1		
14	12¼	HTC	X-3A	PM712	11	11	12	7673	328	21½	279 3/4	12.9	50/55	110		2400	2	6	60	10.4	62	5	4	1		
15	12¼	HTC	X-3A	PM786	11	11	12	7837	164	18½	296 1/4	9	30	110	1	2300	2	6	52	10.9	53	5	4	1		

SMITH REPRESENTATIVE _____ PHONE _____

BIT RECORD

COMPANY	CONTRACTOR		COUNTY	STATE
Husky Oil NPR Operations	Nabors Alaska Drilling			
LEASE	WELL NO	SEC / TOWNSHIP / RANGE / BLOCK		FIELD
	Peard Test Well No. 1			

TOOL PUSHER	DRILL PIPE		DRAW WORKS	
DAY DRILLER	TOOL JOINT	MAKE / SIZE / TYPE	POWER / H P	UNDER SURF
EVENING DRILLER	DRILL COLLAR	NO / O D / I D / LENGTH	PUMP NO 1 MAKE / MODEL / STROKE	INT DATE
MORNING DRILLER	DRILL COLLAR	NO / O D / I D / LENGTH	PUMP NO 2 MAKE / MODEL / STROKE	T D DATE

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	2	3	DEPTH OUT	FTGI	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R P M	VERT DEV	PUMP PRESS	PUMPS No	Liner	SPM	MUD Wt	Vis	DULL CODE T	B	G	REMARKS FORMATION CIRC FLUID ETC	DATE
1	17½	Hu	OSC	PR851	15	15	15	1473	1385	27	27	51	20/50	130	2°	1800	1	6	50	10	33	4	3	1		
2	17½	Hu	OSC	PR713	15	15	15	2217	744	22	22	33.8										2	1	1		
3	17½	Hu	OSC	PR827	15	15	15	2641	424	17	66	24.9										1	1	1		
4	12¼	Hu	OSC	JH907	11	12	12	3035	394	9	76	43.7	20/50	135	3/4	1800	1	6	65	9.5	34	1	2	I		
CH		ACC	EHS	15634	Core #1			3065	30	10½	86.5	2.85	10/20	60	3/4	500	2	6	40	9.5	35	G	O	O	D	
5	12¼	HTC	OSC	K2685	12	12	11	4277	1212	34	120.5	35.6	50/65	125/175	3/4	2000	2	6	60	9.8	35	2	5	I		
CH		ACC	EHS	15634	Core #2			4294	17	6½	127	2.61	18/20	60	3/4	500	2	6	30	9.8	35	G	O	O	D	
6	12¼	HTC	OSC	PV936	12	12	11	4801	507	11½	138½	44	40/55	130	3/4	2000	2	6	60	9.9	41	2	5	I		
7	12¼	HTC	OSC	PV937	12	12	11	5408	607	18½	157	328	40/55	140	1/4	2000	2	6	60	9.8	38	2	6	I		
CH		ACC	EHS	15634	Core #3			5420	12	2½	159½	4.8	20	75		500	2	6	39	9.9	43	G	O	O	D	
8	12¼	HTC	OSC	PW174	12	12	11	5906	486	14	173½	34.7	45/30	150	3/4	2000	2	6	60	9.8	42	2	6	I		
CH		ACC	EHS	15634	Core #4			5916	10	3 3/4	177¼	2.5	20	75		500	2	6	33	9.8	42	G	O	O	D	
9	12¼	HTC	OSC	PV938	12	12	11	6119	203	6	183½	33.8	45/55	140	3/4	2000	2	6	60	9.7	46	28	9	I		
CH		ACC	EHS	15634	Core #5			6129	10	4½	188	2.5	20	75		500	2	6	33	9.7	45	G	O	O	D	
10	12¼	HTC	OSC	PV962	12	12	11	6403	284	9 3/4	197 3/4	29.7	45/55	140	1/2	2000	2	6	60	9.8	48	3	3	1		
CH		ACC	EHS	15634	Core #6			6413	10	4½	202	2.5	20	75		500	2	6	33	9.8	48	G	O	O	D	
11	12¼	Hu	OSC	PW173	12	12	11	6729	316	11½	223½	27.3	50	130	1/2	2000	2	6	60	10	51					
12	12¼	HTC	OSC	JH908	12	12	11	6870	141	12¼	235 3/4	11.7	55	130	1/2	2000	2	6	60	10.2	50	6	5	1		
13	12¼	HTC	X-3A	PM850	12	12	11	7345	475	20½	256 1/4	23.8	55	110		2200	2	6	60	10.4	53	4	4	1		
14	12¼	HTC	X-3A	PM712	11	11	12	7673	328	21¼	279 3/4	12.9	50/55	110		2400	2	6	60	10.4	62	5	4	1		
15	12¼	HTC	X-3A	PM786	11	11	12	7837	164	18½	296 1/4	9	30	110	1	2300	2	6	52	10.9	53	5	4	1		

