N A T I O N A L P E T R O L E U M R E S E R V E I N A L A S K A

HISTORY
OF
DRILLING OPERATIONS

SOUTH MEADE TEST WELL NO. 1

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

For the

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

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SOUTH MEADE TEST WELL NO. 1

INTRODUCTION

South Meade Test Well No. 1 is located in the National Petroleum Reserve in Alaska (Figure 1), formerly designated Naval Petroleum Reserve No. 4. The well is located 997 feet from the north line and 2937 feet from the east line of protracted Section 31, Township 15 North, Range 19 West, Umiat Meridian (Latitude: 70°36'53.92" North; Longitude: 156°53'23.60" West). Alaska State Plane Coordinates are X = 634,958.35 and Y = 6,075,806.74. Drilling related operations started with rig up on January 17, 1978, and were suspended for the summer on May 17, 1978. Drilling related operations began again on November 28, 1978, and were finished on January 22, 1979.

The well was drilled to a total depth of 9,945 feet. South Meade Test Well No. 1 was a stratigraphic test on the crest of the Meade Arch. The objective of the well was to test the Jurassic sand and the Sadlerochit Group, as well as a possible stratigraphic closure within the Kayak/Kekiktuk Formations. At the conclusion of the drilling and evaluation operations, the well was abandoned with cement and mechanical plugs set at selected intervals.

Husky Oil NPR Operations, Inc. supervised and directed the drilling and support operations as prime contractor for the Department of the Interior. Nabors Alaska Drilling, Inc. was the drilling contractor, and Nabors Rig 1, an Emsco A 800, was the drilling rig used.

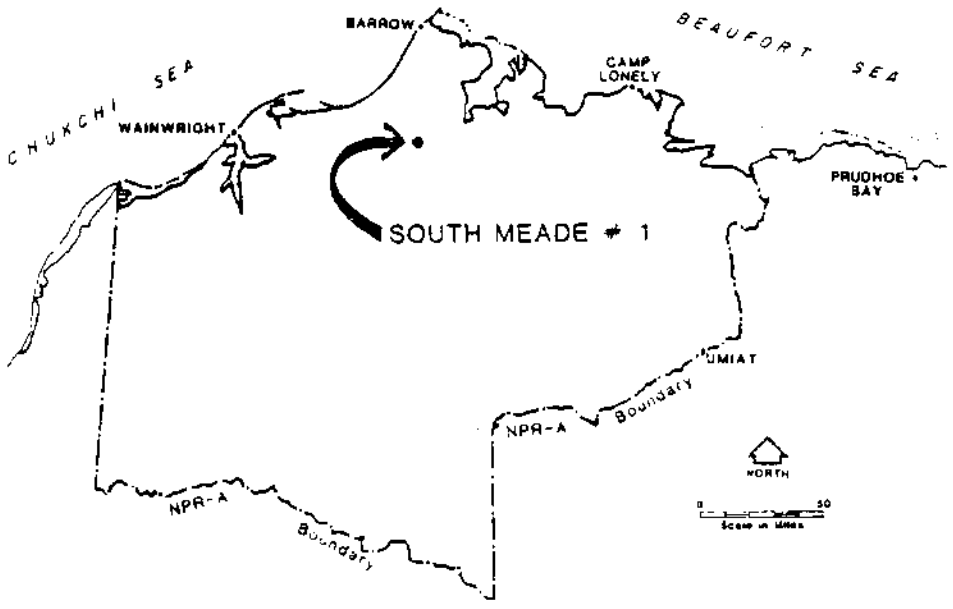


FIGURE 1 - WELL LOCATION MAP - SOUTH MEADE NO. 1

DRILLING SUMMARY

Field operations at the South Meade Test Well No. 1 started on December 8, 1977, with the mobilization of the construction crews and equipment required to build the drilling location and an ice airstrip to accommodate C-130 Hercules aircraft. Construction work was completed on January 6, 1978.

The rig move from South Simpson No. 1 was made with Catco Rolligons. Rig move-in operation began on January 6, 1978, and was completed on January 19, 1978. Rig up operations began January 18, 1978, and were completed in 21 days. The well was spudded February 7, 1978, at 6:00 p.m.

During rig up a 30" conductor was set at 80' and cemented with ArcticSet II cement. A 17-1/2" hole was drilled out below the 30" conductor to 520', then the hole was opened to 26". Twenty-inch casing was run and landed at 505'. The casing was then cemented to surface with 1,564 sacks of ArcticSet II cement. Returns weighed 14.8 ppg. A National weld-on type NSB, 20" starter head was installed.

A 17-1/2" hole was drilled out below the 20" conductor to 2625'. The hole was logged from 2586' to the bottom of 20" casing at 505' with the DIL/SP and the BHC-Sonic/GR Log. After logging, 13-3/8" casing was run and landed at 2616'. It was then cemented with 3,600 sacks of ArcticSet II cement. Returns weighed 14.8 ppg.

A 13-5/8", 5,000 psi, SRRA blowout preventer was installed and tested. Drilling was resumed and stratigraphic cores 1 through 5 were cut from 3010' to 3020.5', 4010' to 4020', 4950' to 4961', 5992' to 6002.5', and 7500' to 7504'. While drilling at 6276', the drilling jars parted, leaving part of the bottom hole assembly in the well. The fish was subsequently recovered. Considerable tight hole problems were experienced while drilling below 3400'. The hole was drilled to 8065'. Severe sloughing shales continued to be encountered. While attempting to get to bottom, a drill collar tool joint parted dropping 15 drill collars, jars, shock sub, and miscellaneous subs. Efforts to recover the fish were not successful. A cement plug was set from the top of the fish at 5965' to 5582'. After dressing the plug off to 5761', a Dyna Drill and bent sub were used to kick off out of the old hole and effectively sidetrack the fish. The sidetrack hole was drilled to 8047'. The 12-1/4" sidetracked hole was logged with DIL/SP, BHC-Sonic/GR, FDC/CNL/CAL/GR, and HDT-Dipmeter from 8047' to 2615'. Sixty sidewall cores were attempted; 54 cores were recovered.

One hundred ninety-eight joints of 9-5/8", 53.5#, S-95 buttress casing were run and landed at 8020'. The casing was cemented with 1,500 sacks of Class "G" cement with 0.75% D-65 and 0.2% D13R at 15.6 ppg. Returns were lost during the 200-barrel displacement. A CBL/VDL log was run and indicated a fair to good cement bond.

Drilling was resumed and an 8-1/2" hole was drilled to 8489' and Core No. 6 was cut from 8489' to 8519'.

At this time a decision was made to suspend the well through the summer months and re-enter it in the fall. The 8-1/2" hole was logged from 8489' back into the 9-5/8" shoe at 8023' with a DIL/SP and BHC-Sonic/GR log. An 11.1 ppg high viscosity pill was spotted from 8519' to 8100' and a 100-sack Class "G" cement plug with additives was spotted from 8100' to ±7870'. A 9-5/8" drillable bridge plug was set at 7655' with 17 sacks of Class "G" cement on top of the plug. The mud was conditioned from 7490' to 12.4 ppg. Three hundred sacks of ArcticSet II cement was down-squeezed through the 9-5/8" FO at 2349'. The 13-3/8" x 9-5/8" annulus was Arctic Packed to surface through the upper 9-5/8" FO at 2139'. The mud was reversed out to water at 4207' and the excess Arctic Pack was spotted in the wellbore from 4207' up. At 1989', the water was reversed out to diesel. Two and seven-eighths inch tubing was run and landed at 6577' KB. The tree was nipplied up and the well secured. The rig was placed on standby May 17, 1978, at 6:00 a.m. The derrick was lowered and the camp and rig were prepared for summer suspension. Operations were suspended on May 20, 1978.

On November 11, 1978, re-entry efforts began with arrival of skeleton Nabors and Kodiak crews to activate the rig camp. An Otter strip was prepared and in operation by November 14. Construction of the Hercules airstrip began on November 13 and was completed on November 27. The rig derrick was raised on November 21. A 13-5/8", 5,000 psi blowout preventer stack and choke manifold were nipplied up. The 2-7/8" rams, blind rams, choke manifold, and Hydril were tested. The tubing hanger was unlanded. Seventy-seven joints of 2-7/8" tubing were pulled and laid down. The Arctic Pack and diesel were displaced with 10.5 ppg mud and circulated through the choke and burned. The mud was conditioned and Plug No. 2 was tagged at 7759'. Cement was drilled out from 7759' to 8094'. The old hole was washed and reamed from 8023' to 8519'. On December 6, 1978, a new hole was drilled to 8527' and formation tested to 0.60 psi/ft. gradient.

An 8-1/2" hole was drilled to a total depth of 9945'. Stratigraphic cores cut in this interval were as follows: Core No. 7, from 8807' to 8808', no recovery; Core No. 8, from 8819' to 8873', recovered 53.3'; Core No. 9, from 9040' to 9059', recovered 16.5'; Core No. 10, from 9305' to 9328', recovered 21.8'. The hole was tight and reaming was necessary on trips below 8565'. Core barrels were stuck at 9328' while cutting Core No. 10 and at 9560' while attempting to ream to bottom at 9664' to core. An attempt to core at 9540' was unsuccessful because the core barrel could not be run to bottom due to tight hole.

At 9945', a decision was made to attempt to cut a stratigraphic core. Because of the above discussed tight hole problems, and the possibility of sticking the core barrel, the hole was logged prior to coring. The following logs were run: DIL/SP, BHC-Sonic/GR, FDC/CNL/GR/CAL, HDT-Dipmeter; Temperature Survey; and Sidewall Cores.

After logging, preparations were made for coring. A 7-5/8" core head and slim core barrel were being run when the drilling jars tripped, driving the

slips through the rotary bushings. The fish consisted of the core head, core barrel, crossover, bit sub, shock sub, one Monel drill collar, fourteen 6-1/4" steel drill collars, crossover, jars, crossover, jars, crossover and two 6-1/4" drill collars, for a total length of 561.20 feet. A fishing string was run into the hole but would not go below 8490'. A bit was run and the hole reamed from 8490' to 8832' where the pipe was stuck. It was worked free and the hole circulated clean. Reaming continued to 9367' where the top of the fish was tagged. Fishing tools were run to 9367' but attempts to get over the fish failed. When pulled, inspection of the tools indicated that the fishing string had gone by the fish. A bit was run to locate the top of the fish with no success (5-1/2 hours).

A decision was made at this time to plug and abandon the well leaving the fish in the hole (Total Depth 9945'). A Velocity Survey was run and plug back began. Plugs were placed in the hole as follows: Plug No. 1, 9355' to 9105', 96 sacks of 15.8 ppg Class "G" cement; Plug No. 2, 8917' to 8717', 103 sacks of 15.8 ppg Class "G" cement; Plug No. 3, across the 9-5/8" shoe from 8135' to 7935', 121 sacks of 15.8 ppg Class "G" cement; Plug No. 4, on top of a retainer in the 9-5/8" casing at 6707' to 6562', 50 sacks of 15.8 ppg Class "G" cement; Plug No. 5, on top of a retainer in the 9-5/8" casing at 2092' to 1875', 50 sacks of 15.2 ppg ArcticSet II retainer. The 9-5/8" annulus from 1875' to the surface was displaced with diesel to allow future temperature measurements by U. S. Geological Survey personnel. The blowout preventers were nippled down and the abandonment head and marker installed.

The rig was released January 22, 1979, at 3:00 p.m. It was moved to the East Simpson Test Well No. 1 location.

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

5. LEASE DESIGNATION AND SERIAL NO.: N/A

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

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

7. UNIT AGREEMENT NAME: N/A

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

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

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

9. WELL NO.: So. Meade Test Well No. 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 997' FNL; 2937' FEL
At proposed prod. zone: Same (straight hole)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 31, T15N, R19W, UM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 48 miles south of Barrow, Alaska

12. COUNTY OR PARISH: North Slope Borough

13. STATE: AK

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 145,730

16. NO. OF ACRES IN LEASE: 23,680,000

17. NO. OF ACRES ASSIGNED TO THIS WELL: N/A

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 122,500

19. PROPOSED DEPTH: 9,925'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): Ground: 35'; Pad: 40'; KB: 60'

22. APPROX. DATE WORK WILL START*: January 5, 1978

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
36"	30" (conductor)	110.32, X-60	± 100' KB	To surface - Arctic Set
26"	20"	133# (K-55)	± 500'	± 800 Sx Arctic Set II to surfac
17 1/2"	13 3/8"	72# (S-95)	± 2600'	± 1900 Sx ArcticSetII to surface
12 1/4"	9 5/8"	53.5# (S-95)	± 8500'	± 250 Sx Class "G", 500' Fill. Second stage: Down squeeze ± 300 Sx Class "G" cement @ 2350'.
8 1/2"	7"	32# (N-80)	Liner ± 8200' to TD	± 200 Sx Class "G" as required to cement entire liner.

Blowout Preventer Program-

From ± 500' 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

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 December 15, 1977

(This space for Federal or State office use)

CONFORMS WITH PERTINENT PROVISION 30 CFR 221

NAME [illegible] TITLE Oil and Gas Supervisor, Alaska Area

CONDITIONS OF CONCURRENCE ATTACHED

DATE 25 JAN 1978

*See Instructions On Reverse Side

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: 997' FNL, 2937' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. [illegible]
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.
South Meade Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 31, T15N, R19W, UM

12. COUNTY OR PARISH North Slope

13. STATE Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB AND WD)
60' KB

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 spud date.			

(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 was spudded at 6:00 PM, February 7, 1978. Initial operations began by drilling 17 1/2" hole below 30" conductor pipe at 110' KB. The 17 1/2" hole will be opened to 26" to 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 February 78

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

TITLE OIL AND GAS SUPERVISOR DATE 2-12-78

*See Instructions on Reverse Side

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: 997' FNL, 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM.
12. COUNTY OR PARISH North Slope. 13 STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB, AND WD) 60' KB
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) Notice of change of wellhead.			

RECEIVED
ONSHORE DIST. OFFICE
FEB 17 1978
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

(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.)*

In the original well plan, the intent was to use National thru-bore wellhead arrangements. Certain problems have been encountered relating to machining tolerances and landing procedures from the manufacturer. These problems will require further engineering design work and machining to effect a solution. Timing is such that the operator plans to change wellhead assemblies from National to FMC, Oil Center Tool. The FMC, OCT wellheads were used last season on NPRA and are similar to those used in Prudhoe Bay. These particular wellheads, although used, have been thoroughly checked and reconditioned by the local FMC representative. The National starter head (20", 2000 psi) will still be used along with the 13 3/8" hanger slips and lower pack-off unit. The entire assembly above the 20" starter head will be FMC, OCT. The 20", 2000 psi flanges on both units are API and completely compatible.

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

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

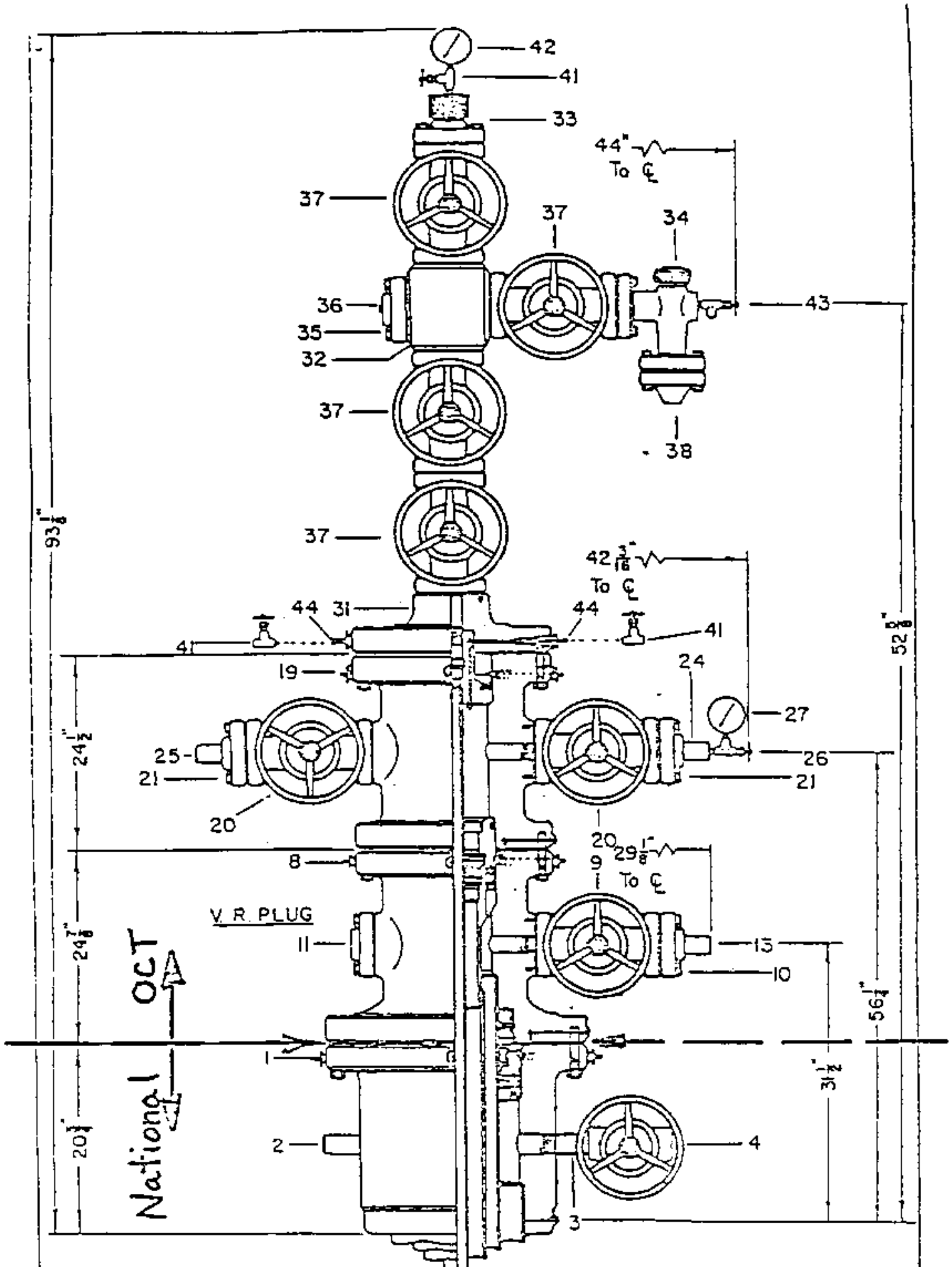
SIGNED Max S. Brewer TITLE Chief of Operations DATE 15 February 78

(This space for Federal or State office use)

APPROVED BY _____ TITLE DISTRICT SUPERVISOR DATE 23 FEB 1978

Conforms with pertinent provisions of 30 CFR 222

*See Instructions on Reverse Side



PROPERTY OF FMC

FMC Corporation
Petroleum Equipment Division
Wellhead Equipment Operation
Houston, Texas

X - 3847 - K - REV. 1	DATE 5-3-76	FILE NO. B
HUSKY OIL CO	DRN. MM	
	CKD. CB	PART NO.

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: 997' FNL, 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) 60' KB
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 20" shallow 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.)*

On 2/10/78, 12 joints of 20", 133 lb/ft, K-55, 8rd casing was run and landed with the 20" duplex float shoe at 505' KB. TD of the 26" hole was 520'. The casing was cemented with 1564 sacks of Dowell's Arctic Set II cement using the duplex technique. Slurry weight in was 15.2 ppg. Cement to surface with a weight of 14.8 ppg. Good returns throughout job. Cement in place at 3:38 PM on 2/10/78. WOC 16 hours and cut off landing joint. Weld on 20", 2000 psi starter head and test weld to 750 psi. Nipple up 20", 2000 psi Hydril and test to 250 psi.

RECEIVED
ONSHORE DIST. OFFICE
FEB 17 1978
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

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 16 February 78

(This space for Federal or State office use)

APPROVED [illegible] TITLE DISTRICT SUPERVISOR DATE 23 FEB 1978

Conforms with pertinent provisions of 30 CFR 222

*See Instructions on Reverse Side

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: 997' FNL, 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF KDB AND WD) 60' KB
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*	☐		☐

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

(other) Subsequent notice of running and cementing 13 3/8" surface casing.

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 2625' and logged. Ran 68 joints of 13 3/8", 72 lb/ft, S-95, Buttress casing and landed with the float shoe at 2616' and the duplex float collar at 2540'. Cemented with 3600 sacks of Arctic Set cement at 15.1 ppg slurry weight. Full returns throughout job with 14.8 ppg slurry weight in returns. Cement in place at 6:00 AM, 2/20/78. Installed OCT wellhead and nipple up 13 5/8", 5000 psi SRRA BOP arrangement (Poslock system on rams). Tested 20" flange to 2000 psi. Tested BOP rams, choke manifold, and kelly cocks to 5000 psi. Tested Hydril to 2500 psi. Tested 13 3/8" casing to 2500 psi. Drilled out float collar, float shoe, and 10' of formation. Tested formation to 0.71 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 Mary S. Brewer TITLE Chief of Operations DATE 9 March 78

(This space for Federal or State office use)

APPROVED BY [illegible] TITLE DISTRICT SUPERVISOR DATE 14 MAR 1978

RECEIVED
OFFICE OF 1 & GAS SUPERVISOR
MAR 13 1978
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

Conforms with pertinent provisions of 30 CFR 222

*See Instructions on Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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ONSHORE DIST. OFFICE
APR 6 1978
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

SUNDRY NOTICES AND REPORTS ON WELLS

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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: 997' FNL; 2937' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) 60'
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 - BOP Operation			

(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 "conditions of concurrence" for this well required actuation of the pipe rams every 24 hours. Often it is not necessary to trip every 24 hours. Therefore, in order to actuate the pipe rams while drilling it is necessary to stop circulation, drain the BOP, and for a short period of time, stop all pipe movement. Hole conditions are such at this well that stopping circulation and pipe movement could easily result in stuck pipe. It is requested that pipe ram actuating every 24 hours be waived. All rams will continue to be actuated on each trip. This has been discussed verbally with Mr. Dale Roberts on March 27, 1978.

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 6 April 78

(This space for Federal or State office use)

APPROVED BY James A. Williams for DISTRICT SUPERVISOR DATE April 12 1978

Conditions of Approval: Daily activities should be resumed when hole conditions are established

*See Instructions on Reverse Side

Conforms with
pertinent
provisions of
30 CFR 222

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: 997' FNL; 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB, AND WD) 60' KB

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 Change of Plans			

RECEIVED
ONSHORE DIST. OFFICE
APR 28 1978
(NOTE: Report results of multiple completion or zone change on Form 9–330.)
CONSERVATION DIVISION
U. S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

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 fish was lost in the hole on April 2, 1978, and efforts to retrieve it have not been successful. In order for drilling to continue, it was necessary to plug back and sidetrack the fish. The fish consists of a 12 1/4" bit, bit sub, shock sub, monel drill collar, eleven 7 3/4" steel drill collars, cross-over sub, drilling jars, cross-over sub, and three 6 1/4" steel drill collars for a total length of 508.71', with the top at 5965'. A 200 sack Class "G" cement plug with 1% D65 (17.1 to 17.4 ppg) was spotted from 5965' to 5853'. After 24 hours, this plug was not firm enough to kick off on; therefore, it was dressed to 5876' and a second 200-sack plug was spotted from 5876' to 5582'. After 24 hours, the plug dressed to firm cement at 5761'. The Dyna Drill and a 2° bent sub were used to kick off at 5761'. Kick off was accomplished on April 15, 1978. The sidetracking plans were discussed with Mr. Jim Weber.

