NATIONAL PETROLEUM RESERVE IN ALASKA

HISTORY
OF
DRILLING OPERATIONS

J. W. DALTON TEST WELL NO. 1

HUSKY OIL NPR OPERATIONS, INC.
Edited by: S. L. Hewitt & R. G. Brockway

For the

U. S. GEOLOGICAL SURVEY
Office of the National Petroleum Reserve in Alaska
Department of the Interior
JUNE 1983

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J. W. DALTON TEST WELL NO. 1

INTRODUCTION

The J. W. Dalton Test Well No. 1 is located on the National Petroleum Reserve in Alaska (Figure 1). The well is located 37.62 feet from the north line and 301.63 feet from the west line of protracted Section 14, Township 18 North, Range 5 West, Umiat Meridian (Latitude: 70°55'13.79" North; Longitude: 153°08'15.104" West). Alaska State Plane Coordinates are X = 603,265.0 and Y = 6,187,135.0. Kelly bushing elevation is at 37 feet and pad is at 19 feet. Drilling related operations commenced with rig-up on April 16, 1979, and terminated on August 1, 1979.

The hole was drilled to a total depth of 9,367 feet. The primary objectives of the well were the Sadlerochit and Lisburne Groups, with secondary interest in the "Pebble Shale" sands. At the conclusion of the drilling and evaluating 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, U. S. Geological Survey. Nabors Alaska Drilling, Inc. was the drilling contractor; and Nabors Rig 1, an Emsco A800, was the drilling rig used.

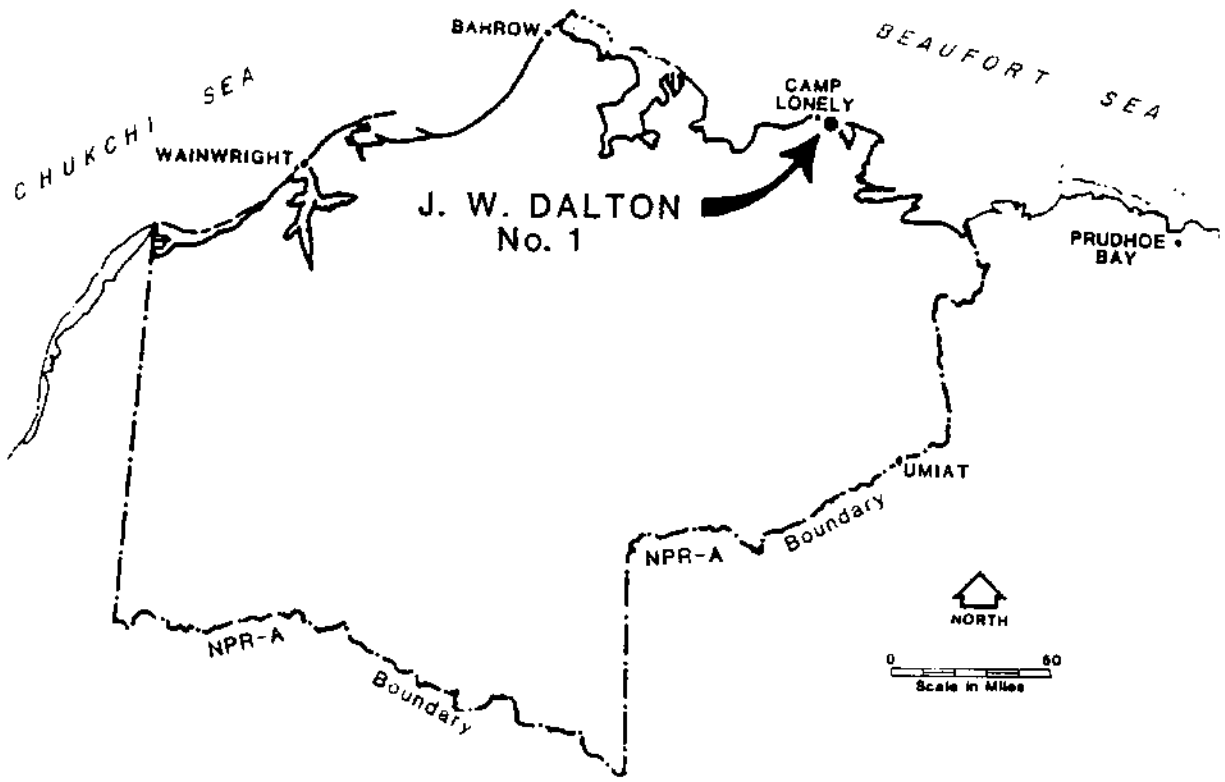

FIGURE 1 - WELL LOCATION MAP - J. W. DALTON NO. 1

DRILLING SUMMARY

Field operations at the J. W. Dalton Test Well No. 1 commenced on December 9, 1978, with mobilization of construction crews and equipment required to build the drilling pad and the gravel road connecting to Lonely for support. Construction work was completed on December 29, 1978, and crews and equipment were demobilized.

Rig move-in operations began April 11, 1979. The majority was moved by truck over the sea ice. The move consisted of 73 truck loads and 12 Rolligon loads. Rig-up operations began on April 16, 1979, and required 21 days. A considerable maintenance program was performed on the rig and camp. The well was spudded on May 7, 1979, at 12:00 noon.

During rig-up, a 20" conductor had been set at 94' and cemented with ArcticSet II cement. A 17-1/2 inch hole was drilled to 2650'. Gravel was encountered from ± 600' to ± 1000'. The mud viscosity was increased to carry the gravel. The hole was logged with a Dresser Atlas BHC Acoustic/GR log and a Dual Induction Focused/GR log. The BHC Acoustic/GR log had to be rerun.

A conditioning trip was made in preparation to run 13-3/8" casing. Sixty-six joints of 13-3/8", 72#, S-95 Buttress casing were run to 2633' KB. A stab-in tool was run on drill pipe. The mud was circulated and conditioned. Twenty barrels of water and 4,350 sacks ArcticSet II cement mixed at 15.2 ppg were pumped, followed by two barrels of water and 43 barrels of mud. Cement returns were observed with 10 to 25 barrels displacement pumped. The stab-in tool was pulled out of the hole. A Braden Head squeeze was necessary due to gas in cellar from around the 20" conductor and between the 20" and 13-3/8" casing. Two hundred fifty sacks of ArcticSet II mixed at 15.2 ppg were pumped down the 20" x 13-3/8" annulus. Returns were 14.9 ppg around the 20" conductor. The 20" Hydril was nippled down.

The 13-3/8" x 5,000 psi blowout-preventer equipment (SRRA arrangement) was installed. The 13-3/8" x 20" annulus was Braden Head squeezed again with 115 sacks of ArcticSet II cement mixed at 15.2 ppg. The blowout-preventer equipment was tested to 5,000 psi, the Hydril to 2,500 psi, and the casing to 2,500 psi. The shoe was drilled out plus 10 feet of formation. The formation was tested to 12 ppg equivalent gradient with no leak off observed.

Drilling of 12-1/4" hole continued to 7555' where 9-5/8" casing was run after wireline logging was completed. The following cores were cut: Core No. 1, 3500' to 3530'; No. 2, 4667' to 4697'; No. 3, 5603' to 5633'; No. 4, 6585' to 6615'; and No. 5, 7524' to 7534'. Dresser Atlas wireline logs run were: Dual Induction Focused Log/GR, Compensated Densilog/Compensated Neutron/Caliper/GR, BHC Acoustilog/GR, and Diplog 4-Arm High Resolution. A Birdwell Velocity Survey was also run. Shot 21 sidewall cores with a recovery of 19.

The hole was conditioned and 182 joints of 9-5/8", 53.5#, S-95 Buttress casing run and landed at 7524'. The float collar was at 7431' and the FOs at 2360' and 2153'. The casing was cemented with 1,000 sacks Class "G" cement mixed to 15.8 ppg, and the plug bumped to 3,000 psi. The landing joint fouled in the casing hanger and the blowout-preventer stack had to be picked up to cut it off. Packing assembly was installed, nippled up blowout preventer, and tested pack-off assembly to 5,000 psi. The second stage cement was down-squeezed through the FO and tested to 3,000 psi. All drilling operations were suspended while the pad and access road were stabilized.

The 9-5/8" casing was drilled out to 7565' and the formation tested to 0.63 psi/ft. with no leak off. Drilling continued to a total depth of 9367'. The following cores were cut in this interval: No. 6, 7967' to 8021'; No. 7, 8021' to 8081'; No. 8, 8081' to 8113'; No. 9, 8113' to 8139.5'; No. 10, 8140' to 8200'; No. 11, 8317' to 8345'; No. 12, 8515' to 8543.5'; No. 13, 9357' to 9367'. Drill-Stem Test No. 1 was conducted on the way down over the interval 7812' to 8140' in open hole with 4487' of water cushion. The test is summarized as follows:

> 1st FP: Opened with strong blow, decreased to fair in 15 minutes; water cushion to surface in 21 minutes at measured rate of 1,255 barrels per day. IHP 4,290 psi, IFP 3,125-3,875 psi, ISIP 4,067 psi.
>
> 2nd FP: Opened tool with flow of water cushion; filtrate to surface in 40 minutes; solution gas breaking out of filtrate in 1 hour 24 minutes; muddy water at rate of 1,218 barrels per day in 2 hours 3 minutes with WHP 300 psi, flowing slightly muddy water with 11,600 ppm Cl_2 and WHP 290 psi, very light oil sheen. FFP 3,875-3,860 psi; FSI 4,051 psi, FHP 4,258 psi.

Dresser Atlas ran the following wireline logs: Dual Induction Focused Log/GR; Compensated Densilog/Compensated Neutron/Caliper/GR; BHC/Acoustilog/Caliper; Diplog 4-Arm High Resolution, and Temperature Survey. Shot 25 sidewall cores; recovered 21.

The U. S. Geological Survey directed Husky to run a 7" liner for further testing of the well. The hole was conditioned and 44 joints of 7", 38#, S-95, BTC casing with a BOT liner hanger and tie back sleeve was run. The shoe was landed at 8898', with the liner hanger at 7204'. The liner was cemented with 800 sacks Class "G" cement. The plug was not bumped with five barrels over theoretical displacement. The top of the cement was tagged at 6928' and drilled out to 7204'.

The liner was drilled out to 7254' and the liner lap and casing tested to 2,500 psi. It failed to hold (bled off to 600 psi) and had to be squeezed. A 9-5/8" retainer was set at 7157' and the lap squeezed with 100 sacks of Class "G" cement. Retainer moved down hole to 7193'. Again squeezed with 100 sacks of Class G cement. Final squeeze pressure was 1,400 psi at three barrels per minute. The retainer and cement were drilled out to 7204' and the lap tested to 3,000 psi.

The 7" liner was cleaned out to 8812' and the shoe tested (pumped away at 1,900 psi). An attempt to run a CBL/VDL log failed due to tool malfunction. An attempt to set a 7" retainer at 8770' and 8773' to squeeze the shoe failed due to junk in the hole. A second attempt to run a CBL/VDL log was unsuccessful due to tool failure.

A second 7" retainer was successfully set at 8791' and the shoe squeezed with 100 sacks of Class "G" cement. Final pressure was 2,200 psi at a rate of two barrels per minute. Top of the cement was at 8787'.

Testing of the liner lap continued. A CBL/VDL log was run. Liner-lap negative-flow test tools were run with a 4400' water cushion and the packer was set at 7163'. The lap was tested with no flow, but pressure buildup during the closed-in period indicated a very minor leak. A RTTS was set at 7176' and an attempt made to pump into the lap with 3,000 psi. No breakdown occurred. The annulus was pressured to 1,500 psi and the lap to 5,000 psi with the pressure bleeding to 4,300 psi in 10 minutes. The lap was repressured to 5,000 psi and it held for 10 minutes with no bleed off.

Preparation for Drill-Stem Test No. 2 over the interval 8558-8665' was made. The zone was isolated by squeezing with cement above it. The liner was perforated at 8549' with 4 shots and a retainer set at 8544'. Formation breakdown was established at 3,750 psi with an injection rate of 1/2 barrel per minute at 2,500 psi. The formation was squeezed with 50 sacks Class "G" cement with the top of the cement at 8473'. The cement and retainer were drilled out to 8780' and the perforations tested to 3,000 psi. A CBL/VDL log was run.

A total of 44' were perforated in the interval 8558-8665' for Drill-Stem Test No. 2. The test is summarized as follows (504' water cushion):

> 1st FP: Opened tool with moderate blow increase to strong blow in 25 minutes through 1/2" choke; shut in well after 31 minutes. IHP 4,600 psi, IFP 442-852 psi; ISIP 4,141 psi. Initial shut-in period 60 minutes.
>
> 2nd FP: Strong blow throughout with gas to surface at 2 psi in 8 hours 30 minutes through 24/64" choke. FFP 915-3,206 psi, FSIP 4,030 psi, FHP 4,473 psi. Recovered 5 barrels asphaltic oil, 3.3 barrels water cushion, 29 barrels mud, 80 barrels salt water.

At the conclusion of the test a retainer was set on wireline at 8542' and the test perforations squeezed with 100 sacks Class "G" cement (Plug No. 1). The plug and casing were tested to 3,000 psi.

The intervals 8482-8509' and 8520-8538' were perforated for Drill-Stem Test No. 3. The packer was set at 8432' and the test performed as follows (500' water cushion):

> 1st FP: Opened tool with weak blow, shut in after 30 minutes. IHP 4,529 psi, IFP 573-733 psi, ISIP 3,460 psi. Shut well for 60 minutes.

2nd FP: Opened tool through 1/2" choke with weak blow increase to strong blow in 60 minutes, decreased to moderate blow in 4 hours. No fluid to surface. Shut in well after 6 hours of FFP. FFP 749-908 psi, FSIP 3,252 psi, FHP 4,497 psi. Shut in well 13 hours 15 minutes. Recovered: 5 barrels oil/water emulsion, 6.8 barrels water cushion and mud, 22 barrels water with oil.

At the conclusion of the test a retainer was set on wireline at 8454' and the test perforations squeezed with 85 sacks Class "G" cement (Plug No. 2). The plug and casing were tested to 3,000 psi.

The interval 8392-8436' was perforated at 4 shots per foot for Drill-Stem Test No. 4. A 500' water cushion was used and the test results were as follows:

1st FP: Opened tool through 3/4" choke with weak blow in 10 minutes, dead in 28 minutes. Shut in well after 30 minutes. IHP 4,443 psi, IFP 391-456 psi, ISIP 586 psi. Shut in well for 60 minutes.

2nd FP: Opened through 1/2" choke, well dead throughout. Shut in after 2 hours, FFP 472-472 psi, FSIP 813 psi, FHP 4,443 psi. Shut in well for 4 hours 40 minutes. Recovered: 7.5 barrels water cushion and mud.

At the conclusion of the test the perforations were squeezed with 100 sacks of Class "G" cement (Plug No. 3).

The interval 7971-7976' was isolated for Drill-Stem Test No. 5. The liner was perforated with 4 shots at 7985' and the formation squeezed with 50 sacks of Class "G" cement. The cement (top 7944') and retainer were drilled out to 8060' and the perforations tested to 3,000 psi. A CBL/VDL log indicated a good squeeze job. The interval 7971-7976' was perforated and Drill-Stem Test No. 5 conducted as follows (504' water cushion):

1st FP: Opened tool through 1/4" choke with weak blow increase to strong blow in 15 minutes at 2 psi wellhead pressure, shut in well in 30 minutes. IHP 4,149 psi, IFP 358-1,251 psi, ISIP 3,953 psi. Initial shut-in period 60 minutes.

2nd FP: Opened tool through 1/4" choke with strong blow, gas to surface in 2 hours 45 minutes, water cushion to surface in 3 hours 35 minutes, filtrate to surface in 4 hours 20 minutes at 258 BPD. FFP 1,219-3,528 psi, FSIP 3,969 psi, FHP 4,149 psi. Shut in well after 7 hours 55 minutes for 15 hours 30 minutes. Recovered: 3.3 barrels water cushion, 162 barrels filtrate/formation water and mud cut water.

At the end of the test, the perforations were squeezed with 100 sacks of Class "G" cement (Plug No. 4), and the plug and casing tested to 3,000 psi.

Testing was concluded and plug back started. Plug No. 5 of 100 sacks of Class "G" cement was spotted on top of a 9-5/8" retainer at 7018'. Recovery of the 9-5/8" casing above the 13-3/8" shoe proved difficult. Two attempts to cut it below the FO at 2153' and three attempts above the FO all failed. A TriState service representative and casing cutters were flown to the site and the casing successfully cut at 2175'. A total of 2150.41' of 9-5/8" casing (52 joints), hanger, FO, and 15 feet of the cut joint were recovered. Plug No. 6 of 100 sacks of ArcticSet II cement was placed on top of a retainer at 1777'. Top of the plug was at 1660'.

After setting Plug No. 6, the upper 1660' of the hole (13-3/8" casing) was left full of diesel to allow future temperature measurements by U. S. Geological Survey personnel. The 5" drill pipe was laid down, the blowout-preventer equipment nippled down, and the abandonment head and dry-hole marker installed. The rig was released August 1, 1979, at 12:00 midnight. It was rigged down and moved to Camp Lonely and stacked to await movement to the East Simpson Test Well No. 2 location.

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

Form P-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NOTICE OF INTENT TO DRILL, DEEPEN, OR PLUG BACK

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

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

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: 38' FNL and 302' FWL
At proposed prod. zone: Same (straight hole)

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.: J.W. Dalton Test Well No
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 14, T18N, R5W, UM
12. COUNTY OR PARISH: North Slope
13. STATE: Alaska

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 89 miles ESE of Barrow, Alaska

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 1000'
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.: 95,040
19. PROPOSED DEPTH: 8600'
20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): Ground = 15'; Pad = 19'; KB = 39'
22. APPROX. DATE WORK WILL START*: May 1, 1979

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	20" (Conductor)	133# (K-55)	± 100' KB	SEE DRILLING PROGRAM FOR DETAILS AND AMOUNTS
17 1/2"	13 3/8"	72# (S-95)	± 2600'	
12 1/4"	9 5/8"	53.5# (S-95)	± 7130'	
8 1/2"	7"	32# (N-80)	Liner ± 6800' to TD	

Blowout Preventer Program-

From ± 100' KB 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 Line.

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 S. Brewer TITLE Chief of Operations DATE 18 April 79

(This space for Federal or State office use)

NO. _____ DATE _____

APPROVED BY Robert A. Hefner TITLE DISTRICT SUPERVISOR DATE 4/27/79

CONDITIONS OF APPROVAL, IF ANY:

See attached conditions.

*See Instructions On Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

1. oil well ☒ gas well ☐ other

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

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

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 38' FNL; 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 14, T18N, R5W, UM

12. COUNTY OR PARISH
North Slope

13. STATE
Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDR AND WD)
GR = 15'; Pad = 19'; KB = 37'

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

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

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

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

This well was spudded May 7, 1979, at 12:00 noon. Hole size: 17 1/2". Prior to spud, a 20" conductor was set in 24" dry drilled hole and cemented with 150 sacks Arcticset II cement. KB depth: 94'.

