NATIONAL PETROLEUM RESERVE IN ALASKA

HISTORY
OF
DRILLING OPERATIONS

EAST SIMPSON TEST WELL NO. 2

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

For the

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

TABLE OF CONTENTS

LIST OF FIGURES

EAST SIMPSON TEST WELL NO. 2

INTRODUCTION

East Simpson Test Well No. 2 is located in the National Petroleum Reserve in Alaska (Figure 1), 66 feet from the south line and 219 feet from the east line of protracted Section 23, Township 19 North, Range 11 West, Umiat Meridian (Latitude: 70°58'42.51" North; Longitude: 154°40'25.74" West). Alaska State Plane Coordinates for the location are X = 419,557.85 and Y = 6,208,069.66, Zone 5. Elevations: Pad 22.5'; Kelly Bushing 40'.

The well was spudded on January 29, 1980, and was drilled to a total depth of 7,505 feet. The rig was released on March 16, 1980. The primary objective of the well was to test the Permo-Triassic age Ivishak sandstone as it onlaps the Pre-Devonian age basement rock. Possible secondary objectives of the well were the shallow Cretaceous Nanushuk sands and the Jurassic Sag River Sandstone.

Husky Oil NPR Operations, Inc. supervised and directed the drilling and support operations as prime contractor to the Department of the Interior, U. S. Geological Survey, Office of the National Petroleum Reserve in Alaska. Nabors Alaska Drilling was the drilling contractor. Nabors Rig 1, an Emsco A800, was used to drill the well.

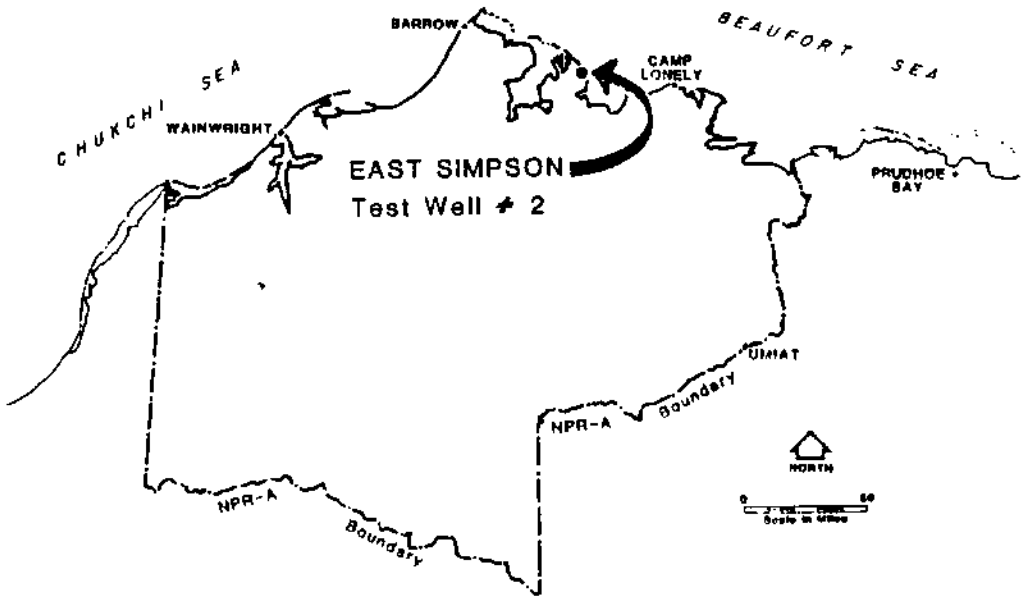


FIGURE 1 - WELL LOCATION MAP - EAST SIMPSON NO. 2

DRILLING SUMMARY

Field operations at the East Simpson Test Well No. 2 site commenced on December 18, 1979, with the mobilization of construction crews and equipment required to build the drilling location and an ice airstrip to accommodate C-130 Hercules aircraft. Construction work was completed on January 3, 1980.

The rig was moved by barge from Camp Lonely to POW-A in the summer of 1979. The rig was then hauled overland by trucks on an ice road. Rig move-in operations began on January 3, 1980, and were completed on January 8, 1980. Rig-up operations began on January 7, 1980, and were completed in 22 days. The well was spudded on January 29, 1980, at 12:00 noon.

A 20" conductor was set at 99' and cemented with 180 sacks of 15.0 ppg ArcticSet II. Twelve and one quarter inch hole was drilled to 2650' with mud weights ranging from 9.1 to 10.1 ppg. Core No. 1 was cut from 2380' to 2410'. Schlumberger Wireline Logs were run as follows: DIL/SP/GR; FDC/CNL/GR/CAL; BHC-Sonic/GR/TTI/CAL; HDT-Dipmeter; shot 43 sidewall cores and recovered 41.