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 27 April 78

(This space for Federal or State office use)

APPROVED BY Leslie A. Smith TITLE DISTRICT SUPERVISOR DATE 5/1/78

Conforms with pertinent provisions of 30 CFR 222

*See Instructions on Reverse Side

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: 997' FNL; 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:

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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope | 13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) 60' KB

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

RECEIVED
ONSHORE DIST. OFFICE
MAY 16 1978
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

(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 8047' at which point an assessment of the hole conditions was made. Because of sloughing shales, it was decided to run casing at this depth rather than risk drilling to ± 8500' and have hole conditions further deteriorate. The hole was conditioned, logs run, and 198 joints of 9 5/8", 53.5#/ft, S-95, Buttress casing was run and landed at 8023' with a fluted casing hanger. The float collar was located at 7940'. The FO cementing sleeves were positioned at 2370' and 2159'. Centralizers were not run because of poor hole conditions. The casing was cemented with 1500 sacks of Class "G" cement containing 0.75% D65 plus 0.2% D13R (15.6 - 16.4). Returns were lost during the last 200 barrels of displacement of the 580 barrel displacement pumped. CIP at 7:30 PM, 5/3/78. Set mandrel hanger packoff and tested to 5000 psi. The programmed downsqueeze of the 13 3/8" X 9 5/8" annulus was postponed until the suspension of the well. Pressure 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 .60 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 May Brawley TITLE Chief of Operations DATE 12 May 78

(This space for Federal or State office use)

_____ DISTRICT SUPERVISOR DATE _____

Conforms with pertinent AREA provisions of 30 CFR 221

*See Instructions on Reverse Side

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: 997' FNL; 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) 60' KB
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 Summer Suspension Procedure			

(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 following procedure describes the summer suspension program conducted at the South Meade Well in anticipation of re-entry during the early 1978-79 drilling season.

1. An 8 1/2" hole was drilled to 8519' at which point an assessment of the required work yet to be completed, along with the lateness in the drilling season, was made. Based on the assessment, it was decided to suspend the well for the summer with anticipation of re-entry during early 1978-79 drilling season.

2. The hole was conditioned and logged.

3. Spotted a 11.0 ppg mud from 8519' to 8100'.

4. Spotted a balanced cement plug of 100 sx of 15.8 ppg Class "G" cement w/0.75%

(Continued on attached page)

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 19 May 78

(This space for Federal or State office use)

_____ TITLE _____ DATE _____

Conforms with pertinent provisions of 30 CFR 221

*See Instructions on Reverse Side

D-65 and 0.2% D13R from 8100' to 7810'.

5. Set EZ-Drill retainer at 7655' and spotted 17 sx of 15.8 ppg Class "G" cement w/0.75% D-65 and 0.2% D13R from 7655' to 7605'.

6. Picked up to 7490' and reversed out any excess cement. Tested casing and plug to 2000 psi. Circulated and conditioned mud from 7490' to 12.4 ppg.

7. Down squeezed 300 sx Arctic Set II cement at 15.2 ppg through lower FO @ 2349' in the 9 5/8" X 13 3/8" annulus. WOC 22 hours.

8. Arctic Packed 9 5/8" X 13 3/8" annulus to surface through upper FO @ 2139'.

9. Spotted 140 bbls excess Arctic Pack in the 9 5/8" hole from 4207' to 2227'.

10. Picked up to 1989'. Displaced mud to water and water to diesel. Hole was displaced prior to tripping leaving fluid level in well at 210'. The reduction in hydrostatic head is accounted for on the weighted mud.

11. Ran 2 7/8" tubing to 6517' with mule shoe and landed.

12. Nippled down BOP and nippled up Xmas tree and tested to 5000 psi.

13. Prepared rig for summer shut down. Suspension work was completed and the rig released at 6:00 AM on May 17, 1978.

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: 997' FNL; 2937' FEL
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:
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. South Meade Test Well No. 1
10. FIELD OR WILDCAT NAME Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM
12. COUNTY OR PARISH North Slope
13. STATE Alaska
14. API NO.
15. ELEVATIONS (SHOW DF, KDB AND WD) 60' KB
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) Notice of Intent to Re-Enter and Continue Drilling Program

(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.)*

See attached.

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

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

SIGNED J. Max Jones TITLE Chief of Operations DATE 22 November 78

(This space for Federal or State office use)

_____ TITLE _____ DATE _____

*See Instructions on Reverse Side

Conforms with pertinent provisions of 30 CFR 221

SOUTH MEADE TEST WELL NO. 1
RE-ENTRY PROGRAM

The following procedure details the re-entry program of the South Meade Test Well No. 1.

1. After reactivating Nabors Rig 1, mix and condition mud to 9.2 ppg. This will yield approximately the equivalent hydrostatic head of the Arctic Pack and diesel presently in the wellbore.

2. Check for pressure on tree and annulus. Check for pressure under BPV. Pull BPV and inspect for corrosion. Test casing to 3000 psi. Set BPV.

3. Nipple down tree, verify thread type and condition of threads in tubing hanger. Nipple up BOP with 2 7/8" pipe rams and blind rams. Dope and run in landing joint. Make up in tubing hanger. Test rams to 5000 psi and Hydril to 2500 psi. Test the choke manifold to 5000 psi. Make sure the flare and blow down lines are clean and dry. Keep the choke manifold filled with 60/40 glycol and water mixture.

4. Back out tubing anchor screws. Pull 2310' of tubing so that the mule shoe of the 2 7/8" tubing is now at 4207 KB (the bottom of the Arctic Pack in the wellbore). Inspect tubing hanger for damage. Remove BPV.

5. Rig up mud line and begin pumping mud through 2 7/8" tubing. $\pm$ 300 barrels is the required amount to displace the diesel and Arctic Pack from the well bore through the choke and flare line to the flare pit for burning. Do not exceed 3000 psi in attempting to break circulation at this depth. Control rate of burn by pumping rate. Make note and log wind direction and velocit during burn. Note time displacement is started, time diesel returns are established, and time Arctic Pack returns are obtained. Shut down as soon as returns are primarily mud. Switch over and begin circulating and conditioning mud through mud tanks. Be sure to clear flare and blowdown lines Fill choke manifold with 60/40 mixture of glycol and water.

6. Pull and lay down tubing. Set BOP test plug. Test blind rams to 5000 psi. Install wear bushing.

7. Trip in hole with 8 1/2" drill bit (open nozzled) and down-hole assembly. Circulate and condition mud on way in hole. Just prior to drilling out Cement Plug No. 2, condition mud to 10.6 ppg. Test casing to 3000 psi. Drill out Cement Plug No. 2 at 7605' and retainer at 7655'.

8. Pressure test casing to 3000 psi (9 5/8", 53.5#, S-95 Buttress casing: burst = 9410 psi; collapse = 8850 psi). Note carefully volume vs pressure to use as a guage for open-hole test below.

9. Run in hole to 7810' and drill out cement at shoe of 9 5/8". Condition mud to uniform 10.6 ppg.

10. Stage in hole to suspended TD at 8519'. Condition hole and mud to 10.6 ppg. Trip out to 9 5/8" shoe.

11. Test formation to an equivalent gradient of 0.60 psi/ft. Circulate and condition mud. Note carefully volume pumped vs pressure.

12. Trip in to TD. Resume Section D, Part 4, of Drilling Procedure as stated in the Drilling Program for South Meade Test Well No. 1, November 15, 1977.

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: 997' FNL; 2937'FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

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.
So. Meade Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Section 31, T15N, R19W, UM

12. COUNTY OR PARISH
North Slope

13. STATE
Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
60' KB

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 Re-entry			

(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.)*

Re-entry operations on this well were commenced on November 30, 1978. The well was checked for pressure. The BPV pulled, inspected, and reset. Nippled down tree. Nippling up 13 5/8", 5000 psi BOP; choke manifold; and kill line.

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

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

SIGNED Max C. Brewer TITLE Chief of Operations DATE 5 December 78

(This space for Federal or State office use)

Robert A. Lloyd TITLE DISTRICT SUPERVISOR DATE 12/7/78

Conforms with pertinent provisions of 30 CFR 221

*See Instructions on Reverse Side

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: 997' FNL; 2937' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

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. So. Meade Test Well No. 1

10. FIELD OR WILDCAT NAME Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD) 60' KB

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.)*

The So. Meade Well was drilled to a TD of 9945' and logged. The hole was then conditioned for terminal coring. While tripping in with coring assembly, a fish was lost in the hole. The fish consists of 7 5/8" core head, 5 3/4" core barrel, cross-over, bit sub, shock sub, one monel DC, fourteen 6 1/4" steel DC, XO, drilling jars, XO, two 6 1/4" steel DC, for a total length of 561.20'. Attempts to recover the fish have been unsuccessful. The hole was conditioned and a velocity survey run. The operator intends to suspend fishing operations and plug and abandon the well. Attached is the Abandonment Procedure.

Open hole logs were reviewed by Jim Eason and Jim Weber on January 17, 1979. The attached procedure was discussed with Jim Weber and verably approved on January 18, 1979.

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

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

SIGNED Max C. Steiner TITLE Chief of Operation DATE 22 January 79

(This space for Federal or State office use)

_____ TITLE _____ DATE _____

Conforms with pertinent provisions of 30 CFR 221

*See Instructions on Reverse Side

SOUTH MEADE TEST WELL NO. 1
ABANDONMENT PROCEDURE

1. Trip in with open ended drill pipe to 9360' after velocity survey. Top fish 9367'.

2. Condition mud to uniform weight and viscosity for plugging. Circulate at least three full circulations to reduce bottom hole temperature.

3. Spot Plug No. 1, a 96 sack Class "G" plug, with 0.75% D65 and 0.3% D13R, mixed at 15.8 ppg. This is a 250' plug in this section of hole from the caliper log. Spot a balanced plug with 6.1 bbl water ahead and 2 bbl water behind cement.

4. Pick up out of cement to 8915'. Circulate two hours to allow Plug No. 1 to set.

5. Spot Plug No. 2, a 103 sack Class "G" plug, with 0.75% D65 and 0.3% D13R, mixed at 15.8 ppg. This is a 200' plug in this section of open hole from the caliper log. Spot a balanced plug with 6.1 bbl water ahead and 2 bbl water behind the cement.

6. Pick up out of cement to 8123'. Circulate 2 hours to allow Plug No. 2 to set.

7. Spot Plug No. 3, a 121 sack Class "G" plug, with 0.75% D65 and 0.3% D13R, mixed at 15.8 ppg. This is a 200' plug, with 100' inside the 9 5/8" casing. Spot a balanced plug with 5.25 bbl water ahead and 2 bbl water behind cement.

8. Pick up out of cement to 6800' and condition mud. Trip out.

9. Pick up 8 1/2" bit and 9 5/8", 53.5# casing scraper. Trip in and scrape casing as required to 6750'.

10. Pick up Halliburton 9 5/8", 53.5# cement retainer on drill pipe and trip in. Set the retainer at ± 6700'. The top of the Kingak shale is at 6730'. Unsting and condition mud.

11. Spot 50 sacks of Class "G" cement with additives as above on top of the retainer. This is a 145' plug inside the 9 5/8" casing. Spot a balanced plug with 5.25 bbl water ahead and 2 bbl water behind the cement.

12. Pick up to 4000' and condition mud. Trip out laying down excess drill pipe. Keep 2100' for setting next retainer. Trip in and lay down drill collars.

13. Pick up Halliburton 9 5/8", 53.5# cement retainer on drill pipe and trip in. Set retainer at ± 2100'. The top FO is at 2158'. Unsting and condition mud.

14. Spot 50 sacks of Arcticset II cement, mixed at 15.2 ppg on top of the retainer. This is a 117' plug inside the 9 5/8" casing. Spot a balanced plug with 5.25 bbl water ahead and 2 bbl water behind the cement.

15. Pick up to 1800', condition mud. Reverse out mud to water and water to diesel. The capacity of the 9 5/8" casing from 1800' is 5350 gallons. Do not fill casing last 5 stands out. This will leave ± 25' of 9 5/8" empty as expansion room for the diesel.

16. Nipple down BOPE to the 13 5/8" 5000 psi top tubing head flange.

17. Rig up the dry hole marker as shown on the attached schematic.

18. Release rig and rig down.

The procedure was discussed with and verbally approved by Jim Weber, USGS, Division of Conservation, on January 18, 1979.

J. M. McCarthy
Drilling Manager
January 18, 1979

Copy to: Drilling Staff
So. Meade Well File

RECEIVED
ONSHORE

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: 997' FNL; 2937' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

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. So. Meade Test Well No. 1

10. FIELD OR WILDCAT NAME Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 31, T15N, R19W, UM

12. COUNTY OR PARISH North Slope

13. STATE Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD) 60' KB

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 9945' and logged. After logs were evaluated, the well was plugged and abandoned as follows: Tripped in open ended to 9355', conditioned hole and mud for plugging. Spotted Plug No. 1, 96 sacks Class "G" cement at 15.8 ppg with 0.75% D65 and 0.13% D13R from 9355' to 9105' in open hole. Picked up to 8917' and circulated and conditioned mud. Spotted Plug No. 2 from 8917' to 8717' with 103 sacks of Class "G" cement at 15.8 ppg with 0.75% D65 and 0.3% D13R. Picked up to 8135' and circulated and conditioned mud. Spotted Plug No. 3 from 8135' to 7935' (100' inside the 9 5/8" casing shoe) with 121 sacks of Class "G" cement at 15.8 ppg with 0.75% D65 and 0.3% D13R. Plug No. 3 in place at 6:45 AM 1/21/79. Picked up to 6800' and circulated. Tripped out, picked up 9 5/8" casing scraper. Tripped in, worked scraper 6700' to 6750'. Tripped out, picked up Halliburton 9 5/8", 53.5# cement retainer on drill pipe and tripped in. Set retainer at 6707'. Conditioned mud. Spotted Plug No. 4 (See Attached)

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

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

SIGNED Max Brewer TITLE Chief of Operations DATE 2 February 79

(This space for Federal or State office use)

APPROVED James Wehle TITLE DISTRICT SUPERVISOR ACTING DATE 2/6/79

Conforms with pertinent provisions of 30 CFR 221

*See Instructions on Reverse Side

from 6707' to 6562' with 50 sacks of Class "G" cement with 0.75% D65 and 0.3% D13R. Plug No. 4 in place at 8:15 PM 1/21/79. Picked up to 6300' and circulated. Tripped out and picked up retainer No. 2. Set retainer No. 2 at 2092'. Spotted Plug No. 5 from 2092' to 1875' with 50 sacks of Arctic Set II; in place at 7:45 AM 1/23/79. Picked up to 1808'. Circulated. Reverse circulated mud to water and water to diesel (5480 gallons). Nipple down BOPE and part of the wellhead. Installed abandonment marker.

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*

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

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

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: 997' FNL; 2937' FEL
At top prod. interval reported below
At total depth: 1805' FNL; 2962' FEL

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 AK
9. WELL NO.: So. Meade Test Well No. 1
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 32, T15N, R19W, UM
12. COUNTY OR PARISH: North Slope
13. STATE: Alaska

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

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
2/7/78	1/14/79	N/A	60' KB	40'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9945' MD	1875' MD	N/A	→	All	None

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

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN
DIL, BHC/GR, FDC/CNL/GR, Velocity Survey, Dipmeter, 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
30"	110.32	80	36	Arctic Set II to Surface	N/A
20"	133	505	26	1564 Sx ArcticSet II to Surface	N/A
13 3/8"	72	2616	17 1/2	3600 Sx ArcticSet II to Surface	N/A
9 5/8"	53.5	8023	12 1/4	1500 Sx Cl G w/300' Sx ArcticSet II	N/A

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

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 Max Brewer TITLE Chief of Operations, ONPRA DATE 5 February 197

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

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.

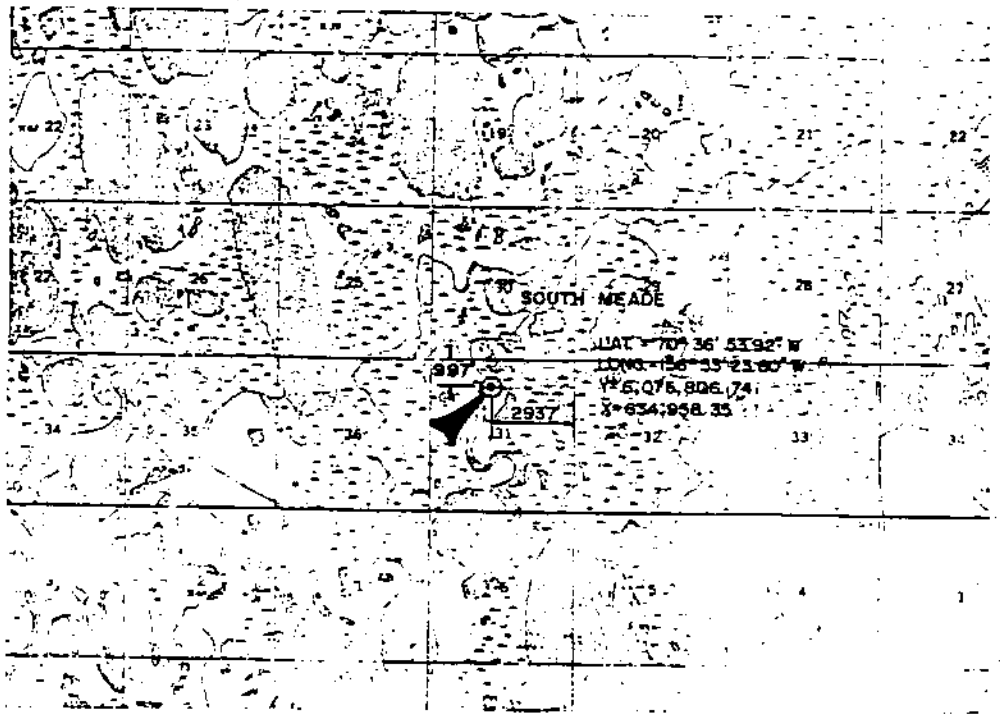
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

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.
No significant porous zones were penetrated.			

38. GEOLOGIC MARKERS

NAME	TOP: MEAS. DEPTH	TOP: TRUE VERT. DEPTH
Torok Shale	3060'	3060'
Gamma Ray/ Pebble Shale	6464'	6462'
Kingak Shale	6730'	6728'
Sag River	8770'	8768'
Shublik Fm.	8860'	8768'
Sadlerochit	9183'	9181'
Pre-Lisburne	9537'	9534'
Total Depth	9945'	9942'



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.

October 7, 1977

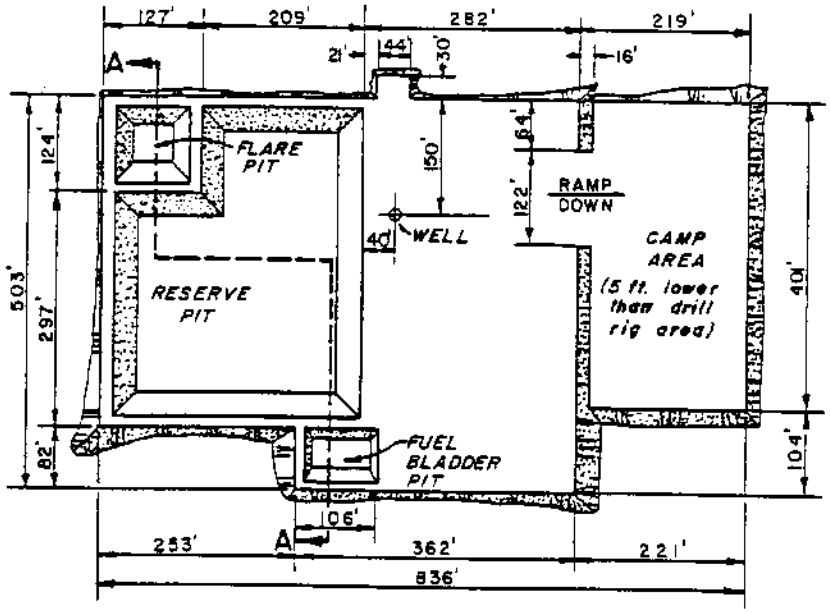
STATE OF ALASKA
49TH
JOHN M. HERRING
No. 953-S
REGISTERED PROFESSIONAL LAND SURVEYOR

0 1/2 1 2
SCALE IN MILES

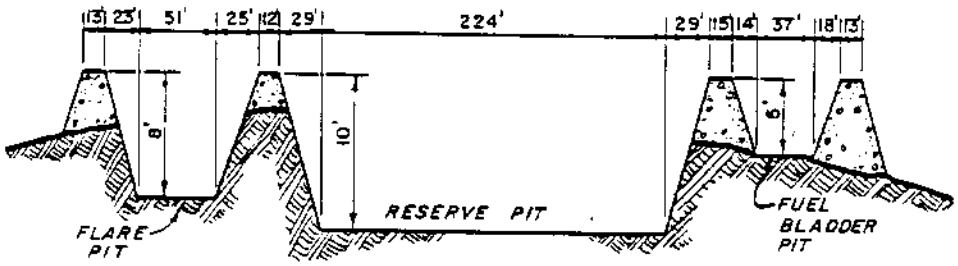
AS STAKED
SOUTH MEADE
LOCATED IN
NW1/4 PROTRACTED SEC. 31 T 15 N, R 19W, UMIAT MERIDIAN, AK

Surveyed for
HUSKY OIL
N.P.R. OPERATIONS INC.

Surveyed by
Bell, Herring and Associates
ENGINEERS AND LAND SURVEYORS
801 West Fireweed, Suite 102
ANCHORAGE, ALASKA 99503



PLAN VIEW



SECTION A-A

SOUTH MEADE DRILLSITE

OPERATIONS HISTORY

DATE AND FOOTAGE DRILLED AS OF 6:00 A.M.	ACTIVITY
1/18/78	Completed rig move (76 loads) from South Simpson No. 1 location. Laid matting boards and set subbase on location.
1/19/78	Began rig up. Began hooking up camp. Spent 48 hours working on runway with grader and water truck. Runway is ready for inspection. Received four Rolligon loads of miscellaneous material from South Simpson. Five loads remain to be moved.
1/20/78	Continued with rig up. Received six Rolligon loads. Ninety-three loads moved to date. Camp 95 percent rigged up; rig five percent rigged up. Set subbase; set draw works and motor on floor.
1/21/78	Set in mud pumps. Set derrick on floor. Raised A frame.
1/22/78	Set in suction tank and settling tank. Set water tank, fuel tank, two rig generators, two boilers, two parts houses, and welding shop. Thirty percent rigged up.
1/23/78	Set shale tank, electric shop, and Tioga heater. Began putting in rig floor and insulating sub. Hooked up steam, water, and mud lines.
1/24/78	Prepared to raise derrick. Hooked up air, fuel, and electrical lines. Installed draw works drive chain. Worked on mud pits. Built fuel containment crib for rig fuel tank.
1/25/78	Strung up drilling line. Installed draw works tie downs and chain guards. Welded on subbase. Changed out air compressor. Worked on pits. Started No. 1 and No. 2 engines. Replaced air lines. Built storage docks.
1/26/78	Raised and pinned derrick. Set rotary beams and floor plates. Overhauled air system in draw works. Cleaned out snow and began winterizing rig. Welded on pits and substructure. Cut off damaged section of 30" conductor and prepared to nipple up.

1/27/78	Finished setting rotary beams and set rotary table. Strung air hoist line. Worked on air system. Repaired steam system. Built equipment docks. Laid pit liner.
1/28/78	Repaired and installed windwalls and steam lines. Worked on No. 1 boiler. Installed lights in subbase and motor shed. Set Dowell unit and tanks. Tanks ready for cement. Began building docks.
1/29/78	Set catwalk and "V" door ramp. Reset and hooked up Tioga heater. Repaired lights on rig floor. Set landing and steps for suction tank. Began welding windwall braces. Installed water and steam lines. Rigged up mud lines. Tuboscope representative made inspection of rig equipment.
1/30/78	Began plumbing water and steam lines. Worked on boilers. Changed liners, checked valves and primed No. 2 pump. Set and hooked up steam heaters on rig floor. Spotted parts house. Built stairs and handrails on pits and substructure. Worked on runway lights.
1/31/78	Continued plumbing in boiler and steam lines. Laid fuel and water lines. Spotted camp fuel tank and gasoline tank. Tore down and thawed No. 1 pump.
2/1/78	Plumbed in water to the draw works. Finished plumbing steam lines. Repaired seals in No. 1 boiler. Repaired air leak in compound. Installed motor clutch guard. Repaired rotary torque indicator. Installed rotary chain. Built suitcases over service lines and insulated same.
2/2/78	Moved steps on shaker tank. Set mud logging unit. Closed in holes in substructure. Repaired leaks in steam lines.
2/3/78	Repaired steam leaks. Insulated rig. Worked on mud gates. Installed PVT equipment. Thawed out around 30" conductor to 68'. Prepared to cement conductor.
2/4/78	No report due to lack of communications.
2/5/78	Tuboscope inspection of swivel and hook revealed cracks in both box connection on swivel and elevator ears on hook. Laid down swivel. Picked up another swivel; found crack in bale. Laid down swivel. Ordered and received replacement swivel and hook from Deadhorse.