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

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

SIGNED Max Brewer TITLE Chief of Operations DATE 9 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

DISTRICT SUPERVISOR DATE 5-11-79

*See Instructions on Reverse Side

RECEIVED
ONSHORE DIST. OFFICE

MAY 22 1979

CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

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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: 38' FNL; 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

5. LEASE
N/A

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

7. UNIT AGREEMENT NAME
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J. W. Dalton Test Well No. 1

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Sec 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR = 15'; Pad = 19'; KB = 37'

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 13 3/8" Surface Casing

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

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

Drilled 17 1/2" hole to 2650' and logged with DIL and Accoustic GR. Conditioned hole and ran 66 joints 13 3/8", 72#/ft, S-95 Buttress casing with centralizers: 10' above shoe and one on collars (from bottom) 1, 3, 4, 5, 7, 9, 11, and 13. Float shoe at 2633' KB. Duplex collar at 2546'. Ran duplex stinger on drill pipe and stabbed into collar. Conditioned mud, pumped 20 bbl water spacer, 4350 sacks Arctic Set II cement at 15.2 ppg slurry weight, 2 bbl water spacer and 43 bbls mud. CIP at 7:00 PM, 5/12/79. Good returns throughout job. Cement returns with 25 bbl displacement pumped. Floats held OK. Braden head squeezed 20" conductor pipe with 250 sacks Arctic Set II cement at 15.2 ppg slurry weight. Final returns 14.9 ppg. CIP at 3:00 AM, 5/14/79. Nipple up wellhead and SRRA BOP stack. Tested 20" flange and packoff to 2000 psi. Tested blind rams, pipe rams, choke manifold, and kelly cocks to 5000 psi. Tested Hydril to 2500 psi. Drill out float collar and shoe. Drilled to 2660'. Tested formation to an equivalent gradient of .62 psi/ft.

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

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

SIGNED Max Doerner TITLE Chief of Operations DATE 19 May 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

APPROVED BY Robert A. Hall TITLE DISTRICT SUPERVISOR DATE 5/23/79

*See Instructions on Reverse Side

AMENDED MAY 27, 1983

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
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4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 38' FNL and 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

5. LEASE
N/A

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

7. UNIT AGREEMENT NAME
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National Petroleum Reserve in Alaska

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14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR: 15'; Pad: 19'; KB: 37'

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

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

(other) Subsequent Report of Running and Cementing 9-5/8" Casing

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

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

A 12-1/4" hole was drilled to 7534' KB and logged with GR/SP/DIL, GR/CNL/FDC/Caliper, GR/BHC AccoustiLog/TTI, Dipmeter, and Velocity Survey. Twenty-one sidewall cores shot; 19 recovered. Drilled rat hole to 7555'. Ran 182 joints 9-5/8", 53.5#, S-95 Buttress casing and landed with float shoe at 7524'. Float collar at 7432'. FOs at 2153' and 2360'. Fifteen centralizers were on the bottom. Primary cement job and 18 centralizers were run from the FO cementers to surface. Circulated mud to condition. Pumped 50 bbls. water, dropped bottom plug, mixed and pumped 1,000 sacks Class "G" cement w/0.75% D65, 0.2% D13R at 15.8 ppg. Dropped top plug, displaced with 2 bbls. H_2O and 540 bbls. mud. Bumped plug with 3,000 psi. CIP 5/31/79 at 9:50 p.m. Landing joint fouled in casing hanger. Picked up BOP stack at spool. Cut landing joint and running tool. Installed packing assembly. Nippled up BOP. Tested packing assembly to 5,000 psi. Down squeezed second stage through FO at 2360'. Pumped 10 bbls. water, mixed and pumped 300 sacks Arctic Set II cement at 15.2 ppg. Displaced with 2 bbls. water and 38 bbls. mud.

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

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

SIGNED _____ TITLE Chief of Operations DATE _____

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

_____ TITLE _____ DATE _____

*See Instructions on Reverse Side

AMENDED MAY 27, 1983

Broke down formation with 500 psi at 4 1/2 BPM. Initial squeeze pressure: 450 psi at 4 BPM. Final pressure: 200 psi. CIP 6/2/79 at 6:25 AM. Closed FO and tested to 3000 psi. Tested BOPE to 5000 psi, Hydril to 2500 psi. Picked up bottom hole assembly and drilled cement to 7437'. Tested casing to 3000 psi. Delayed drill out until 6/8/79 while working on drilling pad. Drilled out collar and shoe. Conditioned mud and cleaned out to 7555'. Drilled 8 1/2" hole to 7565'. Tested formation to .63 psi/ft. No leak off. Resumed drilling.

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 [X] 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: 38' FNL and 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF KDB AND WD)
GR = 15'; Pad = 19'; KB = 37

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 Change Plans			

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

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

The original Notice of Intent to Drill indicated the proposed TD to be 8600'. Due to thickened geologic sequences, the objective TD is expected to be deeper. The operator plans to continue drilling. It is expected that final TD will be at or near 9,000'.

RECEIVED
ONSHORE DIST. OFFICE

JUN 22 1979

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 V. Brewer TITLE Chief of Operations DATE 20 June 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

APPROVED BY James Wheeler TITLE DISTRICT SUPERVISOR ACTING DATE 6/22/79

*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: 38' FNL; 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 14, T18N, R5W, UM

12. COUNTY OR PARISH North Slope 13. STATE Alaska

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR = 15'; Pad = 19'; KB = 37'

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 Change Plans (Depth Revision No. 2)

(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 Notice of Intent to Change Plans, June 20, 1979, indicated a proposed TD of 9,000'. Due to thickened geologic sequences, the objective TD is expected to be deeper. The operator plans to continue drilling. Verbal approval to continue to the new proposed TD of 9500' was given by Mr. Jim Weber on 6/24/79.

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

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

SIGNED Max Dewey TITLE Chief of Operations DATE 25 June 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

APPROVED BY Wm. James Weber ✓ TITLE DISTRICT SUPERVISOR ACTING DATE 6/26/79

RECEIVED
ONSHORE DIST. OFFICE
JUN 26 1979
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

*See Instructions on Reverse Side

AMENDED MAY 27, 1983

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: 38' FNL and 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR = 15'; Pad = 19'; KB = 37'

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 7" Production Liner

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.)*

8 1/2" hole was drilled to 9357'. Terminal core was cut 9357' to 9367'. Conditioned hole and logged with Temperature Survey, DIL/GR, CNC/DL/GR, DHC/GR, Dipmeter, and Velocity Survey. Shot 25 sidewall cores; recovered 21. Ran second Temperature Survey. Conditioned hole. Ran 7", 38#/ft, S-95 Buttress liner. Ran 44 joints 7", 38#, S-95 Buttress casing. Set shoe at 8898', catcher sub at 8858', landing collar at 8819', hydraulic set liner hanger at 7198', top setting sleeve at 7204'. Ran one centralizer 10 feet above shoe on stop ring. Centralizers on collars 3, 5, 10, 15, 20, 25, 37, 40, and 43. Conditioned hole and cemented liner. Pumped 30 bbls water. Mixed and pumped 800 sacks Class "G" cement containing 0.75% D65, 0.3% D13R. Dropped drill pipe wiper plug and displaced with 2 bbls water and 186 bbls mud. Did not bump plug. CIP 7/3/79 at 10:20 AM. WOC 16 hours. Picked up 8 1/2" bit and 9 5/8", 53.5# casing scraper. Ran in. Tagged cement at 6928'. Drilled cement to 7204'. Picked up 5 5/8" bit and 7", 38# casing scraper. Tagged cement in liner at 8812'. Tested casing and lap.

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

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

SIGNED _____ TITLE Chief of Operations DATE _____

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

DISTRICT SUPERVISOR ACTING DATE _____

*See Instructions on Reverse Side

2500 psi would bleed to 600 psi. Picked up and ran 9-5/8", 53.5# cement retainer. Set retainer at 7157'. Establish 4 BPM at 1,800 psi injection. Pull out of retainer. Pump 20 bbls. water. Mix and pump 100 sacks Class "G" cement containing 0.75% D65 and 0.2% D13R. Displace with 5 bbls. water and 87 bbls. mud. Retainer had moved down the hole. Reverse out cement. Circulate and follow retainer to 7193'. Rig up and squeeze 20 bbls. water, 100 sacks Class G cement containing 0.75% D65, 0.2% D13R mixed at 15.8 ppg. Displace with 5 bbls. water and 120 bbls. mud. Initial pressure 1200 psi at 3 BPM, final 1,400 psi at 3 BPM. CIP 7/5/79 at 2:15 p.m. POH 3 stands. Reverse circulate. Recovered small amount of contaminated mud. WOC. RIH w/8-1/2" bit, drilled out cement and tested liner lap to 3,000 psi. OK. Cleaned out 7" casing 8812'. Tested liner to 3,000 psi. Pumped away at 1,900 psi through shoe. Set retainer at 8791'. Squeezed 7" shoe with 100 sacks Class "G" cement w/0.75% D65, 0.3% D13R. Maximum pressure 2,900 psi at 2 BPM. Final pressure 2,200 psi at 2 BPM. Tagged cement at 8787'. Tested casing to 3,000 psi. OK. Ran negative flow liner lap test. Set packer at 7163'. Ran 4400' water cushion. Opened tool for 3 hours, no flow. Closed tool 3 hours. Tripped in with RTTS. Set packer and attempted to pump into lap. Pressured lap to 5,000 psi with no pressure loss in 10 minutes. Prepared for test isolation squeeze cementing.

AMENDED MAY 27, 1983

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: 38' FNL; 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR: 15'; Pad: 19'; KB: 37'

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 Perforate and Test			

(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.)*

Log evaluation determined the decision to run 7" production liner and test selected intervals. Detailed procedure attached. Summary: Perforate 44' between 8558' and 8665'. Run DST tools with 500' water cushion. Test and evaluate. Run retainer and squeeze same.

Test #2 - 44' perforations from 8558' to 8665'. Procedure above.
Test #3 - 45' perforations from 8482' to 8538'. Same procedure.
Test #4 - 44' perforations from 8392' to 8436'. Same procedure.
Test #5 - 5' perforations from 7971' to 7976'. Same procedure.

Lay down 3-1/2" drill pipe. Run 8-1/2" bit and 9-5/8" scraper down to ± 7100'.

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

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

SIGNED _____ TITLE Chief of Operations DATE _____

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

_____ TITLE _____ DATE _____

*See Instructions on Reverse Side

J. W. DALTON
TESTING PROGRAM

The following details the testing procedure for the J. W. Dalton well. Testing will be through perforations of selected intervals through 7" 38# production liner.

1. Run 5 5/8" bit and 7" 38# casing scraper. Condition hole for perforating.

2. Rig up Dresser Atlas to perforate. Pick up enough lubricator to cover the maximum length of tools to be run. Chain down lubricator securely and test lubricator to 500 psi on first run of each test.

3. Perforate the following intervals with 4" Jumbo Jet casing gun at 4 shots per foot. All depths are from the Densilog/Neutron log, Run No. 2, dated 6/28/79. Use CBL/VDL/GR/CCL for correlation log.

Test #2 Perforations	Ft.
8659 - 8665'	6'
8644 - 8654'	10'
8630 - 8636'	6'
8596 - 8608'	12'
8558 - 8568'	10'
Total	44'

4. Run Howco test tools as follows:

   a. HT 500 temperature recorder with maximum recording thermometer.

   b. BT pressure recorder, outside gauge, 48 hour clock.

   c. BT pressure gauge, outside recorder, 48 hour clock.

   d. ± 30' perforated tail pipe. Space out tail pipe per tester.

   e. Hook wall packer for 7" 38# casing.

   f. V-R safety joint.

   g. Jars.

   h. BT pressure gauge, inside recorder, 48 hour clock.

   i. BT pressure gauge, inside recorder, 48 hour clock.

   j. Hydrospring tester.

   k. Dual CIP valve.

   l. 1 stand 3 1/2", 15.5# drill pipe.

   m. Impact reversing sub.

n. 3 1/2", 15.5# drill pipe as required above liner lap.

o. Crossover sub 3 1/2" IF pin X 4 1/2" IF box. (Check ID to be sure bar will pass.)

p. 5", 19.5# drill pipe to surface.

q. Run 500' of water cushion.

5. Set packer ± 50' above the top perforations at ± 8508'. Check log to be sure packer does not set in a casing collar.

6. Test interval as follows:

a. Initial flow 30 minutes.

b. Initial shut-in 1 hour.

c. Final flow 6 hours.

d. Final shut-in 12 hours.

Final flow and shut in periods may be shortened or extended based on well response.

7. After shutting in, drop bar and reverse out.

Catch samples as follows:

a. First fluid to surface.

b. Bottom of water cushion.

c. Top of fluid recovery.

d. Middle of fluid recovery.

e. Bottom of fluid recovery.

Catch other samples as necessary to evaluate production.

Use caution in reversing out. Control rate and pressures.

8. At end of shut in period, pull tools loose and trip out. Be sure well is stable before trip. Condition mud as required.

9. Catch fluid samples at top of DST tools.

10. Trip in with 5 5/8" bit and casing scraper. Scrape casing from 8500' to 8558'.

11. Pick up 7" 38# cement retainer on wireline and set at ± 8548'. If necessary, to avoid a collar, this depth may be adjusted.

12. Trip in with stinger on drill pipe. Tag retainer and cycle valve for proper operation. Unsting from retainer and test to 3000 psi. Test drill pipe to 3000 psi.

13. Stab into retainer. Pump into formation and establish injection rate and pressure. Limit pressure to 3000 psi. If formation does not break down, close pipe rams and pressure up annulus to 1500 psi. Pump into formation and establish rate, limiting pressure to 5000 psi.

14. Mix and pump 100 sacks of Class "G" cement with 0.75% D-65 and 0.3% D-13R at 15.8 ppg. Yield is 1.15 cu ft/sack. Mix water 5 gals/sack. Precede cement with 20 bbls water and follow cement with 3 bbls water.

    Displace cement to within 1250' of retainer and sting in. Squeeze cement, limiting pressure to 3000 psi or 5000 psi with 1500 psi on annulus. Monitor annulus for any sign of leak.

    If injection rate was less than 1/2 BPM at 3000 psi, reduce cement volume to 50 sacks.

    Shut down, leaving ± 1 bbls of cement in drill pipe. Unsting from retainer and bleed off any annulus pressure. Pull out 3 stands and reverse out drill pipe.

15. Trip in with 5 5/8" bit and casing scraper. Clean out to the top of the retainer. Test plug and casing to 3000 psi. Condition for perforating, Test No. 2.

16. Rig up to perforate as in Step No. 2.

17. Perforate the following interval as in Step No. 3.

Test No. 3 Perforations	Ft.
8520 - 8538'	18'
8482 - 8509'	27'
Total	45'

18. Run Howco test tools as in Step No. 4.

19. Set packer ± 50' above top perforations at ± 8432'. Check to be sure packer does not set in casing collar.

20. Test interval, reverse out and catch samples as in Steps No. 6, 7, 8, and 9.

21. Trip in with 5 5/8" bit and scraper. Scrape casing from 8430' to 8480'.

22. Pick up 7" 38# retainer on wireline and set at ± 8459'. If necessary, to avoid a collar, this depth may be adjusted.

23. Trip in with stinger and test retainer to 3000 psi as per Step No. 12.

24. Establish injection rate, pressure and squeeze cement as in Steps 13 and 14.

25. Trip in with 5 5/8" bit and casing scraper. Clean out to the top of the retainer. Test plug and casing to 3000 psi. Condition to perforate for Test No. 3.

26. Rig up to perforate as in Step No. 2.

27. Perforate the following interval as in Step No. 3.

Test No. 4 Perforations	Ft.
8392 - 8436'	44'

28. Run Howco test tools as in Step No. 4.

29. Set packer ± 50' above top perforations at ± 8342'. Be sure packer does not set in a collar.

30. Test interval, reverse out and catch samples as in Steps 6, 7, 8, and 9.

31. Trip in with bit and scraper. Scrape casing from 8300' to 8350'.

32. Pick up 7" 38# retainer on drill pipe and set at ± 8330'. Avoid setting retainer in a collar.

33. Cycle valve for proper operation. Unsting and test retainer to 3000 psi.

34. Establish injection rate, pressure and squeeze cement as in Steps 13 and 14.

35. Trip in with bit and scraper. Clean out to ± 8000'. Test plug and casing to 3000 psi. Condition to perforate for Test No. 4.

36. Rig up to perforate as in Step No. 2.

37. Perforate the following interval as in Step No. 3.

Test No. 5 Perforations	Ft.
7971 - 7976'	5'

38. Run Howco test tools as in Step No. 4.

39. Set packer ± 50' above top perforations at ± 7921'. Be sure packer does not set in a collar.

40. Test interval, reverse out, catch samples as in Steps 6, 7, 8, and 9.

41. Trip in with bit and scraper to ± 7900'.

42. Pick up 7" 38# retainer on drill pipe and set at ± 7880'. Avoid setting retainer in a collar.

43. Cycle valve for proper operation. Unsting and test retainer to 3000 psi.

44. Establish injection rate, pressure as in Step 13.

45. Mix and pump 100 sacks of Class "G" cement with 0.75% D-65 and 0.2% D-13R at 15.8 ppg. Yield is 1.15 cu ft/sack. Mix water 5 gals/sack. Precede cement with 20 bbls water and follow cement with 3 bbls water. Squeeze cement as in Step No. 14.

    Pull out 5 stands and reverse out drill pipe.

46. Trip out and lay down 3 1/2" drill pipe.

47. Pick up 8 1/2" bit and 9 5/8" 53.5# casing scraper. Trip in to ± 7100'. Condition mud.

Abandonment procedure to follow.

J. M. McCarthy
July 4, 1979

Distribution: Rig - 2
Staff - 1 Ea
Hewitt - 1
Haywood - 1
Sundry Notice - 1

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 [X] 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: 38' FNL; 302' FWL
AT TOP PROD. INTERVAL
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

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Sec 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
Gr = 15'; Pad = 19'; KB = 37'

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*	[X]	[ ]
(other)		

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

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This is a confirming notice to abandon J. W. Dalton Test Well No. 1. This well was drilled to a total depth of 9367', logged, and tested. As a result of the evaluation, plans were developed to abandon the well. The abandonment procedure is attached.

RECEIVED
ONSHORE DIST. OFFICE
AUG 1 1979
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 27 July 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

[signature] DISTRICT SUPERVISOR DATE 8/1/79
ACTING

*See Instructions on Reverse Side

J. W. DALTON TEST WELL NO. 1
ABANDONMENT PROCEDURE

AFTER BIT AND SCRAPER RUN

1. Pick up a Howco 9 5/8", 53.5# E-Z Drill retainer. RIH and set retainer @ ± 7000'. Unsting and condition mud.

2. Spot a 100 sack Class "G" cement plug on top of retainer (to contain 0.75% D65, 0.2% D13R) mixed at 15.8 ppg. This is 250' of fill in 9 5/8", 53.5# casing. Spot a balanced plug with 10 bbls water ahead and 4 bbls water behind cement.

3. Pull out of cement 10 stands and condition mud. Trip out laying down drill pipe. Keep ± 2400' of drill pipe for cutting casing and reversing out. Lay down unused drill collars.

4. Pick up 9 5/8" casing cutters. Trip in and cut casing at 2330' (30' above lower FO).

5. After cutting 9 5/8" casing, open the 9 5/8" X 13 3/8" annulus and equalize any differential pressure.

6. Pick up spear packoff and stop plate. Loosen the 9 5/8" packoff anchor screws. Pick up 9 5/8" casing. The 9 5/8" string weight at 2330' in 10.2 ppg mud should be ± 105,400#.

7. Strip the 9 5/8" casing through the BOP and set rotary slips. Break out mandrel hanger and short landing joint. Lay down 9 5/8" casing. Return FO to Halliburton for reconditioning.

8. Trip in with 12 1/4" bit and 13 3/8", 72# casing scraper to 2300'. Circulate and condition mud, removing any cuttings or junk in hole.