WITH REPRESENTATIVE _____ PHONE _____

INTRODUCTION

After the 1976 drilling season, casing requirements were reviewed and the design of casing strings was standardized. Every effort was made to minimize weight and grade changes for simplicity, cost effectiveness, and to reduce chances of error during handling and running operations. Casing sizes were selected to accommodate designs for wells from 2,000' to 20,000'. Steel grade selection was the controlling factor on design with low hardness (Rockwell C24-28) steel being selected for Arctic application and possible H_2S environment. Below is listed casing sizes and design criteria required by Husky:

		YIELD STRENGTH (PSI)		MINIMUM PRESSURE REQUIREMENT (PSI)		
SIZE[1]	WEIGHT	MIN.	MAX.	COLLAPSE	BURST	CONNECTION
20"	133#/ft.	55,000	80,000	1,500	3,050	STC
13-3/8"[2]	72#/ft.	95,000	110,000	3,450	5,350	BTC
9-5/8"[3]	53.5#/ft.	95,000	110,000	8,850	7,900	BTC
9-3/4"[3]	59.2#/ft.	95,000	110,000	9,750	8,540	BTC
7"	38#/ft.	95,000	110,000	12,600	9,200	BTC

(1) OD tolerance to be within API requirements unless adjustment absolutely necessary to meet ID requirements.

(2) Special drift to 12.25".

(3) Special drift to 8.50".

The following additional requirements are primarily to assure that the steel exhibits the metallurgical properties for Arctic applications and resistance to hydrogen embrittlement.

1. All pipe that is 13-3/8" OD and smaller to be quenched and tempered.

2. Run Charpy "V" notch tests on two random samples per 50 tons per heat. Minimum acceptance of 15 ft.-lb.@-50°F. Furnish test reports with order.

3. Perform all testing normally required for API approved pipe.

4. Furnish test reports for ladle analysis, quantitative analysis, and all check tests as per API requirements.

In addition, the following handling requirements were made:

1. Collars must be of same steel grade as pipe body.

2. Apply an API modified thread compound on mill-installed collar before bucking on.

3. Inspect at mill using Tuboscope's Amalog IV or equivalent on 9-3/4" and smaller, and at least magnetic particle on 13-3/8" and 20". All pipe to have special and area inspection together with full length API drifting. (Note special drifting requirements.)

4. Apply Arctic grade grease on all connections before installing thread protectors.

5. Install closed-end type thread protectors. Plastic plugs can be used to secure wrench openings in protectors.

6. Buck up thread protectors with impact wrench. Both mill and third party inspection personnel should observe the installation of thread protectors.

7. Palletize or containerize the tubulars, if possible, prior to shipment from mill. Do not haul pipe like cordwood in gondola railroad cars.

8. All pipe to be Range 3.

9. No "V" notching or metal stenciling on pipe body or collars.

Peard's programmed casing design was as follows: 20" conductor at 80'; 13-3/8" surface casing at 2500'; 9-5/8" casing at 8400'; and a 7" liner run to total depth of 10,000' if necessary for formation evaluation. Casing was run very close as programmed with 20" set at 88'; 13-3/8" at 2632'; and 9-5/8" at 8600'. The 9-5/8" casing was set low as the Shublik Formation it was to be set in was low to forecast (forecast at 8375'; drilled 8463'). A 7" liner was not required for evaluation.

CASING TALLY
SUMMARY SHEET

DATE: February 4, 1979

FIELD National Petroleum Reserve in AK LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 13 3/8" CASING

SUMMARY OF PAGE MEASUREMENTS

	NO OF JOINTS	FEET	00'S
PAGE 1	50	1987	04
PAGE 2	18	721	01
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	68	2708	05

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	68	2708	05
2	LESS CASING OUT JTS NOS.	2	76	81
3	TOTAL (1 - 2)	66	2631	24
4	SHOE LENGTH		2	04
5	FLOAT LENGTH		1	72
6	MISCELLANEOUS EQUIPMENT LENGTH			
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		2635	00
8	LESS WELL DEPTH (KB REFERENCE)		29	70
9	"UP" ON LANDING JOINT		3	00

Weight indicator before cementing: 179.000 ; after slack off: 0 ; inches slacked off –

SUMMARY OF STRING AS RUN

WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW USED	LOCATION IN STRING	NO OF JOINTS	FOOTAGE	INTERVAL
72	S-95	Buttress		New	JT NO 1 THRU NO 66			–
					JT NO THRU NO			–
					JT NO THRU NO			–
					JT NO THRU NO			–
					JT NO THRU NO			–
					JT NO THRU NO			–
					JT NO THRU NO			–

PAGE 1 OF 2 CASING TALLY DATE: January 28, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 13 3/8" CAS