2/6/78	Worked on accumulator. Added two bottles for total of nine. Picked up new hook and swivel; checked OK. Rigged up 2" wash down in 30" conductor. Strung up sand line. Filled pits with water. Began mixing mud. Waited on C-350 pump parts and Totco survey instrument. (Thirty-inch conductor set at 80'.)
2/7/78	Welded leaks in No. 1 pump suction. Laid water return line to boiler. Repaired leaks in low pressure mud system. Put 5-1/2" lines in No. 2 pump. Mixed spud mud. Spudded well February 7, 1978, at 6:00 p.m.
2/8/79 390'	Total Depth: 470'; Mud Weight: 8.4; Viscosity: 46. Report incomplete due to lack of communications.
2/9/78 45'	TD: 520'; MW: 8.5; Vis: 49. Drilled 17-1/2" hole to 520'. Tripped out and picked up 26" hole opener. Opened 17-1/2" hole to 26". Thirty-inch conductor slid down hole 16 inches. Welded eyes on conductor and secured to subbase.
2/10/78 0'	TD: 520'. Opened 17-1/2" hole to 26" to 520'. Circulated and conditioned hole; tripped out. Tripped in and conditioned hole. Tripped out and rigged up to run 20" casing.
2/11/78 0'	TD: 520'. Ran 12 joints of 20", 133#/ft, K-55, 8rd casing and landed with duplex float shoe at 505' KB. Tripped in with 5" drill pipe and stinger. Stabbed into duplex shoe. Circulated and conditioned mud. Cemented with 1,564 sacks (259 barrels) of Dowell ArcticSet cement (15.2 ppg). Good returns throughout job with cement returns to surface at 14.8 ppg. Float held OK. Tripped out and waited on cement. Cement in place 2/10/78 at 3:38 p.m.
2/12/78 0'	TD: 520'. Waited on cement 16 hours. Cut off 20" casing 71 inches below mats. Welded on 20" casing head. Cooled flange weld and prepared to pressure test.
2/13/78 0'	TD: 520'; MW: 8.5; Vis: 54. Cooled casing head bowl. Tested weld to 750 psi. Nippled up 20" Hydril. Worked on high clutch.
2/14/78 433'	TD: 948'; MW: 9.8; Vis: 38. Drilled ahead.

2/15/78 352'	TD: 1300'; MW: 9.5; Vis: 42. Drilled to 1300' and tripped for Bit No. 2. Picked up stabilizer and built breaker. Tripped in and reamed from 515'. Worked on compound chain.
2/16/78 510'	TD: 1810'; MW: 10.2; Vis: 37. Drilled ahead.
2/17/78 445'	TD: 2255'; MW: 10.14; Vis: 45. Drilled to 2090'. Surveyed and tripped for bit. Drilled ahead.
2/18/78 370'	TD: 2625'; MW: 10; Vis: 80. Drilled to 2625'. Made short trip to 20" shoe and reamed back to bottom.
2/19/78 0'	TD: 2625'; MW: 10; Vis: 84. Conditioned hole and logged. Ran DIL and BHC Sonic.
2/20/78 0'	TD: 2625'; MW: 10.2; Vis: 72. Ran 68 joints of 13-3/8", 72#, S-95 Buttress casing. Shoe at 2615' KB; float collar at 2540'. Cemented with 20 barrels of water and 3,600 sacks of ArcticSet at 15.1 ppg. Final returns of 14.8 ppg. Displaced with two barrels of water and 44 barrels of mud.
2/21/78 0'	TD: 2625'; MW: 10.2; Vis: 72. Stood back four stands in derrick. Nippled down Hydril. Hung 13-3/8" casing with 150,000 pounds. Finished trip out with duplex stinger. Nippled down 20" blowout preventer equipment. Final cut 13-3/8" casing. Installed National packer and OCT tubing spool.
2/22/78 0'	TD: 2625'; MW: 10.2; Vis: 72. Tested 20" packoff to 2,000 psi. Tested OK. Nippled up blowout preventer, Hydril, and flow line. Hooked up hydraulic lines, fill up lines, and choke lines.
2/23/78 0'	TD: 2625'; MW: 10.2; Vis: 60. Installed and welded flanges on choke line. Repaired Shaffer blowout preventer. Changed out swivel and rotary chain. Set OCT test plug and prepared to test blowout preventer.
2/24/78 0'	TD: 2625'; MW: 10.2; Vis: 68. Pressure tested blowout preventer to 5,000 psi and Hydril to 2,500 psi. Picked up bottom hole assembly.
2/25/78 325'	TD: 2950'; MW: 9.5; Vis: 38. Tripped in with Bit No. 4. Tagged cement at 2528'. Tested casing to 2,500 psi. Drilled cement and float collar, cement and shoe, hard cement. Drilled to 2635'. Tested formation 0.71 psi/ft. gradient. Drilled to 2697' and surveyed. Drilled to 2950'.

2/26/78 245'	TD: 3195'; MW: 9.5; Vis: 45. Drilled to 3010'. Tripped out and picked up core barrel. Tripped in and cut Core No. 1: 3010-3020.5'; recovered 9.6 feet. Tripped in with bit and reamed core hole.
2/27/78 805'	TD: 4000'; MW: 9.6; Vis: 47. Drilled ahead.
2/28/78 0'	TD: 4010'; MW: 9.7; Vis: 54. Tripped out, pulling tight to 13-3/8" shoe. Laid down 12-1/4" stabilizers. Tripped in. Repaired compound brake. Checked 20" x 13-3/8" annulus. Reamed from 3500' to 4010'. Circulated and tripped out.
3/1/78 280'	TD: 4290'; MW: 10.3; Vis: 38. Tripped in with core barrel. Washed and reamed 60 feet to bottom. Cut Core No. 2: 4010-4020'. Recovered one foot. Tripped in with drilling assembly. Cleaned out 30 feet of fill.
3/2/78 355'	TD: 4645'; MW: 11.0; Vis: 53. Drilled to 4415'. Made five-stand trip; tight hole. Washed and reamed 20 feet to bottom. Drilled to 4645'. Repaired compound chain.
3/3/78 7'	TD: 4652'; MW: 11.0; Vis: 56. Drilled to 4652'. Tested blowout preventer rams to 5,000 psi, Hydril to 2,500 psi. Tripped in with bit.
3/4/78 175'	TD: 4827'; MW: 11; Vis: 50. Reamed 3700' to 4652'. Drilled ahead.
3/5/78 123'	TD: 4950'; MW: 10.5; Vis: 48. Drilled to 4950'. Tripped for core barrel. Repaired hydromatic brake.
3/6/78 90'	TD: 5040'; MW: 10.5; Vis: 46. Tripped in with core barrel. Cut Core No. 3: 4950-4961'. Recovered 10', 4" core. Tripped in with bit. Reamed rat hole.
3/7/78 301'	TD: 5341'; MW: 10.4; Vis: 52. Drilled to 5341'; tripped out.
3/8/78 218'	TD: 5569'; MW: 10.5; Vis: 48. Tripped in with new bit. Reamed from 3960' to 4502'; reamed 5161' to 5341'. Drilled ahead.
3/9/78 134'	TD: 5703'; MW: 10.5; Vis: 58. Made short trip at 5576'; tight from 5560' to 5547'; 25 feet of fill. Circulated samples at 5682'.

3/10/78 167'	TD: 5870'; MW: 10.5; Vis: 52. Tripped in with bit. Reamed 3960' to 4210' and 5643' to 5703'; drilled 5703' to 5712'. Washed out jet. Tripped for bit. Reamed 5672' to 5712'; drilled 5712' to 5870'.
3/11/78 122'	TD: 5992'; MW: 10.5; Vis: 60. Drilled from 5870' to 5992'. Tripped for bit. Tested blowout preventer equipment.
3/12/78 68'	TD: 6060'; MW: 10.4; Vis: 58. Completed blowout preventer test. Tripped in with core barrel. Cut Core No. 4: 5992-6002.5'; recovered 10 feet. Tripped in with bit and reamed core hole. Drilled 6002' to 6060'.
3/13/78 65'	TD: 6125'; MW: 10.5; Vis: 56. Tripped out to shoe of 13-3/8" casing at 2615'; no tight spots. Realigned A10000P pump. Installed new belts and new brake blocks on draw works.
3/14/78 95'	TD: 6220'; MW: 10.4; Vis: 54. Installed pump belts and brake blocks. Tripped in and reamed 3662' to 4150' and 6077' to 6125'.
3/15/78 56'	TD: 6276'; MW: 10.5; Vis: 54. Reamed 40 feet to bottom. Fish in hole consisting of bit sub, shock sub, Monel, 12-1/4" stabilizer, two 7-3/4" drill collars, 12-1/4" stabilizer, nine 7-3/4" drill collars, crossover and jars. Top of fish at 5876'. Ran in hole with overshot dressed with 6-1/4" grapples.
3/16/78 0'	TD: 6276'; MW: 10.5; Vis: 56. Tripped out with overshot and grapples. Tripped in with new fishing tools. Caught fish and tripped out. Ran in hole with 12-1/4" bit.
3/17/78 724'	TD: 6500'; MW: 10.4; Vis: 49. Finished trip in with bit. Reamed 70 feet to bottom. Drilled ahead.
3/18/78 103'	TD: 6603'; MW: 10.6; Vis: 50. Drilled to 6603'. Ran survey. Tripped out and tested blowout preventer equipment. Tripped in. Reamed, starting at 3500'.
3/19/78 38'	TD: 6641'; MW: 11; Vis: 58. Reamed 3500' to 5375'; ran in hole to 6568'. Lined pump belts. Reamed 35 feet to bottom; drilled to 6641'. Began changing swivel packing.
3/20/78 129'	TD: 6670'; MW: 11; Vis: 62. Completed changing swivel packing. Drilled and circulated. Tripped out for bit. Hole tight 6500' to 6380'. Tripped in to

	shoe. Cut drilling line. Worked on No. 1 pump. Reamed 6375' to 6450'. Ran to bottom; 60 feet of fill. Drilled ahead.
3/21/78 430'	TD: 7200'; MW: 11.1; Vis: 65. Pulled eight stands at 6925'; tight hole at 6420'. Reamed bridge at 6700'; 15 feet of fill. Drilled; circulated samples at 7004'.
3/22/78 99'	TD: 7299'; MW: 11.3; Vis: 64. Surveyed and tripped out for Bit No. 17. Tripped in, reamed 4000' to 4075'; changed swivel. Reamed 4075' to 4650'.
3/23/78 151'	TD: 7450'; MW: 11.5; Vis: 64. Reamed 4650' to 4800'. Ran in hole 19 stands. Reamed 6650' to 7299'. Drilled; circulated samples at 7321'. Drilled; lost mud. Mixed lost circulation material; circulated.
3/24/78 50'	TD: 7500'; MW: 11.5; Vis: 67. Drilled to 7500'; circulated. Made wiper trip to shoe. Tripped in and reamed bridges from 3400' to total depth. Washed fill 40 feet to bottom. Circulated and made second wiper trip to shoe.
3/25/78 4'	TD: 7504'; MW: 11.5; Vis: 82. Made short trip. Reamed bridge 6200' to 6250'. Washed 45 feet of fill. Surveyed. Tripped out and picked up core barrel and washed 30 feet of fill to bottom. Cut Core No. 5: 7500' to 7504'. Barrel jammed. Tripped out.
3/26/78 130'	TD: 7630'; MW: 11.6; Vis: 78. Tripped out and laid down three foot core. Tested blowout preventer equipment rams to 5,000 psi and Hydril to 2,500 psi. Cut drilling line. Tripped in and washed 20 feet of fill to bottom.
3/27/78 93'	TD: 7723'; MW: 11.6; Vis: 61. Repaired clutch on Pump No. 1. Surveyed; tripped out. Repaired torque indicator.
3/28/78 176'	TD: 7899'; MW: 11.7; Vis: 61. Serviced rig. Tripped in and reamed 60 feet of fill to bottom. Drilled to 7889' and circulated samples. Drilled ahead.
3/29/78 14'	TD: 7913'; MW: 11.5; Vis: 60. Drilled to 7913'; lost circulation. Tight hole. Pulled out of hole to 7500'. Built volume by 700 barrels. Lost approximately 500 barrels of mud.
3/30/78 0'	TD: 7913'; MW: 11.5; Vis: 57. Circulated and conditioned mud. Tripped in from 7500'. Reamed 40 feet of fill to bottom. Circulated and conditioned mud.

	Lost 150 barrels of mud. Tripped out to repair rig. Tripped in. Worked through bridges at 3720' and 6300'. Reamed 35 feet to 7888'.
3/31/78 147'	TD: 8060'; MW: 11.5; Vis: 62. Reamed to 7913' and drilled to 7917'. Circulated shaker plugged with lost circulation material. Drilled to 7934'; hole packed off; pipe stuck. Worked pipe loose and regained circulation.
4/1/78 5'	TD: 8065'; MW: 11.5; Vis: 70. Tested blowout preventer equipment to 5,000 psi and Hydril to 2,500 psi. Tripped out. First four stands were free, next three tight. Tripped in with new bit. Bridges at 3946', 4156' to 4196', and 7100'. Plugged bit; tripped out to 6600'; circulated and unplugged bit.
4/2/78 0'	TD: 8065'; MW: 11.5; Vis: 100. Circulated and attempted to unplug bit. Tripped out with plugged bit. Found shale in pipe on top of bit. Tripped in to 3610'; reamed to 3950'. Tripped out to shoe; repacked swivel. Tripped in to 3955'; reamed to 4110'. Lost 900 psi pump pressure. Tripped out looking for pressure loss.
4/3/78 0'	TD: 8065'; MW: 11.5; Vis: 96. Fish in hole consisting of bit, bit sub, shock sub, twelve 7-3/4" drill collars, crossover, jars, crossover, and three 6" drill collars. Total length of fish: 508.71'. Washed and reamed 2670' to 3310'. Tripped out to check bit. Bit balled up. Magnafluxed drill collars; found three bad drill collars and one bad bit sub.
4/4/78 0'	TD: 8065'; MW: 11.9; Vis: 140. Inspected bottom hole assembly. Picked up four 6" drill collars. Tripped in to 3212', washing and reaming. Hole caving; pipe sticking. Large amounts of shale over shaker.
4/5/78 0'	TD: 8065'; MW: 11.9; Vis: 118. Washed and reamed 4225' to 4552'. Tripped out for Bit No. 23; hole tight at 3760' and 3670'. Tripped in; cut 400' drilling line. Repaired low drum clutch. Circulated and reamed 3670' to 3710'. Changed shaker screen. Washed and reamed 3710' to 4612'.
4/6/78 0'	TD: 8065'; MW: 11.8; Vis: 110. Washed and reamed 4612' to 5965'. Free from 5116' to 5866'. Repaired No. 1 pump drive chain. Tripped out. Tripped in to 3668'; washed and reamed to 3773'. Top of fish at 5965'.

4/7/78 0'	TD: 8065'; MW: 12; Vis: 135. Washed and reamed 3710' to 5965'. Free hole 4363' to 4498' and 5116' to 5965'. Circulated and conditioned hole; made 10-stand trip. Circulated and conditioned at 5965', top of fish.
4/8/78 0'	TD: 8065'; MW: 12; Vis: 126. Pulled out of hole to shoe. Tripped in to 3790'. Reamed to 3820'; free 3820' to 3910'. Reamed 3910' to 4395'; free 4395' to 4600'. Reamed 4600' to 4833'; free 4833' to 5020'. Reamed 5020' to 5100'; free 5100' to 5965', top of fish. Circulated out to casing. Picked up fishing tools. Tripped in to 4725'; washed and reamed to 4927'. Continued running in hole.
4/9/78 0'	TD: 8065'; MW: 12; Vis: 143. Tripped in hole with overshot; could not get over fish. Circulated and tripped out. Made up fishing tools and tripped in. Circulated and worked over-shot. Attempted to shift sleeve in pump-out sub. Blew kelly hose. Cleaned floor. Tripped out with plugged string.
4/10/78 0'	TD: 8065'; MW: 12; Vis: 118. Tripped in with fishing tools; bridges at 4271' and 4458'. Worked fishing tools. Tripped out, inspected and changed out fishing tools. Ran in hole; cut drilling line. Worked through bridge at 4670'. Circulated and worked overshot.
4/11/78 0'	TD: 8065'; MW: 12; Vis: 106. Circulated and attempted to work over fish. Tripped out (chain out to casing). Laid down fishing tools and inspected. Tested blowout preventer and choke manifold. Tripped in with bit. Reamed 3432' to 3500'; free 3500' to 3927'. Reamed 3927' to 4458'; free 4458' to 5845'.
4/12/78 0'	TD: 8065'; PBTD: 5697'; MW: 12; Vis: 94. Reamed to 5965'; circulated. Tripped out and ran in open ended; circulated. Set Plug No. 1: 5965' to 5697', with 200 sacks of Class "G" with 1 percent D-65, slurry mixed from 17.1 to 17.4 ppg. Cement in place at 5:45 p.m. Pulled five stands and circulated. Laid down 51 singles. Tripped out. Picked up 7-3/4" drill collar. Repaired cathead.
4/13/78 0'	TD: 8065'; PBTD: 5876'; MW: 12; Vis: 137. Finished work on cathead. Tripped in and circulated. Worked down to top of firm plug at 5853'. Circulated and conditioned mud. Tripped out. Repaired mud line valve. Tripped in open ended and circulated. Mixed and pumped Plug No. 2: 5876' to 5608', 200 sacks of Class "G" cement with 1 percent D-65 (16.8-17.2 ppg).

4/14/78 0'	PBTD: 5582'; MW: 12; Vis: 130. Set Plug No. 2. Pulled five stands and circulated. Tripped out; picked up six 7-3/4" drill collars. Cut drilling line. Tripped in. Circulated and waited on cement. Felt for plug; found plug at 5582'. Circulated and waited on cement.
4/15/78 29'	Sidetrack Total Depth: 5790'; MW: 12; Vis: 77. Circulated and waited on cement. Drilled out cement stringers to 5761'; firm cement at 5761'. Circulated, surveyed, and tripped out. Picked up Dyna Drill and tripped in. Reamed fill from 5750' to 5761'. Replaced master chain in draw works. Surveyed and oriented tool. Drilled and oriented tool.
4/16/78 24'	STD: 5814'; MW: 11.8; Vis: 80. Tripped out. Serviced rig; changed bits and tripped in. Reamed 10 feet to bottom with five feet of fill. Surveyed to orient tool. Drilled with Dyna Drill. Tripped out. Changed bottom hole assembly and tripped in.
4/17/78 196'	STD: 6010'; MW: 11.8; Vis: 77. Tripped in hole. Reamed 5770' to 5814'; drilled to 5910'. Pulled out of hole; cut drilling line. Tripped in, worked through bridge at 4420'. Reamed 5787' to 5910'. Drilled to 6036'.
4/18/78 250'	STD: 6260'; MW: 11.7; Vis: 67. Drilled to 6260'. Tripped out.
4/19/78 0'	STD: 6260'; MW: 11.7; Vis: 70. Tripped out. Tested blowout preventers to 5,000 psi, Hydril to 2,500 psi. Replaced upper and lower kelly cocks. Tripped in; worked through bridges 4220' to total depth. Plugged bit; tripped out; ran in hole.
4/20/78 215'	STD: 6475'; MW: 11.5; Vis: 69. Tripped in; reamed 6180' to 6260'; drilled to 6380'. Surveyed; drilled to 6425'. Made five-stand trip. Drilled ahead.
4/21/78 220'	STD: 6695'; MW: 11.6; Vis: 64. Drilled to 6480'; surveyed. Tripped out and serviced rig. Tripped in. Reamed 6430' to 6480'. Drilled to 6601'; surveyed. Drilled ahead.
4/22/78 195'	STD: 6890'; MW: 11.5; Vis: 79. Drilled to 6695'. Made five-stand trip. Reamed bridge, 6415' to 6475'. Drilled to 6725'. Circulated, surveyed, and started trip out. Repaired cathead. Finished trip for bit. Tripped in. Reamed 6635' to 6725', with 14 feet of fill. Drilled ahead.

4/23/78 443'	STD: 7333'; MW: 11.5; Vis: 70. Made ten-stand trip. Drilled. Repaired No. 1 pump.
4/24/78 216	STD: 7549'; MW: 11.5; Vis: 74. Drilled. Tripped out for bit. Ran in hole. Cut drilling line. Reamed bridges, 6549' to 7351'. Drilled; circulated out trip gas and lost circulation material at 7390'. Drilled ahead.
4/25/78 82'	STD: 7631'; MW: 11.5; Vis: 57. Drilled to 7557'; made five-stand trip. Drilled to 7631'; surveyed. Tripped out. Tested blowout preventer equipment to 5,000 psi, Hydril to 2,500 psi. Tripped in with bit.
4/26/78 189'	STD: 7820'; MW: 11.5; Vis: 57. Tripped in. Reamed bridge at 5365'; reamed 60 feet to bottom. Drilled to 7741'. Made five-stand trip. Reamed 22 feet of fill to bottom. Drilled ahead.
4/27/78 162'	STD: 7982'; MW: 11.5; Vis: 54. Drilled to 7940'; tripped for bit. Reamed bridge 6000' to 6070'. Reamed 90 feet to bottom. Drilled ahead.
4/28/78 55'	STD: 8037'; MW: 11.5; Vis: 72. Repaired pump. Drilled to 8037'. Made short trip to shoe; tight hole, 6150' to 6600'; bridge at 6650'. Reamed 20 feet of fill. Circulated and conditioned hole.
4/29/78 0'	STD: 8037'; MW: 11.5; Vis: 97. Circulated; chained out of hole. Ran DIL; bridge at 3837'. Pulled out of hole and removed stabilizers. Ran DIL; bridge at 3834'. Pulled out of hole. Tripped in with bit; bridge at 3792'. Reamed to 4030' and 4078' to 4178'.
4/30/78 10'	STD: 8047'; MW: 11.5; Vis: 98. Reamed to 4267'. Ran in hole to bottom; washed and reamed 25 feet of fill. Drilled 10 feet; circulated. Chained out of hole to 3800'. Ran back to bottom; circulated. Pulled out of hole to log.
5/1/78 0'	STD: 8047'; MW: 11.5; Vis: 101. Ran DIL; tight at 3815' and 3820'. Tagged bottom at 8040'. Pulled out of hole; tight at 7000', 3840', and 3200'. Ran in hole with CNL; stopped at 3818'. Pulled out of hole; picked up bit. Ran in hole to 2500'; cut drilling line. Ran to bottom at 8034'. Pulled out of hole; tight at 3640'. Ran CNL to bottom; misrun. Ran second CNL; misrun.

5/2/78 0'	STD: 8047'; MW: 11.5; Vis: 96. Ran FDC/CNL/GR and BHC Sonic. Tool stopped at 3859'. Worked through tight spot and ran log. Ran two sidewall core guns. Shot 60 sidewalls; recovered 54. Tripped in to shoe and strung up 10 lines. Tripped in to condition hole for casing.
5/3/78 0'	STD: 8047'; MW: 11.5; Vis: 90. Circulated and conditioned hole to run casing. Made 20-stand trip. Circulated and chained out of hole. Installed 9-5/8" rams and ran 9-5/8" casing.
5/4/78 0'	STD: 8047'; MW: 11.5; Vis: 90. Ran 198 joints of 9-5/8", 53.5# S-95 Buttress casing and landed at 8023' KB. Broke circulation. Lost returns. Cemented with 1,500 sacks of Class "G" with 0.75% D-65 and 0.2 D13R at 15.6 ppg. Slurry volume: 315 barrels. Displaced with 580 barrels of mud; no returns last 200 barrels. Cement in place at 7:00 p.m. Waited on cement. Backed out landing joint; installed and tested packoff to 5,000 psi. Changed rams and tested blowout preventer equipment. Laid down 7-3/4" drill collars.
5/5/78 0'	STD: 8047'; MW: 10.5; Vis: 41. Laid down 7-3/4" drill collars. Made up bottom hole assembly. Tripped in to cement top at 7847'; float collar at 7937'. Changed liners in pumps. Drilled cement, 7847' to 7863'. Tripped out, checking for leaks. Drill collars plugged with dry cement.
5/6/78 0'	STD: 8047'; MW: 10.5; Vis: 49. Tripped in hole. Washed out plug. Broke circulation every ten stands. Drilled cement to 7975'; circulated; pulled out of hole. Ran VDL/CBL Gamma Ray logs. Collar locator did not work. Good cement, 7478' to 7525'; fair cement, 7525' to 7160'. Picked up drill collars. Tripped in.
5/7/78 64'	STD: 8121'; MW: 10.6; Vis: 52. Tested 9-5/8" casing to 3,000 psi. Tested formation with 430 psi (0.60 psi/ft.). Drilled on junk and recovered same in junk basket. Cleaned hole.
5/8/78 134'	STD: 8255'; MW: 10.7' Vis: 45. Installed wear bushing. Checked blowout preventers. Cut drilling line. Drilled to 8255'.
5/9/78 48'	STD: 8303'; MW: 10.6; Vis: 44. Checked blowout preventers. Drilled ahead.
5/10/78 100'	STD: 8403'; MW: 10.7; Vis: 46. Worked blowout preventers. Drilled ahead.