9. Pick up Howco 13 3/8", 72# E-Z Drill cement retainer on 5" drill pipe. Set retainer at ± 2250'.

10. Unsting and condition mud.

11. Spot a 100 sack Arctic Set II cement plug on top of the retainer mixed at 15.2 ppg. This is 115' fill inside 13 3/8" casing. Spot a balanced plug with ± 14 bbls water ahead and 2 bbls water behind cement.

12. Pick up to ± 2000'. Circulate and condition mud.

13. Reverse out mud with water. Reverse out water with diesel. The approximate capacity of 13 3/8", 72# casing to 2000' is 296 bbls. Trip out, laying down drill pipe. Do not fill casing to surface. Leave ± 25' of 13 3/8" casing empty.

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

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

16. Clean mud pits and release rig. Rig down for movement to Lonely for summer storage. Clean location.

Information for well marker identification:

USGS - ONPRA
J. W. Dalton Test Well No. 1
38' FNL; 302' FWL
Sec 14, T18N, R5W, UM

D. L. Reid
Drilling Engineer
July 6, 1979

7/26/79

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

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

1. oil well ☒ gas well ☐ other

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: 38' FNL and 302' FWL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Same

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.
J. W. Dalton Test Well No. 1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 14, T18N, R5W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
GR 15'; Pad 19'; KB 37'

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 Abandonment			

RECEIVED
ONSHORE DIST. OFFICE
SEP 5 1979
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.)*

Ran CBL/VDL/GR/CCL log in 7" liner from 8787' to 7204'. Perforated 4 holes at 8549'. Set retainer on wireline at 8544'. Sting into retainer. Initial breakdown: 3750 psi. Established injection 1/2 BPM, 2500 psi. Squeezed with 20 bbls water, 50 sacks Class "G" cement containing 0.75% D-65 and 0.3% D-13R, mixed at 15.8 ppg. Followed by 3 bbls water and mud. Squeezed 17 bbls water and cement into formation. Maximum squeeze pressure: 3750 psi. CIP 7/15/79 at 12:30 AM. Left 1 bbl cement on top of retainer. Drill out cement and retainer. Test perforations to 3000 psi. Run bond log. Perforate for DST No. 2. Four shots per foot, 8659'-8665', 8644'-8654', 8630'-8636', 8596'-8608', 8558'-8568' per Density Neutron Log Run No. 2 dated 6/28/79. Ran DST No. 2. Reversed out. Ran 5 5/8" bit to condition hole. Ran 7" retainer on wireline set at 8542'. Formation broke down with 1800 psi. Established 4 BPM at 1600 psi. Squeezed with 20 bbls water and 100 sacks Class "G" cement with 0.75% D-65 and 0.3% D-13R. Three bbls water and 103 bbls mud squeezed at 2 BPM, 800 psi. Left one

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

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

SIGNED Mark V Bruner TITLE Chief of Operations DATE 31 August 79

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Barry A Bondurant DISTRICT SUPERVISOR DATE Sept 5, 1979

*See Instructions on Reverse Side

bbl cement on top of retainer. CIP 7/18/79 at 7:09 PM. Run 5 5/8" bit and 7", 38# scraper to 8540'. Test casing to 3000 psi. Perforate 8520'-8538', 8482'-8509' as before. Ran DST No. 3. Reversed out. Ran 5 5/8" bit and 7", 38# scraper. Ran 7" retainer on wireline, set at 8454'. Break down formation with 1200 psi. Establish injection at 800 psi and 2 BPM. Pumped 8 bbls water, 85 sacks Class G cement containing 0.75% D-65 and 0.3% D-13R mixed at 15.8 ppg, followed by 3 bbls water and 128 bbls mud. CIP 7/21/79 at 11:42 AM. Worked on Hydril. Ran 5 5/8" bit and 7", 38# scraper. Clean out to 8449'. Tested to 3000 psi. Perforate 8392'-8436' with 4 SPF for DST No. 4. Ran DST No. 4. Reverse out. Set retainer at 8331'. Establish injection 3 BPM at 1500 psi. Pumped 20 bbls water, 100 sacks Class "G" cement containing 0.75% D-65 and 0.2% D-13R mixed at 15.8 ppg. Final squeeze pressure: 2 BPM at 1700 psi. CIP 7/25/79 at 12:15 PM. Ran 5 5/8" bit and scraper to 8055'. Perforate 7984' to 7985' as before. Set retainer on wireline at 7979'. Establish injection 3 BPM at 1800 psi. Pump 20 bbls water, 50 sacks Class "G" cement containing 0.75% D-65 and 0.2% D-13R, mixed at 15.8 ppg, followed by 3 bbls water and 120 bbls mud. Initial pressure: 1750 psi at 2 BPM. Final 2200 psi at 1 BPM. CIP 7/25/79 at 3:30 AM. Drill cement and retainer 7944' to 7990'. Clean out to 8060'. Run bond log. Test perforations to 3000 psi. Perforate 7971' to 7976' as before. Run DST No. 5. Reverse out. Run 5 5/8" bit and 7", 38# scraper to 7900'. Set retainer on drill pipe at 7880'. Establish injection 3 BPM at 1400 psi. Pump 20 bbls water, 100 sacks Class "G" containing 0.75% D-65 and 0.2% D-13R mixed at 15.8 ppg, followed by 3 bbls water and 118 bbls mud. Initial pressure: 1000 psi at 3 BPM; final pressure: 3000 psi at 2 BPM. CIP 7/28/79 at 6:25 AM. Lay down 3 1/2" DP and 4 3/4" drill collars. Run 8 1/2" bit and 9 5/8", 53.5# scraper to 7100'. Condition mud. Test casing to 3000 psi. Run 9 5/8" retainer. Set at 7018'. Pull out of retainer and spot cement. Pump 10 bbls water and 100 sacks Class "G" cement containing 0.75% D-65 and 0.2% D-13R mixed at 15.8 ppg. Follow with 4 bbls water and 114 bbls mud. POH 10 stands. Reverse out DP. Lay down excess 5" DP. Pick up FO shifting assembly. Open FO at 2153'. Circulate and condition annulus. Close FO. Pick up BOT mechanical 9 5/8" casing cutters. Attempt to cut 9 5/8" casing at 2330'. Attempt to pull casing. Would not circulate. Pick up cutters again. Attempt to cut. Pick up hydraulic cutters. Attempt to cut casing at 2130'. Attempt to cut with mechanical cutters at 2125'. Pick off BOP stack and remove 9 5/8" packoff assembly. Attempt to pull casing. Nipple up BOP. Attempt to cut casing at 2120' with hydraulic cutters. Attempt to pull casing. Pick up TriState casing cutters. Cut casing at 2175'. Pull casing loose. Change rams to 9 5/8". Pull and lay down 2150.41 feet of 9 5/8", S-95 Buttress casing. 52 joints, hanger, FO, and 15 feet cut off. Change rams to 5" drill pipe. Run 12 1/4" bit and 13 3/8", 72# scraper to 2170'. Condition mud. Pick up 13 3/8" EZ Drill retainer and set prematurely at 1777'. Spot 100-sack Arcticset II cement plug. Pump 20 bbls water, 100 sacks Arcticset II cement mixed at 15.2 ppg, 3 bbls water, and 26 bbls mud. Pull up to 1620'. Reverse out drill pipe. Top cement at 1660'. Displace mud to water and water to diesel. Lay down 5" drill pipe. Nipple down BOPE. Install dry hole marker. Clean pits. Released rig 8/1/79 at 12:00 midnight.

Form 9-330
(Rev. 5-63)

AMENDED MAY 27, 1983

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [X] Other Wildcat

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

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

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

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 38' FNL; 302' FWL
At top prod. interval reported below
At total depth

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.: J. W. Dalton Test Well No.

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 14, T18N, R5W, UM

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH | 13. STATE

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5/7/79	6/27/79	N/A	37' KB	19'

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
9367'	1580'	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: GR/SP/DIL, GR/CNL/FDC/CAL, GR/BHC/TTI, HRD, Temperature Survey, Survey Velocity

27. WAS WELL CORED: Yes

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

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	133	94'	26"	515 Sx ArcSetII @ 15.2	N/A
13 3/8"	72	2633'	17 1/2"	4350 Sx ArcSetII @ 15.2	N/A
9 5/8"	53.5	7524'	12 1/4"	1000 Sx Class G @ 15.8 w/0.75% D65 & 0.2% D13R	2175'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
7"	7204'	8898'	1000	

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

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		

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
Wellbore Schematic

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

SIGNED _____ TITLE Chief of Operations, ONPRA DATE _____

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

INSTRUCTIONS

AMENDED MAY 27, 1983

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.
POROSITY ZONES			
Sadlerochit	7970'	7990'	Log and core analysis indicate porosity average of 17.5% with calculated log water saturation of 56-86% (See DST #1 and #5 below)
Sadlerochit	8080'	8170'	Log and core analysis average porosity of 14% with water saturation of 73-100%. Zone was partially tested on DST #1 which flowed water.
CORED INTERVALS			
See attached sheet. (1)			
DRILL STEM TESTS			
See attached sheets (2)			

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Torok	4714'	
GR/"Pebble Shale"	7483'	
Base GR Sh	7635'	
Shublik	7755'	
Sadlerochit	7893'	
Kavik Sh	8233'	
Lisburne Fm.	8318'	
Base Lisburne Carbonates	8616'	
Pre-Lisburne Argillite	9270'	
Total Depth	9367'	

U.S. GOVERNMENT PRINTING OFFICE: 1983 O-403036

671-233

WELL COMPLETION REPORT
J. W. Dalton Test Well No. 1
Continuation of Item 37

AMENDED MAY 27, 1983

SUMMARY OF CORED INTERVALS

CORE #	FORMATION	TOP	BOTTOM	RECOVERED	DESCRIPTION, CONTENTS, ETC.
1	Nanushuk	3500'	3530'	27.0'	Intbdd Sltst and Clyst, no indication of hydrocarbon.
2	Lower Nanushuk	4667'	4697'	30.0'	Intbdd f. grn Ss and slty Sh/Clyst. No indication of hydrocarbons.
3	Torok	5603'	5633'	27.0'	Sh with minor slt and traces Ss. No indication of hydrocarbons.
4	Torok	6585'	6615'	4.3'	Slty Shale with minor Ss laminations. No indication of hydrocarbons.
5	GR/"Pebble Shale"	7524'	7534'	8.6'	Sh with floating Quartz grns and thin Sltst lam. No indication of hydrocarbons.
6	Sadlerochit	7967'	8021'	54.0'	Ss with conglomeratic stringers, poor - fair porosity, with poor - fair oil show and residual oil show in upper part of core.
7	Sadlerochit	8021'	8081'	55.0'	Intbdd Sltst, Sh, Ss and Conglomerate, poor - good porosity, poor residual oil show in conglomerate.
8	Sadlerochit	8081'	8113'	13.5'	Conglomerate with minor Sh at top of core, spotty asphaltic oil stain.
9	Sadlerochit	8113'	8139.5'	26.5'	Conglomeratic Ss with minor Sh, fair - good porosity, spotty asphaltic oil stain.
10	Sadlerochit	8140'	8200'	59.0'	Ss with some scattered pebbles, poor - fair porosity, trace of asphalt.
11	Lisburne	8317'	8345'	24.9'	Ls with minor Sh intbds, no porosity, bleeding some heavy oil on bedding and fracture planes.
12	Lisburne	8515'	8543.5'	28.1'	Predominantly Ls with limy Ss at top and Sh at base, v. poor porosity, trace of asphalt.
13	Pre-Mississippian/ Argillite	9357'	9367'	8.8'	Argillite with mica and Quartz filled fractures.

WELL COMPLETION EPORT
J. W. Dalton Test Well No. 1
Continuation of Item 37

AMENDED MAY 27, 1983

DRILL STEM TESTS

NOTE: Pressures given are field pressures as recorded at wellsite.

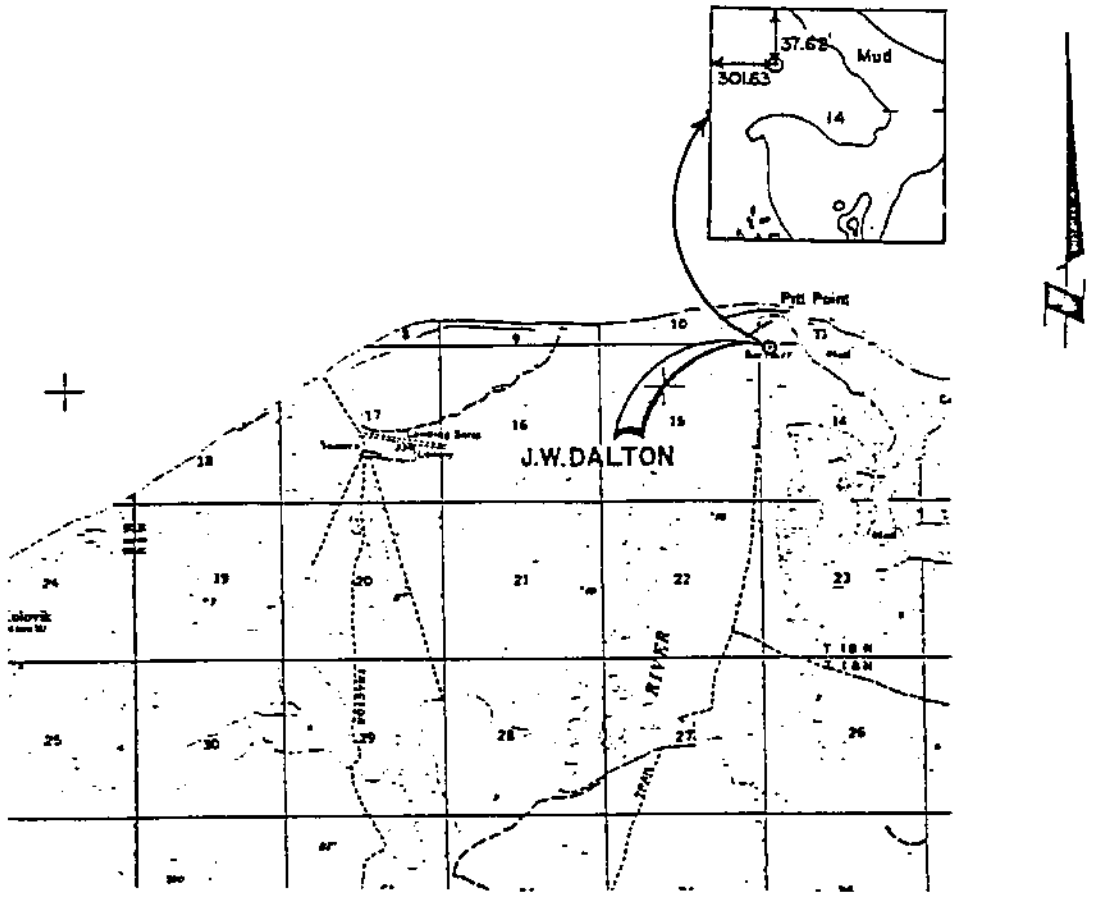
TEST #	INTERVAL	CUSHION	TEST DESCRIPTION
1	7812-8140' (Open hole) (SADLEROCHIT)	4487' water	1st FP: Open tool w/strong blow w/water to surface in 15 min. at measured rate of 1255 bbls./day. Shut in well after 30 min. IHP 4290 psi, IFP 3125-3875 psi, ISIP 4067 psi. Initial shut in period 1 hr. 2nd FP: Opened tool for 3 hrs. w/flow water at 1218 bbls./day. FFP 3875 - 3860 psi, FSIP 4051 psi. Recovered 7777' of salt water and muddy salt water.
2	Perforated 44' in gross interval: 8558-8665' (LOWER LISBURNE)	504' water	1st FP: Opened tool w/moderate blow increase to strong blow in 25 min. through 1/2" choke, shut in well after 31 min. IHP 4600 psi, IFP 442-852 psi, ISIP 4141 psi. Initial shut in period 60 min. 2nd FP: Strong blow throughout w/gas to surface at 2 psi in 8 hrs. 30 min. thru 24/64" choke. FFP 915-3206 psi, FSIP 4030 psi, FHP 4473 psi. Recovered 5 bbls. asphaltic oil, 3.3 bbls. water cushion, 29 bbls. mud, 80 bbls. salt water.
3	Perforations: 8482-8509' 8520-8538' (LISBURNE)	500' water	1st FP: Opened tool w/weak blow, shut in after 30 min. IHP 4529 psi, IFP 573-733 psi. ISIP 3460 psi. Shut well for 60 min. 2nd FP: Opened tool thru 1/2" choke w/weak blow increase to strong blow in 60 min., decreased to moderate blow in 4 hrs. No fluid to surface. Shut in well after 6 hrs. of FFP. FFP 749-908 psi, FSIP 3252 psi, FHP 4497 psi. Shut in well 13 hrs. 15 min. Recovered: 5 bbls oil/water emulsion, 6.8 bbls. water cushion and mud, 22 bbls. water with oil.
4	Perforations: 8392-8436' (LISBURNE)	500' water	1st FP: Opened tool thru 3/4" choke w/weak blow in 10 min., dead in 28 min. Shut in well after 30 min. IHP 4443 psi, IFP 391-456 psi, ISIP 586 psi. Shut in well for 60 min. 2nd FP: Opened thru 1/2" choke, well dead throughout. Shut in after 2 hrs, FFP 472-472 psi, FSIP 813 psi, FHP 4443 psi. Shut in well for 4 hrs. 40 min. Recovered 7.5 bbls. water cushion and mud.

WELL COMPLETION REPORT
J. W. Dalton Test Well No. 1
Continuation of Item 37

AMENDED MAY 27, 1983

DRILL STEM TESTS

TEST #	INTERVAL	CUSHION	TEST DESCRIPTION
5	Perforations: 7971-7976' (SADLEROCHIT)	504' water	1st FP: opened tool thru 1/4" choke w/weak blow increase to strong blow in 15 min. at 2 psi wellhead pressure, shut in well in 30 min. IHP 4149 psi, IFP 358-1251 psi, ISIP 3953 psi. Initial shut in period 60 min. 2nd FP: opened tool thru 1/4" choke w/strong blow, gas to surface in 2 hrs. 45 min, water cushion to surface in 3 hrs. 35 min, filtrate to surface in 4 hrs. 20 min. at 258 BPD. FFP 1219-3528 psi, FSIP 3969 psi, FHP 4149 psi. Shut in well after 7 hrs. 55 min, for 15 hrs. 30 min. Recovered: 3.3 bbls wtr cushion, 162 bbls filtrate/formation water and mud cut water.