The 12-1/4" hole was opened to 17-1/2" and 13-3/8" casing run to 2635' (64 joints S-95, 72 lb./ft.). It was cemented with 2,742 sacks of ArcticSet II (returns 15.1 ppg). A 13-3/8", 5,000 psi, SRRA blowout preventer was installed and tested to 2,000 psi. The float collar was drilled and the casing tested to 2,500 psi. The shoe and 12-1/4" hole were drilled to 2645' and the formation tested to 0.624 psi/ft. equivalent with no leak off.

The 12-1/4" hole was drilled to 6450' with no problems. Core No. 2 was cut from 6056' to 6086', and Core No. 3 was cut from 6340' to 6370'. The hole was logged as follows prior to running 9-5/8" casing: DIL/GR/SP; FDC/CNL/GR/CAL; BHC-Sonic/GR; HDT-Dipmeter; Velocity Survey; shot 24 sidewall cores and recovered 23.

The 9-5/8" casing was run and landed at 6427' (149 joints, 53.5 lb./ft., S-95 Buttress). It was cemented with 1,000 sacks of 15.8 ppg Class "G" cement. Both FO's were opened, circulation established through them, and they were closed. The casing was tested to 3,000 psi and then cemented through the lower FO with 300 sacks of 15.2 ppg ArcticSet II cement. The FO was closed and tested to 3,000 psi. The upper FO was opened, 200 barrels of contaminated mud circulated out, the FO closed and tested to 3,000 psi. The shoe and ten feet of new hole were drilled and the formation was tested to 0.624 psi/ft. equivalent with no leak off.

An 8-1/2" hole was drilled to 7197'. Cores were cut as follows: Core No. 4, 6705-6735'; Core No. 5, 7167-7197'. A decision was made to open hole drill stem test the interval 7152' to 7197'. The well started to flow while running in with the test tools and the mud weight was raised from 9.3 ppg to 9.8 ppg to control the well. The test was then run as follows:

Open hole Drill Stem Test No. 1: Interval 7152-7197', 5,000 foot fresh water cushion; 1/4" surface choke; IHP 3,702 psi.

1st FP (28 minutes): Opened tool with weak blow increasing to strong blow in four minutes; water cushion to surface in 26 minutes. Initial flowing pressure 3,001-3,270 psi; shut in well for 61 minutes. ISIP 3,515 psi.

2nd FP (242 minutes): Opened tool flowing water cushion. After three hours, flowed at rate of 24 barrels/hour of formation water with a very slight trace of oil and a trace of gas. Final flowing pressures: 3,383-3,399 psi; shut in well for 480 minutes. FSIP 3,481 psi, FHP 3,732 psi. Recovered 7,124 feet/161 barrels of formation water.

At the conclusion of the test, the hole was logged as follows: DIL/GR/SP; FDC/CNL/GR/CAL; BHC-Sonic/GR/TTI.

Core No. 6 was cut from 7197-7227' and drilling of 8-1/2" hole continued to 7505'. The following cores were cut: Core No. 7, 7248-7278'; Core No. 8, 7293-7346'; Core No. 9, 7424-7458'. The hole was again logged with a Temperature Survey; DIL/GR/SP; FDC/CNL/GR/CAL; BHC-Sonic/GR/TTI; HDT-Dipmeter; Velocity Survey; a second Temperature Survey; 23 sidewall cores were shot and 20 recovered.

After logging, a decision was made to abandon the well and plug back began. Plugs were set as listed: Plug No. 1, 7444-7114', 200 sacks 15.8 ppg Class "G" cement; Plug No. 2, 6811-6611', 125 sacks 15.8 ppg Class "G" cement; Plug No. 3, 6530-6350', 150 sacks 15.8 ppg Class "G" cement; Plug No. 4, 6310-6165', 50 sacks 15.8 ppg Class "G" cement on top of a retainer set in the 9-5/8" casing at 6310'.

The 9-5/8" casing was cut at 2110' and 49 joints (2,090 feet) were recovered. A retainer was set in the 13-3/8" casing at 2,090 feet and Plug No. 6 (100 sacks 15.2 ppg ArcticSet II) spotted on top of it. The top of the plug was at 1977'. The 13-3/8" annulus was displaced with water and then with diesel to the surface; this was done to allow future temperature measurements by U. S. Geological Survey personnel. The blowout preventer equipment was nippled down and the abandonment head and marker installed.

The rig was released March 16, 1980 at 8:00 p.m. and moved to Camp Lonely.

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NOTICE OF INTENT TO DRILL, DEEPEN, OR PLUG BACK

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

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

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

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

7. UNIT AGREEMENT NAME: N/A

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

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

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

9. WELL NO.: East Simpson Test Well No. 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 66' FSL; 219' FEL
At proposed prod. zone: Same (straight hole)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 23, T19N, R11W, UM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 52 miles east-southeast of Barrow, Alaska

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

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
10,500'	23,680,000	N/A
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
26,000'	7600'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): Pad - 22.5'; KB - 40'

22. APPROX. DATE WORK WILL START*: February 14, 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
17 1/2"	13 3/8"	72# (S-95)	± 2600'	PROGRAM
12 1/4"	9 5/8"	53.5# (S-95)	± 6450'	FOR DETAILS
8 1/2"	7"	32# (N-80)	Liner ± 6100' to TD	AND AMOUNTS

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 C. Brewer TITLE Chief of Operations DATE 30 January 80

(This space for Federal or State office use)

NO. _____ DATE _____

APPROVED BY Barrow Borough TITLE DIRECTOR DATE 2-21-80

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

9

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: 66' FSL; 219' FEL
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.
East Simpson Test Well No. 2

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 23, T19N, R11W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
Est 22.5' Pad; 40' KB

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

NOTICE OF INTENT TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Subsequent Report of 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 January 29, 1980, at 12:00 noon. Hole size at spud was 17 1/2". 20 inch conductor was cemented in place with 180 sacks of Arctic Set II cement at 99' KB previous to spudding.