5/11/78
93'

STD: 8496'; MW: 10.5; Vis: 42. Tripped out and picked up core barrel. Ran in hole. Cut Core No. 6: 8489-8519'.

5/12/78
23'

STD: 8519'; MW: 10.5; Vis: 43. Pulled out of hole and laid down core barrel. Recovered 30 feet.

5/13/78
0'

STD: 8519'; MW: 10.6; Vis: 58. Ran DIL and BHC-Sonic-GR logs from 8519'. Laid down bottom hole assembly. Tripped in open ended to 8519' and spotted 11.1 ppg high viscosity drilling mud pill from 8519' to 8100'. Picked up 8100' and conditioned mud. Spotted 100 sacks of Class "G" with 0.75 percent D-65 + 0.2 percent D13R from 8100' to ±7870'. Picked up to 7730' and reversed out. Tripped out and picked up 9-5/8" casing scraper and ran in to 7700'; circulated.

5/14/78

STD: 8519'; PBTD: 7605'; MW: 12.4; Vis: 47. Tripped out and laid down casing scraper. Ran 9-5/8" Howco E-Z drill retainer and set at 7655'. Spotted 17 sacks of Class "G" cement on retainer. Picked up to 7490' and reversed out. Tested casing and plugged to 2,000 psi. Circulated and conditioned mud. Raised mud weight to 12.4 ppg. Tripped out, laying down drill pipe in preparation for suspending well.

5/15/78

STD: 8419'; PBTD: 7605'; MW: 12.4; Vis: 47. Tripped out and picked up FO shifting assembly and RTTS. Tripped in and opened FO at 2139'. Circulated annulus. Closed FO and tested to 3,000 psi. Reopened FO; set packer; established injection rate of 4 BPM at 800 psi. Pumped 10 barrels of water and 300 sacks of ArcticSet II; displaced with five barrels of water and 36 barrels of mud. Released packer and closed FO. Reversed out excess cement and tested FO to 3,000 psi. Opened FO at 2139' and circulated. Mixed Arctic Pack.

5/16/78

STD: 8519'; PBTD; 7605'. Built Arctic Pack. Displaced 9-5/8" annulus to water, then displaced 9-5/8" annulus to Arctic Pack. Reversed excess Pack. Closed FO and tested to 3,000 psi. Pulled out of hole and laid down shifting assembly. Ran in hole open ended to 4207'; reversed mud to water and spotted 140 barrels of Arctic Pack in hole. Laid down drill pipe to 1989'. Displaced to diesel and observed for flow. Laid down drill pipe. Rigged up and ran 2-7/8" tubing.

5/17/78

STD: 8519'; PBTD: 7605'. Ran 217 joints of 2-7/8" tubing. Installed tubing hanger; landed tubing with muleshoe at 6517' KB. Nippled down blowout

	preventers. Nipped up Christmas tree. Tested seals to 5,000 psi. Released rig at 6:00 a.m. Began rigging down.
11/29/78	Began rig up for re-entry. Worked on boilers and steam lines. Filled water tanks.
11/30/78	Sealed leaks in mud pits. Hot air unit and boilers in operation. Installed pump valves. Dressed 700 HO pump. Checked well for pressure. Pulled back pressure valve; OK. Set in Dowell cement tanks.
12/1/78	MW: 10.3; Vis: 45. Picked up kelly, swivel, and rig tongs. Worked on shale shaker and No. 2 mud tank. Nippled down tree. Set in blowout preventer equipment. Nippled up blowout preventer equipment. Began mixing mud.
12/2/78	MW: 10.6; Vis: 45. Mixed mud and built volume. Repaired leaks in steam and water lines. Installed 2-7/8" rams in blowout preventers.
12/3/78	MW: 10.5; Vis: 43. Tested 2-7/8" rams and choke manifold. Repaired leaks. Tested Hydril. Changed Hydril and rubber and nippled up.
12/4/78	MW: 10; Vis: 40. Finished testing blowout preventer equipment; tested Hydril to 2,500 psi. Backed out anchor screws and unset tubing hanger with 75,000 pound pull. Tubing string weight: 65,000 pounds. Laid down tubing. Pulled 77 joints. Displaced Arctic Pack and diesel with 10.5 ppg mud. Broke circulation with 1,100 psi; circulated with 400 psi for 58 minutes. Recovered 9.4 ppg returns. Burned Arctic Pack and diesel returns. Blew down flare lines. Laid down 2-7/8" tubing. Changed to 5" pipe rams. Tested rams to 5,000 psi. Pulled test plug and set wear bushing. Picked up bottom hole assembly.
12/5/78	MW: 10.1; Vis: 41. Picked up bottom hole assembly. Picked up 5" drill pipe to 5900'. Repaired pump and valve. Circulated and conditioned mud at 5900'. Blew out mud lines. Picked up drill pipe to 7605'. Circulated and conditioned mud.
12/6/78	STD: 8519'; MW: 10.2; Vis: 38. Circulated and washed to 7655'. Drilled plug at 7655'. Worked on compound. Second plug at 7759'. Tested casing to 3,000 psi. Drilled cement to 8094'. Circulated bottoms up. Pulled out to 8020'. Circulated and conditioned mud.

12/7/78 11'	STD: 8530'; MW: 10.1; Vis: 73. Circulated and conditioned mud. Washed and reamed 8094' to 8523'. Top of fill at 8236'. Circulated bottoms up. Made short trip; six feet of fill. Drilled to 8527'. Tested formation to 0.60 psi/ft. equivalent gradient. Drilled to 8530'. Tripped out.
12/8/78 18'	STD: 8548'; MW: 10.7'; Vis: 10.1. Repaired rotary table. Picked up bottom hole assembly; ran in hole. Repaired air line; ran in hole. Repaired cat line; ran in hole. Washed 40 feet to bottom.
12/9/78 15'	STD: 8565'; MW: 10.8; Vis: 57. Drilled to 8558'. Tripped out; tripped in. Washed and reamed 50 feet to bottom, working junk sub. Drilled to 8565'. Tripped out. Lost three cones in hole.
12/10/78 0'	STD: 8565'; MW: 10.8; Vis: 62. Waited on tools. Made up reverse circulating junk basket. Tripped in. Reamed 8559' to 8564'. Dropped ball and milled over junk. Tripped out. Recovered two cups of bit and retainer parts. Dressed junk basket. Tripped in. Washed 10 feet to bottom. Dropped ball and milled over junk. Tripped out.
12/11/78 15'	STD: 8580'; MW: 10.6; Vis: 52. Tripped out second run with globe basket. Recovered three cones and miscellaneous junk. Tripped in, reamed 55 feet to bottom. Drilled 8565' to 8577'. Tripped out for bit. Tripped in, reamed bridge at 8467'; had 40 feet of fill. Drilled ahead.
12/12/78 47'	STD: 8627'; MW: 10.8; Vis: 56. Drilled to 8627'. Tripped out. Repaired elevators. Tripped out. Replaced pump drive chain. Tripped in. Reamed 25 feet to bottom. Drilling.
12/13/78 60'	STD: 8687'; MW: 10.7; Vis: 54. Drilling ahead.
12/14/78 18'	STD: 8705'; MW: 10.8; Vis: 59. Drilled to 8690'. Tripped out. Tested blowout preventer equipment. Tripped in. Picked up two stabilizers. Reamed 8650' to 8690'; had 10 feet of fill. Drilling ahead.
12/15/78 65'	STD: 8770'; MW: 10.8; Vis: 46. Drilled to 8770'. Tripped for bit; tight hole at 8610'. Repaired rig. Tripped out.
12/16/78 0'	STD: 8770'; MW: 10.8; Vis: 45. Down 14-1/2 hours for repairs to pump countershafts. Tripped out; picked up new bit. Tripped in to shoe at 8023'. Waited on pump shaft repairs.

12/17/78 0'	STD: 8770'; MW: 10.8; Vis: 43. Replaced bearings on pump countershafts. Both shafts were repaired. Circulated and conditioned mud at 8023' to check pumps.
12/18/78 12'	STD: 8782'; MW: 10.7; Vis: 43. Tripped in; washed and reamed 100 feet to bottom. Drilled to 8782'. Tripped out; lost three cones. Picked up reverse circulating basket. Tripped in. Reamed bridge at 8465'.
12/19/78 0'	STD: 8782'; MW: 10.9; Vis: 53. Reamed bridges at 8425' and 8460'. Tripped out. Laid down reversing basket. Tripped in with bit. Thawed out mud line. Reamed bridge at 8460' to 8517'. Washed and reamed 8705' to 8782'. Circulated and conditioned mud. Tripped out. Tight at 8725'. Picked up reverse circulating junk basket and tripped in.
12/20/78 0'	STD: 8782'; MW: 10.9; Vis: 55. Tripped in with reversing basket. Washed and reamed 8740' to 8776' with six feet of fill. Reamed fill to 8780'. Tripped out, recovered 15" shale and roller bearings. Tripped in with basket, reamed 36 feet to bottom with three feet of fill. Dropped ball and milled over junk to 8784'. Tripped out.
12/21/78 0'	STD: 8782'; MW: 10.9; Vis: 48. Tripped out with reversing basket. Recovered one cone. Dressed basket. Tripped in. Washed and reamed 40 feet to bottom. Milled two feet to 8786'. Tripped out. Recovered two cones. Changed seals in Hydril. Tested blowout preventer equipment.
12/22/78 84'	TD: 8807'; MW: 10.8' Vis: 52. Tested blowout preventer equipment. Ran in hole; reamed 8756' to 8782'. Drilled to 8807'; circulated; pulled out of hole. Picked up core barrel. Ran in hole.
12/23/78 12'	TD: 8819'; MW: 10.9; Vis: 56. Tripped in with core barrel. Reamed bridges from 8442' to bottom. Cut Core No. 7: 8807-8808'. Lost circulation. Stabilized hole, tripped out with core barrel. Tripped in with bit. Reamed bridge 8450' to 8455'; ten feet of fill. Drilled 8807' to 8819'. Circulated and conditioned mud and hole. Tripped out for core barrel.
12/24/78 55'	TD: 8874'; MW: 10.9; Vis: 51. Tripped out. Picked up core barrel. Tripped in; washed 40 feet to bottom. Cut Core No. 8: 8819-8873'. Tripped out, recovered 55 feet. Tripped in with bit.

12/25/78 100'	TD: 8974'; MW: 10.9; Vis: 55. Tripped in. Drilled ahead.
12/26/78 66'	TD: 9040'; MW: 10.9; Vis: 54. Drilled to 9040'. Tripped out; picked up core barrel. Tripped in; reamed 30 feet to bottom.
12/27/78 66'	TD: 9106'; MW: 10.9; Vis: 58. Cut Core No. 9: 9040-9059'. Recovered 16.8 feet of core. Tripped in. Washed 40 feet to bottom. Drilled ahead.
12/28/78 87'	TD: 9193'; MW: 10.9; Vis: 52. Drilled to 9193'. Tripped for bit.
12/29/78 80'	TD: 9273'; MW: 10.9; Vis: 56. Tripped in. Washed 55 feet to bottom. Drilled ahead.
12/30/78 32'	TD: 9305'; MW: 10.9; Vis: 54. Drilled to 9305'. Tripped out. Repaired high drum chain. Tested blowout preventer equipment OK. Picked up core barrel and tripped in.
12/31/78 29'	TD: 9334'; MW: 10.9; Vis: 50. Reamed 9220' to 9305' with core barrel. Cut Core No. 10: 9305-9328'. Core barrel stuck on connection. Jarred free and tripped out. Recovered 21 feet of core. Tripped in; washed 45 feet to bottom. Drilled ahead.
1/1/79 69'	TD: 8397'; MW: 10.9; Vis: 52. Drilled to 9357'; circulated samples. Tripped for bit. Reamed 9314' to 9357'. Drilled ahead.
1/2/79 71'	TD: 9468'; MW: 10.9; Vis: 48. Drilled to 9397'; circulated samples. Drilled to 9412'; tripped out. Changed out shock sub and jars. Washed and reamed 9346' to 9412'. Drilled ahead.
1/3/79 60'	TD: 9528'; MW: 10.9; Vis: 53. Drilled to 9528'. Circulated samples. Tripped out. Repaired lube pump chain compound. Tripped in with bit. Reamed 9375' to 9528'.
1/4/79 12'	TD: 9540'; MW: 10.9; Vis: 50. Drilled 9528' to 9540'. Tripped for core barrel. Tested blowout preventer equipment. Tripped in with core barrel. Attempted to ream bridges 9212' to 9325. Tripped out. Tripped in with bit to condition for core.
1/5/79 7'	TD: 9547'; MW: 10.9; Vis: 50. Reamed 9325' to 9540'. Circulated bottoms up. Made short trip to shoe; tight hole at 8815'. Tripped out. Tripped in with Bit No. 59 and reamed 9450' to 9540'. Drilled ahead.

1/6/79 27'	TD: 9574'; MW: 10.9; Vis: 50. Drilled to 9557'. Tripped for bit. Reamed 50 feet to bottom with 10 feet of fill. Drilled ahead.
1/7/79 74'	TD: 9648'; MW: 10.9; Vis: 50. Drilled to 9597'. Made short trip; tight to 150 feet off bottom with three feet of fill. Drilled ahead.
1/8/79 12'	TD: 9664'; MW: 10.9; Vis: 52. Drilled to 9664'. Circulated samples. Made short trip with five feet of fill. Conditioned mud; pulled out of hole to shoe. Picked up core barrel. Tripped in; reamed from 9285' to 9448'. Reamed to bottom.
1/9/79 30'	TD: 9694'; MW: 10.9; Vis: 53. Reamed with core barrel; barrel stuck. Worked free and tripped out. Tripped in with bit. Reamed 160 feet to bottom with 25 feet of fill. Drilled ahead.
1/10/79 86'	TD: 9780'; MW: 10.9; Vis: 62. Drilled to 9719'. Made short trip. Drilled ahead.
1/11/79 37'	TD: 9817'; MW: 10.9; Vis: 64. Drilled to 9784'. Circulated samples; tripped out. Tested blowout preventer equipment. Tripped in with 10 feet of fill. Drilled ahead.
1/12/79 67'	TD: 9884'; MW: 10.9; Vis: 57. Drilled to 9852'. Made short trip. Drilled to 9884'. Tripped for bit.
1/13/79 29'	TD: 9913'; MW: 10.9; Vis: 50. Ran in hole; reamed 9844' to 9884' with 20 feet of fill. Drilled. Made short trip; slipped and cut 100 foot drilling line. Ran in hole.
1/14/79 32'	TD: 9945'; MW: 12.0; Vis: 59. Tripped in to 8637. Washed and reamed 51 feet to bottom. Drilled to 8817'. Made short trip with 3,500 pound drag. Worked through tight spots at 8263', 7620', and 7649'. Drilled ahead.
1/15/79 0'	TD: 9945'; MW: 10.9; Vis: 53. Finished Temperature Survey. Ran DIL to 9940', BHCS to 9940', FDC/CNL to 9940', Dipmeter to 9938'. Shot 45 sidewall cores; recovered 33. Temperature Survey showed 240° first run. Ran second run Temperature Survey.
1/16/79 0'	TD: 9945'; MW: 10.9; Vis: 50. Finished Temperature Survey Run No. 2. Tripped in with bit; reamed 60 feet to bottom with 30 feet of fill.

	Conditioned mud and hole. Tripped out for core barrel. Picked up core barrel and tripped in. Jars tripped, driving slips through rotary. Fish in hole is core head, core barrel, crossover, bit sub, shock sub, Monel drill collar, fourteen 6-1/4" drill collars, crossover, jars, crossover, jars, crossover, two 6-1/4" drill collars. Total fish: 561.02 feet. Fished slips off the top of the wear bushing. Lost one slip handle down hole.
1/17/79 0'	TD: 9945'; MW: 10.8; Vis: 54. Waited on fishing tools. Tripped in; bridge at 8490'. Tripped out. Laid down fishing tools. Tripped in with Bit No. 64. Reamed 8490' to 8832'; stuck at 8832'; worked free. Circulated sloughing shale. Reamed 8832' to 8872'.
1/18/79 0'	TD: 9945'; MW: 11.0; Vis: 53. Washed and reamed to 9367'. Indicated top of fish at 9367'. Circulated; pulled out of hole. Tested blowout preventer. Made up fishing tools; ran in hole to shoe. Slipped and cut drilling line. Continued fishing.
1/19/79 0'	TD: 9945'; MW: 10.9+; Vis: 56. Felt for top of fish, 9360' to 9370'; could not find top of fish. Pulled out of hole, laid down fishing tools. Ran in hole with bit; reamed 9336' to 9371' with 20 feet of fill. Reamed 5-1/2 hour; circulated; made short trip. Circulated and conditioned mud. Pulled out of hole. Rigged up Schlumberger. Ran Velocity Survey.
1/20/79 0'	TD: 9945'; MW: 10.4; Vis: 48. Tripped in to 9355' with open ended drill pipe. Conditioned hole for abandonment plug. Spotted Plug No. 1 with six barrels of water and 96 sacks of Class "G" with additives at 15.8 ppg. Displaced with two barrels of water and 157 barrels of mud. Tripped pipe to 8917'. Conditioned mud. Spotted Plug No. 2 with six barrels of water and 103 sacks of Class "G" with additives at 15.8 ppg. Displaced with two barrels of water and 151 barrels of mud. Tripped out to 8135'. Conditioned mud. Spotted Plug No. 3 with 5-1/4 barrels of water and 121 sacks of Class "G" with additives at 15.8 ppg. Displaced with two barrels of water and 137 barrels of mud. All cement contains 75% D-65 and 0.3% D13R.
1/21/79	TD: 9945'; PBTD: 5092'; MW: 9.5; Vis: 38. Finished Plug No. 3 at 8135'. In place at 6:45 a.m. Tripped out to 6800'; conditioned mud. Tripped out for 9-5/8" scraper. Tripped in to 6750'; tripped out. Tripped in with retainer; circulated. Set retainer at 6707'. Spotted Plug No. 4 from 6707' to 6562' with 50 sacks of Class "G" with 0.75% D-65 and 0.3% D13R.

Displaced with 15 barrels of mud. Cement in place at 8:15 p.m. Tripped to 6300'; conditioned mud. Laid down 5" drill pipe and drill collars. Picked up Retainer No. 2; tripped in.

1/22/79

TD: 9945'; PBTD: 1875'. Set Retainer No. 2 at 2092'. Set Plug No. 5, 2092' to 1875', with 50 sacks of ArcticSet II, 8.2 barrels slurry displaced with two barrels of water and 32 barrels of mud. In place at 7:45 a.m. Pulled out of hole three stands to 1808'; circulated. Reverse circulated mud to water, water to diesel. Laid down drill pipe, broke kelly, pulled wear ring, nippled down blowout preventers, cleaned pits. Began rigging down. Released rig at 3:00 p.m., January 22, 1979.

DRILLING TIME ANALYSIS

SOUTH MEADE TEST WELL NO. 1

NABORS ALASKA DRILLING, INC., RIG 1

Spudded 2/7/78, Rig released 1/22/79

Total Depth: 9,945 Feet

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 1 of 13

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 1-11																							12		Began Moving Camp and Rig
1-12																							12		Began Moving Camp and Rig
1-13																							12		Began Moving Camp and Rig
1-14																							12		Began Moving Camp and Rig
1-15																							12		Began Moving Camp and Rig
1-16																							12		Began Moving Camp and Rig
1-17																							24		Began Moving Camp and Rig
1-18																							24		Began Moving Camp and Rig
1-19	24																								Began Rigging Up
1-20	24																								Began Rigging Up
1-21	24																								Began Rigging Up
1-22	24																								Began Rigging Up
1-23	24																								Began Rigging Up
1-24	24																								Began Rigging Up
1-25	24																								Began Rigging Up

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 2 of 13

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
1-26	24																								Began Rigging Up
1-27	24																								Began Rigging Up
1-28	24																								Began Rigging Up
1-29	24																								Began Rigging Up
1-30	24																								Began Rigging Up
1-31	24																								Began Rigging Up
2-1	24																								Began Rigging Up
2-2	24																								Began Rigging Up
2-3	24																								Began Rigging Up
2-4	24																								Began Rigging Up
2-5	24																								Began Rigging Up
2-6	24																								Began Rigging Up
2-7	17	5½		1	½																				Spudded Well at 6:00 p. m.
2-8		7	9	8	½	½																		Drilling	
2-9			12	4½			3	3															1½	Reaming	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 3 of 13

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
2-10				3				2		12	7													Running Casing	
2-11											8	16												Waiting on Cement	
2-12												24												Nipple Up BOP	
2-13		6		4			9½					1	½										3	Repairing Rig	
2-14		15½		5½	1½		1	½																Drilling	
2-15		9	10 ¾		1		3½																	Repairing Rig	
2-16		17	½	3½	1			2																Drilling	
2-17		24																						Drilling	
2-18			1½	11				2½	9															Reaming	Ran DIL & BHC Sonic
2-19				8½				2 ¾		12														Tripping	
2-20				2½				2¼		3½		15¾												Circulating	
2-21												24												Nipple Up BOP	
2-22						½	14					7½	2											Nipple Up BOP	
2-23												9	12½										2½	Nipple Up BOP	
2-24		9 ¼		9	½			½															4¼	Tripping	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 4 of 13

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
2-25		7¼	1	10	1¾		1										3½							Drilling	Core No. 1: 3010' - 3020.5'
2-26		21		1½	1			½																Drilling	
2-27		5¼	2½	11¾	1¾	¼	1																2	Repairing Rig	
2-28		2	4¼	11		½		3									3¼							Tripping	Core No. 2: 4010' - 4020'
3-1		20	½	1½	½			1½																Drilling	
3-2		4¼		3½			3½	1¼					10¾											Repairing Rig	
3-3		7	4½	3		½	5						4											Tripping	
3-4		16½		5	¼			2¾																Drilling	
3-5		½	3¾	9½	½	¼	3						½				5½						1	Repairing Rig	Core No: 4950' - 4961'
3-6		19½		3			1½																	Drilling	
3-7		11	6	4½	1			1					½											Tripping	
3-8		18		1¾				4½																Drilling	
3-9		4	2½	12½	½		2½	2																Tripping	
3-10		12		4			5	3																Drilling	
3-11			1	11			½						7½				4							Testing BOP	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 5 of 13

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
3-12		11½	1	3½	1½		5	1½																Drilling	Core No. 4: 5992' - 6002.5'
3-13		4	7	1½			10½																1	Repairing Rig	
3-14		13½	2	7				1½																Drilling	
3-15				15		1										4							4	Tripping	
3-16		9	½	11			1½	1½															½	Tripping	
3-17		12¼		5	½		½	1 ¼					4											Drilling	
3-18			17	2½			1	2½					1											Reaming	
3-19		12		6½			3½	½															1½	Repairing Rig	
3-20		16½	2	3			1	1½																Drilling	
3-21		13½	1½	5½	¼	½	1	1				¼												Drilling	
3-22		6	14	½			1	2½																Reaming	
3-23		11½	7	3½				2																Drilling	
3-24			1	14½	1	½		7																Tripping	
3-25		5	2½	8				½					4½				3½							Tripping	Core No. 5: 7500' - 7504'
3-26		20½		½	½		2	½																Drilling	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 6 of 13