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 13, 1978

STATE OF ALASKA
JOHN R. HERRING
No. 953-S
REGISTERED PROFESSIONAL LAND SURVEYOR

J.W. DALTON

LAT. = 70° 55' 13.79" N
LONG. = 153° 08' 15.104" W
Y = 6,187,135.00
X = 603,265.00

ZONE 5
SCALE: 1" = 1 Mile

AS STAKED

J.W. DALTON 4 - 79

NW 1/4 PROTRACTED SEC. 14 T 18 N, R 5 W, UMIAT MERIDIAN, AK

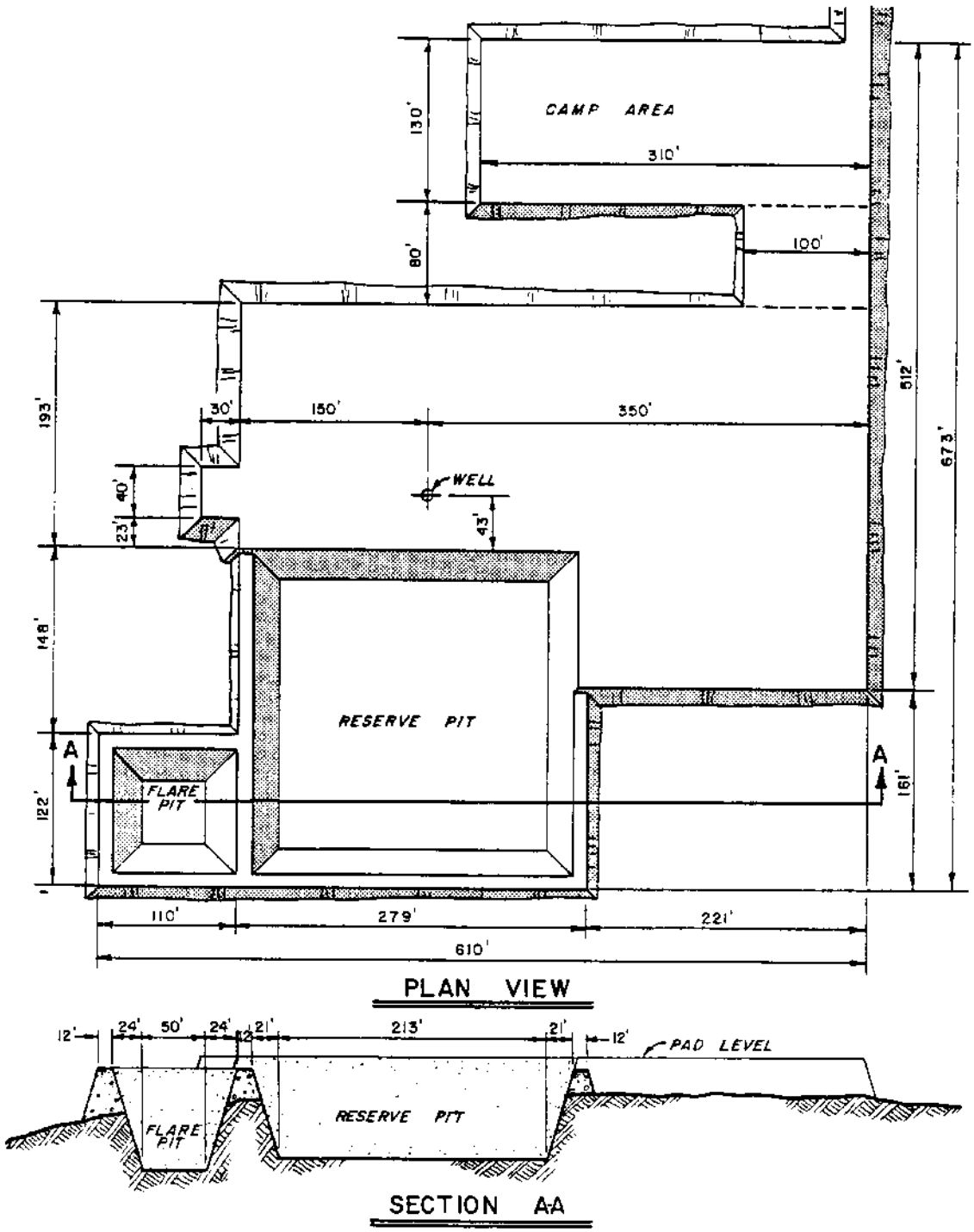
Surveyed for

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

J. W. DALTON DRILLSITE



DRILL PAD DRAWING

OPERATIONS HISTORY

DATE AND FOOTAGE DRILLED AS OF 6:00 A.M.	ACTIVITY
5/7/79	Twenty-first day of rig up. Twenty-inch conductor set at 94'. Painted sub, choke house, catwalk, handrails, and steps. Picked up bottom-hole assembly. Prepared to spud. Spudded well May 7, 1979 at 12:00 noon.
5/8/79 400'	TD: 494'; MW: 9.6; Vis: 46. Drilled cement from 61' to 94'. Drilled to 452'; pumped out cellar and checked conductor.
5/9/79 497'	TD: 991'; MW: 9.2; Vis: 165. Circulated and surveyed at 494'. Repaired compound; circulated and reamed fill. Plugged bit on connection. Pulled out of hole and changed bits. Ran in hole; washed and reamed 40 feet to bottom. Drilled to 772'. Changed shaker screens; unplugged flow line. Repaired No. 2 motor and master clutch. Drilled to 991'. Circulated and surveyed; washed and reamed fill.
5/10/79 1090'	TD: 2080'; MW: 9.4; Vis: 250. Reamed fill 928' to 991'. Drilled to 1921'. Circulated; surveyed; pulled out of hole. Changed bit. Ran in hole; washed and reamed 60 feet to bottom with no fill. Drilled ahead.
5/11/79 569'	TD: 2650'; MW: 9.5; Vis: 280. Drilled to 2650'. Circulated a wiper trip. Steel-line measured; no correction. Circulated; surveyed; pulled out of hole. Rigged up to log. Ran Accoustic/GR to 2637'.
5/12/79 0'	TD: 2650'; MW: 9.5; Vis: 260. Reran Accoustic/GR to 2641'; ran DIL to 2636'. Rigged down logging unit. Ran in hole; circulated and conditioned mud for casing. Pulled out of hole; prepared to run 13-3/8" casing.
5/13/79 0'	TD: 2650'; MW: 9.5; Vis: 210. Ran 66 joints of 13-3/8", 72# casing to 2633' KB. Picked up stab-in tool; ran in hole to float collar at 2546'. Circulated and conditioned mud. Rigged up Dowell and pumped 20 barrels of water, 4,350 sacks ArcticSet II, 720 barrels of 15.2 ppg slurry, followed with two barrels of water and 43 barrels of mud. Cement returns with 25 barrels displaced. Pulled out of hole with stinger. Floats held. Waited on cement.

5/14/79 0'	TD: 2650'. Cleaned and repaired 13-3/8" x 5,000 psi blowout-preventer equipment. Braden head squeezed 20" conductor pipe. Pumped 250 sacks ArcticSet II. Cement in place 5/14/79 at 3:00 a.m. Waited on cement.
5/15/79 0'	TD: 2650'; MW: 9.5; Vis: 210'. Waited on cement. Repaired rig; nippled down and hung 20" Hydril. Installed 13-3/8" casing slips.
5/16/79 0'	TD: 2650'; MW: 9.5; Vis: 200. Set slips and packoff assembly. Worked on stand to support 20". Tested packoff to 5,000 psi. Nippled up 13-5/8" x 5,000 psi blowout-preventer equipment.
5/17/79 0'	TD: 2650'; MW: 9.1; Vis: 41. Nippled up 13-5/8" blowout-preventer equipment. Braden-head cement job on 13-3/8" x 20" annulus. Used 115 sacks of ArcticSet II at 1,500 psi. Circulated back to 750 psi at 2 barrels per minute. Hooked up choke lines; picked up bottom-hole assembly. Tested blowout-preventer equipment. Strap in hole.
5/18/79 850'	TD: 3500'; MW: 9.4; Vis: 37. Tested casing to 2,500 psi. Drilling cement, float collar, float shoe, and 10 feet of formation. Pulled out of hole to shoe; tested formation to equivalent mud weight of 12 ppg. No leak off. Drilled to 3500'. Circulated, surveyed, pulled out of hole for core barrel.
5/19/79 30'	TD: 3530'; MW: 9.5; Vis: 36. Ran in hole with core barrel. Cut Core No. 1, 3500' to 3530'. Pulled out of hole. Received 27-foot core. Laid down core barrel and picked up Bit No. 5. Ran in hole to shoe. Cut drilling line. Ran in hole to 2580'; reamed to 3480'. Reamed rat hole, 3500' to 3530'. Surveyed at 3500'. Repaired clutch.
5/20/79 1107'	TD: 4637'; MW: 9.8; Vis: 38. Repaired No. 1 engine clutch. Drilled to 4015'; surveyed. Drilled to 4514'; surveyed. Drilled to 4637'; circulated; surveyed. Pulled out of hole.
5/21/79 237'	TD: 4874'; MW: 9.7; Vis: 34. Picked up core barrel and tested blowout preventers. Ran in hole to 4667'. Steel-line measured; 30 foot correction. Circulated and cut Core No. 2, 4667' to 4697'. Pulled out of hole. Received 30-foot core. Laid down core barrel. Picked up Bit No. 6. Ran in hole; reamed rat hole. Drilled to 4874'. Pulled out of hole to shoe; repaired mud line.

5/22/79 729'	TD: 5603'; MW: 9.0; Vis: 34. Ran in hole to bottom. Drilled to 5134'; surveyed. Drilled to 5603'. Circulated; dropped survey. Pulled out to core.
5/23/79 344'	TD: 5947'; MW: 9.1; Vis: 36. Ran in hole. Cut Core No. 3, 5603' to 5633'. Recovered 27 feet. Ran in hole with bit. Reamed 5603' to 5633'.
5/24/79 637'	TD: 6584'; MW: 9.9; Vis: 38. Drilled to 6102'; surveyed. Drilled to 6584'; surveyed and dropped pill.
5/25/79 62'	TD: 6646'; MW: 9.9; Vis: 40. Pulled out of hole; tested blowout-preventer equipment. Ran in hole with core barrel. Cut Core No. 4, 6585' to 6615'. Recovered 4.3 feet of core. Pulled out of hole; laid down core and core barrel. Ran in hole with bit; reamed core hole.
5/26/79 483'	TD: 7129'; MW: 9.9; Vis: 40. Drilled to 6937'; circulated samples. Drilled to 7129'.
5/27/79 199'	TD: 7328'; MW: 10.1; Vis: 53. Drilled to 7129'; circulated samples. Drilled to 7219'; circulated samples. Surveyed; tripped for bit. Changed bit and shock sub. Ran in hole to shoe; cut drilling line. Ran in hole; surveyed. Attempted to retrieve survey. Pulled to 5620'; retrieved survey. Ran in hole to 7170'; washed to 7219'.
5/28/79 196'	TD: 7524'; MW: 10; Vis: 40. Drilled to 7402'; circulated samples. Drilled to 7495'; circulated samples. Surveyed; pulled out of hole. Checked blowout-preventer equipment. Picked up core barrel; ran in hole.
5/29/79 10'	TD: 7534'; MW: 10; Vis: 42. Ran in hole with core barrel; circulated. Cut Core No. 5, 7524' to 7534'. Pulled out of hole. Recovered 8.6 feet of core. Ran in hole; reamed core hole. Circulated and conditioned mud. Pulled out of hole. Rigged up Dresser Atlas logging unit. Ran DIL/GR to 7535'.
5/30/79 0'	TD: 7534'; MW: 10; Vis: 42. Ran GR/FDC/CNL log to 7536'. Ran BHC to 7534' and Dipmeter to 7534'. Ran Velocity Survey. Shot 21 sidewall cores; recovered 19. Ran in hole to condition hole for 9-5/8" casing.
5/31/79 21'	TD: 7555'; MW. 10.1; Vis: 40. Ran in hole; kelly froze in rat hole. Broke circulation; plugged bit.

Pulled out of hole; pulled jets. Ran in hole. Washed 60 feet to bottom with 15 feet of fill. Drilled to 7555'. Circulated and conditioned mud. Chained out. Pulled bore protector. Changed rams. Rigged up and ran 9-5/8" casing.

6/1/79
0'

TD: 7555'; MW: 10.1; Vis: 45. Ran 9-5/8" casing and landed at 7524'. Rigged Dowell and circulated. Prepared to cement. Pumped 50 barrels H_2O. Mixed and pumped 1,000 sacks Class "G" with 0.75% D-65, 0.2% D-13R. Dropped top plug; displaced with two barrels of water and 540 barrels of mud. Bumped plug to 3,000 psi. Cement in place at 9:50 p.m. Rigged down Dowell. Landing joint fouled in casing hanger. Picked up blowout-preventer stack at spool. Worked on landing joint.

6/2/79
0'

TD: 7555'; MW: 10.1; Vis: 44. Cut landing joint and running tool. Installed packing assembly. Nippled up blowout preventer. Tested packoff assembly to 5,000 psi. Picked up RTTS and shifting assembly. Ran in hole to 2000'; tested FOs to 500 psi. Ran in hole; opened upper FO at 2153'. Circulated annulus. Closed FO. Set RTTS 50' below FO and tested to 3,000 psi. Ran in hole to 2360'. Opened lower FO and circulated annulus. Closed FO. Set RTTS 50' below FO and tested to 3,000 psi. Set closing finger 6' (estimated) above FO. Established injection rate of 4-1/2 BPM at 500 psi. Rigged up to cement. Pumped 10 barrels of water and 300 sacks of ArcticSet II at 15.2 ppg. Pumped two barrels of water and 38 barrels of mud. Initial pressure: 450 psi at 4 BPM. Final pressure: 200 psi. Cement in place at 6:25 a.m.

6/3/79
0'

TD: 7555'. Reversed out excess cement. Had 4 barrels cement and 4 barrels contaminated mud. Closed and tested FO to 3,000 psi. Pulled out of hole. Opened upper FO and circulated annulus. No contamination. Closed FO and tested to 3,000 psi. Pulled out of hole. Laid down Halliburton tools. Cleaned floor and mud pit. Rebuilt drilling nipple. Laid down 12-1/4" bottom-hole assembly. Tested blowout-preventer equipment to 5,000 psi; tested Hydril to 2,500 psi. Picked up 8-1/2" bottom-hole assembly.

6/4/79
0'

TD: 7555'; MW: 9.8; Vis: 39. Repaired Koomey remote control unit. Changed liners in No. 1 pump. Repaired mud line. Repaired tongs. Cleaned rig and location. Ran in hole with 26 stands drill pipe used on cement job. Drill pipe plugged with contaminated

	mud. Circulated clean. Pulled out of hole. Picked up bottom-hole assembly and ran in hole to 1000'. Cut drilling line. Ran in hole, measuring.
6/5/79 0'	TD: 7555'; MW: 9.8; Vis: 37. Tagged cement at 7430'. Tested casing to 3,000 psi. Drilled cement to 7437'. Circulated and conditioned mud. Worked on location. Changed seats in No. 1 pump. Worked on desander. Cleaned and painted rig and camp.
6/6/79 0'	TD: 7555'; MW: 9.8; Vis: 37. Smoothed out and compacted road. Rebuilt pad surface with gravel. Filled washed out area under matting. Pulled out of hole. Repaired No. 2 pump. Performed general maintenance on rig and camp.
6/7/79 0'	TD: 7555'; MW: 9.8; Vis: 37. Ran in hole to 1500' and circulated. Mud temperature: 51°. Pulled out of hole. Worked on rig. Worked gravel into pad surface.
6/8/79 11'	TD: 7566'; MW: 9.8; Vis: 40. Worked on pad and road. Maintained rig and camp. Ran in hole; drilled float collar. Drilled cement and shoe at 7524'. Cleaned out to 7555'. Circulated and conditioned mud. Drilled to 7565'. Tested formation to 0.63 psi/ft. Drilled to 7566'. Circulated out fill.
6/9/79 132'	TD: 7698'; MW: 10; Vis: 42. Reamed and cleaned out fill below shoe. Drilled 7566' to 7629'. Surveyed; pulled out of hole. Steel-line measured; no correction. Ran in hole with Bit No. 11. Picked up 3 stabilizers. Reamed from 7580' to 7629'.
6/10/79 123'	TD: 7821'; MW: 10; Vis: 40. Drilled to 7821'. Surveyed; pulled out of hole. Tested blowout-preventer equipment.
6/11/79 146'	TD: 7967'; MW: 10.1; Vis: 39. Tested blowout-preventer equipment. Ran in hole with Bit No. 12. Picked up 4 drill collars. Reamed 20 feet to bottom; no fill. Drilled to 7842'; circulated samples. Drilled to 7895'; circulated samples. Drilled to 7957'. Wiper tripped 6 stands. Drilled to 7967'. Circulated samples. Surveyed; pulled out of hole.
6/12/79 54'	TD: 8021'; MW: 10.1; Vis: 42. Pulled out of hole. Picked up 60-foot core barrel and Sperry Sun orienting tools. Ran in hole. Repaired. Ran in hole; circulated at 7967'. Cut Core No. 6, 7967' to 8021'.

6/13/79 51'	TD: 8070'; MW: 10.1; Vis: 39. Pulled out of hole. Received 55-foot core. Ran in hole. Reamed rat hole. Circulated hole clean. Pulled out of hole; picked up core barrel and orienting survey tool. Cut drilling line. Ran in hole; circulated.
6/14/79 23'	TD: 8093'; MW: 10.1; Vis: 38. Cut Core No. 7, 8021' to 8081'. Pulled out of hole. Received 55 foot core. Ran in hole; reamed core hole. Pulled out of hole. Picked up core barrel and orienting equipment. Ran in hole.
6/15/79 19'	TD: 8112'; MW: 10.1; Vis: 38. Cut Core No. 8, 8081' to 8113'. Pulled out of hole. Received 13.5-foot core. Stood back core barrel. Checked blowout-preventer equipment. Ran in hole with bit. Reamed 8081' to 8012'. Circulated; pulled out of hole. Made up 30-foot core barrel. Worked on Sperry Sun tools. Ran in hole.
6/16/79 28'	TD: 8140'; MW: 10.1; Vis: 38. Circulated. Cut Core No. 9, 8113' to 8139.5'. Pulled out of hole. Received 26.5 feet. Set back core barrel. Broke down core-orienting tools. Cut drilling line. Ran in hole; circulated. Pulled out of hole for Drill-Stem Test No. 1.
6/17/79 0'	TD: 8140'; MW: 10.1; Vis: 38. Ran in hole with Drill-Stem Test No. 1 tools. Made up test manifold. IF: 1/2 hour; ISI: 1 hour; FF: 3 hours; FSI: 6 hours. Released packer. Laid down manifold. Pulled out of hole 5 stands. Pumped pill. Pulled out of hole; chained out. Ran in hole to clean out for Core No. 10. Drill-Stem Test No. 1: IF: strong blow; decreased to fair blow. Had water cushion to surface in 21 minutes. Rate: 1,255 BPD. FF: good flow of water cushion. Flowed muddy water 15 minutes, with filtrate to surface in 40 minutes. Solution gas breaking out in 24 minutes. Surface pressure in 1 hour: 150 psi. Increased to 300 in 2 hours; dropped to 290 psi at shut in.
6/18/79 63'	TD: 8203'; MW: 10.1; Vis: 37. Circulated at 8140'. Pulled out of hole for Core No. 10. Tested blowout-preventer equipment. Picked up core barrel. Ran in hole; circulated. Cut Core No. 10, 8140' to 8200'. Received 59-foot core. Pulled out of hole; recovered core. Stood back core barrel. Ran in hole with Bit No. 13; reamed core hole.