JOINT NO.	FIRST MEASUREMENT FEET	00'S	CHECK MEASUREMENT FEET	00'S	WT GR.
1	40.91				
2	37.04				
3	41.05				
4	39.21				
5	34.62				
6	39.00				
7	36.60				
8	38.89				
9	36.87				
0	41.87				
TOTAL A	386.06				

JOINT NO.	FIRST MEASUREMENT FEET	00'S	CHECK MEASUREMENT FEET	00'S
1	40.51			
2	35.88			
3	35.95			
4	41.50			
5	41.94			
6	40.70			
7	36.86			
8	41.15			
9	41.87			
0	43.19			
TOTAL D	399.55			

1	35.56				
2	35.98				
3	39.66				
4	40.15				
5	39.40				
6	42.38				
7	41.57				
8	41.29				
9	38.98				
0	40.00				
TOTAL B	394.97				

1	41.90			
2	42.00			
3	41.53			
4	39.18			
5	41.43			
6	36.45			
7	41.95			
8	41.57			
9	39.00			
0	41.75			
TOTAL E	406.76			

1	41.63				
2	36.38				
3	39.94				
4	40.47				
5	42.34				
6	35.48				
7	41.15				
8	42.86				
9	40.49				
0	38.96				
TOTAL C	399.70				

TOTAL A	386.06			
TOTAL B	394.97			
TOTAL C	399.70			
TOTAL D	399.55			
TOTAL E	406.76			
TOTAL PAGE	1987.04			

PAGE 2 OF 2 CASING TALLY DATE: January 28, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 13 3/8" CAS

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	39.39				
2	38.81				
3	41.50				
4	41.88				
5	38.97				
6	41.80				
7	42.22				
8	35.92				
9	38.21				
0	41.95				
TOTAL A	401.65				

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S
1				
2				
3				
4				
5				
6				
7				
8				
9				
0				
TOTAL D				

1	42.02				
2	34.94				
3	42.60				
4	42.03				
5	38.36				
6	42.60				
7	42.13				
8	34.68				
9					
0					
TOTAL B	319.36				

1				
2				
3				
4				
5				
6				
7				
8				
9				
0				
TOTAL E				

1					
2					
3					
4					
5					
6					
7					
8					
9					
0					
TOTAL C					

TOTAL A	401.65			
TOTAL B	319.36			
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	721.01			

CASING AND CEMENTING REPORT

WELL NAME Peard Test Well No. 1 WELL NO. _____

LOCATION National Petroleum Reserve in Alaska

RAN CASING AS FOLLOWS:

66	Jts	13 3/8"	S-95	72#	Buttress	Casing
_____	Jts	_____	_____	_____	_____	_____
_____	Jts	_____	_____	_____	_____	_____

Shoe @ 2632' Float @ 2550' DV @ -

Centralizer @ 2622', 2589', 2545', 2509', 2470', 2396', and 2320'.

FIRST STAGE

Sx of Cement 2800 Type Permafrost Additives - % Excess 55

Preflush 20 bbls of water Initial Pressure 1200

Displacement 57 bbls. Final Pressure 1200

Plug Down 2/2/79 - 1:05 ~~AM~~ PM

SECOND STAGE - Stage Collar @ _____

Sx of Cement _____ Type _____ Additives _____ % Excess _____

Preflush _____ Initial Pressure _____

Displacement _____ bbls. Final Pressure _____

Plug Down _____ AM PM

Well Depth 2641' Overall Casing Tally 2663'

KB to Top of Cut Off Casing 29' Length of Landing Jt Removed 31.10

Weight Indicator Before Cementing 97,000 lbs.

Weight Indicator After Slacking Off 0 lbs.

Inches Slacked Off 1/2"

Remarks:

CASING TALLY
SUMMARY SHEET

DATE: March 18, 1979

FIELD National Petroleum Reserve in AK LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 9 5/8 " CASING

SUMMARY OF PAGE MEASUREMENTS

	NO OF JOINTS	FEET	00'S
PAGE 1	50	2190	27
PAGE 2	50	2191	03
PAGE 3	50	2187	29
PAGE 4	49	2148	51
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	199	8717	10

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	199	8717	10
2	LESS CASING OUT (JTS NOS.	3	117	14
3	TOTAL (1 – 2)	196	8599	96
4	SHOE LENGTH		1	95
5	FLOAT LENGTH		1	75
6	MISCELLANEOUS EQUIPMENT LENGTH		7	84
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		8611	50
8	LESS WELL DEPTH (KB REFERENCE)		8610	00
9	"UP" ON LANDING JOINT		11	50

Weight indicator before cementing: 400 ; after slack-off: 350 ; inches slacked off _____ .