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
3-27		13¼	1	7¼	1½	1																		Servicing Rig	
3-28		4½					1 ¾	17 ¾																Drilling	
3-29			¾	7¼			4	12																Conditioning Mud	
3-30		11½	1½	5			1½	4															½	Reaming	
3-31		8		9	½			1½					4										1	Drilling	
4-1			7½	10			1	5½																Circulating	
4-2			17	6				½															½	Tripping	
4-3			12	3½																			8½	Magnafluxing BHA	
4-4			13½	6¼			3¼																1	Reaming	
4-5			20½	1½			2																	Reaming	
4-6			8½	4¼				11¼																Conditioning Mud	
4-7			6½	5½				12																Circulating	
4-8			2	14½			½	1								6								Reaming	
4-9			½	16			2½	1								3							1	Repairing Rig	
4-10			5	5½			1						2½			10								Fishing	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. South Meade Test Well No. 1 Page 7 of 13

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
4-11			7	9				6 3/4											1 1/4					Reaming	
4-12		1/2		11 1/2	1/4	1/2	4 1/4	7																Repairing Rig	
4-13				9 1/2		1		4 1/2		2	7													Waiting on Cement	
4-14		4	1/2	6	1		1	2 1/2			9													Waiting on Cement	
4-15		14 1/2	1/2	5 1/2	2 1/2	1/2		1/2																Drilling	
4-16		5	1 1/4	13 3/4	1 3/4	1/2																	1	Tripping	
4-17		22	1		1																			Drilling	
4-18		3 1/2	2 1/2	9 1/4	3/4								8											Tripping	
4-19		13	4	5 1/2	1	1/2																		Reaming	
4-20		14 1/2	1/2	6	2	1/2							1/2											Drilling	
4-21		13	1	8	1 1/2		1/2																	Drilling	
4-22		20 1/2		1 1/2			2																	Drilling	
4-23		12 1/2	1 1/2	7 1/2	1			1/2															1	Drilling	
4-24		16 1/2		5	1/2								2											Drilling	
4-25		13	1 1/4	4 3/4				1/2					4 1/2											Tripping	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 8 of 12

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
4-26		14¼		9	¾																			Drilling	
4-27		14¼	1½	3¼			3	2																Drilling	
4-28			8½	8 ¾				3 ¾	3															Circulating	Ran DIL
4-29		1¼	10¼	5				7															½	Reaming	
4-30			2¼	10¼				2½	6														3	Tripping	Ran DIL and CNL
5-1				1					21½														1½	Logging	Ran FDC/CNL/GR & BHC Shot 60 SWCs, Recovered 54
5-2				8½				9½															6	Circulating	
5-3										23													1	Running Casing	
5-4		1		9½				4				1	4½										4	Tripping	
5-5		3		17			1	1½	1½															Repairing Rig	Preparing to Log
5-6		6		10½		½		1½	4½				1											Tripping	Ran VDL/CBL/GR
5-7		12¼		7¼		1	1	1				½											1	Tripping	
5-8		13¼		10		½		¼																Drilling	
5-9		15				½	4	4½																Drilling	
5-10		17½		4	1	½	½																	Drilling	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 9 of 13

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
5-11			1	8½				3½									11							Coring	Core No. 6: 8489' -8519'
5-12				9 ¾				6½	5 ¾										2					Logging	Ran DIL & BHC Sonic/GR
5-13				11½				10½		1									½				½	Circulating	
5-14				7				11½															5 ¾	Tripping	
5-15				5½				15½															3½	Circulating	
5-16	2½			10				2				7 ¾	¾										1	Tripping	
5-17	24																							Rigging Down	Released Rig at 6:00 a. m.
					WELL			TEMPORARILY				SUSPENDED													
11-29	24																							Began Rig Up for Re-entry	
11-30	24																							Began Rig Up for Re-entry	
12-1	24																							Began Rig Up for Re-entry	
12-2	24																							Began Rig Up for Re-entry	
12-3	24																							Began Rig Up for Re-entry	
12-4	24																							Began Rig Up for Re-entry	
12-5		12		2½			3½	5½					½											Circulating	Drilled Cement Plug

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 10 of 13

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
12-6		4	3½	3				13															½	Circulating	
12-7				13			11																	Tripping	
12-8		13¾	1¼	7																			1½	Drilling	
12-9		1½	1	15½			¾	1								½							4	Tripping	
12-10		3½	2	12¼		1		¾								2							2½	Tripping	
12-11		9½	2½	7¾		½	3¼	½																Drilling	
12-12		18½		4½																			1	Drilling	
12-13		7½		8½				½					7½											Drilling	
12-14		21	½	2½																				Drilling	
12-15				11			11½																1½	Tripping	
12-16							24																	Repairing Rig	
12-17		6½	1	5		½	6	1															4	Circulating	
12-18			6	14½				1½								1							1	Reaming	
12-19			5	19																				Tripping	
12-20			6¾	14												3								Tripping	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 11 of 13

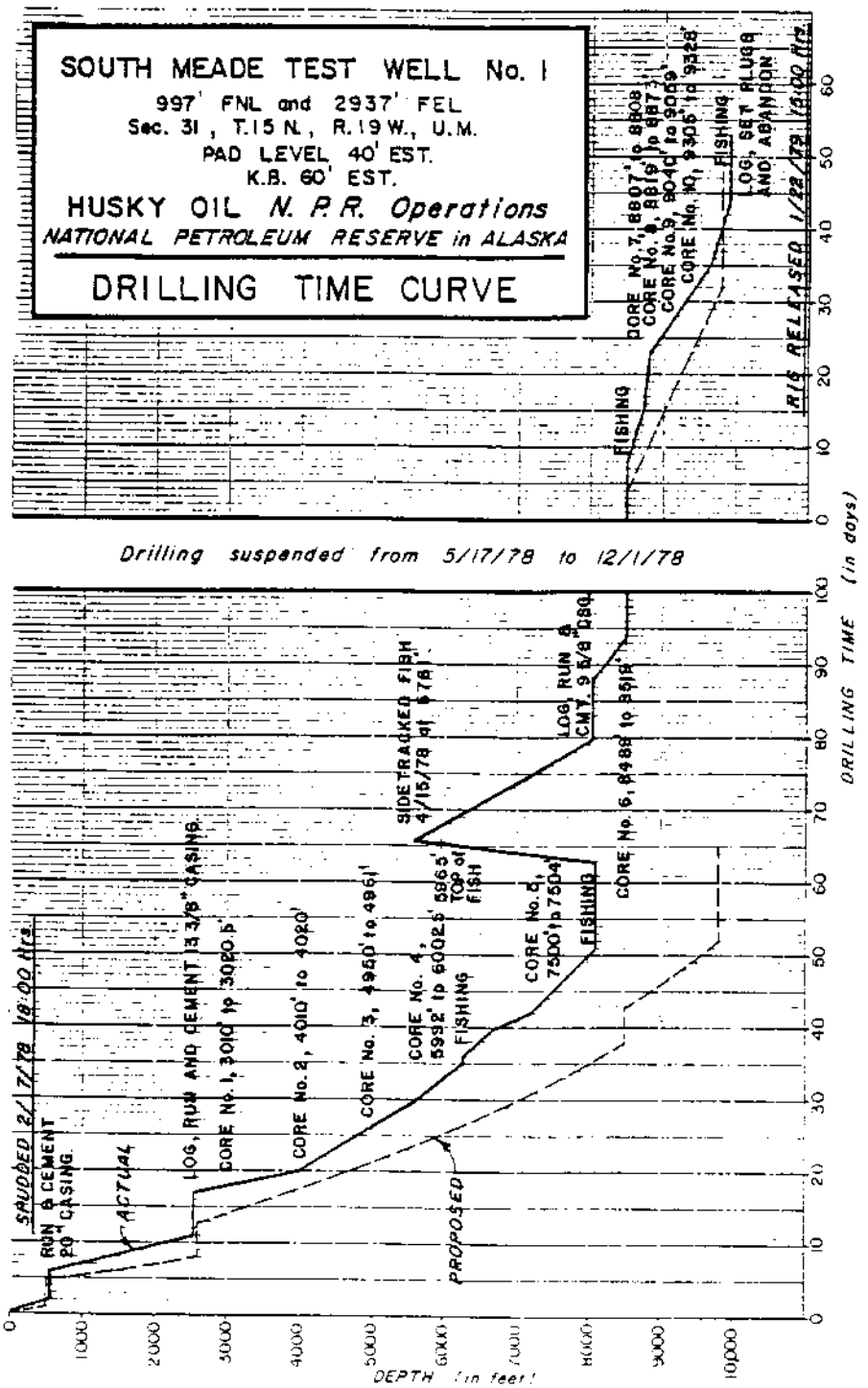
DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
12-21		3¼		8¼		¼	4½	1¾					5										¼	Testing BOP	
12-22			5¼	15													2¾						1	Tripping	
12-23		1¼	1	8¾				1									12							Tripping	Core No. 7: 8807' - 8808'
12-24		14¾		9¼																				Tripping	Core No. 8: 8819' - 8873'
12-25		19		5																				Tripping	
12-26		1½		14			1										7						½	Coring	Core No. 9: 9040' -9059'
12-27		24																						Drilling	
12-28		14	1	9																				Tripping	
12-29		17½					3	1½					2											Drilling	
12-30		4	2	9				½					2				6½							Reaming	Core No. 10: 9305' - 9328'
12-31		11	1½	9				1½															1	Drilling	
1979 1-1		12½	1½	8				1½															½	Drilling	
1-2		14¼		5½	¼		2	1½																Drilling	
1-3		3	6	11									4											Drilling	
1-4			6	14¼			½	2¼															1	Reaming	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 12 of 13

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
1-5		13¼	1½	8¾																			½	Drilling	
1-6		22½		1½																				Drilling	
1-7		9½		10½				3															1	Drilling	
1-8		4½	7¾	11¾		½																		Reaming	
1-9		23		1																				Drilling	
1-10		9¾		7¼	¼			2					4½											Drilling	
1-11		22¾		1¼																				Drilling	
1-12		10¾	1	10¾	½		1																	Tripping	
1-13		12¾		8¾				1½															1	Tripping	
1-14				2					22															Logging	TS,DIL,BHCS, FDL/CNL Dipmeter
1-15				11				3	10															Logging	Shot 45, SWCs, Recovered 33
1-16			2½	12½																			9	Waiting on Fishing Tools	
1-17			12	6½				2½					3											Reaming	
1-18			9½	8			½	2								3							1	Fishing	
1-19				6¾				11⅝	3										2½					Tripping	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH MEADE TEST WELL NO. 1 Page 13 of 13

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
1-20				12 ¼		½		8¼											2½					Tripping	
1-21				10½				¼				6							6					Tripping	
1-22	24																							Rigging Down	Rig Released at 3:00 p.m.
	667½		344½	34		187 ¾		86¼		31		103¾		-0-		59			14 ¾	-0-		216			
TOTALS	1032¼		998 ¾			15¼		306½		53½		112 ¾		-0-		32½		-0-		-0-		-0-			


SOUTH MEADE TEST WELL No. 1
997' FNL and 2937' FEL
Sec. 31, T.15 N., R.19 W., U.M.
PAD LEVEL 40' EST.
K.B. 60' EST.
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
DRILLING TIME CURVE
RIG RELEASED 1/22/79 (2100 hrs.
FISHING
CORE No. 7, 8807' to 8808'
CORE No. 8, 8819' to 8827'
CORE No. 9, 8940' to 9065'
CORE No. 10, 9305' to 9328'
FISHING
LOG, SET PLUGS AND ABANDON
Drilling suspended from 5/17/78 to 12/1/78
SIDETRACKED FISH 4/15/78 at 6781'
LOG, RUN & CMT. 9 5/8" CSG.
CORE No. 6, 8488' to 8518'
CORE No. 5, 7500' to 7504'
FISHING
CORE No. 4, 5992' to 6002'
5965' TOP of FISH
FISHING
CORE No. 3, 4950' to 4961'
CORE No. 2, 4010' to 4020'
CORE No. 1, 3010' to 3020'
LOG, RUN AND CEMENT 13 3/8" CASING
RUN & CEMENT 20" CASING
SPUDDED 2/17/78 18:00 hrs.
ACTUAL
PROPOSED
DEPTH (in feet)
DRILLING TIME (in days)

DRILLING MUD RECORL

REGAN ENTERPRISES, INC.

Individual Professional Consulting Service

COMPANY Husky Oil NPR Operations — STATE Alaska

WELL South Meade Test Well No. 1 — COUNTY North Slope

CONTRACTOR Nabors Alaska Drilling — LOCATION NPRA — SEC 31 TWP 15N RNG 19W

STOCKPOINT _____ DATE _____ ENGINEER Millikin

CASING PROGRAM: 20 inch at 505 ft.
13 3/8 inch at 2616 ft.
9 5/8 inch at 8023 ft.

TOTAL DEPTH 9945 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1978	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	
2/8	497	8.5	46	10	6	2/10	9.0	–	–	2	.2	–	500	–	½	3	0	97	–	
2/9	520	8.5	50	12	8	4/10	9.0	–	–	4	.2	–	500	–	½	3	0	97	–	
2/10	520	9.7	55	14	8	4/12	9.0	–	–	4	.2	–	560	–	½	5	0	95	–	
2/11	520	9.7	55	14	8	4/12	9.0	–	–	4	.2	–	560	–	½	5	0	95	–	
2/12	520	9.7	54	12	8	4/16	8.5	–	–	4	.2	–	560	–	½	5	0	95	–	
2/13	520	8.7	54	12	8	4/14	8.5	–	–	4	.2	–	560	–	½	3	0	97	–	
2/14	980	9.8	38	14	8	4/14	10.4	–	–	2	.0	–	800	–	1½	4	0	96	–	
2/15	1300	9.5	42	14	6	2/10	9.0	10.2	–	2	.5	–	800	–	½	4	0	96	–	
2/16	1830	10.2	37	17	6	2/14	9.0	9.6	–	2	.8	–	800	–	1	6	0	94	–	
2/17	2245	10.4	45	18	2	0/20	9.0	12.0	–	2	.3	–	800	80	1	10	0	90	–	
2/18	2625	10.0	80	28	16	4/30	9.0	0.8	–	2	.6	–	800	80	tr	10	0	90	–	Raised viscosity for logs.
2/19	2625	10.0	84	28	16	4/30	9.0	9.8	–	2	.6	–	800	80	tr	10	0	90	–	
2/20	2625	10.2	75	26	12	4/28	9.0	9.6	–	2	.4	–	800	80	tr	10	0	90	–	
2/21	2625	10.2	72	26	12	4/24	9.0	9.6	–	2	.4	–	800	80	tr	10	0	90	–	
2/22	2625	10.2	72	26	16	2/20	9.0	9.6	–	2	.4	–	800	80	tr	10	0	90	–	
2/23	2625	10.2	69	26	12	2/20	9.0	9.6	–	2	.4	–	800	80	tr	10	0	90	–	
2/24	2625	9.5	37	17	10	2/12	9.0	15.4	–	2	.4	–	500	40	tr	6	0	94	–	
2/25	2925	9.5	38	17	10	2/20	9.0	14.0	–	2	.4	–	500	40	½	6	0	94	–	
2/26	3190	9.5	45	22	12	2/16	9.0	12.2	–	2	.5	–	500	40	tr	6	0	94	–	
2/27	4000	9.6	47	18	6	2/14	9.5	12.2	–	2	.6	–	600	40	tr	7	0	93	–	Adding a lot of water to maintain low weight.
2/28	4000	9.7	54	22	10	2/18	9.5	0.3	–	2	.6	–	500	40	tr	7	0	93	–	Sloughing shale over shaker.
3/1	4290	10.3	38	20	10	2/14	9.6	9.6	–	2	.6	–	500	40	tr	10	0	90	–	" " " " "
3/2	4645	11.0	53	26	10	2/14	9.5	8.8	–	2	.7	–	500	40	tr	12	0	88	–	Problem with sloughing shale.
3/3	4652	11.0	28	28	12	2/20	9.5	8.7	–	2	.6	–	500	40	tr	11	0	89	–	Tight hole.
3/4	4827	11.0	50	26	10	4/16	9.8	10.0	–	3	.8	–	500	40	tr	11	0	89	–	Long pieces of shale.
3/5	4950	10.5	48	28	8	2/10	10.0	3.4	–	2	.6	–	500	40	tr	9	0	91	–	
3/6	5049	10.5	45	26	8	2/8	9.5	4.1	–	2	.6	–	500	40	tr	9	0	91	–	
3/7	5341	10.4	52	–	–	2/8	10.0	–	–	2	.6	–	500	40	tr	9	0	91	–	
3/8	5569	10.5	48	24	6	0/8	10.5	4.1	–	2	.7	–	500	40	tr	11	0	89	–	Tight hole.
3/9	5703	10.5	58	31	10	2/20	10.5	3.5	–	2	1.4	–	500	40	tr	13	0	87	–	Tight hole.
3/10	5870	10.5	52	26	8	2/16	10.0	3.5	–	2	.8	–	500	40	.8	12	0	88	–	
3/11	5992	10.5	60	32	10	2/18	10.5	10.0	–	2	.8	–	500	40	tr	14	0	86	–	
3/12	6060	10.4	58	36	8	2/12	9.5	3.4	–	2	.5	–	500	40	tr	12	0	88	–	
3/13	6125	10.5	56	28	8	2/14	9.5	3.6	–	2	.6	–	500	40	tr	12	0	88	–	

DRILLING MUD RECORD

REGAN ENTERPRISES, INC.

Individual Professional Consulting Service

COMPANY Husky Oil NPR Operations — STATE Alaska

WELL South Meade Test Well No. 1 — COUNTY North Slope

CONTRACTOR Nabors Alaska Drilling — LOCATION NPRA — SEC 31 TWP 15N RNG 19W

STOCKPOINT _____ DATE _____ — ENGINEER Millikin — TOTAL DEPTH 9945 ft.

CASING PROGRAM: 20 inch at 505 ft.
13 3/8 inch at 2616 ft.
9 5/8 inch at 8023 ft.

DATE	DEPTH feet	WEIGHT lb/gal	VISCOSITY Sec API @ °F	VISCOSITY PV @ °F	Yp	GELS 10 sec/10 min	pH Strip Q Meter Q	FILTRATION ml API	FILTRATION HTHP @ °F	FILTRATION Cake 32nds	FILTRATE ANALYSIS Pm	FILTRATE ANALYSIS Pf/Mf	FILTRATE ANALYSIS Cl ppm	FILTRATE ANALYSIS Ca ppm	SAND %	RETORT Solids %	RETORT Oil %	RETORT Water %	CEC Mud, me/ml	REMARKS AND TREATMENT
3/14	6220	10.4	54	27	8	2/8	9.0	9.0	–	2	.5	–	500	40	tr	12	0	88	–	Adding 4-6 #/barrel soltex to mud.
3/15	6270	10.5	54	35	7	2/8	9.0	4.1	–	2	.5	–	500	40	tr	12	0	88	–	
3/16	6275	10.5	56	30	8	2/10	9.0	3.8	–	2	.5	–	500	40	tr	12	0	88	–	
3/17	6480	10.4	49	33	8	2/8	9.0	2.6	–	2	.5	–	500	20	tr	10	0	90	–	
3/18	6603	10.6	50	33	8	2/10	9.0	2.6	–	2	.6	–	500	tr	tr	12	0	88	–	Reaming to bottom.
3/19	6641	11.0	58	36	10	2/10	9.0	3.2	–	2	.5	–	500	tr	tr	15	0	85	–	Losing some mud while reaming.
3/20	6770	11.0	62	36	8	2/10	9.0	3.8	–	2	.5	–	500	tr	tr	16	0	84	–	Hole packed off while reaming.
3/21	7200	11.1	65	34	8	2/10	9.0	3.4	–	2	.5	–	500	tr	tr	16	0	84	–	
3/22	7300	11.3	64	35	7	2/10	9.0	3.8	–	2	.5	–	500	tr	tr	17	0	83	–	Hole problems.
3/23	7452	11.5	64	42	12	4/16	9.5	3.0	–	2	.6	–	500	tr	tr	18	0	82	–	
3/24	7500	11.5	67	39	10	2/10	9.5	3.6	–	2	.7	–	500	tr	tr	18	0	82	–	Lots of shale coming over shaker
3/25	7504	11.5	82	46	10	14/26	9.5	4.2	–	2	.7	–	500	tr	tr	18	0	82	–	
3/26	7630	11.6	78	42	10	10/24	9.5	3.4	–	2	.8	–	500	tr	tr	18	0	82	–	Less sloughing shale.
3/27	7723	11.6	61	37	9	4/16	10.0	2.7	–	2	1.0	–	500	tr	tr	17	0	83	–	Hole cleaning up.
3/28	7899	11.7	61	38	10	4/16	10.5	2.1	–	2	1.0	–	500	tr	tr	17	0	83	–	Sloughing shale over shaker.
3/29	7913	11.5	60	35	12	4/16	9.0	4.3	–	2	.6	–	500	tr	tr	12	0	88	–	Still losing returns.
3/30	7913	11.5	57	40	10	4/14	9.0	3.9	–	2	.5	–	500	tr	tr	16	0	84	–	Lost approx. 250 barrels mud.
3/31	8060	11.5	62	42	12	4/18	9.5	3.6	–	2	.5	–	500	tr	tr	15	0	85	–	
4/1	8060	11.5	70	42	10	2/16	10.0	2.8	–	2	1.0	–	500	–	tr	13	0	87	–	Mixed 500 barrels new mud.
4/2	8060	11.5	100	47	14	2/20	10.0	3.2	–	2	1.0	–	500	–	tr	14	0	86	–	Raising viscosity to 100-110.
4/3	8060	11.5	96	45	10	2/20	10.0	3.6	–	2	1.0	–	560	–	tr	15	0	85	–	Reaming to fish.
4/4	8060	11.9	140	120	25	12/35	9.5	3.8	–	2	.8	–	600	–	1½	17	0	83	–	Lost about 200 barrels over shaker.
4/5	8065	11.9	118	108	38	14/35	9.0	3.7	–	2	.7	–	600	–	1½	17	0	83	–	Reaming to top of fish.
4/6	8065	11.8	110	136	28	20/36	9.0	3.8	–	2	.8	–	600	–	1½	17	0	83	–	Reaming to top of fish.
4/7	8065	12.0	147	115	45	30/50	9.0	3.8	–	2	.8	–	600	–	2	17	4	79	–	Sloughing shale coming over shaker.
4/8	8065	12.0	126	90	33	22/50	9.0	2.6	–	2	.5	–	500	–	2	17	4	79	–	Mixed 200 barrels volume.
4/9	8065	12.0	143	126	50	30/55	9.0	2.7	–	2	.5	–	500	–	2	17	4	79	–	Running in with overshot.
4/10	8065	12.0	118	110	20	18/40	9.0	2.8	–	2	.4	–	500	–	2	17	4	79	–	Trying to latch onto fish.
4/11	8065	12.0	106	86	28	12/22	9.0	2.6	–	2	.5	–	500	–	1½	17	3	80	–	Run in hole with cleanup bit.
4/12	8065	12.0	94	77	25	10/27	9.0	3.1	–	2	.4	–	500	–	1½	17	3	20	–	Plugging back.
4/13	8065	12.0	137	112	31	18/44	10.0	3.3	–	2	1.0	–	500	–	1½	17	3	80	–	Building volume.
4/14	5582	12.0	130	97	25	12/33	10.0	3.0	–	2	1.0	–	500	–	1½	17	3	80	–	Set second plug and WOC.
4/15	5787	12.0	77	77	10	6/30	10.0	3.7	–	2	.8	–	500	–	1	17	3	80	–	Kicking off.
4/16	5814	11.8	80	54	13	10/28	10.0	2.7	–	2	1.0	–	500	–	½	15	4	81	–	Kicking off.
4/17	6010	11.8	77	54	12	6/20	10.0	3.0	–	2	1.0	–	500	–	½	15	4	81	–	Drilling ahead.

DRILLING MUD RECORD

REGAN ENTERPRISES, INC.