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

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

SIGNED [signature] TITLE Chief of Operations DATE 25 February 80

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

[signature] DISTRICT SUPERVISOR DATE 3-3-80

*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: 66' FSL; 219' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE: N/A

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

7. UNIT AGREEMENT NAME: N/A

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

9. WELL NO.: East Simpson Test Well No. 2

10. FIELD OR WILDCAT NAME: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 23, T19N, R11W, UM

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

14. API NO.:

15. ELEVATIONS (SHOW DF, KDB, AND WD): Est 22.5' Pad; 40' KB

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

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

(other) Subsequent Report of Running and Cementing 13 3/8" 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 2650' and logged with DIL/GR, FDC/CNL/GR, BHCS/GR, and HDT/Dipmeter. Shot 43 sidewall cores and recovered 41. The hole was then opened to 17 1/2". Ran 64 joints of 13 3/8", 72 lb, S-95 Buttress casing. Landed at 2635'. Cemented with 2742 sacks of Arctic Set II cement. Had full returns throughout job with 15.1 ppg returns. CIP at 6:45 PM, 2/6/80. Set slips with 90,000 lbs. Cut off 13 3/8" casing and nippled up 13 3/8", 5000 psi BOP stack. Tested BOPs to 5000 psi and Hydril and casing to 2500 psi. OK. Drilled out cement, float collar, float shoe, and 10 feet of formation to 2645'. Tested formation to a 0.624 psi/ft gradient with no observed leak off. Drilling 12 1/4" hole ahead.

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 25 February 80

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

_____ TITLE _____ DATE 3-7-80

*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: 66' FSL; 219' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
N/A

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

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME National Petroleum Reserve in Alaska

9. WELL NO.
E. Simpson Test Well No. 2

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 23, T19N, R11W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
Est 22.5' Pad; 40' KB

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

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

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

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

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

Drilled a 12 1/4" hole to 6450'. Logged with DIL/GR, FDC/CNL/GR, BHC-Sonic/GR, Dipmeter, and Velocity Survey. Shot 24 sidewall cores, recovering 23. Ran 147 joints of 9 5/8", 53.5 lb, S-95 Buttress, Range 3 casing. Shoe at 6427'. FOs at 2140' and 2357'. Ran centralizers as per program. Cemented with 1000 sacks of Class "G" cement with 0.75% D65 and 0.2% C13R at 15.8 ppg. Displaced with 10 bbls of water and 445 bbls of mud. Bumped plug to 3000 psi. CIP at 2:30 AM 2/19/80. Open FO at 2357' and down squeezed 300 sacks of Arctic Set II cement at 15.2 ppg. Displaced with 10 bbls of water and 37 bbls of mud. CIP at 12:30 PM, 2/21/80. Closed FO and reversed out 7 bbls of cement. Installed 5000 lb BOPE and tested. OK. Tested casing to 3000 psi. OK. Drilled float collars and shoe. Drilled to 6460' and tested formation to 0.624 psi/ft equivalent gradient. OK. Drilling an 8 1/2" hole ahead.

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

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

SIGNED Max L. Brewer TITLE Chief of Operations DATE 28 February 80

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

Barry J. Anderson TITLE _____ DATE 3-7-80

*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: 66' FSL; 219' FEL
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.
East Simpson Test Well No. 2

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 23, T19N, R11W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
Est 22.5' Pad; 40' KB

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

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

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

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

This is a confirming notice to abandon E. Simpson Test Well No. 2. This well was drilled to a total depth of 7505', logged, and tested. As a result of the evaluation, plans were developed to abandon the well. The abandonment procedure is attached.

This plan has been discussed with and verbally approved by Mr. Weber and Mr. Kornbrath of the USGS Conservation Division on 3/10/80.

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

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

SIGNED [signature] TITLE Chief of Operations DATE 14 March 80

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

[signature] TITLE _____ DATE 3-19-80

*See Instructions on Reverse Side

EAST SIMPSON TEST WELL NO. 2
ABANDONMENT PROCEDURE

1. Trip in with open ended drill pipe to 7430'.

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

3. Spot Plug No. 1, a 200 sack, Class "G" plug, with 0.75% D65 and 0.2% D13R, mixed at 15.8 ppg. This is a 330' plug in the open hole. Spot a balanced plug with 10 bbls water ahead and 2 bbls water behind the cement.