SUMMARY OF STRING AS RUN

WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW USED	LOCATION IN STRING	NO OF JOINTS	FOOTAGE	INTERVAL
53.5	S-95	131 Res		New	JT NO. 1 THRU NO 196	196	8717	0 ' – 8600 '
					JT NO. THRU NO.			' – '
					JT NO. THRU NO.			' – '
					JT NO. THRU NO.			' – '
					JT NO. THRU NO.			' – '
					JT NO. THRU NO.			' – '
					JT NO. THRU NO.			' – '

PAGE 1 OF 4 CASING TALLY DATE: February 27, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	43.91				
2	46.80				
3	45.75				
4	45.50				
5	46.50				
6	44.92				
7	47.85				
8	44.00				
9	43.26				
0	46.95				
TOTAL A	455.44				

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	46.33				
2	41.10				
3	43.42				
4	42.23				
5	39.00				
6	42.60				
7	42.53				
8	45.10				
9	42.23				
0	40.00				
TOTAL D	424.54				

1	41.36				
2	45.62				
3	47.83				
4	44.91				
5	45.22				
6	44.96				
7	41.33				
8	45.60				
9	41.30				
0	43.66				
TOTAL B	441.79				

1	44.15				
2	41.00				
3	41.93				
4	45.81				
5	45.15				
6	42.00				
7	46.91				
8	44.63				
9	45.78				
0	45.36				
TOTAL E	442.72				

1	38.66				
2	43.94				
3	44.75				
4	46.94				
5	44.80				
6	42.63				
7	43.79				
8	39.73				
9	35.61				
0	41.36				
TOTAL C	422.21				

TOTAL A	455.44				
TOTAL B	441.79				
TOTAL C	422.21				
TOTAL D	424.54				
TOTAL E	442.72				
TOTAL PAGE	2186.70				

PAGE 2 OF 4

CASING TALLY

DATE: February 27, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	44.23				
2	45.26				
3	45.53				
4	42.49				
5	45.16				
6	44.45				
7	44.02				
8	38.10				
9	45.07				
0	46.18				
TOTAL A	440.49				

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	35.21				
2	46.40				
3	44.45				
4	45.10				
5	44.65				
6	48.15				
7	43.99				
8	46.72				
9	36.90				
0	37.35				
TOTAL D	428.92				

1	45.30				
2	36.95				
3	47.06				
4	46.11				
5	47.14				
6	45.35				
7	47.94				
8	44.08				
9	45.56				
0	46.74				
TOTAL B	452.23				

1	42.26				
2	45.50				
3	43.54				
4	44.20				
5	46.53				
6	33.21				
7	46.33				
8	45.02				
9	34.66				
0	45.50				
TOTAL E	426.75				

1	46.77				
2	44.35				
3	42.75				
4	44.60				
5	47.10				
6	45.30				
7	44.53				
8	46.70				
9	44.70				
0	43.74				
TOTAL C	450.54				

TOTAL A	440.49				
TOTAL B	452.23				
TOTAL C	450.54				
TOTAL D	428.92				
TOTAL E	426.75				
TOTAL PAGE	2198.93				

PAGE 3 OF 4 CASING TALLY DATE: February 27, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	43.66				
2	43.83				
3	46.26				
4	46.73				
5	45.85				
6	35.20				
7	46.65				
8	45.96				
9	42.33				
0	43.87				
TOTAL A	440.34				

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	47.88				
2	43.52				
3	44.20				
4	45.88				
5	43.58				
6	35.00				
7	46.70				
8	45.87				
9	45.08				
0	38.06				
TOTAL D	435.77				

1	45.45				
2	40.33				
3	44.91				
4	42.50				
5	47.61				
6	43.35				
7	45.75				
8	41.07				
9	45.20				
0	44.42				
TOTAL B	440.59				

1	43.05				
2	35.42				
3	44.40				
4	46.75				
5	39.18				
6	46.88				
7	45.83				
8	41.35				
9	45.76				
0	43.90				
TOTAL E	432.52				

1	38.10				
2	46.33				
3	48.20				
4	42.19				
5	44.00				
6	46.93				
7	44.04				
8	42.18				
9	42.97				
0	43.38				
TOTAL C	438.32				

TOTAL A	440.34				
TOTAL B	440.59				
TOTAL C	438.32				
TOTAL D	435.77				
TOTAL E	432.52				
TOTAL PAGE	2187.54				

PAGE 4 OF 4 CASING TALLY DATE: February 27, 1979

FIELD NPRA LEASE & WELL NO. Peard Test Well No. 1 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	42.23				
2	45.42				
3	46.31				
4	40.54				
5	44.72				
6	46.50				
7	43.40				
8	42.12				
9	47.42				
0	40.26				
TOTAL A	438.92				

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	45.40				
2	39.81				
3	44.82				
4	38.60				
5	46.52				
6	43.00				
7	45.01				
8	45.73				
9	36.00				
0	43.12				
TOTAL D	428.01				

1	45.90				
2	42.73				
3	45.65				
4	42.35				
5	36.12				
6	43.63				
7	46.30				
8	46.85				
9	44.50				
0	44.89				
TOTAL B	438.92				