Individual Professional Consulting Service

COMPANY Husky Oil NPR Operations STATE Alaska CASING PROGRAM: 20 inch at 505 ft.

WELL South Meade Test Well No. 1 COUNTY North Slope 13 3/8 inch at 2616 ft.

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 31 TWP 15N RNG 19W 9 5/8 inch at 8023 ft.

STOCKPOINT _____ DATE _____ ENGINEER _____ TOTAL DEPTH 9945 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec / 10 min	Strip □ Meter □	ml API	HTHP @ °F	Cake 32nd	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
4/18	6260	11.7	67	73	14	6/26	11.0	3.4	–	2	1.1	–	500	–	½	15	4	81	–	Drilling ahead.
4/19	6260	11.7	70	73	15	6/30	10.5	3.7	–	2	1.1	–	500	–	½	15	4	81	–	Testing BOP.
4/20	6465	11.5	69	67	18	10/35	10.5	3.5	–	2	1.0	–	500	–	½	14	4	82	–	Drilling ahead.
4/21	6680	11.6	64	66	10	6/22	10.0	3.2	–	2	1.0	–	500	–	½	14	4	82	–	Drilling ahead.
4/22	6890	11.5	79	73	14	8/28	10.0	2.6	–	2	1.0	–	500	–	tr	14	4	82	–	Drilling ahead.
4/23	7325	11.5	70	58	10	8/25	10.5	2.8	–	2	1.0	–	500	–	tr	14	4	82	–	Drilling ahead.
4/24	7543	11.5	74	58	17	8/30	10.0	3.8	–	2	1.0	–	500	–	tr	14	4	82	–	Drilling ahead.
4/25	7631	11.5	57	42	11	6/18	10.0	3.2	–	2	1.0	–	500	–	tr	13	4	83	–	Drilling.
4/26	7814	11.5	57	48	14	8/25	10.0	3.8	–	2	1.0	–	500	–	tr	13	4	83	–	Drilling.
4/27	7964	11.5	54	39	12	8/26	10.0	2.6	–	2	1.0	–	500	–	tr	13	3	84	–	Drilling.
4/28	8037	11.5	72	41	12	10/24	9.5	3.6	–	2	1.0	–	550	–	½	14	3	83	–	POH to log.
4/29	8037	11.5	97	73	21	10/28	9.5	3.6	–	2	.8	–	500	tr	tr	15	3	82	–	Logging.
4/30	8047	11.5	98	78	17	15/35	10.0	3.6	–	2	1.0	–	500	tr	½	15	3	82	–	POH to log. Tight hole.
5/1	8047	11.5	101	79	22	18/34	10.0	3.6	–	2	1.0	–	500	tr	½	15	3	82	–	Logging.
5/2	8047	11.5	96	78	24	15/40	9.5	3.6	–	2	.8	–	500	tr	½	15	3	82	–	Finished logging. Shot SWCs.
5/3	8047	11.5	90	70	20	15/35	9.5	3.6	–	2	.8	–	500	tr	½	15	3	82	–	Rig up to run 9 5/8" casing.
5/4	8047	11.5	90	70	20	15/35	9.5	3.6	–	2	.8	–	500	tr	tr	15	3	82	–	Finished running casing.
5/5	8047	10.5	41	20	8	3/7	9.5	6.0	–	2	.7	–	500	tr	tr	10	–	90	–	POH.
5/6	8047	10.5	49	25	11	8/18	12.5	5.4	–	2	1.3	–	400	150	tr	10	–	90	–	Ran cement bond log.
5/7	8121	10.6	52	24	12	4/16	12.0	4.8	–	2	1.3	–	400	tr	tr	10	–	90	–	Keep viscosity 50+.
5/8	8255	10.7	45	21	10	3/8	12.0	4.2	–	2	1.8	–	400	tr	¼	11	–	89	–	Drilling ahead.
5/9	8303	10.6	44	19	11	3/7	11.5	4.0	–	2	1.4	–	400	tr	tr	11	–	89	–	Drilling ahead.
5/10	8403	10.7	46	20	10	3/8	12.5	3.8	–	2	1.5	–	400	tr	tr	11	–	89	–	Drilling.
5/11	8496	10.5	42	19	9	2/6	12.0	4.4	–	2	1.5	–	400	tr	tr	10	–	90	–	Coring.
5/12	8519	10.5	43	22	10	3/9	11.0	4.8	–	2	.8	–	450	tr	tr	10	–	90	–	POH to log.
5/13	8519	10.6	58	30	17	4/16	11.5	4.4	–	2	.8	–	500	150	tr	11	–	89	–	Finished logging.
5/14	8519	12.4	47	28	12	4/26	12.0	6.4	–	2	1.4	–	450	150	tr	18	–	82	–	Laying down drill pipe.
5/15	8519	12.4	47	28	12	4/26	12.0	6.4	–	2	1.4	–	450	150	tr	18	–	82	–	Well temporarily suspended.

ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations STATE Alaska

WELL South Meade Test Well No. 1 COUNTY North Slope

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 31 TWP 15N RNG 19W

STOCKPOINT DATE ENGINEER Jim Lary

CASING PROGRAM: 20 inch at 505 ft.
13 3/8 inch at 2616 ft.
9 5/8 inch at 8023 ft.

TOTAL DEPTH 9945 ft.

DATE 1978-1979	DEPTH feet	WEIGHT lb/gal	VISCOSITY Sec API @ °F	VISCOSITY PV @ °F	Yp	GELS 10 sec/10 min	pH Strip ○ Meter ○	FILTRATION ml API	FILTRATION MTHP ? °F	FILTRATE ANALYSIS Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	SAND %	RETORT Solids %	RETORT Oil %	RETORT Water %	CEC Mud, me/ml	REMARKS AND TREATMENT
12/1		10.3	45	15	12	8/15	8.5	20	-	2	.1		200	0	0	7	0	93	-	Building mud for re-entry.
12/2		10.6	48	22	16	4/15	8.5	20	-	2	.1		200	0	0	8	0	92	-	Nipple up and test BOP.
12/2		10.6	45	24	18	3/16	8.5	20	-	2	.1		200	0	0	7	0	93	-	Nipple up and test BOP.
12/3		10.5	43	22	16	3/14	8.5	20	-	2	.1		200	0	0	8	0	92	-	Testing BOP.
12/4		10.5	50	26	20	4/18	8.5	20	-	2	.1		200	0	0	8	0	92	-	Picking up BHA
12/4		10.0	40	16	12	3/9	8.5	20	-	2	.1		200	0	0	7	0	93	-	RIH. Circulated out casing pk.
12/5		10.4	55	28	18	5/16	9.5	8	-	2	.3		200	60	tr	11	0	89	-	
12/5		10.1	41	18	7	3/6	8.5	9.5	-	2	.3		200	60	0	10	0	90	-	
12/6		10.5	37	18	4	2/4	10.5	8	-	2	-		200	tr	tr	11	0	89	-	RIH, drilling cement plug 7656'.
12/6	8085	10.2	38	14	6	2/3	9.0	7.4	-	2	-		200	tr	tr	10	0	90	-	Drilling 2d plug 7759'-8085'.
12/7	8085	10.6	88	55	30	6/28	11.0	4.0	-	2	-		200	tr	½	11	0	89	-	
12/7	8530	10.7	73	48	23	7/29	10.5	4.2	-	2	-		200	tr	½	11	0	89	-	Circ & cond @ 8520'. Slou. shale
12/8	8543	10.7	101	65	34	10/46	10.5	4.0	-	2	-		200	tr	½	12	0	88	-	Reducing vis to 50-55.
12/9		10.8	66	33	21	4/12	10.5	4.0	-	2	-		200	tr	½	12	0	88	-	Trip for bit #43. Hole in GC.
12/9	8565	10.8	57	29	27	4/10	10.5	3.6	-	2	-		200	tr	½	12	0	88	-	Trip for bit #44.
12/10	8565	10.8	62	34	21	3/8	10.5	3.8	-	2	-		200	tr	½	12	0	88	-	POH. Left 3 cones.
12/11	8577	10.6	60	32	20	3/9	10.5	4.0	-	2	-		200	tr	½	11	0	89	-	Hit bridge at 70' off bottom.
12/11	8577	10.6	52	29	15	3/6	10.0	4.2	-	2	-		200	tr	tr	11	0	89	-	
12/12		10.8	58	29	19	4/8	10.0	4.0	-	2	-		200	tr	½	11	0	89	-	Drilling to 8627'. No problems.
12/12	8627	10.8	56	28	19	3/7	10.0	4.0	-	2	-		200	tr	½	11	0	89	-	Raised weight to 10.8.
12/13		10.8	56	28	17	3/6	10.0	3.8	-	2	-		200	tr	½	11	0	89	-	Drilling ahead.
12/13	8684	10.7	54	29	20	3/7	10.0	3.6	-	2	-		200	tr	½	11	0	89	-	Drilling ahead.
12/14		10.8	57	27	16	3/6	10.0	3.6	-	2	-		200	tr	½	12	0	88	-	Drilling ahead.
12/14	8700	10.8	59	27	17	4/8	10.0	3.6	-	2	-		200	tr	½	12	0	88	-	Drilling ahead.
12/15	8770	10.8	44	20	17	3/5	10.0	3.4	-	2	-		200	tr	tr	12	0	88	-	
12/15	8770	10.8	46	20	17	3/5	10.0	3.4	-	2	-		200	tr	tr	12	0	88	-	
12/16	8770	10.8	45	21	17	3/5	10.0	3.4	-	2	-		200	tr	½	12	0	88	-	Rig down for repairs.
12/17	8770	10.8	43	19	16	3/4	10.0	3.4	-	2	-		200	tr	½	12	0	88	-	Rig down for repairs.
12/18		10.8	43	19	16	3/4	10.0	3.4	-	2	-		200	tr	½	12	0	88	-	Trip for Bit No. 49.
12/18	8782	10.7	43	19	12	2/4	9.5	3.6	-	2	-		200	tr	½	12	0	88	-	Left 3 cones in hole.
12/19	8782	10.9	52	28	15	3/6	9.5	3.8	-	2	-		200	tr	½	13	0	87	-	Trouble going in hole.
12/19	8782	10.9	53	28	16	3/7	9.5	3.8	-	2	-		200	tr	½	13	0	87	-	
12/20	8782	10.9	48	27	18	3/8	9.5	3.6	-	2	-		200	tr	½	14	0	86	-	Fishing for junk.
12/20	8782	10.9	55	27	20	4/8	9.5	3.8	-	2	-		200	tr	½	14	0	86	-	Fishing for junk.
12/21	8782	10.9	55	28	19	4/7	9.5	3.6	-	2	-		200	tr	½	14	0	86	-	Fishing for junk.

ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations STATE Alaska CASING PROGRAM: 20 inch at 505 ft.

WELL South Meade Test Well No. 1 COUNTY North Slope 13 3/8 inch at 2616 ft.

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 31 TWP 15N RNG 19W 9 5/8 inch at 8023 ft.

STOCKPOINT DATE ENGINEER Jim Lary TOTAL DEPTH 9945 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
	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	
12/21	8782	10.9	48	27	16	3/6	9.5	3.6	–	2	–		200	tr	½	14	0	86	–	
12/22	8805	10.9	54	27	17	3/7	9.5	3.6	–	2	–		200	tr	½	14	0	86	–	
12/22	8808	10.8	52	24	15	3/6	9.5	3.6	–	2	–		200	tr	½	14	0	86	–	
12/23	8807	10.9	52																	Pick up core bit & barrel. RIH.
12/23	8819	10.9	56	25	12	3/5	9.5	3.0	–	2	–		200	tr	½	15	0	85	–	Lost returns.
12/24	8819	10.9	54	25	13	3/5	9.5	4.0	–	2	–		200	tr	½	14	0	86	–	Cut core.
12/24	8874	10.9	51	26	17	3/6	9.5	4.0	–	2	–		200	tr	½	14	0	86	–	POH. Hole seems stable.
12/25	8906	10.9	55	27	19	3/7	9.5	3.6	–	2	–		200	tr	½	13	0	87	–	RIH. Drilling ahead.
12/25	8956	10.9	55	31	24	4/11	9.5	3.8	–	2	–		200	tr	½	14	0	86	–	Drilling ahead.
12/26	9015	10.9	52	30	20	4/9	10.0	4.0	–	2	–		200	tr	½	14	0	86	–	Drilling ahead. Building volume.
12/26	9040	10.9	54	32	21	4/6	10.0	4.0	–	2	–		200	tr	½	14	0	86	–	POH to run core.
12/27	9092	10.9	58	32	23	3/10	10.0	3.8	–	2	.4		200	tr	½	14	0	86	–	Drilling ahead.
12/28	9193	10.9	52	32	18	3/9	9.5	4.0	–	2	.4		200	tr	½	14	0	86	–	
12/29	9268	10.9	56	33	23	4/10	9.0	4.2	–	2	.1		200	tr	tr	14	0	86	–	Reamed 30 feet to bottom.
12/30	9307	10.9	54	33	21	4/9	9.5	3.8	–	2	.2		200	tr	½	14	0	86	–	
1/1	9340	10.9	50	30	19	3/7	10.0	4.0	–	2	.3		200	tr	½	15	0	85	–	
1/1	9396	10.9	52	32	20	4/5	9.5	4.2	–	2	.2		200	tr	½	15	0	85	–	Drilling ahead.
1/2	9410	10.9	53	33	19	4/7	9.5	4.2	–	2	.2		200	tr	½	15	0	85	–	Drilling ahead.
1/2	9460	10.9	48	31	18	4/6	9.5	4.2	–	2	.2		300	tr	½	15	0	85	–	Drilling ahead.
1/3	9528	10.9	49	32	18	4/6	9.5	4.2	–	2	–		200	tr	½	15	0	85	–	Drilling ahead.
1/3	9528	10.9	53	32	19	4/8	9.5	4.2	–	2	–		200	tr	½	15	0	85	–	
1/4	9540	10.9	51	31	17	4/6	9.5	4.0	–	2	–		200	tr	½	15	0	85	–	Core bit would not go. POH.
1/4	9540	10.9	50	31	18	4/6	9.5	4.0	–	2	–		200	tr	½	15	0	85	–	
1/5	9540	10.9	53	27	18	3/5	9.5	3.6	–	2	–		200	tr	½	15	0	85	–	Reamed to 9540'. Short trip.
1/5	9540	10.9	50	26	18	3/5	9.5	3.6	–	2	–		200	tr	½	15	0	85	–	POH. Hole stable.
1/6	9557	10.9	50	28	18	3/5	9.5	3.4	–	2	–		200	tr	½	15	0	85	–	Drilled to 9557'. POH.
1/6	9570	10.9	50	26	16	3/7	9.5	3.8	–	2	–		200	tr	½	15	0	85	–	RIH. 10 feet fill. Hole in GC.
1/7	9610	10.9	51	27	18	3/7	9.5	3.8	–	2	–		200	tr	½	15	0	85	–	Made short trip. Hole in GC.
1/7	9635	10.9	50	27	18	3/6	9.5	3.8	–	2	–		200	tr	½	15	0	85	–	Drilling ahead.
1/8	9664	10.9	50	28	18	3/7	9.5	3.8	–	2	–		200	tr	½	15	0	85	–	
1/8	9664	10.9	52	28	18	3/7	9.5	3.8	–	2	–		200	tr	½	15	0	85	–	Pickup CB. Hit bridge.
1/9	9678	10.9	54	28	21	4/6	9.0	3.6	–	2	–		300	tr	½	15	0	85	–	Did not get to bottom w/barrel.
1/9	9685	10.9	53	28	20	4/6	9.5	3.6	–	2	–		300	tr	½	15	0	85	–	
1/10	9749	11.0	60	33	26	5/12	10.5	3.8	–	2	–		400	tr	½	16	0	84	–	Drilling to 9749'.
1/10	9769	10.9	62	32	27	6/14	10.5	3.8	–	2	–		400	tr	½	15	0	85	–	Drilling to 9769'.

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ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations STATE Alaska CASING PROGRAM: 20 inch at 505 ft.

WELL South Meade Test Well No. 1 COUNTY North Slope 13 3/8 inch at 2616 ft.

CONTRACTOR Nabors Alaska Drilling LOCATION NPRA SEC 31 TWP 15N RNG 19W 9 5/8 inch at 8023 ft.

STOCKPOINT DATE ENGINEER Jim Lary TOTAL DEPTH 9945 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
	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	
1/11	9788	10.9	61	32	26	6/12	10.0	4.0	–	2	–		400	tr	½	15	0	85	–	Trip for bit.
1/11	9800	10.9	64	34	27	5/11	10.0	4.2	–	2	–		400	tr	½	15	0	85	–	Drilling ahead.
1/12	–	10.9	56	27	21	4/9	10.5	4.0	–	2	–		400	tr	½	15	0	85	–	Drilling ahead.
1/12	9844	10.9	57	27	21	4/9	10.5	4.0	–	2	–		400	tr	½	15	0	85	–	Drilling ahead.
1/13	9910	10.9	50	26	20	4/8	10.5	4.0	–	2	–		400	tr	½	15	0	85	–	Drilling ahead.
1/13	9913	10.9	50	26	18	4/7	10.5	4.0	–	2	–		400	tr	½	15	0	85	–	Drilled. Tripped for bit.
1/14	9938	10.9	53	27	20	4/9	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	Drilling ahead.
1/14	9945	10.9	53	27	21	4/9	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	POH to run logs.
1/15	9945	10.9	53	27	20	4/8	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	Logging.
1/16	9945	10.9	50	26	20	4/7	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	Lost fish in hole.
1/17	9945	10.8	60	26	19	4/8	10.5	4.2	–	2	–		300	tr	½	15	0	85	–	
1/17	9945	10.8	54	26	18	4/7	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	
1/18	9945	11.0	53	25	18	4/7	10.5	4.0	–	2	–		300	tr	½	15	0	85	–	Fishing.
1/19	9943	10.9	56	28	21	4/9	10.0	4.0	–	2	–		300	tr	½	15	0	85	–	Running velocity survey.
1/20	Information unavailable.																			
1/21	9943	9.5	38	12	4	0/0	10.0	–	–	–	–		300	60	tr	6	0	94	–	Plugging to abandon.

BIT RECORD

COUNTY	FIELD	STATE	SECTION	TOWNSHIP	RANGE	SPUD	DS	UNDER INTER	SET SAND STRING
North Slope Borough		Alaska	31	15N	19W				

CONTRACTOR	RIG NO	LEASE	WELL NO	COMPANY	TOOL PUSHER
Nabors Alaska Drilling	1	So. Meade Test Well 1		Husky Oil NPR Operations, Inc.	

MAKE RIG	TYPE	RIG POWER	PUMP POWER	BOILER'S NO.	BTU. HP.	PUMP NO. 1	LINER	PUMP NO. 2	LINER

DRILL PIPE	TOOL JOINT TYPE	DRILL COLLARS	OD	TD	LENGTH	MUD TYPE	SALESMAN

RUN NO.	SIZE	MAKE	TYPE	JET SIZE	SERIAL	DEPTH OUT	FEET	HOURS	FEET PER HOUR	ACCUM. HRS. ON JOINT	WT. 1000 LBS	RPM	VERTICAL DEV.	PUMP PRESSURE	PUMP OPER. ATION	SPM 1	SPM 2	MUD WT	MUD VIS.	MUD W.L.	DULL T	DULL B	DULL G	DULL OTHER	REMARKS
RR1	17 ½"	Reed	Y11J	2-15 1-14	617877	520	440	12 1/2	35.20	12½	20/30	150	½°	1000	2	50	50	9.2	50						
1	26"	Smith	HO			520	R 440	17																	
	Ran 12 Joints of 20", 133#, 8rd, K-55 casing. Shoe at 505'. Cemented with Dowell Arctic Set II. 259 barrels slurry.																								
RR1	17 ½"	Reed	Y11J	2-15 1-14	617877	1300	785	11	71.36	23½	35	150	1°	1750	2	50	42	9.5	42	10.2	6	4	G		
2	17 ½"	Reed	Y11J	2-15 1-14	618243	2090	790	25	31.60	48½	35/45	150	1½°	1200	1	50		10.4	45	12	3	6	0		
3	17 ½"	Sec	S3S	2-15 1-14	SS4085	2625	535	25	21.40	73½	40	150	½°	1200	1	60		10	84	9.8	3	3	0		
	Ran 68 Joints of 13 3/8" 72#, S95 Buttress Casing. Shoe @ 2616'; float collar at 2540'. Cemented with 3600 sacks of Dowell Arctic Set II. 15.1 ppg in; 14.8 ppg out.																								
4	12 ¼"	Sec	S3SJ	1-13 2-12	687151	3010	385	17 1/4	22.32	90 3/4	45	140	½°	2000	1	60		9.5	45	12.2	3	3	1		
CH1	15/32	ACC			14131	3020	10	1		91 3/4	20	60		1000	1	44		9.5	45	12.2					
5	12 ¼"	Sec	S3SJ	2-12 1-13	693335	4010	1000	22 1/2	44.44	112 1/4	45	140	1½°	2000		60		9.7	54	10.3					
6	12 ¼"	Sec	S3SJ	2-13 1-12	692720	4652	642	26 3/4	24.00	139	45	140	1½°	2100	1	60		11	56	9.2	3	6	1/8		
7	12 ¼"	Sec	S3SJ	3-13	693227	4950	298	23 1/2	12.68	162 1/2	45	140	½°	2000	1	58		10.5	48	3.4	6	7	0		
CH1	15/32	ACC			14131	4961	11	4 1/2	2.44	167	20	60		1000	1	45		10.5	46	3.4	G	O	O	D	
8	12 ¼"	Smith	DSJ	3-12	834FJ	5341	491	24	20.46	191	45	120	3/4°	2000	1	52		10.5	48	4.1	5	7	0		
9	12 ¼"	Reed	Y11J	1-12 2-13	614442	5703	362	25	14.48	216	50	120		2000	1	52		10.5	58	3.5	6	8	1/8		
10	12 ¼"	Sec	S3SJ	3-12	781056	5717	9	1/2	18	216 1/2	50	110		2000	1	52		10.5	52	3.6					
11	12 ¼"	Sec	S3SJ	3-12	781398	5992	280	15 1/2	18	232	60	110		2000	1	52		10.5	60	4.1	5	7	1/4		
CH1	15/32	ACC				6002	10	3	3.33	235	15	60		1200	1	45		10.4	58	3.4	G	O	O	D	
12	12 ¼"	Sec	S3SJ	3-12	687163	6221	219	22	9.95	257	65	110		2200	1	57		10.5	54	4.1	5	7	2		
13	12 ¼"	Sec	S3SJ	3-12	780017	6276	55	3	18.33	260	65	110		2200	1	57		10.5	56	0.8	4	7	1		
14	12 ¼"	Sec	S3SJ	2-13 1-14	693373	6603	327	21	15.37	281	60	120		1900	1	56		10.6	50	2.6	6	8	0		
15	12 ¼"	HTC	OSC3J	2-13 1-14	S2596	6745	142	12	11.83	293	50	100		2000	1	56		11	62	3.8	6	7	0		
16	12 ¼"	HTC	X1G	2-13 1-14	ZA985	7299	554	30	18	323	55	120		2000	1	58		11.3	64	3.8	5	4	1		

BIT RECORD

SHEET 2 OF 4

COUNTY	FIELD	STATE	SECTION	TOWNSHIP	RANGE	SPUD	OS	UNDER INTER	SET SAND STRING
North Slope Borough		Alaska	31	15N	19W				

CONTRACTOR	RIG NO	LEASE	WELL NO	COMPANY	TOOL PUSHER
Nabors Alaska Drilling	1	So. Meade Test Well	1	Husky Oil NPR Operations, Inc.	