6/19/79 137'	TD: 8340'; MW: 10.1; Vis: 38. Drilled to 8317'. Circulated samples. Pulled out of hole; picked up core barrel. Ran in hole; washed 11 feet to bottom.
6/20/79 168'	TD: 8508'; MW: 10.2; Vis: 40. Cut Core No. 11, 8317' to 8345'. Pulled out of hole; received 24.9 feet. Serviced core barrel and stood back. Checked blowout-preventer equipment. Ran in hole; washed and reamed 8317' to 8345'. Drilled to 8508'.
6/21/79 39'	TD: 8547'. Circulated samples; pumped pill. Pulled out of hole for Core No. 12. Checked blowout-preventer equipment. Picked up core barrel. Ran in hole to 7500'; cut drilling line. Ran in hole to 8510'. Cleaned out 5 feet of fill. Cut Core No. 12, 8515' to 8543.5'. Pumped pill; pulled out of hole. Recovered 28.1 feet of core. Serviced core barrel and stood back. Checked blowout-preventer equipment. Made up bit and ran in hole.
6/22/79 198'	TD: 8745'; MW: 10.1; Vis: 40. Drilled to 8640'; circulated samples. Drilled to 8670'; circulated samples.
6/23/79 100'	TD: 8845'; MW: 10; Vis: 38. Drilled; circulated pill. Pulled out of hole. Repaired. Ran in hole and drilled ahead.
6/24/79 147'	TD: 8992'; MW: 10; Vis: 38. Drilled; surveyed. Pulled out of hole. Circulated samples at 8887'. Made short trip to 8966'.
6/25/79 112'	TD: 9104'; MW: 10.2; Vis: 40. Pulled out of hole. Serviced rig; changed bits and stabilizer blades. Checked rams. Ran in hole and reamed 8932' to 8992'.
6/26/79 156'	TD: 9260'; MW: 10.2; Vis: 38. Made 6-stand wiper trip. Drilled ahead.
6/27/79 107'	TD: 9367'; MW: 10.1; Vis: 39. Drilled to 9307'. Made 6-stand wiper trip. Drilled to 9350'. Circulated; surveyed. Pulled out of hole; made steel-line measure correction to 9357'. Picked up core barrel; ran in hole. Reamed 75 feet to bottom. Cut Core No. 13, 9357' to 9367'.
6/28/79 0'	TD: 9367'; MW: 10.2; Vis: 39. Pulled out of hole with core; recovered 8.8 feet. Laid down core barrel. Tested blowout-preventer equipment. Ran in hole with Bit No. 14; reamed core hole. Circulated

	and conditioned. Made wiper trip to shoe; no drag; no fill. Circulated; surveyed. Pulled out of hole to log; rigged up to log. Ran Temperature Survey No. 1; misrun. Ran Temperature Survey No. 2.
6/29/79 0'	TD: 9367'; MW: 10.2; Vis: 39. Ran DIFL to 9370'; reran DIFL. Ran CN/CDL/GR; reran CN/CDL/GR to 9362'. Ran BHC-AL/GR to 9361', logger's depths.
6/30/79 0'	TD: 9367'; MW: 10.2; Vis: 36. Ran Dipmeter to 9362'; ran Velocity Survey. Shot 25 sidewall cores; recovered 21. Ran Temperature Survey to 9360'. Rigged down Dresser Atlas; changed bottom-hole assembly. Ran in hole to shoe; slipped and cut drilling line.
7/1/79 0'	TD: 9367'; MW: 10.2; Vis: 37. Cut 100 foot drilling line. Ran in hole. Reamed 20 feet to bottom; had 12 feet of fill. Circulated and conditioned mud. Pulled out of hole to shoe. Waited on cement to arrive.
7/2/79 0'	TD: 9367'; MW: 10.2; Vis: 37. Waited on cement.
7/3/79 0'	TD: 9367'; MW: 10.2; Vis: 36. Waited on cement. Ran in hole; tagged fill at 9352'. Circulated and conditioned mud at 9350'. Pulled out of hole; rigged up and ran 7" liner. Broke circulation at 5000' and at shoe. Ran liner to 8898' KB. Rigged up cement head and circulated volume of drill pipe and casing. Dropped setting ball and set liner. Top of tie back: 7204'. Circulated and conditioned mud.
7/4/79 0'	TD: 9367'; MW: 10.2; Vis: 36. Circulated and conditioned mud and hole. Rigged up Dowell. Cemented with 30 barrels of water and 800 sacks Class "G" containing 0.75% D-65, 0.3% D-13R. Dropped drill-pipe plug and displaced with 2 barrels of water and 186 barrels of mud. Final pump pressure: 1,500 psi. Cement in place July 3, 1979, at 10:20 a.m. Did not bump plug. Pulled out of hole. Laid down bottom-hole assembly and excess drill pipe. Picked up 4-3/4" drill collars and 3-1/2" drill pipe. Picked up 8-1/2" bit and 9-5/8", 53.5# scraper on 5" drill pipe. Ran in hole; repaired. Ran in hole; tagged cement at 6928'.
7/5/79 0'	TD: 9367'; MW: 10.1; Vis: 40. Drilled cement 6928' to 7204'; top of liner. Circulated hole clean. Pulled out of hole; picked up 5-5/8" bit and 7" scraper. Ran

in hole; set down at 7204'. Circulated 50 feet inside liner. Tagged cement at 8812'. Tested casing to 2,500 psi; bled back to 600 psi. Circulated hole clean. Pulled out of hole. Tested blowout-preventer equipment. Picked up Howco cement retainer and ran in hole.

7/6/79
0'

TD: 9367'; MW: 10.2; Vis: 38. Ran in hole with 9-5/8" cement retainer; set at 7157'. Established injection rate of 4 BPM at 1,800 psi. Pulled out of retainer. Pumped 20 barrels of water mix and pumped 100 sacks Class "G" cement containing 0.75% D-65 and 0.2% D-13R. Followed with 5 barrels of water and 87 barrels of mud. Retainer moved down the hole. Reversed out cement. Circulated and followed retainer to 7193'. Rigged up Dowell and squeezed 128 barrels of mud, 20 barrels of water, and 100 sacks of Class "G" containing 0.75% D-13R mixed at 15.8 ppg. Followed with 5 barrels of water and 120 barrels of mud. Initial pressure: 1,200 psi at 3 BPM. Final pressure: 1,400 psi at 3 BPM. Cement in place July 5, 1979, at 2:15 p.m. Pulled out of hole 3 stands; reverse circulated. Recovered small amount of contaminated mud. Pulled out of hole; picked up bit. Ran in hole to 5620'. Waited on cement.

7/7/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Waited on cement. Ran in hole to 7193'; drilled on cement and retainer to 7204'. Circulated bottoms up. Tested liner lap to 3,000 psi. Pulled out of hole.

7/8/79
0'

TD: 9367'; MW: 10.2; Vis: 38. Picked up 5-5/8" bit, junk sub, 3-1/2" drill pipe, 4-3/4" drill collars with 7" and 9-5/8" scraper assembly. Ran in hole. Drilled on junk at 7209'. Pulled out of hole. Steel-line measurement. No correction. Picked up 5-5/8" bit, junk sub, 3 - 4-3/4" drill collars, and 6 - 6-1/4" drill collars. Ran in hole; drilled junk and cement, 7206' to 7294'. Circulated bottoms up; pulled out of hole and picked up 7" and 9-5/8" scraper assembly. Ran in hole.

7/9/79
0'

TD: 9367'; MW: 10.1; Vis: 38. Ran in hole with scraper assembly. Pulled out of hole; changed bottom-hole assembly. Ran in hole. Drilled cement, 7294' to 7690'. Soft cement to 7720'. Ran in hole to 8270'; circulated hole clean.

7/10/79
0'

TD: 9367'; MW: 10.1; Vis: 36. Ran in hole; circulated at 8812'. Pulled out of hole; picked up 7" scraper. Ran in hole to top of liner. Ran in hole,

breaking circulation. Circulated hole clean and tested shoe. Pumped away at 1,900 psi. Pulled out of hole. Rigged up Dresser Atlas and logged CBL.

7/11/79
0'

TD: 9367'; MW: 10.1; Vis: 36. Finished logging (misrun). Made up EZ drill retainer. Attempted to set retainer; would not set. Repaired compound chain, oil line, and rotary seal. Pulled out of hole with retainer. Rigged up to log; misrun. Made up bottom-hole assembly. Ran in hole to 7204'; circulated and cleaned hole.

7/12/79
0'

TD: 9367'; MW: 10.2; Vis: 37. Circulated top of liner. Ran in hole to 8790'; circulated. Pulled out of hole. Rigged up Dresser tool; would not work; rigged down. Picked up 7", 38# EZ drill retainer. Ran in hole; set at 8791'. Tested casing and drill pipe to 3,000 psi. Cemented with 100 sacks Class "G" with 20 barrels of water ahead; displaced with 3 barrels of water and 106 barrels of mud--132 barrels total. Maximum pressure: 2,900 psi at 2 BPM. Final pressure: 2,200 psi at 2 BPM. Final shut in: 2,000 psi. Unstung with 750 psi on pipe in 3 minutes. Pulled 3 stands. Reversed out; no cement or contaminated mud. Pulled out of hole and laid down running tools. Picked up bit and 7" scraper. Ran in hole to 6400'. Waited on cement. Ran in hole.

7/13/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Tagged cement at 8787'. Circulated pill, pulled out of hole, rig-up loggers, ran CBL. Rigged down loggers; picked up test tool to test liner lap. Ran in hole; ran 4400' cushion. Picked up test manifold. Set packer at 7163'; tail at 7185'. Opened tool 3 hours; no flow. Closed tool 3 hours. Dropped bar on reverse sub. Reversed out water cushion. Pulled out of hole.

7/14/79
0'

TD: 9367'; MW: 10.1; Vis: 35. Pulled out of hole; laid down Howco tools. Tested blowout-preventer equipment. Worked on blowout-preventer equipment while waiting on RTTS tools. Made up RTTS and ran in hole. Checked all connections in hole. Tested Dowell lines. Set packer at 7176'. Pressured to 3,000 psi. Put 1,500 psi on annulus. Pumped 3-1/2 barrels, pressure to 5,000 psi. Bled to 4,300 psi in 10 minutes. Pumped 1/2 barrel. Pressured to 5,000 psi; no pressure loss in 10 minutes. Bled off; recovered 3 barrels. Pulled out of hole; laid down RTTS. Picked up bit and scraper. Ran in hole; cut drilling line. Ran in hole.

7/15/79
0'

TD: 9367'; MW: 10.1; Vis: 34. Ran in hole; conditioned mud. Pulled out of hole; lost bit. Ran in hole with wireline junk basket; tagged bit at 8462'. Pushed down to 8778'. Ran in hole with squeeze gun; shot 4 shots at 8549'. Set retainer on wireline at 8544'. Ran in hole with stinger; stung into retainer. Tested lines to 5,000 psi. Tested drill pipe and casing to 3,000 psi. Pumped into formation with 3,750 psi. Estimated 1/2 BPM at 2,500 psi. Cemented with 20 barrels H_2O and 50 sacks Class "G" with 0.75% D-65 and 0.3% D-13R, followed by 3 barrels water. Squeezed 17 barrels. Cement in place at 12:30 a.m. Left one barrel cement in drill pipe. Pulled out of retainer. Pulled out of hole 3 stands; reversed out. Pulled out of hole. Picked up bit and scraper; ran in hole.

7/16/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Ran in hole; waited on cement. Ran in hole; tagged cement at 8473'. Drilled cement, 8473' to 8544'. Tagged retainer at 8544'. Drilled retainer; drilled cement, 8547' to 8557'. Ran in hole to 8780'. Circulated and conditioned mud. Pulled out of hole. Tested perforations to 3,000 psi; checked blowout-preventer equipment. Rigged up to log; ran CBL/VDL. Perforated 8558-8665'. Laid down Dresser; made up Howco test tools.

7/17/79
0'

TD: 9367'; MW: 10.1; Vis: 39. Picked up Howco test tools. Ran in hole for Drill-Stem Test No. 2. Ran 500-foot water cushion. Hooked up test manifold. Opened tool 1/2 hour with weak blow; had steady buildup. Shut in tools 1 hour. Opened tools 13 hours. Weak to medium-strong blow. Had gas to surface at 8:00 p.m.; had 100% gas at 8:10 p.m. Shut in tool 5-1/2 hours at 6:00 a.m.

7/18/79
0'

TD: 9367'; MW: 10.1; Vis: 41. Final shut-in of Drill-Stem Test No. 2. Reversed out at 9:45 p.m. 6983' of fluid entry. Laid down test head and pulled out of hole. Laid down test tools. Made up bottom-hole assembly. Ran in hole. Recovered 5 barrels of asphaltic oil, gas-cut mud, and water.

7/19/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Ran in hole with bit; circulated. Pulled out of hole; checked blowout preventer. Rigged up Dresser Atlas tools. Ran retainer on wireline; set retainer at 8542'. Picked up Howco stinger. Ran in hole; hooked up Dowell. Tested lines to 5,000 psi; tested casing and drill pipe to 3,000 psi. Pumped into formation with 1,800 psi; estimated 4 BPM at 1,600 psi. Pumped 20 barrels of

water, mixed 100 sacks Class "G" with 0.75% D-65 and 0.3% D-13R. Pumped 3 barrels of water and 103 barrels of mud. Squeezed at 2 BPM, 800 psi. Left one barrel cement in drill pipe. Cement in place 7/18/79 at 7:09 p.m. Pulled out of hole to 8538'. Reversed out water and small amount of cement. Pulled out of hole. Made up bit and scraper; cleaned out to 8540'. Tested casing to 3,000 psi; pulled out of hole.

7/20/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Pulled out of hole. Tested blowout-preventer equipment, upper and lower kelly cocks, wings, HCR, check valve, and Hydril. Hydril seals leaked. Rigged up Dresser Atlas and perforated 8482-8538'. Made up and ran test tools. Ran in hole; tool opened going into liner. Pulled out of hole; reset packer and clocks. Ran in hole; set packer at 8438', 500' water cushion. Ran Drill-Stem Test No. 3. Opened tool at 11:00 p.m.; shut in 11:30 p.m. to 12:30 a.m. Final flow 12:30 a.m. to 6:00 a.m.

7/21/79
0'

TD: 9367'; MW: 10.2; Vis: 36. Conducted final flow of Drill Stem Test No. 3. Shut in from 6:30 a.m. to 7:45 p.m. Dropped back and reversed out recovery. Recovered 5 barrels oil, 6.8 barrels water cushion and mud, 22 barrels water with oil. Pulled out of hole. Laid down tools. Checked blowout preventer. Ran in hole with bit and scraper. Pulled out of hole.

7/22/79
0'

TD: 9367'. Rigged up Dresser Atlas. Set retainer on wireline at 8454'. Ran in hole with stinger. Tested lines to 5,000 psi; established breakdown and rate 1,200 psi, pumped in 800 psi at 2 BPM. Mixed 8 barrels of H_2O and 85 sacks Class "G" with 0.75% D-65 and 0.3% D-13R, followed with 3 barrels H_2O. Displaced with 128 barrels mud. Pulled out of hole 4 stands and reversed out. Pulled out of hole to 7202'; cut line. Pulled out of hole. Worked on Hydril; could not repair. Waited on weather and Hydril.

7/23/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Waited 19-1/2 hours for weather to clear. Nippled up Hydril and tested. Picked up bit and casing scraper.

7/24/79
0'

TD: 9367'; MW: 10.1; Vis: 37. Ran in hole with bit and scraper; tagged cement at 8446'. Cleaned out to 8449'. Tested retainer and casing to 3,000 psi. Pulled out of hole to top of liner. Circulated and conditioned mud. Pulled out of hole. Rigged up for

Drill-Stem Test No. 4. Tested lubricator to 500 psi. Perforated 8392' to 8436' with 4 shots per foot. Made up test tools; ran in hole; 500' water cushion. Opened tools for initial flow; had very weak blow. Shut in. Opened for final flow; had none. Made final shut-in. Reversed out; had very minor gas at 850 strokes. Recovered 7.5 barrels water cushion and mud. Pulled out of hole with tools.

7/25/79
0'

TD: 9367'; MW: 10.1; Vis: 38. Laid down test tools. Ran in hole with retainer and set at 8331'. Tested lines to 5000'; tested casing to 3,000 psi. Estimated rate: 3 BPM at 1,500 psi. Pumped 20 barrels, 100 sacks Class "G" with 0.75% D-65 and 0.20% D-13R at 15.8 ppg. Followed with 3 barrels of water and 126 barrels of mud. Initial pressure: 3 BPM at 900 psi. Final pressure: 2 BPM at 1,700 psi. Cement in place at 12:15 p.m. Pulled out of hole 3 stands. Reversed out drill pipe. Pulled out of hole. Ran in hole with bit and scraper to 8055'. Conditioned mud. Pulled out of hole. Rigged up and perforated 7984' to 7985'. Set retainer at 7979'. Ran in hole with stinger. Tested lines to 5,000 psi; tested casing to 3,000 psi. Estimated rate: 3 BPM at 1,800 psi. Pumped 20 barrels of water and 50 sacks Class "G" with 0.75% D-65 and 0.20% D-13R, followed with 3 barrels of water and 120 barrels of mud. Initial pressure: 1,750 psi at 2 BPM. Final pressure: 2,200 psi at 1 BPM. Cement in place at 3:30 a.m. Pulled out of hole first stand; reversed out. Reversed ± 4 barrels cement. Pulled out of hole.

7/26/79
0'

TD: 9367'; MW: 10.1; Vis: 39. Pulled out of hole. Picked up bit; ran in hole to 7113'. Waited on cement. Ran in hole; tagged cement at 7944'. Drilled cement and retainer to 7990'. Cleaned out to 8060'. Conditioned mud; pulled out of hole to top of liner. Circulated to clean junk; pulled out of hole. Rigged up Dresser for CBL, 7930' to 8150'. Tested perforations to 3,000 psi OK.

7/27/79
0'

TD: 9367'; MW: 10.0; Vis: 36. Perforated 7971' to 7976' at 4 shots per foot. Made up test tools and ran in hole for Drill-Stem Test No. 5. Set packer at 7924'; 504' water cushion. Opened tool for initial flow, with weak blow. Increased to moderate in 5 minutes; increased to strong in 15 minutes; flowed in 30 minutes. Initial shut-in: 1 hour. Final flow: strong blow. Gas to surface: 2 hours and 45 minutes. Cushion to surface: 3 hours and 35 minutes. Formation fluid: 4 hours and 20 minutes. Had 70 psi

on 1/4" choke. Stabilized last hour; 110 psi; 1/4" choke; 258 BPD. C_1 at final shut-in: 11,000 ppm. Final flow: 7 hours and 32 minutes. Shut in for final buildup.

7/28/79
0'

TD: 9367'; MW: 10.0; Vis: 35. Reversed out at end of shut in. Recovered 3.3 barrels water cushion and 162 barrels formation water and mud-cut water. Pulled out of hole and laid down test tools. Ran in hole with bit and scraper to 7900'. Conditioned mud. Pulled out of hole; picked up 7" retainer and ran in hole. Slipped and cut 100' line. Ran in hole; set retainer at 7880'. Tested lines to 5,000 psi; tested casing to 3,000 psi. Established breakdown at 1,400 psi, 3 BPM. Pumped 20 barrels of water and 100 sacks Class "G" with 0.75% D-65 and 0.2% D-13R. Followed cement with 3 barrels water and 118 barrels of mud. Initial pressure: 1,000 psi at 3 BPM. Final pressure: 3,000 psi, 2 BPM. Cement in place at 6:25 a.m.

7/29/79
0'

PBTD: 6768'; MW: 10.0; Vis: 36. Pulled out of hole 5 stands. Reversed out; no cement. Pulled out of hole; laid down 3-1/2" drill pipe and 4-3/4" drill collar. Ran in hole with 8-1/2" bit and 9-5/8" scraper to 7100'. Circulated and conditioned mud. Tested casing to 3,000 psi. Pulled out of hole; ran 9-5/8" retainer and set at 7018'. Circulated; pumped 10 barrels of water ahead of 100 sacks Class "G" cement containing 0.75% D-65, 0.2% D-13R at 15.8 ppg. Followed with 4 barrels of water, 114 barrels of mud. Pulled out of hole 10 stands; reversed out. Pulled out of hole, laying down excess 5" drill pipe.