4. Pull up to 6800', lay down excess drill pipe. Circulate and condition for Plug No. 2.

5. Spot Plug No. 2, a 125 sack, Class "G" Plug, with 0.75% D65 and 0.2% D13R, mixed at 15.8 ppg. This is a 200' plug in the open hole. Spot a balanced plug with 10 bbls water ahead and 2 bbls water behind cement.

6. Pull up to 6525'. Lay down excess drill pipe. Circulate and condition for Plug No. 3.

7. Spot Plug No. 3, a 150 sack, Class "G" plug, with 0.75% D65 and 0.2% D13R, mixed at 15.8 ppg. This is a + 200' plug (100' in open hole and + 100' in 9 5/8" casing). Spot a balanced plug with 12 bbls water ahead and 2 bbls water behind cement.

8. Pull up to ± 6225' and slowly circulate mud, limit pressure.

9. Trip out and pick up a bit and 9 5/8", 53.5# scraper. RIH, clean out to ± 6325. Trip out and pick up 9 5/8", 53.5# retainer. RIH and set retainer at 6300'. Condition mud.

10. Spot a 50 sack, Class "G" cement plug on top of retainer with 0.75% D65 and 0.2% D13R mixed at 15.8 ppg. This is 145' fill inside 9 5/8" casing. Spot a balanced plug with 8 bbls water ahead and 3 bbls water behind cement.

11. 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 collars.

12. Pick up TriState 9 5/8" casing cutters. Trip in and cut casing at 2240' (100' below top FO).

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

14. Run in with packoff retrieving tool. Back out anchor screws and pull 9 5/8" packoff per FMC/OCT directions.

15. Pick up TriState spear, packoff, and stop plate. Circulate and condition the 9 5/8" casing and 9 5/8" X 13 3/8" annulus. Pick up 9 5/8" casing. The 9 5/8" string weight at 2240' in 10 ppg mud is ± 101,500#.

16. Strip casing up through BOP and set rotary slips. Lay down 9 5/8" casing.

17. Box and return the 9 5/8" mandrel hanger and short landing joint to Anchorage.

18. Trip in with 12 1/4" bit and 13 3/8", 72# scraper to ± 2230'. Circulate and condition mud, removing any cuttings or junk in the hole.

19. Pick up Halliburton 13 3/8", 72# cement retainer on drill pipe. Set retainer at 2220'.

20. Spot a 100 sack Arctic Set II cement plug on top of the retainer mixed at 15.2 ppg. This is a 114' plug inside 13 3/8" casing. Spot a balanced plug with ± 14 bbls water ahead and 2 bbls water behind.

21. Pick up slowly out of the cement plug to 2100'. Slowly circulate mud. WOC 4 hours.

22. Reverse out mud with water. Reverse out water with diesel. The approximate capacity of the 13 3/8" from 2100' to surface is 310 bbls. Trip out, laying down drill pipe. DO NOT fill casing to surface. Leave ± 25' of 13 3/8" casing empty.

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

24. 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".

25. Release rig and rig down for movement to Lonely. Clean location.

Information for well marker identification:

USGS - ONPRA
East Simpson Test Well No. 2
66' FSL; 219' FEL
Sec 23, T19N, R11W, UM

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: 66' FSL; 219' FEL
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.: East Simpson Test Well No. 2

10. FIELD OR WILDCAT NAME: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 23, T19N, R11W, UM

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

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD): Est 22.5' Pad; 40' KB

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

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

RECEIVED
ONSHORE DIST. OFFICE

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

APR 18 1980

CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

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

This well was drilled to 7505', logged and tested. Following an evaluation of the logs and test, the well was abandoned as follows: The first open hole plug from 7444' to 7114' was cemented with 200 sacks of Class "G" cement with 0.75% D65 and 0.2% D13R. The second plug was spotted from 6811' to 6611' with 125 sacks of Class "G" cement with 0.75% D65 and 0.2% D13R. The third plug was cemented with 150 sacks of Class "G" cement with 0.75% D65 and 0.2% D13R from 6530' to 6350'. A 9 5/8" retainer was set at 6310'. Fifty sacks of Class "G" cement with 0.75% D65 and 0.2% 013R was spotted on top of retainer. Top of cement at 6165'. The 9 5/8" casing was cut at 2110' and a 13 3/8" retainer set at 2090'. One hundred sacks of Arctic Set II was spotted on top of retainer. Cement plug from 2090' to 1977'. Displaced mud with water and water with diesel. Nipple down BOP. Install dry hole marker. Released rig 3/16/80 at 8:00 PM.

Wellbore schematic attached.

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

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

SIGNED [signature] TITLE Chief of Operations DATE 17 April 80

(This space for Federal or State office use)

Conforms with pertinent provisions of 30 CFR 221.