MAKE RIG | TYPE | RIG POWER | PUMP POWER | BOILERS NO. | RTD. HP. | PUMP NO. 1 | LINER | PUMP NO. 2 | LINER

DRILL PIPE | TOOL JOINT TYPE | DRILL COLLARS | OD | ID | LENGTH | MUD TYPE | SALESMAN

Run No.	Size	Make	Type	Jet Size	Serial	Depth Out	Feet	Hours	Feet per Hour	Accum. Rot. Hours	Wt. 1000 Lbs	RPM	Vert. Dev.	Pump Pressure	Pump Operation	SPM 1	SPM 2	Mud Wt	Mud Vis	Mud W.L.	Dull T	Dull B	Dull G	Other	Remarks
17	12 ¼"	Sec	S4TJ	3-14	770308	7500	201	19 ½	10.31	342 1/2	55	120		2100	1	58		11.5	80	4.2	6	6	0		
CH2	18 15/16	ACC			13164	7504	4	3 ½	1.14	346	20	65	½°	1000	1	38		11.5	82	4.2					
18	12 ¼"	HTC	XIG	3-14	Z8350	7723	223	25 ½	8.75	371 1/2	60	120	½°	2000	1	58		11.6	61	2.7	6	3	1/16		
19	12 ¼"	HTC	XIG	3-14	Z8864	7913	190	17 ½	10.86	389	60	120		2000	1	58		11.5	57	3.5	5	6	1/4		
20	12 ¼"	Smith	DGHJ	3-14	DC787	8065	152	19 ½	7.79	408 1/2	65	120	1°	2000	1	58		11.5	70	2.8	8	7	1/4		
21	12 ¼"	HTC	XIG	3-14	FB030		Lost in hole on fish.																		
22	12 ¼"	Smith	DGHJ	3-14	DC784		Wash and ream 1332'. Fishing.														1	3	0		
23	12 ¼"	Sec	S4T	3-16	770311		Wash and ream 1430'. Top of fish: 5965'.														8	8	0		
RR22	12 ¼"	Smith	DGHJ	Out	DC789		Clean out to top of fish.																		
24	12 ¼"	Sec	S4TJ	3-16	770310		Run on top of fish.														4	4	0		
Abandoned fish 4/12/78. Set cement plug to drill around.																									
RR22	12 ¼"	Smith	DGHJ	3-14	DC789		Run on cement plug. Plugged back to 5761'.																		
25	12 ¼"	HTC	XIG	2-16 1-24	AL351	5791	30	9	3.33	417 1/2	10		3/4	1600	1	50		11.8	80	2.7	4	4	1		
26	12 ¼"	HTC	XIG	2-16 1-24	EB159	5814	23	9 ½	2.42	427	10			1600		50		11.8	80	2.7	4	4	1		
27	12 ¼"	HTC	XIG	3-14	FB100	5910	96	5	19.20	432	60	110	2°	2000	1	60		11.8	77	3	2	2	1		
28	12 ¼"	Smith	SDS	3-14	784NJ	6260	350	25 ½	13.73	457 1/2	55	110	3½°	2000	1	60		11.7	67	3.4	7	7	1		
29	12 ¼"	Smith	SDS	3-14	966NK	6480	220	19 ¼	11.28	476 3/4	55	110	2°	2000	1	60		11.6	64	3.2	6	7	0		
30	12 ¼"	Smith	SDT	3-14	6160B	6725	245	18	13.61	495 3/4	55	110	1¼°	2000	1	50		11.5	79	2.6	6	5	1/4		
31	12 ¼"	HTC	XDG	3-14	JT785	7351	626	30 ½	20.52	525 1/4	55	120	½°	2000	1	60		11.5	74	3.8	6	6	1/8		
32	12 ¼"	HTC	XDG	3-14	JT194	7631	280	22	12.73	547 1/4	60	115	1½°	2000	1	60		11.5	57	3.2	7	2	0		
33	12 ¼"	Sec	S44	3-14	628224	7940	309	27 ½	11.24	574 3/4	55	120	½°	2000	1	60		11.5	54	2.6	5	7	0		
34	12 ¼"	Sec	S44	3-14	591823	8037	97	14 ¼	6.81	589	60	120		2000	1	60		11.5	72	3.4	6	6	0		
35	12 ¼"	Sec	S4T	3-14	513746	8047	10	1 ¼	8	590 1/4	50	120		1800	1	58		11.5	98	3.6					
	Ran 198 joints of 9 5/8 S-95 casing. Cemented with 1500 sacks of Class G 0.2% HR-7, 1% CFR-2.																								

BIT RECORD

COUNTY	FIELD	STATE	SECTION	TOWNSHIP	RANGE	SPUD	TD	UNDER INTER	SET SAND STRING
North Slope Borough		Alaska	31	15N	19W				

CONTRACTOR	RIG NO	LEASE	WELL NO	COMPANY	TOOL PUSHER
Nabors Alaska Drilling	1	So. Meade Test WELL	1	Husky Oil NPR Operations, Inc.	

MAKE RIG	TYPE	RIG POWER	PUMP POWER	BOILER S.NO. RTD. HP	PUMP NO 1	LINER	PUMP NO. 2	LINER

DRILL PIPE	TOOL JOINT TYPE	DRILL COLLARS	OD	TD	LENGTH	MUD TYPE	SALESMAN

BIT NO	SIZE	MAKE	TYPE	JET SIZE	SERIAL	DEPTH OUT	FEET	HOURS	FEET PER HOUR	RECOM WOB 1000 LBS	WT 1000 LBS	RPM	PUMP PRESS PSI	PUMP OPEN ACTION	SPM 1	SPM 2	MUD WT	MUD VIS	MUD PH	DULL T	DULL B	DULL G	DULL OTHER	REMARKS
36	8 ½"	HTC	OSC1G	3-10	EE236	8078	31	2 ½	12.40	592 3/4	45	110	2000	1	43		10.6	52	4.8	7	7	0		
37	8 ½"	HTC	XDV	2-10 1-9	JX103	8122	44	4 ½	9.78	597 1/4	45	110	2000	1	43		10.6	52	4.8	8	8	0		
38	8 ½"	HTC	X1G	2-10 1-9	SB646	8272	150	16 3/4	8.96	614	35	120	2200	1	43		10.6	44	4	5	5	0		
39	8 ½"	Reed	F-P5I	3-9	836098	8332	60	16 ½	3.64	630 1/2	35	110	2200	1	41		10.7	46	3.8	1	1	0		
40	8 ½"	HTC	X1G	3-9	SC007	8488	156	19 ½	8.00	650	35	110	2200	1	41		10.5	42	4.4	6	5	0		
HO2	8 ½"	Chris	MC20		75-3369	8519	30	11			20	65	1000	1	43		10.5	43	4.8	P	O	O	R	
RR3B	8 ½"	HTC	X1G		SB646	8519	Reamed core hole.				Suspended		operation		for	present.								
41	8 ½"	HTC	X1G	Out	H6532	8530	11	3 ½	3.14	664 1/2	35	90	1000	1	50		10.7	101	4	5	4	0		
42	8 ½"	HTC	X1G	3-10	RP182	8558	28	7 ¼	4.00	671 3/4	35	90	2300	1	50		10.8	57	3.6	8	8	1/2		
43	8 ½"	HTC	X1G	3-9	TC216	8565	7	4 ½	1.56	676 1/4	40	90	2300	1	50		10.8	57	3.6					
44	8 ½"	Smith	W4		506KS	8577	12	3 ½	3.43	679 3/4	35	90	1700	1	45		10.6	52	4.2	2	4	0		
45	8 ½"	HTC	X1G	3-10	RN248	8627	50	9 ½"	5.26	689 1/4	40	90	1700	1	45		10.8	56	4	7	6	1/4		
46	8 ½"	Smith	F-2	3-9	B5560	8690	63	26	2.42	715 1/4	40	70	2000	1	50		10.8	59	3.6	8	4	1		
47	8 ½"	Reed	S31G	1-9 2-10	320692	8770	80	21	3.81	736 1/4	45	70	2000	1	45		10.8	46	3.4					
48	8 ½"	HTC	XDV	3-9	JX042	8782	12	6 ½	1.85	742 3/4	40	90	1850	1	42		10.7	43	3.6	8	8			
49	8 ½"	Smith	W4		696KX	8782																		
50	8 ½"	Reed	S31G	3-9	320679	8807	25	3 ½	7.14	746	43	70	2600	1	52		10.8	52	3.6	5	2			
HO3	8 ½"	Chris	MC20I	Dia	8W1701	8808	1	½																
51	8 ½"	HTC	J33	3-11	PH853	8819	12	1 ½	9.60	741 1/4	40	40	700	1	36		10.9	51	4	1	1	0		
CH3	8 ½"	Chris	MC20I	Dia	8W1701	8874	55	12	4.58	759 1/4	15	45	700	1	36		10.9	51	4	G	O	O	D	
51RR	8 ½"	HTC	J33	3-9	PH853	9040	166	35	6.64	794 1/4	43	45	1850	1	43		10.9	54	4	5	5	0		
	8 ½"	Chris	MC20I	Dia	8W1701	9059	19	7	2.71	180 1/4	20	60	700	1	36		10.9	58	3.8	G	O	O	D	
52	8 ½"	Smith	F-2	3-9	ZF547	9193	134	26 ½	5.06	827 3/4	40/45	35/45	2000	1	46	3 ½	10.9	52	4	8	6	1/4		
53	8 ½"	HTC	J33	3-9	PH864	9305	112	25 3/4	4.35	853 1/2	40/45	45	1900	1	46	3 3/4	9	56	4.2	8	7	1/4		

BIT RECORD

COUNTY	FIELD	STATE	SECTION	TOWNSHIP	RANGE	SPUD	DS	UNDER INTER	SET SAND STRING
North Slope Borough		Alaska	31	15N	19W				

CONTRACTOR	RIG NO	LEASE	WELL NO	COMPANY	TOOL PUSHER
Nabors Alaska Drilling	1	Sq. Meade Test Well	1	Husky Oil NPR Operations, Inc	

MAKE RIG	TYPE	RIG POWER	PUMP POWER	BOILER'S H.P.	PUMP NO. 1	LINER	PUMP NO. 2	LINER

DRILL PIPE	TOOL JOINT TYPE	DRILL COLLARS O.D.	I.D.	LENGTH	MUD TYPE	SALESMAN

RUN NO.	SIZE	MAKE	TYPE	JET SIZE	SERIAL	DEPTH OUT	FEET	HOURS	FEET PER HOUR	REVOLUTIONS	WT. 1000 LBS.	RPM	VERTICAL DEV.	PUMP PRESSURE	PUMP OPEN. ATTAIN	SPM 1	SPM 2	MUD WT.	MUD VIS.	MUD W.L.	DULL T	DULL B	DULL G	DULL OTHER	REMARKS
HO3	8 ½"	Chris	MC201	Dia	8W1701	9328	23	10 ½	2.19	864	20/30	60		1500	1	38		10.9	50	4.2	F	A	I R		
54	8 ½"	HTC	J33	3-9	PH865	9357	29	7 ½	3.87	871 1/2	20/45	35/40		1900	1	45		10.9	52	4.2	8	8	1/4		
55	8 ½"	HTC	J44	3-9	ZT079	9412	55	11 ½	4.78	883	20/45	35/45		2000	1	32		10.9	48	4.2	8	8	1/4		
56	8 ½"	HTC	J44	3-9	RB382	9528	116	18 3/4	6.19	901 3/4	40/45	40	2 ½	2000	1	43		10.9	53	4.2	8	8	3/4		
57	8 ½"	HTC	J44	3-9	RB379	9540	12	3	4.00	904 3/4	45	35/45		2000	1	43		10.9	53	4.2	6	4	1/4		
CH3	8 ½"	Chris	MC201	Dia	8W701	9540	Hit bridge. Had to pull out bridge 9212'. Reamed 9325'.																		
58	8 ½"	Reed	S13G	3-11	320680	9540	Reamed 9325' to 9540'														3	4	1/4		
59	8 ½"	HTC	J55	3-9	LA140	9557	17	10 ½	1.62	91 3/4	30/40	35/50	3 3/4	1700	1	42		10.9	50	3.8	1	1	0		
60	8 ½"	HTC	J33	3-9	ZW752	9664	107	34 3/4	3.08	950	35/40	35/50		1700	1	42					2	4	0		
CH4	8 ½"	Chris	MC2RS	Dia	7504011	Hit bridge.	Reamed 9285' to 9560'.							Pulled out to run bit.											
61	8 ½"	HTC	J22	3-9	KH204	9784	120	35 1/4	3.38	985 1/4	35/40	40		1650	1	42		10.9	64	4.2	8	4	1/8		
62	8 ½"	HTC	J33	3-9	PH862	9884	110	26 1/4	4.19	1011 1/2	45	45		1600	1	45		10.9	57	4	3	4	1/4		
63	8 ½"	HTC	J22	3-9	KH231	9913	29	9 1/4	3.14	1020 3/4	40	45		1600	1	45		10.9	50	4	3	3	1		
RR59	8 ½"	HTC	J55	3-9	LA140	9945	32	12 1/4	2.61	1033	40/45	40/45		1750	1	43		10.9	53	4	2	3	0		
64	8 ½"	Reed	S31G	3-11	330674	9945	Clean out to core.																		
HO5	7 5/8"	Chris	MC23	Lost	In hole																				
65	8 ½"	Smith	W-4		094KS	Clean out to top of fish.																			

INTRODUCTION

After the 1976 drilling season, casing requirements were reviewed and design of casing strings 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 are additional requirements 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.

South Meade's programmed casing design was as follows: 30" conductor at 80', 20" deep conductor at 500', 13-3/8" surface casing at 2600', 9-5/8" casing at 8500', and 7" liner if necessary for testing at TD of 9825'. Casing was run as follows: 30" at 80', 20" at 505', 13-3/8" at 2616', 9-5/8" at 8023'. The 9-5/8" was run high to control tight hole and sloughing shale problems encountered in the Kingak Formation. Casing Tally Summaries, Casing Tallies, and Casing Cementing Reports are included in this report.

CASING TALLY
SUMMARY SHEET

DATE: February 10, 1978

FIELD National Petroleum Reserve in AK LEASE & WELL NO. South Meade Test Well No. 1 TALLY FOR 20 " CASING

SUMMARY OF PAGE MEASUREMENTS

	NO OF JOINTS	FEET	00'S
PAGE 1	16	655	41
PAGE 2			
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	16	655	41

SUMMARY OF DEPTH CALCULATIONS

		NO OF JOINTS	FOOTAGE FEET	00'S
1	TOTAL CASING ON RACKS	16	655	41
2	LESS CASING OUTJUTS NOS	4	149	61
3	TOTAL (1 - 2)	12	2	10
4	SHOE LENGTH			
5	FLOAT LENGTH			
6	MISCELLANEOUS EQUIPMENT LENGTH			
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		507	90
8	LESS WELL DEPTH (KB REFERENCE)			
9	"UP" ON LANDING JOINT		2	20
	Depth Landed		505	70 KB

Weight indicator before cementing: _____, after slack-off: _____, inches slacked off _____.

SUMMARY OF STRING AS RUN

WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW USED	LOCATION IN STRING	NO OF JOINTS	FOOTAGE	INTERVAL
133	K-55	8RD		New	JT NO 1 THRU NO 12	12	505	0 505
					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 1

CASING TALLY

DATE: February 10, 1978

FIELD NPRA LEASE & WELL NO. So. Meade Test Well #1 TALLY FOR 20" CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	2	10			
2	43	40			
3	42	05			
4	41	23			
5	42	45			
6	41	42			
7	41	23			
8	43	25			
9	40	94			
0	43	05			
TOTAL A	381	12			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	35	45			
2	34	73			
3	37	53			
4	41	82			
5					
6					
7					
8					
9					
0					
TOTAL D	149	61			

1	41	33			
2	42	50			
3	42	95			
4					
5					
6					
7					
8					
9					
0					
TOTAL B	126	78			

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	381	12		
TOTAL B	126	78		
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	507	90		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well So. Meade Test Well No.1 Date February 10, 1978

Size Casing 20" Setting Depth 505' Top (liner hanger) _____

Hole Size 26" " Mud Gradient 8.5/Gal Viscosity 54

Casing Equipment

_____ shoe, _____ float located _____ feet

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

and _____ feet.

_____ centralizers located _____

_____

One _____ scratchers located 10 feet above shoe and one on next three

casing collars.

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	1575	Dowell	Arctic Set		15.2-15.3	259
(2)						

Cement through (DV, FO) Collar at _____ feet

	No Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)						
(4)						

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

Circulated 480 bbls @ 8 BPM, pumped in 20 ~~(cu. ft.)~~, (barrels) _____

_____ prewash, used bottom plug (yes, no), mixed cement (1) above 80

minutes, cement (2) above _____ minutes, top plug (yes, no) displaced with

9 ~~(cu. ft.)~~, (barrels) in 3 minutes at rate of 3 BPM, CFM,

(Bumped plug) ~~(Did not bump plug)~~. Final Pressure 1500. Reciprocated

pipe 0 feet while (mixing) and (displacing) cement. Displacing time 3

minutes. Had full circulation (full, partial,

none, etc.). Completed job at 3:38 PM a.m., p.m.

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

Opened (DV, FO) at _____ a.m., p.m., circulated _____ bbls @ _____ BPM, pumped in

_____ (cu. ft.), (barrels) _____ prewash, mixed cement (3) above

_____ minutes, cement (4) above _____ minutes, dropped closing plug, dis

placed with _____ (cu. ft.), (barrels) in _____ minutes at rate of _____

_____ BPM, CFM. (Bumped plug) (Did not bump plug). Final Pressure _____.

Displacing time _____ minutes. Had _____ circulation

(full, partial, none, etc.)

Remarks (Third Stage Job, etc.)

_____

_____

_____

_____

_____

B. L. Clanton

Foreman

CASING TALLY
SUMMARY SHEET

DATE: February 19, 1978

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

SUMMARY OF PAGE MEASUREMENTS

	NO OF JOINTS	FEET	00'S
PAGE 1	73	2809	54
PAGE 2			
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL			

SUMMARY OF DEPTH CALCULATIONS

		NO OF JOINTS	FOOTAGE FEET	00'S
1	TOTAL CASING ON RACKS	73	2809	54
2	LESS CASING OUT OTS NOS	5	197	41
3	TOTAL (1 - 2)		2612	13
4	SHOE LENGTH		1	88
5	FLOAT LENGTH		2	09
6	MISCELLANEOUS EQUIPMENT LENGTH			
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		2616	10
8	LESS WELL DEPTH (KB REFERENCE)			
9	"UP" ON LANDING JOINT KB Measurement		1	--

Weight indicator before cementing: 165,000 ; after slack-off: 155,000 ; 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 68	68	2612.13	0 2615.10
Dowell	Float Shoe				JT NO THRU NO		1.88	2613.22 2615.10
Dowell	Duplex Float Collar				JT NO THRU NO		2.09	2540
					JT NO THRU NO			
					JT NO THRU NO			
					JT NO THRU NO			
					JT NO THRU NO			

PAGE 1 OF 2

CASING TALLY

DATE: February 19, 1978

FIELD NPRA LEASE & WELL NO. So. Meade Test Well No.1 TALLY FOR 13 3/8" CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT 00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT 00'S	WT GR.
Shoe 1	1	88			
2	35	78			
3	35	35			
Collar4	2	09			
5	42	59			
6	41	26			
7	36	45			
8	35	40			
9	40	56			
0	42	00			
TOTAL A	313	36			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT 00'S	WT GR
1	36	98			
2	40	25			
3	38	10			
4	34	85			
5	40	10			
6	38	42			
7	37	93			
8	36	00			
9	36	93			
0	38	41			
TOTAL D	377	97			

1	35	73			
2	41	23			
3	35	57			
4	36	70			
5	37	28			
6	36	88			
7	35	05			
8	41	40			
9	42	55			
0	41	83			
TOTAL B	384	22			

1	40	10			
2	37	32			
3	35	30			
4	38	18			
5	42	79			
6	35	02			
7	41	64			
8	41	41			
9	35	10			
0	41	82			
TOTAL E	388	68			

1	37	98			
2	39	51			
3	35	85			
4	37	50			
5	33	08			
6	36	29			
7	36	40			
8	42	30			
9	36	56			
0	42	13			
TOTAL C	377	60			

TOTAL A	313	36		
TOTAL B	384	22		
TOTAL C	377	60		
TOTAL D	377	97		
TOTAL E	388	68		
TOTAL PAGE	1841	83		

PAGE 2 OF 2

CASING TALLY

DATE: February 19, 1978

FIELD NPRA LEASE & WELL NO. So. Meade Test Well No.1 TALLY FOR 13 3/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT 00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT 00'S	WT GR.
1	41	59			
2	41	08			
3	37	49			
4	37	70			
5	36	10			
6	35	01			
7	39	67			
8	36	71			
9	36	48			
0	38	80			
TOTAL A	380	63			

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

1	41	95			
2	39	10			
3	38	45			
4	40	75			
5	42	00			
6	42	08			
7	39	77			
8	36	15			
9	31	63			
0	41	76			
TOTAL B	393	64			

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	380	63		
TOTAL B	393	64		
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	774	27		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well So. Meade Test Well No.1 Date February 19, 1978

Size Casing 13 3/8" Setting Depth 2615.10 KB Top (liner hanger) _____

Hole Size 17 1/2 " Mud Gradient 10.2/Cal Viscosity 84

Casing Equipment

Dowell float shoe, _____ float located 2540 feet

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

and _____ feet

_____ centralizers located 10 feet above shoe, top of first joint, first two collars above float collar, and every other joint through twelfth joint.

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	3600	Dowell	Arctic Set II	-	15.1	625
(2)						

Cement through (DV, FO) Collar at _____ feet

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)						
(4)						

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

Circulated 691 bbls @ 4.5/5 BPM, pumped in 20 (cu. ft.), (barrels) water prewash, used bottom plug (~~yes~~, no), mixed cement (1) above 175 minutes, cement (2) above _____ minutes, top plug (~~yes~~, no) displaced with 46 (~~cu. ft.~~), (barrels) in 20 minutes at rate of 2.5 BPM, ~~CFM~~, (Bumped plug) (Did not bump plug). Final Pressure 800 psi. Reciprocated pipe _____ feet while (mixing) and (displacing) cement. Displacing time _____ minutes. Had full circulation (full, partial, none, etc.). Completed job at 6:00 a.m., ~~p.m.~~

Cementing Procedure (through IDV, FO) at _____ feet) (cross out where necessary)

Opened IDV, FO) at _____ a.m., p.m., circulated _____ bbls @ _____ BPM, pumped in _____ (cu. ft.), (barrels) _____ prewash, mixed cement (3) above _____ minutes, cement (4) above _____ minutes, dropped closing plug, displaced with _____ (cu. ft.), (barrels) in _____ minutes at rate of _____ BPM, CFM. (Bumped plug) (Did not bump plug). Final Pressure _____ Displacing time _____ minutes Had _____ circulation (full, partial, none, etc.)

Remarks (Third Stage Job, etc.)