7/30/79
0'

PBTD: 6768'; MW: 10.0; Vis: 35. Laid down excess 5" drill pipe. Picked up shifting tools and ran in hole. Opened FO at 2153' and circulated annulus. Closed FO. Pulled out of hole; picked up BOT mechanical 9-5/8" cutter. Ran in hole; attempted to cut casing at 2330'. Pulled out of hole; picked up spear; attempted to pull casing, would not move. Pressured casing with no circulation. Picked up cutter; ran in hole. Attempted to cut casing at 2327'; no cut. Pulled out of hole; picked up hydraulic cutter. Ran in hole; attempted to cut casing at 2130'. Pulled out of hole. Picked up mechanical cutter and ran in hole. Attempted to cut at 2125'; no cut. Pulled out of hole.

7/31/79
0'

PBTD: 6758'; MW: 10; Vis: 34. Finished trip out; laid down 9-5/8" casing cutter. Raised

blowout-preventer stack. Removed 9-5/8" packoff assembly. Attempted to pull pipe; nippled up. Picked up 9-5/8" hydraulic cutter. Ran in hole to 2120' and attempted to cut casing. Pulled out of hole. Picked up spear and attempted to pull casing; no cut. Waited on Tri-State serviceman and cutter.

8/1/79

PBTD; 1660'; MW: 10.1; Vis: 34. Picked up 9-5/8" Tri-State casing cutter. Ran in hole; cut casing at 2175'. Pulled out of hole. Picked up BOT, speared 9-5/8", and pulled casing loose. Changed rams; pulled and laid down 9-5/8" casing. Total 2150.41' casing laid down, 52 joints, hanger, FO, 15' cut off. Changed rams; picked up 12-1/4" bit and casing scraper; ran in hole to 2170'; circulated and conditioned mud. Pulled out of hole; picked up Howco 13-3/8" EZ drill retainer and ran in hole. Retainer set prematurely at 1777'. Released running tool and circulated. Rigged up Dowell equipment to cement. Pumped 20 barrels of water and 100 sacks ArcticSet II at 15.2 ppg. Followed with 3 barrels of water and 26 barrels of mud. Pulled out of hole to 1620'; reversed out. Displaced mud to water and water to diesel. Laid down 5" drill pipe.

8/2/79

PBTD: 1660'. Cleared floor; nippled down blowout-preventer equipment. Installed dry-hole marker and cleaned pits. Released rig August 1, 1979, at 12:00 midnight. Began rig down for move to Lonely.

DRILLING TIME ANALYSIS

J. W. DALTON TEST WELL NO. 1

NABORS ALASKA DRILLING, INC., RIG 1

Spud 5/7/79; Rig released 8/1/79

Total Depth 9,367 Feet

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

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1979 4-16	24																								Began Rigging Up
4-17	24																								Rigging Up
4-18	24																								Rigging Up
4-19	24																								Rigging Up
4-20	24																								Rigging Up
4-21	24																								Rigging Up
4-22	24																								Rigging Up
4-23	24																								Rigging Up
4-24	24																								Rigging Up
4-25	24																								Rigging Up
4-26	24																								Rigging Up
4-27	24																								Rigging Up
4-28	24																								Rigging Up
4-29	24																								Rigging Up
4-30	24																								Rigging Up

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

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
5-1	24																								Rigging Up
5-2	24																								Rigging Up
5-3	24																								Rigging Up
5-4	24																								Rigging Up
5-5	24																								Rigging Up
5-6	23½									½															Rigging Up
5-7	6	11		2½			½						4											Completed Rig Up	Spudded Well at 12:00 Noon
5-8		12		4½	½		2½	½															4	Surveying	
5-9		17½	1	3	1			1															½	Reaming	
5-10		11½	½	8				4½																Drilling	
5-11				7				2	15															Logging	Ran Dresser Atlas Wireline Logs
5-12				5				2		13½		2											1½	Running 13 3/8" Casing	
5-13											24													Waiting on Cement	
5-14										3	21													Waiting on Cement	
5-15											3	21												Nippled up BOP	

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

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
5-16										½		22	1½											Nipple Up BOP	
5-17		10¼		2½				1½					4										5	Making Up New Bit	
5-18		3	3	7		5¾		2¼	¼								2¾							Tripping	Core No. 1: 3500' - 3530'
5-19		15	½		5		3½																	Working on No. 1 Clutch	
5-20		4	1¼	11½	¾			1½									4¼							Tripping	Core No. 2: 4667' - 4697'
5-21		18		3	½		2½																	Tripping	
5-22		6½	1	8¾	¼			1									6½							Tripping	Core No. 3: 5603' - 5633'
5-23		23¼			¾																			Drilling	
5-24		4		7¼	½			2					3¾				6½							Circulating	Core No. 4: 6585' - 6615'
5-25		18	1	4				1																Drilling	
5-26		11¾		6½	2¼			2															1	Drilling	
5-27		19½	½		¼			3¾																Drilling	
5-28			½	13½	¼			2¼	4½								3							Circulating	Core No. 5: 7524' - 7534'
5-29									24															Logging	Ran Dresser Atlas Wireline Logs
5-30		1½	½	11				3½	5½														2	Running in Hole	

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

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
5-31				2½				1¼		20¾														Running 9 5/8" Casing	
6-1				2½																			21½	Attempting to Bail Out Landing Joint	
6-2				1½									4½										18	Testing FO	Drilling suspended to 6/8 for Stabilization of drilling pad and Road.
6-3				7½									1½										15	POH with BHA	
6-4				5½				16¼															2	RIH - SLM	
6-5				3½																			20½	Circulating	
6-6				2				8															14	General Clean Up	
6-7			1	4				6															13	General Clean Up	
6-8		10	3	7				1½															2½	Reaming	
6-9		24																						Drilling	
6-10		10¾	½	5				3⅛					4½											Testing BOP	
6-11		2¾		12½				2⅛									6½							Circulating	Core No. 6: 7967' to 8021
6-12		1		15¾				2									5¼							Pumping Pill	Core No. 7: 8021' - 8081'
6-13				13			¼	2									8¾							Coring	Core No. 8: 8081' - 8113'
6-14				9½				2									12½							Coring	Core No. 9: 8113' - 8139.5'

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

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
6-15				14½				6									2½						1	Running In Hole	
6-16				11¼														12½						DST No. 1	
6-17				10¾				2					3¾				7½							Running In Hole	Core No. 10: 8140' - 8200'
6-18		10	½	11¾				2½																Drilling	
6-19		8¼	½	6				2									6½							Coring	Core No. 11: 8317' - 8345'
6-20		8½		9½													5						1	Pulling Out of Hole	Core No. 12: 8515' - 8543.5'
6-21		15¼		4			¾	3½																Drilling	
6-22		15½		3½			1	1¼															2¾	Drilling	
6-23		21½		¾				2																Drilling	
6-24		17	¾	5¼		½		½																Pulling Out of Hole	
6-25		23½		½																				Drilling	
6-26		17½		6½				½																Drilling	
6-27			½	12¾				3½	1½				2¼				3½							Pulling Out of Hole	Core No. 13: 9357' - 9367'
6-28									24															Logging	Ran Dresser Atlas Wireline Logs
6-29									24															Logging	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. J. W. Dalton Test Well No. 1 Page 6 of 8

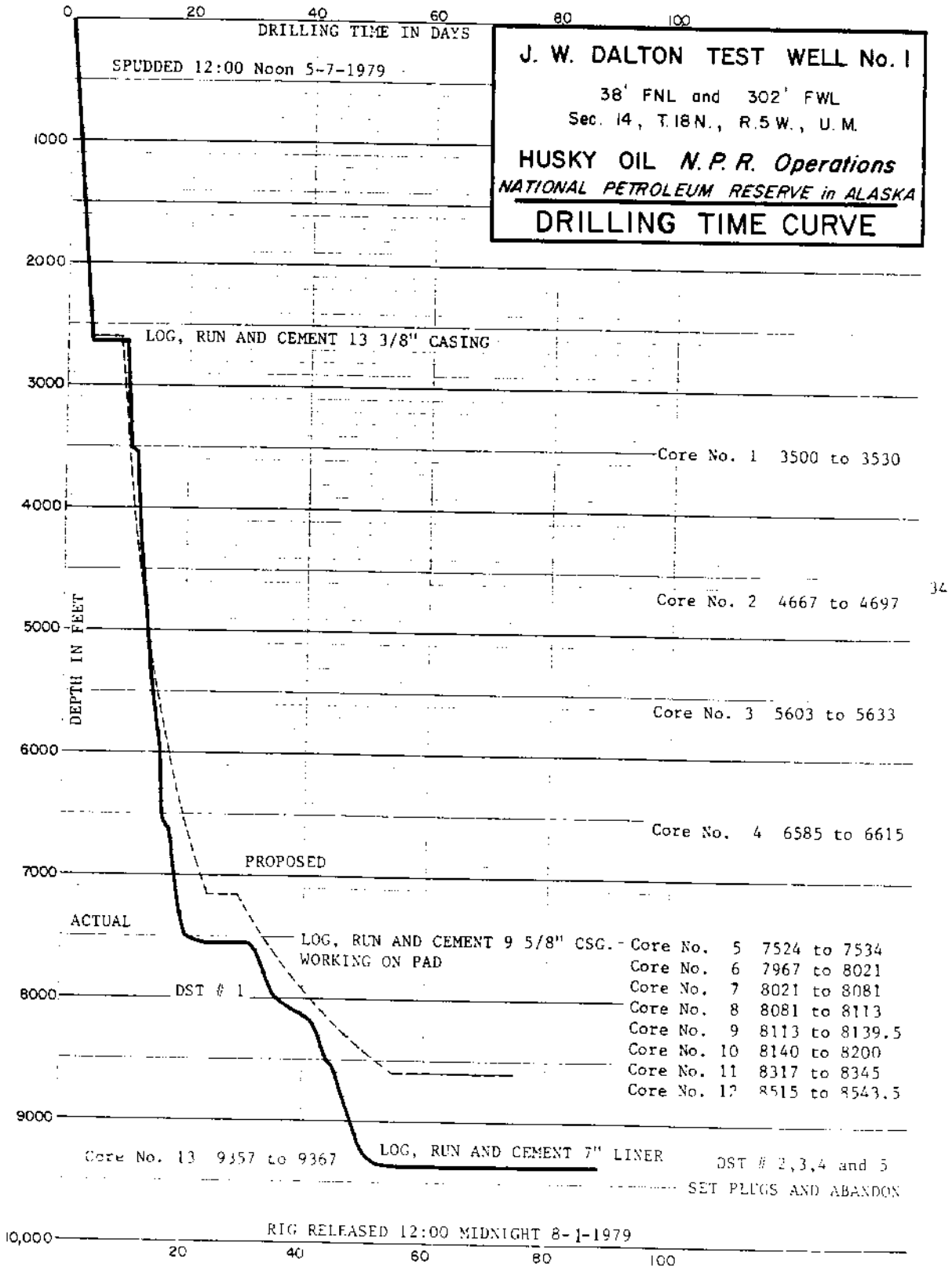
DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
6-30				6½				3½	3														11	Cutting Drilling Line	
7-1																							24	Waiting on Equipment	
7-2				3¾				2½		2¾													15	Waiting on Equipment	
7-3				16				3		5														Circulating	
7-4				14½			3	3															3¾	Repair Drum Chain	Running 7" liner
7-5				7				2			4½		5							5½				Going In Hole	
7-6		10		5½							7½												1	Waiting On Cement	
7-7		7¾		13½				1¼															1½	Pulling Out Of Hole	
7-8		10½		11				1															1¾	Running In Hole	
7-9		3		12½				6¾	¾														1¼	Circulating	
7-10				8			3		12											1				Logging	Ran CBL Log
7-11				10½				2	7½	4														Running In Hole	
7-12				10¾				3	5½		1½							2¾						Waiting On Cement	
7-13				11¾			4						2½					4¾					1	Pulling Out Of Hole	
7-14				9¾				4½	5½														4¼	Running In Hole	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. J. W. Dalton Test Well No. 1 Page 7 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
7-15				8¼				4½	3		1½									½			6	Running In Hole	
7-16				4					5½									14½						Pick Up Test Tool	Ran CBL Log
7-17																		24						Drill Stem Testing	DST No. 2
7-18				15⅛				4½	1½											2½				Running In Hole	
7-19				15¼				2					2¼					2		¼			2¼	Pulling Out Of Hole	
7-20				4				2										18						Drill Stem Testing	DST No. 3
7-21				7⅜				2	1	2			⅜										9	Pulling Out Of Hole	
7-22												½											23½	Waiting on Hydril	
7-23				8½				2	3			3½	⅜					4		¼			1⅜	Running In Hole	
7-24				14				2	2									3½		2½				Collecting Samples	
7-25		8½		8				2½			3									2				Pulling Out Of Hole	
7-26		6½						1	4½									12						Logging	Ran CBL Log
7-27				10				2										12						Drill Stem Testing	DST No. 4, DST No. 5
7-28				15				4												4			1	Squeezing Cement	
7-29				17½				2½								3							1	Pulling Out of Hole	Stuck Casing

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. J. W. Dalton Test Well No. 1 Page 8 of 8

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
7-30				5								6				10							3	Nipple Down BOP	
7-31				5½				1½								½							16½	Waiting on Fishing Too	
8-1	15½			4				4		½														Laying down drill pipe	Rig Released 12:00 Midnight
TOTAL HOURS	525	418¾	21	565½	12	6¼	17¾	168¾	154¼	52	66	55	40¼	-0-	-0-	13½	81	110¾	-0-	18	-0-	255¼			


0
20
40
60
80
100
DRILLING TIME IN DAYS
J. W. DALTON TEST WELL No. 1
38' FNL and 302' FWL
Sec. 14, T.18N., R.5W., U.M.
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
DRILLING TIME CURVE
SPUDDED 12:00 Noon 5-7-1979
1000
2000
LOG, RUN AND CEMENT 13 3/8" CASING
3000
Core No. 1 3500 to 3530
4000
Core No. 2 4667 to 4697
DEPTH IN FEET
5000
Core No. 3 5603 to 5633
6000
Core No. 4 6585 to 6615
PROPOSED
7000
ACTUAL
LOG, RUN AND CEMENT 9 5/8" CSG. - WORKING ON PAD
Core No. 5 7524 to 7534
Core No. 6 7967 to 8021
Core No. 7 8021 to 8081
Core No. 8 8081 to 8113
Core No. 9 8113 to 8139.5
Core No. 10 8140 to 8200
Core No. 11 8317 to 8345
Core No. 12 8515 to 8543.5
8000
DST # 1
9000
Core No. 13 9357 to 9367
LOG, RUN AND CEMENT 7" LINER
DST # 2,3,4 and 5
SET PLUGS AND ABANDON
10,000
RIG RELEASED 12:00 MIDNIGHT 8-1-1979
20
40
60
80
100

ARCTIC DRILLING SERVICES

3139 Denali Street

DRILLING MUD RECORD

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska

WELL J. W. Dalton Test Well No. 1 COUNTY N. Slope Borough

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA SEC 14 TWP 18N RNG 5W

STOCKPOINT Lonely DATE 8/1/79 ENGINEER

CASING PROGRAM: 13 3/8 inch at 2633 ft.
9 5/8 inch at 7524 ft.
7 inch at 8898 ft.

TOTAL DEPTH 9367 ft.

DATE	DEPTH feet	WEIGHT lb/gal	VISCOSITY Sec API R ___ °F	VISCOSITY PV B ___ °F	Yp	GELS 10 sec/10 min	pH Strip ☐ Meter ☐	FILTRATION ml API	FILTRATE ANALYSIS HTHP ___ °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	SAND %	RETORT Solids %	RETORT Oil %	RETORT Water %	CEC Mud, me/ml	REMARKS AND TREATMENT
5/5	0	8.6	40	8	12	6/8	9.5	25		3			800	Tr	0	2		98		
5/6	0	8.6	42	10	13	6/8	9.5	25		3			800	Tr	0	2		98		Repaired leak in mud pits.
5/7	0	8.6	43	11	14	6/8	9.0	25		3			800	Tr	0	2		98		Mixed additional volume.
5/8	487	9.6	46	12	14	4/9	9.0	25		3			1300	40	2.5	8		92		
5/9	991	9.2	165	16	35	14/28	8.5	15		2			1800	40	3	5		95		
5/10	2081	9.4	250	22	47	16/37	8.3	12		2			1700	40	3	8		92		
5/11	2650	9.5	280	26	40	16/40	8.5	12		2			1800	40	3	9		91		
5/12	2650	9.5	260	24	40	16/45	8.5	12		2			1800	40	3	9		91		
5/13	2633	9.5	210	26	50	18/45	8.5	12		2			1600	40	3	9		91		
5/14	2633	9.5	210	26	50	18/45	8.5	12		2			1600	40	3	9		91		
5/15	2633	9.5	200	26	50	18/45	8.5	12		2			1600	40	3	9		91		
5/16	2633	9.5	200	26	50	18/45	8.5	12		2			1600	40	3	9		91		
5/17	2633	9.5	41	9	7	5/14	8.0	16		2			1400	40	.5	6		94		
5/18	3500	9.4	37	6	8	5/26	11.0	12		2			2400	60	.25	7		93		
5/19	3530	9.5	36	8	6	3/19	10.5	14		2			1800	40	.25	7		93		
5/20	4637	9.8	38	6	6	2/21	11.0	12		2			1800	40	Tr	8		92		
5/21	4874	9.7	34	5	7	2/12	10.5	12		2			1300	40	Tr	7		93		
5/22	5603	10.0	34	6	9	2/14	10.0	10		2			1300	40	Tr	11		89		
5/23	5875	9.9	36	8	9	2/11	8.5	9		2			1000	40	Tr	10		90		
5/24	6570	9.9	38	9	13	3/17	8.5	8.5		2			1000	40	Tr	11		89		
5/25	6614	9.9	40	13	17	3/20	8.0	10		2			850	40	.25	11		89		
5/26	7096	9.9	40	10	15	3/14	9.0	6.5		2			800	40	Tr	11		89		
5/27	7300	10.1	53	16	26	6/24	10.5	4.4		2			800	40	Tr	12		88		
5/28	7524	10.0	40	11	17	3/16	10.0	5.0		2			800	40	Tr	11		89		
5/29	7534	10.0	42	12	14	3/18	10.0	5.0		2			800	40	Tr	11		89		
5/30	7534	10.0	42	12	19	3/18	10.0	5.0		2			800	40	Tr	11		89		
5/31	7555	10.1	40	11	17	3/16	9.5	6.0		2			800	40	Tr	12		88		
6/1	7555	10.1	45	12	18	3/18	9.5	6.0		2			800	40	Tr	12		88		
6/2	7555	10.1	44	11	18	4/18	9.5	6.0		2			800	40	Tr	12		88		
6/3	7555	10.0	41	11	12	4/17	10.0	7.0		2			800	80	Tr	11		88		
6/4	7555	9.8	39	10	11	3/9	9.5	8.0		2			800	120	Tr	9		91		
6/5	7460	9.8	37	10	7	3/6	9.5	6.0		2			800	80	Tr	9		91		
6/6	7430	9.8	37	10	7	3/6	9.5	6.0		2			800	80	Tr	9		91		
6/7	7430	9.8	37	10	7	3/6	9.5	6.0		2			800	80	Tr	9		91		
6/8	7565	9.8	40	11	11	3/7	11.0	6.0		1			800	120	Tr	9		91		

ARCTIC DRILLING SERVICES

3139 Denali Street

DRILLING MUD RECORD

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska

WELL J. W. Dalton Test Well No. 1 COUNTY N. Slope Borough

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA

STOCKPOINT Lonely DATE 8/1/79 ENGINEER

SEC 14 TWP 18N RNG 5W

CASING PROGRAM: 13-3/8 inch at 2633 ft.
9-5/8 inch at 7524 ft.
7 inch at 8898 ft.