TITLE DISTRICT SUPERVISOR DATE _____

*See Instructions on Reverse Side

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

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

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

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

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

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: 66' FSL; 219' FEL
At top prod. interval reported below
At total depth: Same

RECEIVED
ONSHORE DIST. OFFICE
APR 22 1980
CONSERVATION DIVISION
U. S. GEOLOGICAL SURVEY
ANCHORAGE, ALASKA

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.: East Simpson No. 2
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 23, T19N, R11W, UM
12. COUNTY OR PARISH: North Slope
13. STATE: Alaska

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

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1/29/80	3/10/80	N/A	Pad 22.5'; KB 40'	22.5'

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
7505' TD	1977'	N/A	→	All	None

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

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL/GR/SP, FDC/CNL/GR/Cal, BHCS/GR/TTI, HDT Dipmeter, Temperature and Velocity Surveys

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#	99'	26"	180 Sx of Arctic Set II	N/A
13 3/8"	72#	2635'	17 1/2"	2742 Sx of Arctic Set II	N/A
9 5/8"	53.5#	6427'	12 1/4"	1000 Sx Cl G w/0.75% D65 & 0.2% D13R; 300 Sx Arctic Set II	2110'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

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

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3/1/80	14	1/4"			TSTM		

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
200 psi	N/A			TSTM		

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Vented

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 Max C Brewer TITLE Chief of Operations DATE 21 April 80

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

DISTRICT FILE

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types [illegible] lands and leases to either a Federal agency or a State agency, or [illegible] 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.
SEE ATTACHMENTS FOR CORED INTERVALS, POROSITY, AND DSTs.			

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Torok Shale	2734'	Straight Hole
GR/Pebble Shale	6326'	
Kingak Shale	6519'	
Sag River	6606'	
Shublik	6772'	
Sadlerochit/ Ivishak	7153'	
Argillite/ Basement	7420'	

U.S. GOVERNMENT PRINTING OFFICE [illegible]

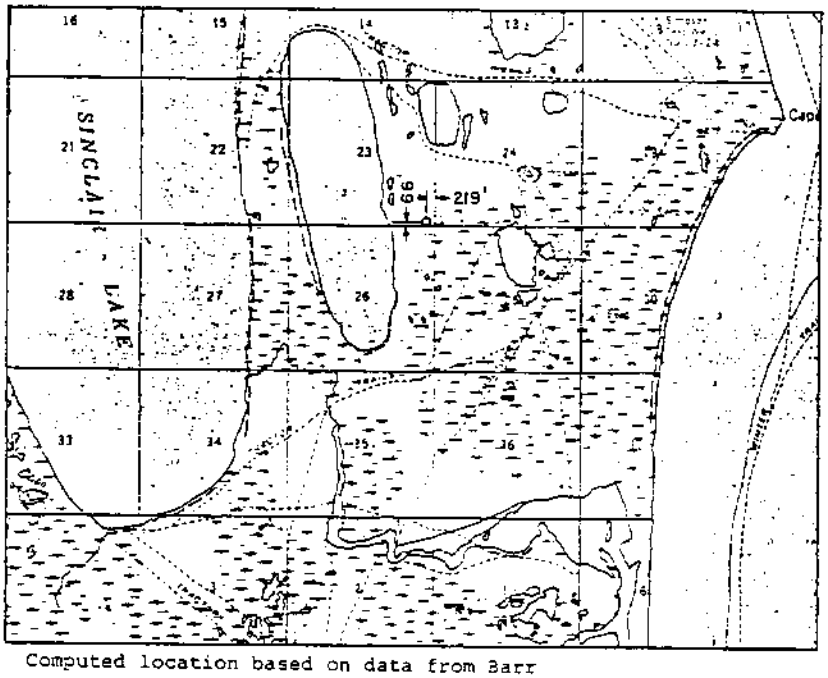
[illegible]

SUMMARY OF CORES

CORE NO.	FORMATION	CORED INTERVAL	
1	Torok	2380-2410'	Predominantly sandstone with interbedded clay, poor-fair porosity, clay filled, no indication of hydrocarbons.
2	Torok	6056-6086'	Sandstone and shale, interbedded, nil-fair porosity, very poor spotty fluorescence at 6060-6063.5'; analysis indicates zones are water wet.
3	"Pebble Shale"	6340-6370'	Shale; fissile and splintery, pyritic with floating quartz grains, no indication of hydrocarbons.
4	Sag River	6705-6735'	Sandstone; very fine-fine grained, generally poor porosity, very spotty oil stain, core and log analysis indicates very low permeability with water saturation 100%.
5	Sadlerochit/ Ivishak	7167-7197'	Predominantly sandstone with interbedded mudstone, shale and coal near base with minor conglomerate at 7168'. Measured and calculated porosity 20-25%. Interval produced salt water on DST No. 1.
6	Sadlerochit	7197-7227'	Shale, mudstone and coal, interbedded with occasionally pyritized wood. No indication of hydrocarbons.
7	Sadlerochit	7248-7278'	Predominantly sandstone with interbedded siltstone and with mudstone at base, with coal and carbonized wood throughout, generally poor porosity, very poor oil show in upper one foot of interval. Log and core analysis indicates zone is water wet.
8	Sadlerochit	7293'-7346'	Interbedded claystone, shale and siltstone and coal with occasionally thin sandstone. No porosity, no indication of hydrocarbons.
9	Argillite/ Basement	7424-7458'	Metamorphosed red siltstone and sandstones grading to black argillite.