_____

_____

_____

_____

_____

J. E. Rider
Foreman

CASING TALLY
SUMMARY SHEET

DATE: May 3, 1978

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

SUMMARY OF PAGE MEASUREMENTS

	NO OF JOINTS	FEET	00'S
PAGE 1	50	1925	97
PAGE 2	50	2017	48
PAGE 3	50	1979	55
PAGE 4	50	2037	22
PAGE 5	3	87	77
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL		8047	99

SUMMARY OF DEPTH CALCULATIONS

		NO OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	203	8047	99
2	LESS CASING OUT OTS NOS	1	-	-
3	TOTAL (1 - 2)		8047	99
4	SHOE LENGTH		1	77
5	FLOAT LENGTH		1	62
6	MISCELLANEOUS EQUIPMENT LENGTH		10	55
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		8047	99
8	LESS WELL DEPTH (KB REFERENCE)		18	30
9	"UP" ON LANDING JOINT		24	92

Weight indicator before cementing: 420,000 , after slack-off: 0 ; inches slacked off 12"

SUMMARY OF STRING AS RUN

WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW USED	LOCATION IN STRING	NO OF JOINTS	FOOTAGE	INTERVAL
53.5	S-95	Buttress	Algoma Armco Lone Star	New	JT NO 1 THRU NO 142	142	2369.61	2369.61 - 2365.76
					JT NO 142 THRU NO 148	6	2158.48	2158.98 - 2154.63
					JT NO THRU NO			
					JT NO THRU NO			
					JT NO THRU NO			
					JT NO THRU NO			
					JT NO THRU NO			

PAGE 1 OF 5

CASING TALLY

DATE: May 3, 1978

FIELD NPRA LEASE & WELL NO. So. Meade 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	01	77			
2	40	84			
3	42	28			
4	01	62			
5	38	71			
6	38	12			
7	42	35			
8	38	68			
9	37	28			
0	36	34			
TOTAL A	317	99			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT 00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT 00'S	WT GR
1	41	62			
2	37	32			
3	39	14			
4	39	73			
5	36	78			
6	43	10			
7	39	02			
8	40	30			
9	39	47			
0	38	12			
TOTAL D	394	60			

1	42	21			
2	39	08			
3	41	76			
4	41	92			
5	37	55			
6	39	32			
7	41	19			
8	41	23			
9	39	96			
0	41	70			
TOTAL B	405	92			

1	42	24			
2	40	30			
3	43	32			
4	37	52			
5	42	28			
6	41	40			
7	37	84			
8	41	85			
9	41	47			
0	37	18			
TOTAL E	405	40			

1	40	91			
2	41	66			
3	42	95			
4	42	70			
5	41	70			
6	36	80			
7	39	35			
8	34	00			
9	42	34			
0	39	65			
TOTAL C	402	06			

TOTAL A	317	99		
TOTAL B	405	92		
TOTAL C	402	06		
TOTAL D	394	60		
TOTAL E	405	40		
TOTAL PAGE	1925	97		

PAGE 2 OF 5 **CASING TALLY** DATE: May 3, 1978

FIELD NPRA LEASE & WELL NO. S. Meade 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	41	60			
2	41	78			
3	42	52			
4	40	95			
5	38	65			
6	39	74			
7	40	48			
8	42	00			
9	39	44			
0	42	43			
TOTAL A	409	59			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	43	78			
2	41	44			
3	40	74			
4	41	13			
5	37	92			
6	36	65			
7	42	65			
8	39	25			
9	42	06			
0	37	60			
TOTAL D	403	22			

1	44	56			
2	36	08			
3	34	25			
4	42	78			
5	34	20			
6	41	00			
7	43	00			
8	41	46			
9	37	43			
0	42	47			
TOTAL B	397	23			

1	43	93			
2	43	58			
3	38	00			
4	41	96			
5	42	00			
6	38	10			
7	41	00			
8	34	36			
9	41	75			
0	39	60			
TOTAL E	404	48			

1	40	72			
2	40	88			
3	41	23			
4	41	55			
5	35	38			
6	43	98			
7	38	02			
8	39	00			
9	40	62			
0	41	38			
TOTAL C	402	96			

TOTAL A	409	59		
TOTAL B	397	23		
TOTAL C	402	96		
TOTAL D	403	22		
TOTAL E	404	48		
TOTAL PAGE	2017	48		

PAGE 3 OF 5 **CASING TALLY** DATE: May 3, 1978

FIELD NPRA LEASE & WELL NO. So. Meade 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	43	28			
3	43	10			
4	39	60			
5	40	78			
6	41	90			
7	39	52			
8	43	88			
9	36	40			
0	43	35			
TOTAL A	414	04			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	40	55			
2	42	39			
3	36	90			
4	42	00			
5	41	98			
6	38	88			
7	38	98			
8	43	38			
9	39	44			
0	40	98			
TOTAL D	405	48			

1	38	19			
2	41	48			
3	42	50			
4	42	86			
5	42	78			
6	43	70			
7	39	19			
8	41	98			
9	44	62			
0	38	21			
TOTAL B	415	51			

1	40	90			
2	41	18			
3	03	85			
4	44	42			
5	42	17			
6	43	25			
7	35	30			
8	42	14			
9	03	85			
0	42	38			
TOTAL E	339	44			

1	44	38			
2	39	09			
3	39	56			
4	40	32			
5	36	56			
6	41	62			
7	40	27			
8	43	35			
9	38	45			
0	41	53			
TOTAL C	405	08			

TOTAL A	414	04		
TOTAL B	415	51		
TOTAL C	405	08		
TOTAL D	405	48		
TOTAL E	339	44		
TOTAL PAGE	1979	55		

PAGE 4 OF 5 **CASING TALLY** DATE: May 3, 1978

FIELD NPRA LEASE & WELL NO. So. Meade 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	43	37			
2	41	70			
3	38	38			
4	42	22			
5	41	93			
6	41	38			
7	41	73			
8	38	93			
9	36	50			
0	38	12			
TOTAL A	404	26			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR
1	38	68			
2	38	52			
3	40	50			
4	42	59			
5	38	25			
6	41	67			
7	38	98			
8	42	92			
9	40	24			
0	42	20			
TOTAL D	404	65			

1	41	04			
2	43	22			
3	43	07			
4	42	48			
5	42	90			
6	41	48			
7	38	70			
8	41	63			
9	33	88			
0	42	08			
TOTAL B	410	48			

1	42	22			
2	41	40			
3	42	15			
4	41	84			
5	42	08			
6	42	74			
7	40	54			
8	37	50			
9	35	30			
0	39	51			
TOTAL E	405	28			

1	37	88			
2	42	58			
3	40	96			
4	41	72			
5	44	52			
6	41	85			
7	40	26			
8	42	74			
9	38	00			
0	42	04			
TOTAL C	412	55			

TOTAL A	404	26		
TOTAL B	410	48		
TOTAL C	412	55		
TOTAL D	404	65		
TOTAL E	405	28		
TOTAL PAGE	2037	22		

PAGE 5 OF 5 **CASING TALLY** DATE: May 3, 1978

FIELD NPRA LEASE & WELL NO. Sq. Meade 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	41	70			
2	02	85	OCT Hanger		
3	43	22	Landing Jet and		
4			Hanger Adapter		
5					
6					
7					
8					
9					
0					
TOTAL A	87	77			

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

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

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	87	77		
TOTAL B				
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	87	77		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well So. Meade Test Well No.1 Date May 3, 1978

Size Casing 9 5/8" Setting Depth 8023.07 Top (liner hanger) _____

Hole Size 12 1/4" " Mud Gradient 11.5 Viscosity 90

Casing Equipment

Dowell shoe, Dowell float located 83.12 feet

above shoe, 8023.07 (DV, FO) collars located at 2369.61 feet

and 2158.98 feet.

_____ centralizers located _____

_____

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	1500	Dowell	Class "G"	1% CFR2 & 2% HR-7	15.6-16.4	315
(2)						

Cement through (DV, FO) Collar at - feet

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)						
(4)						

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

Circulated 120 bbls @ 6 BPM, pumped in 50 ~~(cu. ft.)~~, (barrels) _____

_____ prewash, used bottom plug (yes, ~~no~~), mixed cement (1) above 132

minutes, cement (2) above _____ minutes, top plug (yes, ~~no~~) displaced with

580 (cu. ft.), (barrels) in 140 minutes at rate of 5 BPM, ~~CFM~~,

~~(Bumped plug)~~ (Did not bump plug). Final Pressure 1200. Reciprocated

pipe 0 feet while (mixing) and (displacing) cement. Displacing time 140

minutes. Had partial circulation (full, partial,

none, etc.). Completed job at 7:00 ~~a.m.~~, p.m.

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

Opened (DV, FO) at _____ a.m., p.m., circulated _____ bbls @ _____ BPM, pumped in

_____ (cu. ft.), (barrels) _____ prewash, mixed cement (3) above

_____ minutes, cement (4) above _____ minutes, dropped closing plug, dis-

placed with _____ (cu. ft.), (barrels) in _____ minutes at rate of _____

_____ BPM, CFM. (Bumped plug) (Did not bump plug). Final Pressure _____

Displacing time _____ minutes. Had _____ circulation

(full, partial, none, etc.)

Remarks (Third Stage Job, etc.)

_____

_____

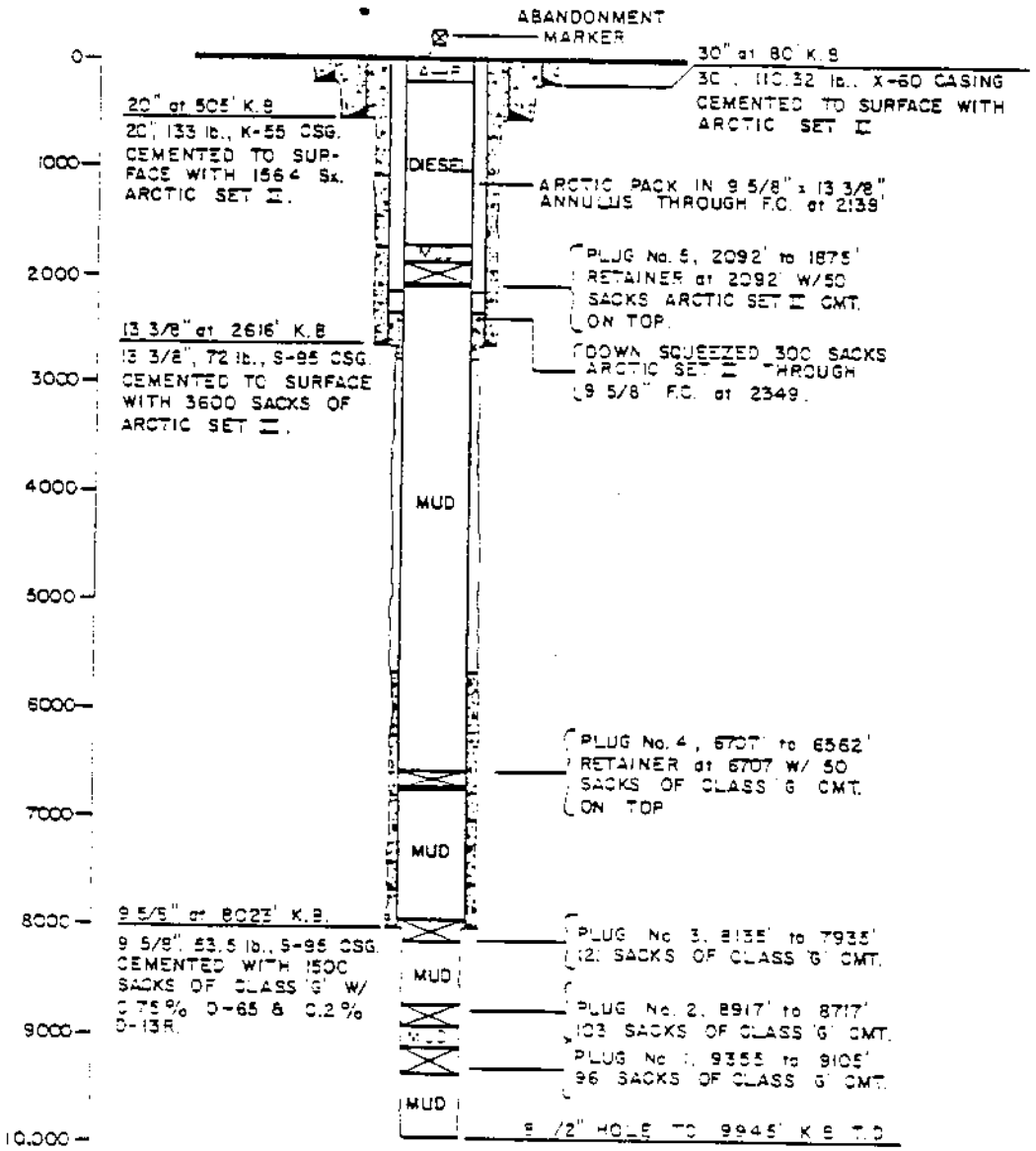
_____

_____

_____

B. L. Clanton

Foreman



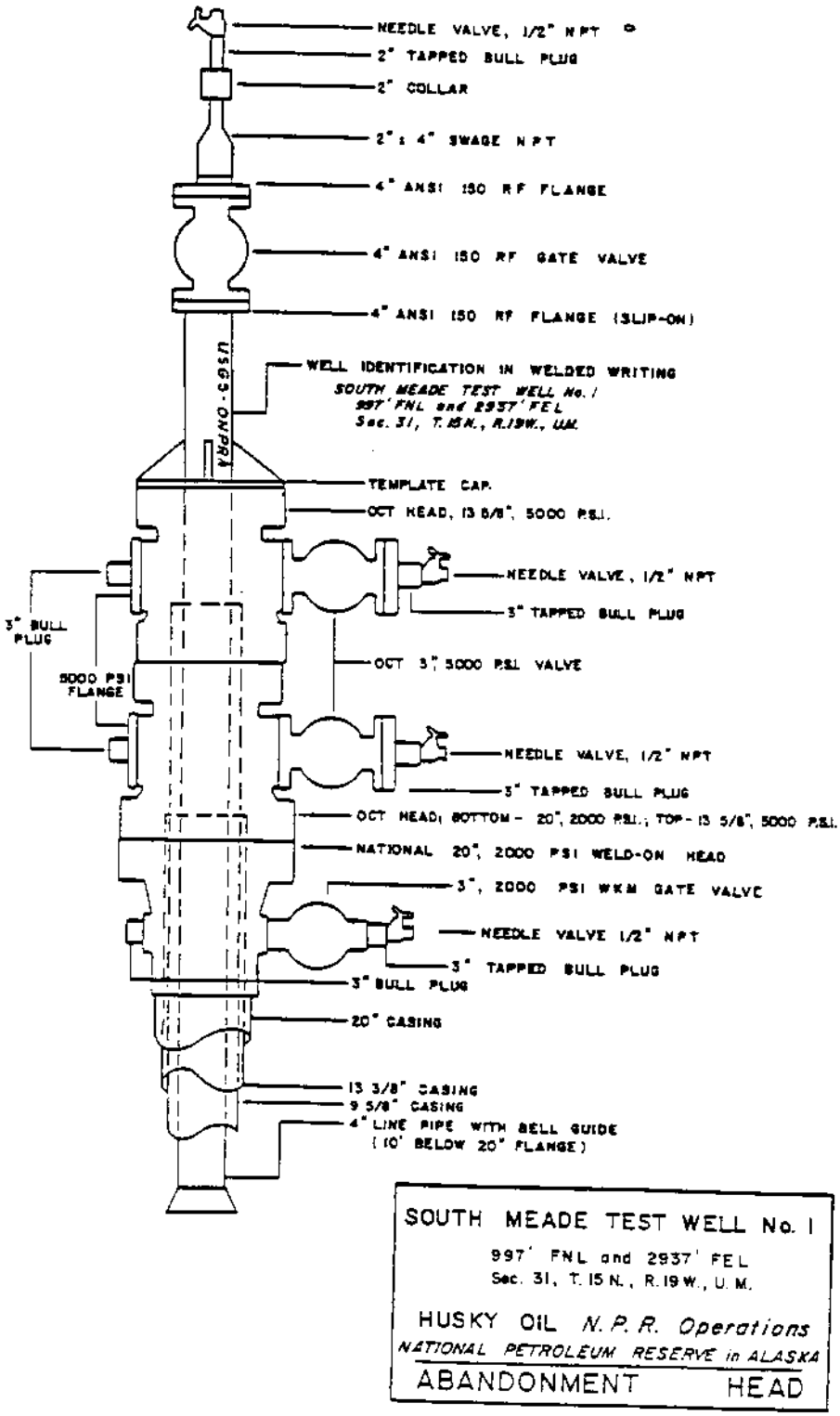
SOUTH MEADE TEST WELL No. 1

997' FNL and 2937' FEL
Sec 3, T. 5 N., R. 19 W., U.M.
PAD LEVEL 40 EST.
K.B. 80' EST.

HUSKY OIL N.P.R. Operations

NATIONAL PETROLEUM RESERVE in ALASKA

WELLBORE SCHEMATIC


NEEDLE VALVE, 1/2" NPT
2" TAPPED BULL PLUG
2" COLLAR
2" x 4" SWAGE NPT
4" ANSI 150 RF FLANGE
4" ANSI 150 RF GATE VALVE
4" ANSI 150 RF FLANGE (SLIP-ON)
WELL IDENTIFICATION IN WELDED WRITING
SOUTH MEADE TEST WELL No. 1
997' FNL and 2937' FEL
Sec. 31, T. 15N., R.19W., U.M.
USGS-ONPRA
TEMPLATE CAP.
OCT HEAD, 13 5/8", 5000 P.S.I.
NEEDLE VALVE, 1/2" NPT
3" TAPPED BULL PLUG
3" BULL PLUG
5000 PSI FLANGE
OCT 3", 5000 P.S.I. VALVE
NEEDLE VALVE, 1/2" NPT
3" TAPPED BULL PLUG
OCT HEAD; BOTTOM - 20", 2000 P.S.I.; TOP - 13 5/8", 5000 P.S.I.
NATIONAL 20", 2000 PSI WELD-ON HEAD
3", 2000 PSI WKM GATE VALVE
NEEDLE VALVE 1/2" NPT
3" TAPPED BULL PLUG
3" BULL PLUG
20" CASING
13 3/8" CASING
9 5/8" CASING
4" LINE PIPE WITH BELL GUIDE
(10' BELOW 20" FLANGE)
SOUTH MEADE TEST WELL No. 1
997' FNL and 2937' FEL
Sec. 31, T. 15 N., R. 19 W., U. M.
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
ABANDONMENT HEAD

ARCTIC CASING PACK

In production wells, wells suspended through summer months, and wells completed for re-entry with temperature recording tools, Baroid Arctic Casing Pack was used between casing strings. It is a stable, highly viscous fluid which will not freeze and collapse casing set in permafrost zones. Its unique gelling characteristics exhibit excellent thermal properties (heat transfer coefficient of approximately 0.1 BTU per hour per square feet per degree F at 32°F). Composition of Baroid Arctic Casing Pack used is as follows for each 100 barrels mixed:

Diesel	82.0 barrels
Water	5.0 barrels
Salt	60.0 ppb per barrel of water
EZ Mul	12.5 ppb
Gel Tone	50.0 ppb
Barite	103.0 ppb

In South Meade, the annulus between the 9-5/8" and 13-3/8" casing from 2349' to the wellhead was displaced with Arctic Pack when the well was suspended for the summer of 1978. The Arctic Casing Pack was left in the annulus when the well was abandoned in January of 1979 as the wellbore was left for re-entry with Temperature tools. The Arctic Pack Record is included in this report.

ARCTIC PACK RECORD

DATE: May 15, 1978

I. JOB SUMMARY

Annulus volume: 13 3/8 x 9 5/8 x 2139 '	124.28	bbl
Drill pipe volume: 5 x 19.5 #/ft x 2139 '	38.00	bbl
Total volume of system:	162.28	bbl
Volume of water used in water wash	563	bbl
Volume of water pumped at water breakthrough	151	bbl
Volume of pack pumped	185	bbl
Volume of pack pumped at breakthrough	148	bbl
Displacement efficiency at breakthrough	91	%
% Water contamination of returns at end of job	0	%

Remarks (including weather) Good job. Wash breakthrough 151 bbls = 93%. Total Geltone 48.6 ppb, 23 ppb premix, 25.6 ppb added. Overdisplaced 9 bbls premix at end of job. Weather: +8°F, 18K, 2 miles, light snow and fog.

II. PILOT TEST OF FLUIDS

A. Prepack

Retort Data:

% Oil	86	
% Water	7	
% Solids	7	
Weight	9.5	#/gal

Rheology (at 50 ° F):

PV	18	cps
YP	17	#/100 ft²
10 Sec Gel	5	#/100 ft²
10 Minutes	14	
Emulsion Stability	1600	volts

B. Gelled Pack (25.6 #/bbl Geltone added to prepack):

Rheology (at 50 ° F):

PV	off scale	cps
YP	off scale	#/100 ft²
10 Sec Gel	80	#/100 ft²

C. Drilling Mud (prior to displacement with water):

Wt	11.4	#/gal
PV	22	cps
YP	8	#/100 sq ft
10 Sec Gel	3	#/100 sq ft
10 Minutes		

Remarks: Retort prior to displacement at 25 bbls after breakthrough: 8% total - 1% excess. Final retort: 7% total - 0% excess. Em. stab: 1900 volts.

III. RELEVANT WELL DATA

Outer casing	13 3/8"	72	#/ft
Inner casing	9 5/8"	53.5	#/ft
Drill pipe	5"	19.5	#/ft

Depth of cement sleeve: 2139 ft SLM

Casing annulus volume: 124.28 bbls

Drill pipe volume (includes height to floor)	38.00	bbls
Total system volume	162.28	bbls
Rig pump capacity	5.799	strokes/bbl
Cementing unit pump capacity	58.5	strokes/bbl

Remarks: Pumped wash with rig pump. Squeezed 300 sacks through FO at 2349' SLM. Samples firm, two hard prior to starting wash. Started wash at 9:13 AM; finished wash at 10:46 AM.

IV. WATER WASH STEP

Volume water pumped	563	bbls
Rate	6.6	bbl/min
Volume pumped at water breakthrough (0.5 #/gal drop in weight of mud return)	151	bbls
Appearance of water at end of water wash		clear
		turbid
		muddy

Remarks: Pumped six tankers water from truck with rig pumps. Water temperature: ± 32°. Final weight: 8.4 ppg. Did not clear. Had to shut down between loads. Overall, a good wash.

V. ARCTIC PACK DISPLACEMENT

a.	Volume of pre-mix spacer	10	bbl
b.	Total volume of gelled pack pumped	166	bbl
c.	Total number of (50 lb) sacks of Geltone added	85	sacks
d.	Average lb Geltone added per bbl	25.6	lb/bbl = 48.6 ppb total
e.	Pumping rate	4	bbl/min
f.	Total volume of pre-mix and gelled pack pumped at breakthrough	148	bbl
g.	Volume of returns dumped into mud system	67	bbl
h.	Volumes of fluids used to displace drill pipe	14	bbl of premix
		33	bbl of mud
i.	Volume of uncontaminated returns	± 20	bbl

k. Remarks: Pumped 10 bbls spacer, 166 bbls gelled, overdisplaced with 9 bbls premix, leaving 5-bbl spacer in drill pipe. Final pack weight: 10.1 ppg. First 10 bbls after breakthrough were severely gelled.

RIG INVENTORY

Draw Works

Emsco A 800, Serial No. 11, grooved for 1-1/4" line. Equipped with 46" Parkersburg hydromatic brake, sandline drum, and Emsco air operated catheads.

Rig Drive

Emsco A 83 sectional compound; Serial No. 11.

Engines

Three Caterpillars, D379, turbocharged diesel engines, Serial Nos. 68B 1724, 68B 1725, and 68B 1726.

Pumps

Oilwell A1000P, Serial No. P-117-34.

National C 350 with National forged steel fluid end.

Substructure

Lee C. Moore Corporation, 15' high, 23' wide, 52' long.

Mast

Lee C. Moore Corporation 136', Serial No. T3119. Equipped with Lee C. Moore kit. Hook load with 12 lines, 600,000 lbs.

Blocks

Emsco RA-44-5, Serial No. 45.

Swivel

Emsco L 400, Serial No. 14T.

Rotary Table

26" Oilwell.

Tongs

BJ, type OB.

Accumulator

Koomey, Model T-201603S, 3,000 lb. w.p.

Blowout Preventers

One - 13-5/8", 5,000 lb. Hydril, Serial No. 3588.

One - 13-5/8", 5,000 lb. Shaffer LWS double.

Boilers

Two Kewanee, 100 HP, Scotch Marine boilers with Kewanee oil burners.

Mud Tanks

No. 1: 35' long, 9' 6" wide, 6' 10" high, mud tank complete with insulated cover.

No. 2: 38' 10" long, 9' 6" wide, 6' 10" high, mud tank with insulated cover.

No. 3: 32' long, 9' 6" wide, 6' 10" high, mud tank with insulated cover.

Degasser

Clark Gas Hog.

Desander

Pioneer, 10 cone.

Desilter

Sweco, 8 cone.

Overshots

One 10-5/8" Bowen, maximum catch 9".

One 8" Bowen, maximum catch 6-3/4".

Water-Fuel Tanks

One combination water/fuel tank; capacity 400 lbs. water, 8,000 gallons fuel.

Two upright water tanks; capacity 400 lbs.

Drill Collars

Twenty-one 7-3/4" O.D., 2-7/8" I.D. drill collars, 6-5/8" H90 connections.

Twenty-one 6-1/4" O.D., 2-7/8" I.D. drill collars, 4-1/2" 1 + 90 connections.

(99)

Drill Pipe

Ninety joints 5", 19.5 lb., Grade G; 5", 19.5 lb., Grade E as needed.

Air Heater

One Tioga, 4,200,000 BTU air heater.

Generator

Two Caterpillars, D353, 200 KW generator sets and required distribution system.