1	43.00				
2	46.70				
3	44.93				
4	44.90				
5	44.42				
6	43.36				
7	44.93				
8	37.83				
9	47.76				
0					
TOTAL E	397.83				

1	45.28				
2	44.73				
3	43.87				
4	45.82				
5	44.33				
6	42.73				
7	46.00				
8	43.20				
9	44.00				
0	45.16				
TOTAL C	445.12				

TOTAL A	438.92				
TOTAL B	438.92				
TOTAL C	445.12				
TOTAL D	428.01				
TOTAL E	397.83				
TOTAL PAGE	2148.80				

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well Peard Test Well No. 1 Date March 18, 1979

Size Casing 9 5/8" Setting Depth 8610' Top (liner hanger) _____

Hole Size 12 1/4" Mud Gradient .55 Viscosity 55

Casing Equipment

8600' shoe, 8505' float located 95 feet

above shoe, _____ (DV; FO) collars located at 2378 feet

and 2110 feet.

_____ centralizers located 8590', 8554', 8460', 2460', 2417', 2333',

2248', 2109', 2064', 1845', 1621', 1405', 1187', 962', 742', 548', 345', and 126'.

_____ scratchers located _____

_____

Liner hanger and pack off (describe) None

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	1000	Howco	G	.2% HR7, 1% CFR2	15.8	203 Bbls
(2)						

Cement through (DV; FO) Collar at 2378 feet

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)	300	Howco	Permafrost		14.9	49.6 Bbls
(4)						

Cementing Procedure (around shoe) (cross out where necessary)

Circulated 900 bbls @ 6.6 BPM, pumped in 50 ~~cu. ft.~~, (barrels) _____ _____ prewash, used bottom plug (yes, ~~no~~), mixed cement (1) above 37 minutes, cement (2) above _____ minutes, top plug (yes, ~~no~~) displaced with 602 (~~sacks~~), (barrels) in 57 minutes at rate of 10 BPM, CFM. (Bumped plug) (Did not bump plug). Final Pressure 3000 psi. Reciprocated pipe 0 feet while (mixing) and (displacing) cement. Displacing time 57 minutes. Had full circulation (full, partial, none, etc.). Completed job at 11:40 a.m., ~~p.m.~~

Cementing Procedure (through ~~(DV,~~ FO) at 2378 feet) (cross out where necessary)

Opened (DV, FO) at 10:00 a.m.~~p.m.~~, circulated 225 bbls @ 10 BPM, pumped in 27 (cu. ft.), (barrels) 10 prewash, mixed cement (3) above 8 minutes, cement (4) above _____ minutes, dropped closing plug, displaced with 39 (~~sacks~~), (barrels) in _____ minutes at rate of 5 _____ BPM, CFM. (Bumped plug) (Did not bump plug). Final Pressure 400 _____ Displacing time 8 minutes. Had down squeeze

Remarks (Third Stage Job, etc.)