DRILL STEM TESTS

TEST NO.	FORMATION	TEST INTERVAL	
1	Sadlerochit/ Ivishak Sa	7152-7197'	Open hole DST: 5000' fresh water cushion; 1/4" surface choke; IHP: 3702 psi. 1st FP: (28 minutes) Opened tool with weak blow increasing to strong blow in 4 minutes; water cushion to surface in 26 minutes. Initial flowing pressure 3001-3270 psi; shut in well for 61 minutes. ISIP 3515 psi. 2nd FP: (242 minutes) Opened tool flowing water cushion. After three hours, flowed at rate of 24 bbls/hr of formation water with very slight trace of oil and trace of gas. Final flowing pressures: 3383-3399 psi; shut in well for 480 minutes. FSIP 3481 psi, FHP 3732 psi. Recovered 7124 feet/161 bbls of formation water.



Computed location based on data from Barr Automated Surveys, Inc. to Husky Oil NPR Operations, Inc. dated Aug. 11, 1979, a copy of which is on file with Tectonics, Inc., Anchorage, AK.

EAST SIMPSON No. 2 3-80

LAT. = 70°58'42.51"
LONG. = 154°40'25.74
Y = 6,208,069.66
X = 419,557.85
ZONE 5

0 1 Mile
Graphic Scale

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.

STATE OF ALASKA
49TH
James B. Roberts
No. 3260-S
REGISTERED PROFESSIONAL LAND SURVEYOR

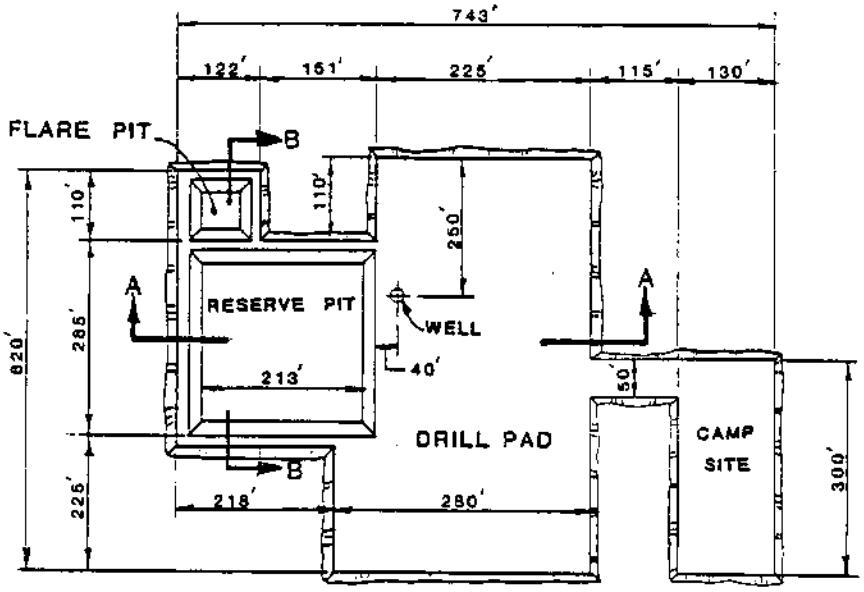
AS STAKED

EAST SIMPSON TEST WELL No.2

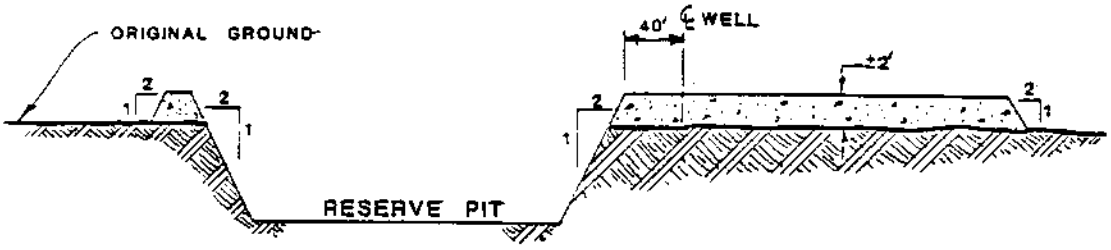
LOCATED IN
SE 1/4 PROTRACTED SEC.23, T19N, R11W, UMIAT MERIDIAN, AK.

SURVEYED FOR
HUSKY OIL
N.P.R. OPERATIONS, INC.