TOTAL DEPTH 9367 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS			SAND	RETORT			CEC	REMARKS AND TREATMENT
1979	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/10 min	Strip ☐ Meter ☐	ml API	HTHP @ °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
6/9	7694	10.0	42	13	12	3/7	11.0	5.8		2			850	100	Tr	10		90		
6/10	7821	10.0	40	14	10	3/8	10.0	5.7		1			900	40	1/4	10		90		
6/11	7967	10.1	39	13	11	3/8	9.5	5.6		1			950	40	Tr	11		89		
6/12	8022	10.1	42	14	10	3/9	10.5	5.8		1			900	40	Tr	11		89		
6/13	8072	10.1	39	11	9	2/7	10.0	5.8		1			950	40	Tr	11		89		
6/14	8092	10.1	38	11	8	2/7	9.5	5.9		1			950	Tr	Tr	11		89		
6/15	8113	10.1	38	11	8	2/8	9.5	6.0		1			950	20	Tr	11		89		
6/16	8141	10.1	38	11	8	2/7	9.5	6.0		1			950	20	20	11		89		
6/17	8141	10.1	38	11	8	2/7	9.0	6.5		1			900	20	Tr	11		89		
6/18	8200	10.1	37	12	9	1/6	9.5	6.5		1			950	20	Tr	11		89		
6/19	8339	10.1	38	12	9	1/6	9.5	6.5		1			1000	20	1/4	11		89		
6/20	8498	10.2	40	12	10	1/6	9.0	6.0		1			1000	20	1/4	11		89		
6/21	8543	10.2	40	12	12	2/7	9.5	7.0		1			1100	20	1/4	11		89		
6/22	8740	10.1	40	12	12	2/7	9.0	6.5		1			1100	20	Tr	11		89		
6/23	8835	10.1	38	10	8	2/5	9.5	7.0		1			1050	20	Tr	11		89		
6/24	8993	10.1	38	10	8	2/5	9.0	6.5		1			1050	20	Tr	11		89		
6/25	9104	10.2	40	10	10	2/6	9.5	6.5		1			1100	20	Tr	11		89		
6/26	9254	10.2	38	12	8	1/5	9.5	5.5		1			1100	20	Tr	11		89		
6/27	9367	10.1	39	12	12	2/6	9.0	6.0		1			1100	20	Tr	11		89		
6/28	9367	10.2	39	12	12	2/6	9.5	6.0		1			1100	20	Tr	11		89		
6/29	9367	10.2	39	12	12	2/6	9.0	6.0		1			1100	20	Tr	11		89		
6/30	9367	10.2	36	11	9	2/6	9.0	6.0		1			1100	20	Tr	11		89		
7/1	9367	10.2	37	10	5	1/6	9.0	5.5		1			1100	20	Tr	11		89		
7/2	9367	10.2	37	10	5	1/6	9.0	5.5		1			1100	20	Tr	11		89		
7/3	9367	10.2	36	10	5	1/6	9.0	6.0		1			1100	20	Tr	11		89		
7/4	9367	10.2	36	10	6	1/6	9.0	6.0		1			1100	20	Tr	11		89		
7/5	8898	10.1	40	12	5	2/7	11.0	11		2			1100	0	Tr	11		89		
7/6	8898	10.2	38	10	5	1/6	10.0	11		2			1100	0	Tr	11		89		
7/7	8898	10.2	38	10	5	1/6	12.0	12		2			1100	100	Tr	11		89		
7/8	8898	10.2	38	10	5	1/5	13.0	12		3			1100	200	Tr	11		89		
7/9	8898	10.1	38	10	5	1/5	13.0	14		2			1100	50	Tr	11		89		
7/10	8898	10.1	36	10	5	1/5	13.0	14		2			1100	Tr	Tr	10		90		
7/11	8898	10.2	36	10	5	1/5	13.0	14		2			1100	Tr	Tr	10		90		
7/12	8898	10.2	37	11	5	1/6	13.0	15		2			1100	Tr	Tr	10				
7/13	8898	10.1	37	10	5	2/8	13.0	16		2			1200	Tr	Tr	10		90		

09

ARCTIC DRILLING SERVICES

3139 Denali Street

DRILLING MUD RECORD

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska

WELL J. W. Dalton Test Well No. 1 COUNTY N. Slope Borough

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA SEC 14 TWP 18N RNG 5W

STOCKPOINT Lonely DATE 8/1/79 ENGINEER

CASING PROGRAM: 13-3/8 inch at 2633 ft.
9-5/8 inch at 7524 ft.
7 inch at 8898 ft.

TOTAL DEPTH 9367 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1979	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/10 min	Strip ☐ Meter ☐	ml API	HTHP @ °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
7/14	8902	10.1	34	9	4	2/9	13.0	16		2			1200	Tr	Tr	10		90		
7/15	8902	10.1	34	9	4	2/10	13.0	15		2			1200	Tr	Tr	10		90		
7/16	8902	10.1	37	9	7	2/12	13.0	15		2			1300	20	Tr	9		91		
7/17	8902	10.1	39	9	7	2/12	13.0	14		2			2000	40	Tr	9		91		
7/18	8902	10.1	41	16	8	1/9	12.5	15		2			1400	40	Tr	8		92		
7/19	8902	10.1	37	12	7	1/7	12.5	15		2			1400	40	Tr	8		92		
7/20	8902	10.1	37	7	12	1/6	12.5	14		2			1400	40	Tr	8		92		
7/21	8902	10.2	36	7	10	1/6	12.5	15		2			1400	40	Tr	8		92		
7/22	8902	10.0	42	14	8	1/8	11.0	14		2			1400	40	Tr	8		92		
7/23	8902	10.1	37	12	7	1/8	11.0	13		2			1300	40	Tr	8		92		
7/24	8902	10.1	37	7	7	0/5	11.0	10		2			1100	40	Tr	8		92		
7/25	8902	10.1	38	11	4	0/6	11.5	14		2			1100	40	Tr	7		93		
7/26	8902	10.1	39	7	9	0/7	11.0	14		2			1000	40	Tr	7		93		
7/27	8902	10.0	36	6	6	0/5	11.0	15		2			1100	40	Tr	7		93		
7/28	8902	10.0	35	6	6	0/5	11.0	15		2			1150	40	Tr	6		93		
7/29	8902	10.0	36	6	6	0/5	11.0	14		2			1100	40	Tr	6		94		
7/30	8902	10.0	35	6	4	0/4	11.0	15		2			1050	40	Tr	6		94		
7/31	8902	10.0	34	6	4	0/3	11.0	15		2			1000	40	Tr	8		92		
8/1	8902	10.0	34	5	3	0/3	10.5	15		2			1000	40	Tr	8		92		

BIT RECORD

COMPANY	CONTRACTOR	COUNTY	STATE
Husky Oil NPR Operations, Inc	Nabors Alaska Drilling, Inc.	North Slope Borough	Alaska

LEASE	WELL NO	SEC	TOWNSHIP	RANGE	BLOCK	FIELD
National Petroleum Reserve	J. W. Dalton No. 1	14	18N	5W		

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

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	2	3	DEPTH OUT	FIGE	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R P M	VERT DEV	PUMP PRESS	PUMPS No	Liner	SPM	MUD Wt	Vis	DULL CODE 1	2	3	REMARKS FORMATION, CIRC FLUID, ETC.	DATE
1	17½	HTC	X3A	SC095	15	15	15	741'	680	21		32.3	20/30	110	1/4	1300	1	6½	58	9.6	46	4	4	I		5/8
2	17½	HTC	X3A	SC524	16	16	16	1921'	1180	20	41	59	30/45	110	1/2	1000	1	6½	64	9.2		6	6	I	Gravel,sand,clay	5/9
3	17½	HTC	OSC 3AJ	PJ196	16	16	16	2650	729	11½	52½	64.8	35/45	110	3/4	1000	1	6½	64	9.5		4	6	I	Clay, silt, sand	5/10
4	12¼	HTC	OSC	AA735	13	13	13	3500'	850	13½	65½	64	10/40	50	3/4	1300	1	6½	51	9.4	37	5	4	I	Clay	5/18
5	12¼	HTC	OSC	AA867	12	12	11	4637'	1107	17½	83	63.3	45	110	3/4	2000	1	6½	54	9.8	38	6	7	I	Clay	5/20
6	12¼	HTC	X3A	PM881	12	12	11	5603'	906	24	112½	36.6	45	110	3/4	2000	1	6½	52	10	34	4	4	I	Clay	5/22
7	12¼	HTC	X3A	PM787	12	12	11	6584'	951	29½	149½	32.2	50	110		2000	1	6½	52	9.9	38	5	5	I	Clay	5/25
8	12¼	HTC	X3A	PM717	12	12	11	7219'	605	29	184½	20.3	35	90		2100	1	6½	51	10	53	4	4	I	Clay, silt, shale	5/27
9	12¼	HTC	X3A	PM877	12	12	11	7524'	305	19½	204	15.6	35	90		2100	1	6½	51	10	40	6	6	I	Shale	5/28
10	8½	HTC	OSC	NE005	9	9	9	7629'	74	9½	218	7.8	40	60		2000	1	5½	48	10	42	5	7	I	Drilling F,S,cmnt	6/8
11	8½	HTC	X3A	AM673	9	9	9	7821'	192	25	243	7.7	40	70	3/4	2000	1	5½	49	10	40	7	6		Silt,sand,shale	6/9
12	8½	HTC	J22	SL095	9	9	9	7967'	146	13	256	11.2	35	70	1/2	2000	1	5½	49	10	39					
13	8½	HTC	J22	VK490	9	9	9	8317'	117	10¼		11.4	30/35	65		1800	1	5½	45	10	38	2	2	I	Sandstone, cglmrt	6/19
14	8½	HTC	J33	FA919	9	9	9	9357'	365	54½		6.7	45	50		1900	1	5½	49	10	39	2	2	I		6/27
15	5 5/8	Smi	K3	AA61573																					Clean out 7"	7/5
16	8½	Sec	H7756	844011	12	12	13															7	3	I	Drilling retainer	7/6
17	8½	HTC	OSC1G	ND071	12	12	14															5	7	I	Drilling retainer	7/7
18	5 5/8	Smi	D6	61259																					Drilling cement	7/8
19	5 5/8	Smi	D6	AA67223																					Drilling cmt & ret	7/16
20	5 5/8	Smi	D6	AA67216																						
21	5 5/8	Smi	D6	AA67226																		5	5		Drilling cmt & ret	7/26

SMITH REPRESENTATIVE _____ PHONE _____

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.

Proposed casing for J. W. Dalton Test Well No. 1 was as follows: 20" conductor at ±100'; 13-3/8" casing at ±2600'; 9-5/8" casing at ±7130'; 7" liner from 6800' to total depth if needed for evaluation. Actual casing run was 20" at 94'; 13-3/8" casing at 2633'; 9-5/8" at 7524'; and a 7" liner from 7204' to 8898'. The 9-5/8" casing was run low to forecast as the Triassic rocks it was to be set in were low to forecast.

When plugging and abandoning the well, the 9-5/8" casing was cut at 2175' and recovered back to the surface. The 13-3/8" casing was left full of diesel from 1660' to surface so temperature monitoring equipment could be run in the well bore at a future date.

CASING TALLY
SUMMARY SHEET

DATE: May 12, 1979

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

SUMMARY OF PAGE MEASUREMENTS			
	NO OF JOINTS	FEET	00'S
PAGE 1	50	1994	26
PAGE 2	21	831	00
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL		2825	26

SUMMARY OF DEPTH CALCULATIONS				
		NO. OF JOINTS	FOOTAGE FEET	00'S
1	TOTAL CASING ON RACKS	71	2825	26
2	LESS CASING OUT (JTS NOS 67 thru 71	5	193	72
3	TOTAL (1 - 2)		2631	54
4	SHOE LENGTH		1	92
5	FLOAT LENGTH		1	63
6	MISCELLANEOUS EQUIPMENT LENGTH			
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		2635	09
8	LESS WELL DEPTH (KB REFERENCE)		2650	
9	"UP" ON LANDING JOINT		1.5	

Weight indicator before cementing: _____ ; after pick-off: _____ ; inches slacked off _____

SUMMARY OF STRING AS RUN								
WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW-USED	LOCATION IN STRING	NO OF JOINTS	FOOTAGE	INTERVAL
					JT NO. Shoe THRU NO.		1.92	2633.59 - 2631.67
72#	S-95	Buttress		New	JT NO. 1 THRU NO. 2	2	83.32	2631.67 - 2548.35
					JT NO. Float THRU NO.		1.63	2548.35 - 2546.72
72#	S-95	Buttress		New	JT NO. 3 THRU NO. 66	64	2548.22	2546.72 -
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			

PAGE 1 OF 2 **CASING TALLY** DATE: May 12, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton No. 1 TALLY FOR 13 3/8 " CASING

JOINT NO	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	41	45			
2	41	87			
3	40	60			
4	41	25			
5	41	31			
6	37	85			
7	38	20			
8	37	40			
9	41	64			
0	39	05			
TOTAL A	400	62			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	40	90			
2	34	61			
3	39	21			
4	41	79			
5	41	70			
6	41	75			
7	41	15			
8	41	41			
9	36	35			
0	38	40			
TOTAL D	397	27			

1	41	21			
2	41	57			
3	39	75			
4	39	78			
5	41	64			
6	40	23			
7	40	98			
8	39	05			
9	36	60			
0	41	41			
TOTAL B	402	22			

1	37	03			
2	39	35			
3	41	14			
4	41	85			
5	38	07			
6	37	52			
7	42	05			
8	42	25			
9	41	78			
0	40	12			
TOTAL E	401	16			

1	36	66			
2	40	60			
3	37	29			
4	43	27			
5	42	03			
6	35	80			
7	39	73			
8	33	98			
9	41	51			
0	42	12			
TOTAL C	392	99			

TOTAL A	400	62		
TOTAL B	402	22		
TOTAL C	392	99		
TOTAL D	397	27		
TOTAL E	401	16		
TOTAL PAGE	1994	26		

PAGE 2 OF 2 **CASING TALLY** DATE: May 12, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton 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	37	77			
2	40	74			
3	39	80			
4	38	13			
5	41	13			
6	37	68			
7	36	82			
8	40	33			
9	42	32			
0	33	75			
TOTAL A	388	47			

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	40	49			
2	41	90			
3	43	06			
4	40	65			
5	41	13			
6	41	58			
7	36	79			
8	41	37			
9	40	68			
0	35	00			
TOTAL B	402	65			

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

1	39	88			
2					
3					
4					
5					
6					
7					
8					
9					
0					
TOTAL C	39	88			

TOTAL A	388	47		
TOTAL B	402	65		
TOTAL C	39	88		
TOTAL D				
TOTAL E				
TOTAL PAGE	831	00		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well J. W. Dalton No. 1 Date May 12, 1979

Size Casing 13 3/8" Setting Depth 2633' KB Top (liner hanger) _____

Hole Size 17 1/2" Mud Gradient 9.5 ppg Viscosity 210

Casing Equipment

Dowell shoe, Dowell float located 86 feet

above shoe, at 2547' (DV, FO) collars located at _____ feet

and _____ feet.

Nine centralizers located 10' above shoe, top of 1st, 3d, 4th, and 5th joints and every other collar through 13th 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)	4350	Dowell	ASII		15.2	720 Bbls
(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 720 bbls @ 4/5 BPM, pumped in 20 ~~cu. ft.~~, (barrels) water

_____ prewash, used bottom plug (yes, no), mixed cement (1) above 205

minutes, ~~cement (2) above _____ minutes~~, top plug ~~(yes,~~ not displaced with

45 ~~cu. ft.~~, (barrels) in 12 minutes at rate of 4 BPM, ~~CFM,~~

~~(Bumped plug)~~ (Did not bump plug). Final Pressure 700 psi. Reciprocated

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

minutes. Had full 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.)

_____

_____

_____

_____

_____

J. E. Rider

Foreman

CASING TALLY
SUMMARY SHEET

DATE: May 31, 1979

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

SUMMARY OF PAGE MEASUREMENTS

	NO. OF JOINTS	FEET	.00'S
PAGE 1	50	2072	72
PAGE 2	50	2070	44
PAGE 3	50	2033	21
PAGE 4	40	1646	11
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	190	7822	48

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE .00'S
1	TOTAL CASING ON RACKS	190	7822	48
2	LESS CASING OUT (JTS NOS.	8	330	38
3	TOTAL (1 - 2)	182	7492	10
4	SHOE LENGTH		1	76
5	FLOAT LENGTH		1	62
6	MISCELLANEOUS EQUIPMENT LENGTH		66	69
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		7562	17
8	LESS WELL DEPTH (KB REFERENCE)		7555	
9	"UP" ON LANDING JOINT		21	

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
				New	JT NO. Casing THRU NO. Hanger		17.95	20' KB - 37.95
53.5	S-95	Buttress		New	JT NO. 131 THRU NO. 182	52	2115.58	37.95 - 2153.53
					JT NO. FO THRU NO. Cementer		3.88	2153.53 - 2157.41
53.5	S-95	Buttress		New	JT NO. 126 THRU NO. 130	5	203.21	2157.41 - 2360.62
					JT NO. FO THRU NO.		3.86	2360.62 - 2364.48
53.5	S-95	Buttress		New	JT NO. 3 THRU NO. 125	123	5083.96	2364.48 - 7448.44
					JT NO. Float THRU NO. Collar		1.62	7448.44 - 7450.06
53.5	S-95	Buttress		New	1 2	2	89.41	7450.06 7539.47
					Shoe		1.76	7539.47 7541.23

PAGE 1 OF 4

CASING TALLY

DATE: May 31, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton 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	47			
2	45	94			
3	43	34			
4	43	17			
5	42	61			
6	43	11			
7	43	26			
8	39	62			
9	38	12			
0	41	68			
TOTAL A	424	32			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	40	55			
2	42	11			
3	39	38			
4	43	61			
5	36	78			
6	39	22			
7	41	55			
8	41	28			
9	34	50			
0	39	40			
TOTAL D	398	38			

1	42	20			
2	42	49			
3	44	75			
4	40	92			
5	40	80			
6	41	30			
7	42	20			
8	38	86			
9	41	42			
0	37	38			
TOTAL B	412	32			

1	41	59			
2	39	84			
3	41	00			
4	42	32			
5	42	74			
6	46	87			
7	42	70			
8	42	28			
9	41	27			
0	46	50			
TOTAL E	427	11			

1	39	98			
2	42	15			
3	38	75			
4	39	17			
5	40	84			
6	43	22			
7	43	58			
8	42	58			
9	41	77			
0	38	55			
TOTAL C	410	59			

TOTAL A	424	32		
TOTAL B	412	32		
TOTAL C	410	59		
TOTAL D	398	38		
TOTAL E	427	11		
TOTAL PAGE	2072	72		

PAGE 2 OF 4

CASING TALLY

DATE: May 31, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton 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	62			
2	41	90			
3	42	42			
4	41	88			
5	41	89			
6	43	50			
7	39	89			
8	41	00			
9	42	90			
0	42	57			
TOTAL A	420	57			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	42	60			
2	40	73			
3	42	05			
4	42	18			
5	40	65			
6	42	95			
7	41	35			
8	42	25			
9	41	16			
0	42	16			
TOTAL D	418	08			

1	46	47			
2	38	72			
3	41	05			
4	40	32			
5	42	98			
6	36	78			
7	42	32			
8	43	15			
9	41	93			
0	40	58			
TOTAL B	414	30			