_____

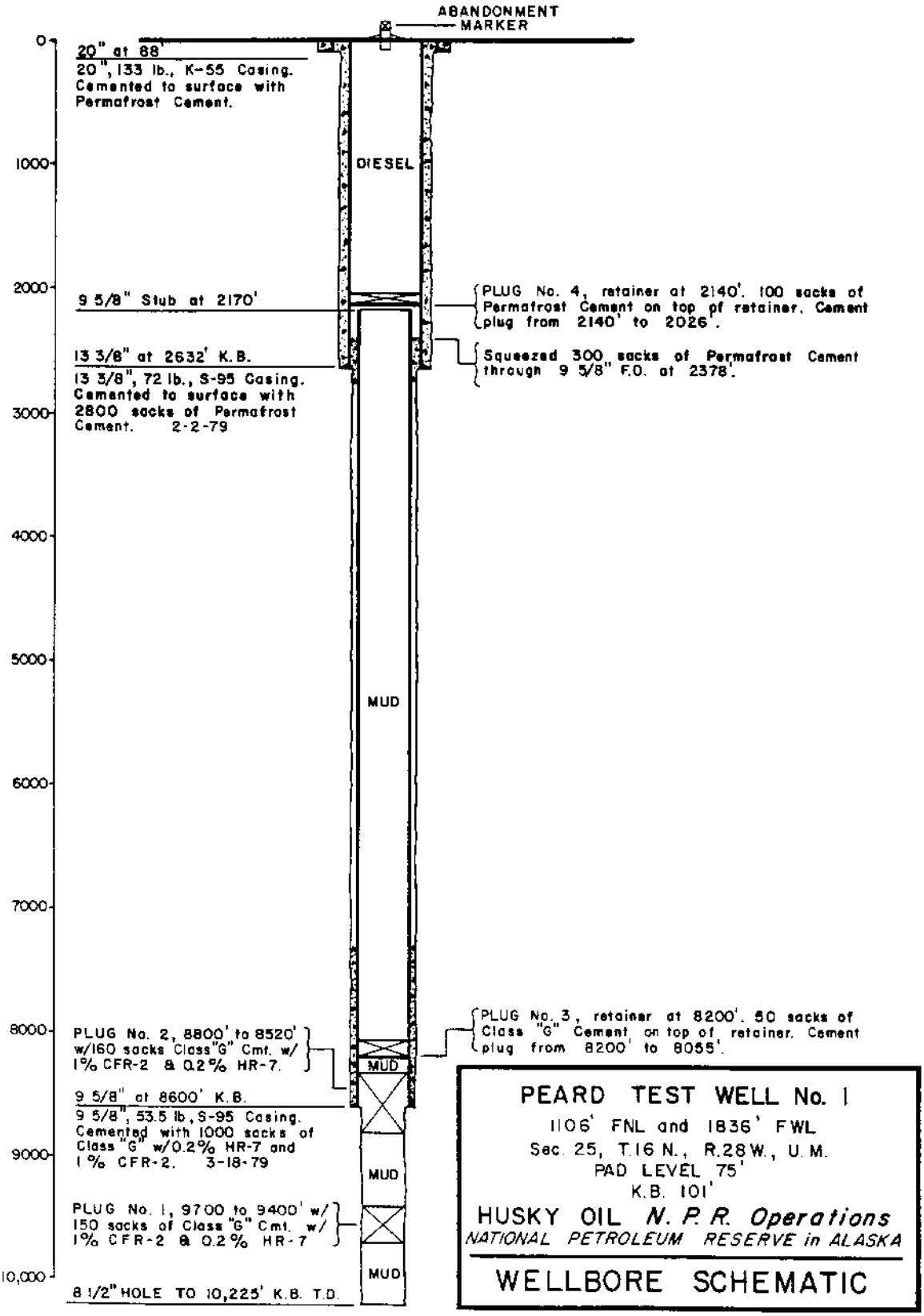
_____

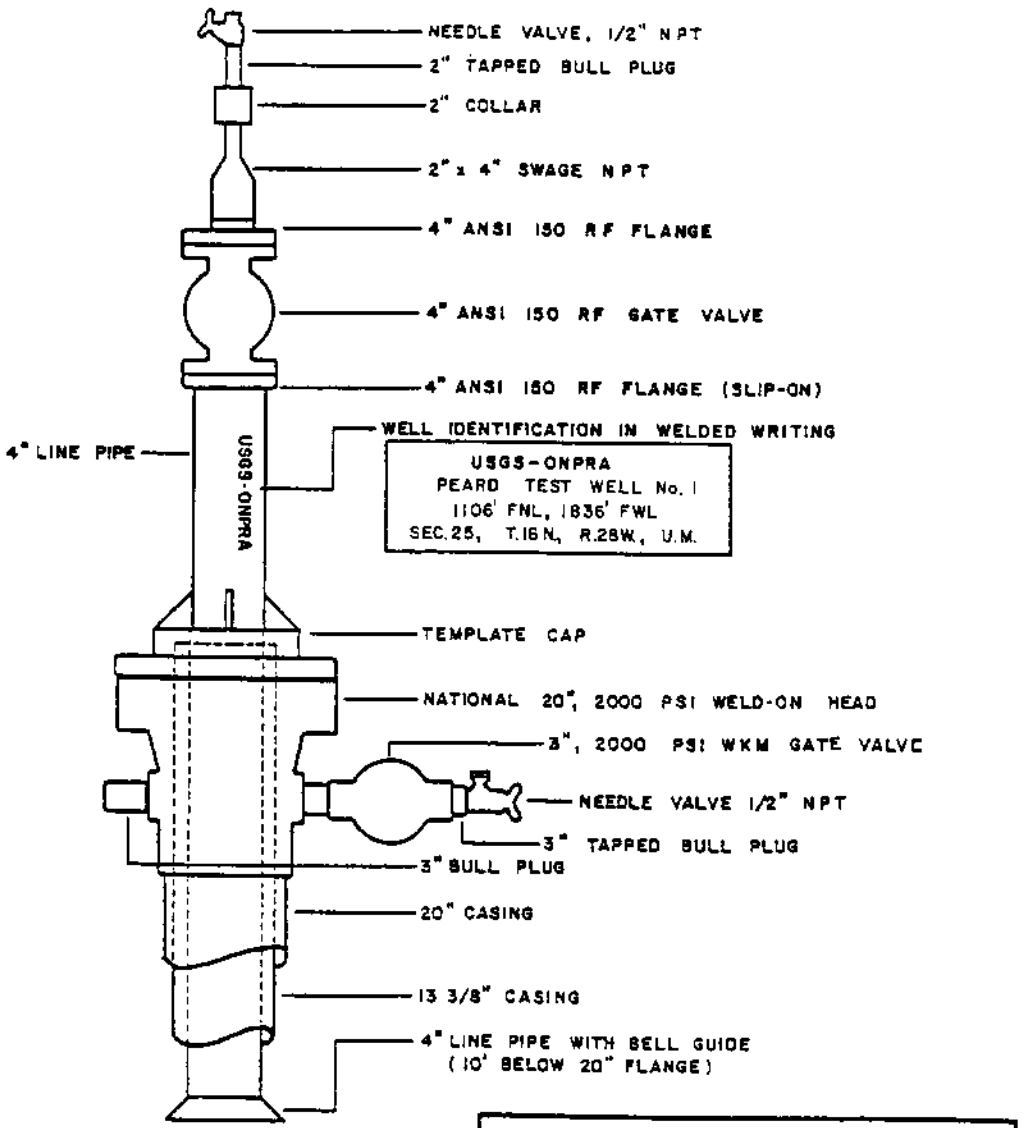
_____

_____

_____

D. L. Wester
Foreman


ABANDONMENT MARKER
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10,000
20" at 88'
20", 133 lb., K-55 Casing. Cemented to surface with Permafrost Cement.
DIESEL
9 5/8" Stub at 2170'
PLUG No. 4, retainer at 2140'. 100 sacks of Permafrost Cement on top of retainer. Cement plug from 2140' to 2026'.
Squeezed 300 sacks of Permafrost Cement through 9 5/8" F.O. at 2378'.
13 3/8" at 2632' K.B.
13 3/8", 72 lb., S-95 Casing. Cemented to surface with 2800 sacks of Permafrost Cement. 2-2-79
MUD
PLUG No. 3, retainer at 8200'. 50 sacks of Class "G" Cement on top of retainer. Cement plug from 8200' to 8055'.
PLUG No. 2, 8800' to 8520' w/160 sacks Class "G" Cmt. w/ 1% CFR-2 & 0.2% HR-7.
MUD
9 5/8" at 8600' K.B.
9 5/8", 53.5 lb., S-95 Casing. Cemented with 1000 sacks of Class "G" w/0.2% HR-7 and 1% CFR-2. 3-18-79
MUD
PLUG No. 1, 9700 to 9400' w/ 150 sacks of Class "G" Cmt. w/ 1% CFR-2 & 0.2% HR-7
MUD
8 1/2" HOLE TO 10,225' K.B. T.D.
PEARD TEST WELL No. 1
1106' FNL and 1836' FWL
Sec. 25, T.16 N., R.28 W., U.M.
PAD LEVEL 75'
K.B. 101'
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
WELLBORE SCHEMATIC



PEARD TEST WELL No. 1

1106' FNL and 1836' FWL
Sec. 25, T.16 N., R.28 W., U.M.

HUSKY OIL *N.P.R. Operations*
NATIONAL PETROLEUM RESERVE in ALASKA

ABANDONMENT HEAD

RIG INVENTORY

Draw Works