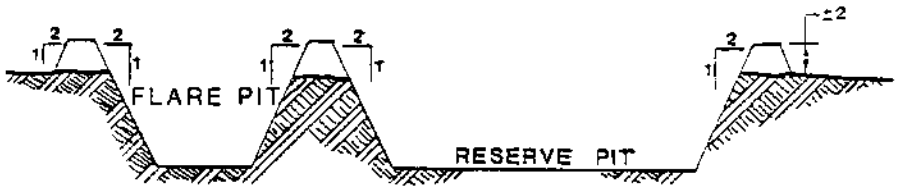
TECTONICS INC.
P.O. BOX 4-2265, ANCHORAGE, AK 99509



PLAN VIEW



SECTION A - A



SECTION B - B

EAST SIMPSON NO.2 DRILL PAD

OPERATIONS HISTORY

DATE AND FOOTAGE DRILLED AS OF 6:00 A.M.	ACTIVITY
1/28/80	Continued with general rig up. Tested Hydril. Formation broke down at 250 psi. Set 20" conductor at 99' and cemented in place with 180 sacks ArcticSet II cement. Preceded with 10 barrels water and followed with five barrels water. Cement in place 1/27/80 at 1:30 p.m.
1/29/80	Waited on cement. Picked up bottom hole assembly. Tested Hydril to 250 psi. Tagged cement at 98'; drilled to 99'.
1/30/80 747'	Total Depth: 846'; Mud Weight: 9.4; Viscosity: 40. Spudded well January 29, 1980, at 12:00 noon. Pulled out of hole; unplugged bit. Drilled cement; drilled formation to 227'. Pulled out of hole; picked up stabilizers. Drilled to 343'. Surveyed. Drilled ahead to 846'.
1/31/80 1018'	TD: 1864'; MW: 9.8; Vis: 42. Surveyed; drilled; surveyed; drilled. Tripped for bit at 1737'. Washed to bottom. Drilled; surveyed; drilled.
2/1/80 546'	TD: 2410'; MW: 9.9; Vis: 40. Drilled to 2380'; pulled out of hole. Ran in hole with core barrel. Circulated out six feet of fill. Cut Core No. 1, 2380' to 2410'. Pulled out of hole; recovered 30 feet of core. Picked up bottom hole assembly.
2/2/80 240'	TD: 2650'; MW: 9.8; Vis: 60. Ran in hole; drilled to 2650'. Conditioned and circulated for logs; surveyed. Pulled out of hole. Ran DIL/SP/GR, CNL/FDC/GP/CAL, BHCS/GR/CAL/TT1, and HDT.
2/3/80 0'	TD: 2650'; MW: 9.9; Vis: 47. Shot 43 sidewall cores; recovered 41. Rigged down logging unit. Ran in hole; cleaned out from 2480' to 2650'. Circulated; pulled out of hole.
2/4/80 0'	TD: 2650'; MW: 9.8; Vis: 47. Opened 12-1/4" hole to 17-1/2" to 1380'.
2/5/80 0'	TD: 2650'; MW: 10.2; Vis: 41. Continued opening hole. Pulled out of hole; changed hole openers. Ran in hole; opened hole to 2040'.

2/6/80 0'	TD: 2650'; MW: 10.3; Vis: 62. Opened hole to 2650'; circulated. Pulled out of hole; began running 13-3/8" casing.
2/7/80 0'	TD: 2650'; MW: 10.3; Vis: 36. Ran 64 joints of 13-3/8", 72#, S-95 Buttress casing to 2635'. Rigged up Dowell unit; circulated; tested lines. Pumped 20 barrels water and 2,742 sacks ArcticSet II cement at 15.6 ppg; followed with two barrels water; displaced with 41 barrels mud. Cement in place 2/6/80 at 6:45 p.m. Had 15.1 ppg returns. Set slips with 90,000 pounds. Cut off 13-3/8" casing; nippled up wellhead.
2/8/80 0'	TD: 2650'; MW: 9.4; Vis: 45. Nippled up blowout preventer stack; tested packoff to 2,000 psi. Tested blowout preventer equipment. Ran in hole to float collar; drilled to 2627'. Tested casing to 2,500 psi.
2/9/80 750'	TD: 3400'; MW: 9.6; Vis: 39. Drilled ten feet of new hole to 2645'; tested formation to 0.624 gradient. Drilled to 3150'; circulated; surveyed. Drilled ahead.
2/10/80 602'	TD: 4002'; MW: 9.7; Vis: 38. Drilled; circulated, surveyed. Drilled; circulated; surveyed. Drilled ahead.
2/11/80 758'	TD: 4760'; MW: 9.7; Vis: 38. Drilled to 4443'; surveyed. Drilled ahead.
2/12/80 360'	TD: 5120'; MW: 9.7; Vis: 41. Drilled; surveyed; pulled out of hole. Ran in hole; drilled ahead.
2/13/80 665'	TD: 5785'; MW: 9.9; Vis: 41. Drilled to 5574'; circulated and surveyed. Drilled to 5764'; circulated a gas show of 280 units. Drilled ahead.
2/14/80 253'	TD: 6038'. Drilled to 5764'; surveyed. Pulled out of hole; changed bits. Ran in hole; tight from 5120' to 5680'. Reamed 40 feet; no fill. Drilled ahead. Circulated samples at 5948'. Drilled ahead.
2/15/80 48'	TD: 6086'; MW: 9.9; Vis: 39. Drilled to 6045'; circulated samples; surveyed. Pulled out of hole, steel-line measuring. Corrected depth to 6065'. Picked up core barrel; reamed 30 feet. Cut Core No. 2, 6056' to 6086'. Pulled out of hole; recovered 27.5 feet of core. Ran in hole; reamed core hole.
2/16/80 254'	TD: 6340'; MW: 9.9; Vis: 40. Reamed core hole to 6086'; drilled to 6134'. Circulated samples. Drilled to 6340'; surveyed. Pulled out of hole to core. Tested blowout preventer equipment.