1	43	22			
2	42	74			
3	40	96			
4	40	70			
5	40	34			
6	40	40			
7	42	80			
8	44	15			
9	42	25			
0	39	07			
TOTAL E	416	63			

1	38	43			
2	38	66			
3	38	53			
4	44	78			
5	42	95			
6	41	80			
7	37	18			
8	36	55			
9	40	08			
0	41	90			
TOTAL C	400	86			

TOTAL A	420	57		
TOTAL B	414	30		
TOTAL C	400	86		
TOTAL D	418	08		
TOTAL E	416	63		
TOTAL PAGE	2070	44		

PAGE 3 OF 4

CASING TALLY

DATE: May 31, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton No. 1 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	39	74			
2	42	84			
3	41	90			
4	38	96			
5	42	55			
6	40	45			
7	42	48			
8	36	17			
9	41	94			
0	42	05			
TOTAL A	409	08			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	42	53			
2	46	48			
3	37	68			
4	34	64			
5	43	22			
6	39	00			
7	38	75			
8	40	48			
9	38	88			
0	37	09			
TOTAL D	398	75			

1	40	50			
2	42	76			
3	40	38			
4	42	23			
5	43	00			
6	43	56			
7	39	13			
8	40	45			
9	41	30			
0	42	76			
TOTAL B	416	07			

1	36	80			
2	41	00			
3	39	60			
4	34	33			
5	40	50			
6	42	36			
7	41	36			
8	38	40			
9	43	42			
0	43	30			
TOTAL E	401	07			

1	41	46			
2	39	00			
3	41	20			
4	42	40			
5	40	97			
6	40	54			
7	39	80			
8	41	35			
9	41	42			
0	40	10			
TOTAL C	408	24			

TOTAL A	409	08		
TOTAL B	416	07		
TOTAL C	408	24		
TOTAL D	398	75		
TOTAL E	401	07		
TOTAL PAGE	2033	21		

PAGE 4 OF 4

CASING TALLY

DATE: May 31, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton 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	30			
2	41	50			
3	41	89			
4	42	86			
5	40	60			
6	39	95			
7	39	58			
8	42	25			
9	41	50			
0	40	32			
TOTAL A	411	75			

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	40	54			
2	39	09			
3	41	64			
4	41	71			
5	42	20			
6	42	20			
7	42	61			
8	38	90			
9	40	44			
0	40	68			
TOTAL D	409	98			

1	41	10			
2	31	81			
3	43	21			
4	42	44			
5	38	00			
6	40	08			
7	42	84			
8	43	25			
9	41	80			
0	42	35			
TOTAL B	406	88			

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

1	43	11			
2	38	32			
3	42	89			
4	37	20			
5	42	65			
6	41	90			
7	41	40			
8	44	15			
9	42	98			
0	42	90			
TOTAL C	417	50			

TOTAL A	411	75		
TOTAL B	406	88		
TOTAL C	417	50		
TOTAL D	410	01		
TOTAL E				
TOTAL PAGE	1646	14		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well J. W. Dalton No. 1 Date May 31, 1979

Size Casing 9 5/8" Setting Depth 7524' Top (liner hanger) _____

Hole Size 12 1/4" Mud Gradient .520 Viscosity 40

Casing Equipment

Dowell shoe Dowell float located 92 feet

above shoe, at 7541' (~~DV~~, FO) collars located at 2153 feet

and 2360 feet.

_____ centralizers located 10' above shoe, top 1, 3, 4, 5, and every other one through 25th collar. Two above and below each FO and every 5th collar to surface.

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
1	1000	Dowell	"G"	0.75% D-65 & 0.2% D-13R	15.8	205 Bbls
2						

Cement through (~~DV~~, FO) Collar at 2360 feet

	No Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
3	300	Dowell	ASII		15.2	50 Bbls
4						

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

Circulated 1100 bbls @ 8 BPM, pumped in 50 ~~(cu. ft.)~~, (barrels) water

_____ prewash, used bottom plug (yes, ~~no~~), mixed cement (1) above 70

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

542 (~~cu. ft.~~), (barrels) in 120 minutes at rate of 8 BPM, CFM,

(Bumped plug) ~~(Did not bump plug)~~. Final Pressure 1250 psi. Reciprocated

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

minutes. Had full circulation (full, partial,

none, etc.). Completed job at 9:50 ~~a.m.~~, p.m.

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

Opened (~~DV~~, FO) at 5:15 a.m., ~~p.m.~~, circulated _____ bbls @ _____ BPM, pumped in

10 ~~(cu. ft.)~~, (barrels) water prewash, mixed cement (3) above

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

placed with 40 ~~(cu. ft.)~~, (barrels) in 12 minutes at rate of 3.5

_____ BPM, ~~CFM~~. (Bumped plug) (Did not bump plug). Final Pressure 200 psi

Displacing time _____ minutes. Had _____ circulation

(full, partial, none, etc.)

Remarks (Third Stage Job, etc.)

J. E. Rider

Foreman

CASING TALLY
SUMMARY SHEET

FIELD National Petroleum Reserve in AK LEASE & WELL NO. J. W. Dalton Test Well No. 1 DATE: July 3, 1979

TALLY FOR 7 " CASING

SUMMARY OF PAGE MEASUREMENTS

	NO. OF JOINTS	FEET	00'S
PAGE 1	50	1900	42
PAGE 2	10	381	11
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	60	2281	53

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	60	2281	53
2	LESS CASING OUT (JTS NOS.)	16	606	72
3	TOTAL (1 - 2)	44	1674	81
4	SHOE LENGTH		1	85
5	Landing Collar & Catch Sub		1	84
6	MISCELLANEOUS EQUIPMENT LENGTH (Hgr, Sleeve, & Cent Bushing)		16	12
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		1694	62
8	LESS WELL DEPTH (KB REFERENCE)			
9	"UP" ON LANDING JOINT			

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
					JT NO. Hanger THRU NO. Sleeve		16.12	7204 - 7220.12
					JT NO. 3 THRU NO 44	42	1599.29	7220.12 - 8819.41
					JT NO. Landing THRU NO Collar		.92	8819.41 - 8820.41
					JT NO. 2 THRU NO.	1	37.68	8820.33 - 8858.01
					JT NO Catcher THRU NO. Sub		.92	8858.01 - 8858.93
					JT NO. 1 THRU NO	1	37.84	8858.93 - 8896.77
					JT NO Shoe THRU NO		1.85	8896.77 - 8898.62

PAGE 1 OF 2

CASING TALLY

DATE: June 29, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton No. 1 TALLY FOR 7 " CASING

JOINT NO	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	37	84			
2	37	68			
3	36	10			
4	43	33			
5	37	85			
6	38	22			
7	43	26			
8	36	65			
9	42	07			
0	38	00			
TOTAL A	391	00			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	37	35			
2	38	45			
3	35	90			
4	38	02			
5	37	45			
6	37	50			
7	38	54			
8	38	62			
9	37	41			
0	38	73			
TOTAL D	377	97			

1	34	84			
2	36	88			
3	41	90			
4	36	22			
5	38	36			
6	38	28			
7	40	78			
8	41	72			
9	36	85			
0	36	36			
TOTAL B	382	19			

1	38	85			
2	38	70			
3	36	63			
4	36	84			
5	37	65			
6	38	39			
7	38	02			
8	37	63			
9	37	81			
0	36	11			
TOTAL E	376	63			

1	34	60			
2	37	65			
3	33	85			
4	38	63			
5	38	10			
6	38	32			
7	36	90			
8	38	05			
9	38	78			
0	37	75			
TOTAL C	372	63			

TOTAL A	391	00			
TOTAL B	382	19			
TOTAL C	372	63			
TOTAL D	377	97			
TOTAL E	376	63			
TOTAL PAGE	1900	42			

PAGE 2 OF 2

CASING TALLY

DATE: June 29, 1979

FIELD NPRA LEASE & WELL NO. J. W. Dalton No. 1 TALLY FOR 7 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	37	11			
2	36	81			
3	35	56			
4	41	65			
5	38	10			
6	38	33			
7	37	75			
8	36	60			
9	38	85			
0	40	35			
TOTAL A	381	11			

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	381	11		
TOTAL B				
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	381	11		

CASING OR LINER CEMENT JOB

Lease National Petroleum Reserve Well J. W. Dalton No. 1 Date July 3, 1979

Size Casing 7" Setting Depth 8898' Top (liner hanger) _____

Hole Size 8½" Mud Gradient _____ Viscosity 37

Casing Equipment

BOT Type V shoe, _____ landing collar located 79.21 feet

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

and _____ feet

_____ centralizers located 10 feet above shoe and on collars 3, 5, 10, 15, 20, 25, 37, 40, and 43.

_____ scratchers located _____

_____

Liner hanger and pack off (describe) BOT Type MC hydraulic set with 6 foot tie back sleeve

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	800	Dowell	G	0.75% D-65 & 0.3% D-13R	15.8	163.85
(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 1150 bbls @ 6½ BPM, pumped in 30 ~~(cu. ft.)~~, (barrels) water

_____ prewash, used bottom plug (yes, no), mixed cement (1) above 50

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

188 (cu. ft.), (barrels) in 49 minutes at rate of 6 BPM, CFM,

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

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

minutes. Had _____ circulation (full, partial,

none, etc.). Completed job at 10:20 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.)

_____

_____

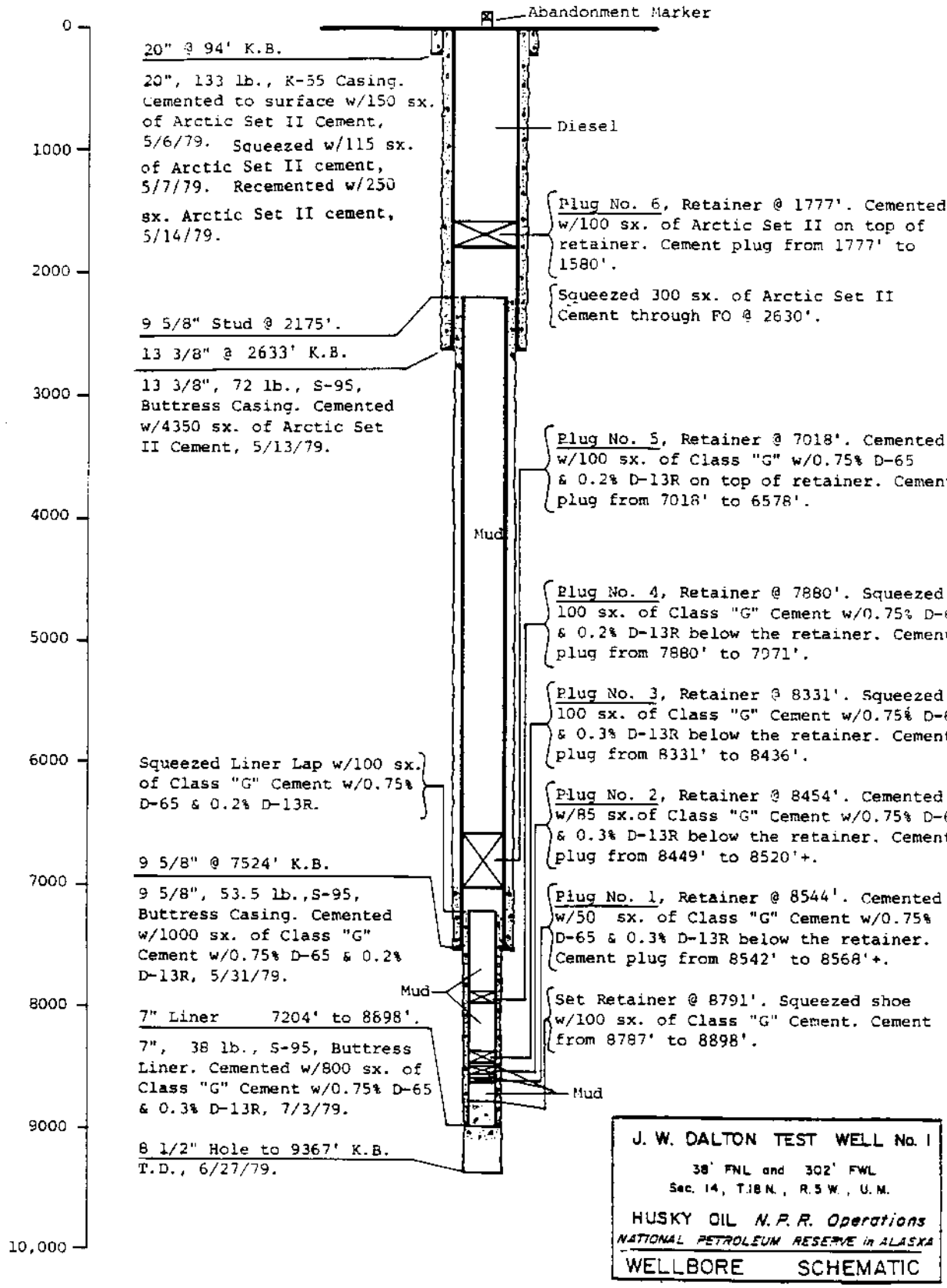
_____

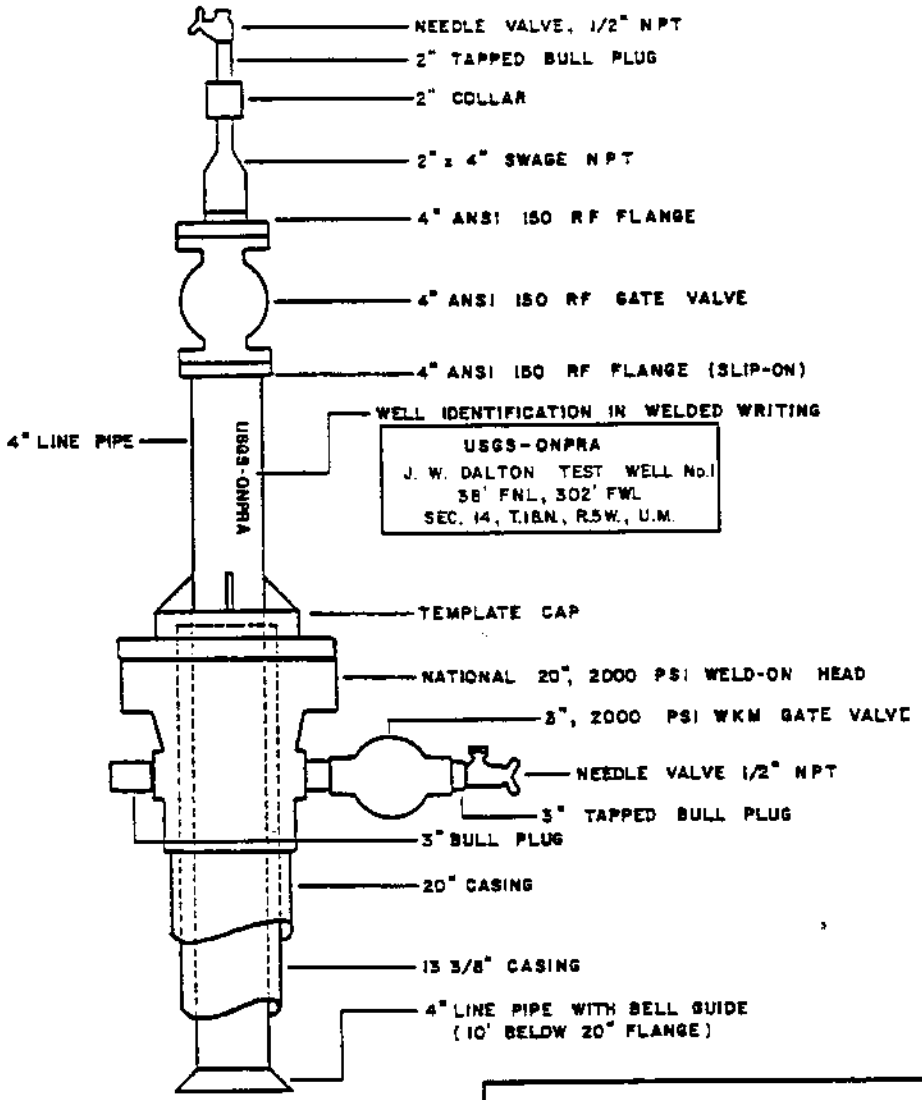
_____

_____

J. E. Rider

Foreman


Abandonment Marker
0
20" @ 94' K.B.
20", 133 lb., K-55 Casing. Cemented to surface w/150 sx. of Arctic Set II Cement, 5/6/79. Squeezed w/115 sx. of Arctic Set II cement, 5/7/79. Recemented w/250 sx. Arctic Set II cement, 5/14/79.
1000
Diesel
Plug No. 6, Retainer @ 1777'. Cemented w/100 sx. of Arctic Set II on top of retainer. Cement plug from 1777' to 1580'.
2000
Squeezed 300 sx. of Arctic Set II Cement through FO @ 2630'.
9 5/8" Stud @ 2175'.
13 3/8" @ 2633' K.B.
13 3/8", 72 lb., S-95, Buttress Casing. Cemented w/4350 sx. of Arctic Set II Cement, 5/13/79.
3000
Plug No. 5, Retainer @ 7018'. Cemented w/100 sx. of Class "G" w/0.75% D-65 & 0.2% D-13R on top of retainer. Cement plug from 7018' to 6578'.
4000
Mud
Plug No. 4, Retainer @ 7880'. Squeezed 100 sx. of Class "G" Cement w/0.75% D-65 & 0.2% D-13R below the retainer. Cement plug from 7880' to 7971'.
5000
Plug No. 3, Retainer @ 8331'. Squeezed 100 sx. of Class "G" Cement w/0.75% D-65 & 0.3% D-13R below the retainer. Cement plug from 8331' to 8436'.
6000
Squeezed Liner Lap w/100 sx. of Class "G" Cement w/0.75% D-65 & 0.2% D-13R.
Plug No. 2, Retainer @ 8454'. Cemented w/85 sx.of Class "G" Cement w/0.75% D-65 & 0.3% D-13R below the retainer. Cement plug from 8449' to 8520'+.
9 5/8" @ 7524' K.B.
7000
9 5/8", 53.5 lb.,S-95, Buttress Casing. Cemented w/1000 sx. of Class "G" Cement w/0.75% D-65 & 0.2% D-13R, 5/31/79.
Plug No. 1, Retainer @ 8544'. Cemented w/50 sx. of Class "G" Cement w/0.75% D-65 & 0.3% D-13R below the retainer. Cement plug from 8542' to 8568'+.
Mud
8000
Set Retainer @ 8791'. Squeezed shoe w/100 sx. of Class "G" Cement. Cement from 8787' to 8898'.
7" Liner 7204' to 8698'.
7", 38 lb., S-95, Buttress Liner. Cemented w/800 sx. of Class "G" Cement w/0.75% D-65 & 0.3% D-13R, 7/3/79.
Mud
9000
8 1/2" Hole to 9367' K.B.
T.D., 6/27/79.
10,000
J. W. DALTON TEST WELL No. 1
38' FNL and 302' FWL
Sec. 14, T.18 N., R.5 W., U.M.
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
WELLBORE SCHEMATIC



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ABANDONMENT HEAD

RIG INVENTORY

Draw Works

Emsco A 800, Serial No. 11, grooved for 1-1/4" line. Equipped with 46" Parkersburg hydromatic brake, sand-line 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 K 700 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 DB.

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

Swaco, 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 barrels water, 8,000 gallons fuel.

Two upright water tanks; capacity 400 barrels.

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" H90 connections.

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.