Oilwell 860, Serial No. H38-15, Double Drum, Main Drum 1-3/8" Lebus, Bill Drilling Control, Crown-O-Matic Crown Saver, and National Type D Dead Line Anchor.

Engines

Three (3) - Caterpillar D-398 diesel engines enclosed in Herc size steel buildings.

Auxiliary Brake

Elmago Model 6032, Serial No. 6487.

Drawworks Drive

Oilwell Model 1600, Serial No. H-37-21.

Mast

Lee. C. Moore Model 1,025,000#, Serial No. T-3538, 142 ft. hook load with 12 lines 703,000# hook load with 10 lines 683,000#.

Substructure

Lee C. Moore - capacity 700,000# casing load plus a set back load of 400,000#. Floor height 24', motor base height 16.50', G.L. to table beams of 22.10'.

Rotary Table

Oilwell Model A-2750, Size 27-1/2", Serial No. R-106-84, capacity 465 tons.

Travelling Blocks

Oilwell Model 480, Serial No. B-50-98, 6 sheaves 480 ton rating.

Hook

W. Wilson Model Hydra-Hook, Serial No. 26, 500 ton rating.

Swivel

Oilwell Model PC 425, Serial No. 5-31-8. Capacity 425 ton dead load, 295 ton rotating.

Links

B J 3-1/2" x 120" capacity 500 ton. Spare B J 2-3/4" x 108" capacity 350 ton.

Pumps

No. 1 - Oilwell Model A-1000P, 7-3/4" x 18", Serial No. P-117-36.

No. 2 - Oilwell Model A-1000P, 7-3/4" x 18", Serial No. P-117-37.

Pulsation Dampener

Hydril Model K-20 3000, Serial No. 36082.

Generators

No. 1 - E. M. Model Bemac II, 250 KW, 1,200 RPM engine, Caterpillar, Model D-353E, Serial No. 46B3266.

No. 2 - E. M. Model Bemac II, 250 KW, 1,200 RPM engine, Caterpillar, Model D-353E, Serial No. 46B3268.

Accumulator

Stewart Stevenson Model Koomey T-15100-35, reservoir capacity 180 gallons. Charged capacity 160 gallons with 15 HP chain driven, 3/4" x 2-1/4" triplex pump, and 4 nitrogen bottles for back up. Remove system Model Gerc-3.

Blowout Preventors

One (1) - 13-5/8" x 5,000# Hydril G.K., Serial No. 33850.

One (1) - 13-5/8" x 5,000# Double Shaffer Type L.W.S.

One (1) - 13-5/8" x 5,000# Single Shaffer Type L.W.S.

Choke Manifold

As per attached drawing, but less automatic choke. All 3" x 5,000 psi W.P. valves and fittings insulated and heated steel building.

Wash Down Pumps

Two (2) - 3" x 2" Mission pumps driven by 20 HP electric motors.
High Pressure Blowout Preventer Test Pump.

Air Compressor

No. 1 - Westinghouse Model 4WC, Serial No. 457-1800.

No. 2 - Westinghouse Model 4WC, Serial No. 457-1756.

Air Receivers

One (1) 36" x 12', 865 cubic foot capacity 150 psi working pressure.

Mud Tanks

No. 1 Shaker Tank - width 9.50', length 41.0', height 7.50'. "U" shaped bottom, insulated on all sides, and has steel insulated cover. Capacity 350 barrels.

No. 2 Center Tank - width 9.50', length 39.0', height 7.50'. "U" shaped bottom, insulated on all sides, and has steel insulated cover. Capacity 350 barrels.

No. 3 Suction Tank - width 9.50', length 36.55', height 7.50'. "U" shaped bottom, insulated, on all sides, and has steel insulated cover.

No. 4 Premix Tank - with two agitators. Width 8.50', length 35' with winterization. Capacity 192 barrels.

1 - 6" low pressure mud system
1 - 4" high pressure mud system
2 - 3 HP agitators
2 - 10 HP agitators
1 - 7-1/2 HP agitator.

Shale Shaker

Dual Brandt Shaker.

Degasser

Gas-Hogg, Model GA-TX.

Desander

Bauer, Model 623-4, two 12" cones 1,200 GPM.

Desilter

Pioneer 11-4" DSC-400G cones 1,200 GPM.

Combination Water and Fuel Tank

Water Tank - 30' x 8' x 8' rectangular - 400 barrels.

Fuel Tank - 26.50' x 6.50' x 6.50' cylinder type - 6,000 gallons.

Dog House

Length 32', width 9.0', height 8.02' steel insulated with 3/8" plywood interior.

Generator and Accumulator Building

Generator No. 1 - 31' long, 9.50' wide, 8.32' high.

Generator No. 2 - 31' long, 9.50' wide, 8.32' high.

Boilers

Two Automatic 100 HP.

Air Heater

1. Air Heaters Tioga, Model IDF 205-4M.M, Serial No. 103.

2. Air Heaters Tioga, Model IDF 2055-815M.M BTU, Serial No. 105.

Tongs

W. Wilson, Type AAX with all sizes of heads to 13-3/8".

Winch

Germatic Model 6-255EC, type hydraulic line size 9/16".

Slips

Two (2) sets Varco Model SDXL Size 5".

One (1) set Varco Model DCSL Size 9".

One (1) set Varco Model CMSXL Size 20SEG.

One (1) set B Ross Size 7".

Elevators

Two (2) sets W. Wilson, Type 350 ton 18 degrees 5".

One (1) set W. Wilson, Type A 4-1/2".

One (1) set W. Wilson, Type 50 ton 13-3/8".

One (1) set W. Wilson, Type 50 ton 13-3/8".

One (1) set B. J., Type A-50 ton 7".

One (1) set W. Wilson, Type A-50 ton 7" with 6-1/4" bushings.

Kelly

One (1) Drilco 5-1/4" Hex 4-1/2" IF 40' long.

One (1) Baash Ross 5-1/4" Hex 4-1/2" IF 40' long.

Kelly Spinner

Varco Model 6200 air operated.

Survey Instrument

Totco, OD, 1-5/8" double punch 8 degrees.

Kelly Drive

Varco Model HD type pin drive 5-1/4" Hex.

24 6-1/2"/6-3/4" with 5" H90 Connectors.

24 7-3/4" with 6-5/8" Regular Connectors.

Drill Pipe

310 Joints 5" Grade E 18 Degrees 4-1/2" IF.

158 Joints 5" Grade G 18 Degrees 4-1/2" IF.

Fishing Tools

One (1) 8-1/8" OD and one (1) 5/8" OD Series 150 Bowen Over Shot top connection 5-1/2".

F.H. Maximum Catch 9" with full range of grapples.

Junk Basket

One (1) - 4-1/2R 6-5/8" OD Skirt Junk Basket.

Other Equipment

Tool House - length 42', width 9.0', height 8.35', steel insulated and heated.

One (1) Atco 24' x 40' fold away shop building.

One (1) full set of sectional rig matting.