2/17/80 64'	TD: 6404'; MW: 9.9; Vis: 40. Ran in hole with core barrel; reamed 30 feet. Cut Core No. 3, 6340' to 6370'. Pulled out of hole; received 30 feet of core. Ran in hole; reamed core hole. Drilled ahead.
2/18/80 46'	TD: 6450'; MW: 9.9; Vis: 80. Drilled to 6450'; short tripped; hole tight from 6450' to 5998'. Conditioned mud; pulled out of hole to log. Ran GR/SP/DIL, GR/CAL/CNL/FDC, GR/BHCS, and HDT-Dipmeter.
2/19/80 0'	TD: 6450'; MW: 9.9; Vis: 42. Ran Velocity Survey and shot 24 sidewall cores; recovered 23. Ran in hole; reamed 20 feet to bottom with four feet of fill. Circulated and conditioned hole. Rigged up to begin running 9-5/8" casing.
2/20/80 0'	TD: 6450'; MW: 9.7; Vis: 36. Made up shoe and two joints of 9-5/8" casing. Found that float collar was defective; waited on new float collar. Made up float collar, 92 joints of 9-5/8" casing, FO, 7 joints of 9-5/8" casing, FO, 50 joints of 9-5/8" casing and hanger. Landed with shoe at 6427'. Conditioned hole. Cemented with 1,000 sacks Class "G" cement with 0.75% D-65 and 0.2% D-13R at 15.8 ppg. Displaced with 10 barrels water and 445 barrels mud. Bumped plug to 3,000 psi; floats held. Backed out landing joint and installed packoff. Cement in place at 2:30 a.m.
2/21/80 0'	TD: 6450'; MW: 9.7; Vis: 36. Installed and tested packoff to 3,800 psi. Laid down 12-1/4" bottom hole assembly. Changed rams. Picked up RTTS and ran in hole; opened upper FO and established circulation. Closed FO; tested to 3,000 psi.
2/22/80 0'	TD: 6450'; MW: 9.4; Vis: 35. Down squeezed through lower FO. Pumped 10 barrels water; 300 sacks ArcticSet II at 15.2 ppg, 50 barrels slurry followed with two barrels water displaced with 37 barrels mud. Cement in place 2/21/80 at 12:30 p.m. Closed FO and reversed out. Received seven barrels cement. Opened upper FO and circulated annulus. Dumped 200 barrels contaminated mud. Pulled out of hole; laid down Howco tools. Tested blowout preventer equipment. Picked up bottom hole assembly.
2/23/80 0'	TD: 6450'; MW: 9.2; Vis: 31. Picked up 8-1/2" bottom hole assembly; ran in hole, steel-line measuring, and tagged cement at 6332'. Circulated and conditioned mud. Tested casing to 3,000 psi; lost 600 psi. Pulled out of hole, looking for leak.

2/24/80 60'	TD: 6510'; MW: 9.3; Vis: 40. Drilled cement from 6332' to 6432'. Float collar at 6341'; shoe at 6427'. Cleaned out to 6450'; drilled to 6460'. Tested formation to 0.624 psi/ft. equivalent gradient. Drilled ahead.
2/25/80 195'	TD: 6705'; MW: 9.4; Vis: 44. Drilled to 6563'; surveyed. Pulled out of hole; ran in hole. Drilled ahead. Pulled out of hole.
2/26/80 140'	TD: 6845'; MW: 9.3; Vis: 44. Pulled out of hole; picked up core barrel. Ran in hole. Cut Core No. 4, 6705' to 6735'. Pulled out of hole; recovered 30 feet of core. Ran in hole with bit; reamed 30 feet. Drilled ahead.
2/27/80 202'	TD: 7047'; MW: 9.4; Vis: 43. Drilled to 6855'; tripped, looking for washout. Ran in hole; drilled ahead.
2/28/80 138'	TD: 7185'; MW: 9.4; Vis: 45. Drilled to 7120'; circulated samples. Drilled to 7167'; circulated samples. Pulled out of hole. Picked up core barrel; ran in hole. Began coring.
2/29/80 12'	TD: 7197'; MW: 9.3; Vis: 38. Finished cutting Core No. 5, 7167' to 7197'. Pulled out of hole; received 29 feet of core. Ran in hole; circulated and conditioned mud. Pulled out of hole; picked up test tools. Ran in hole with collars. Filled collars; well began to flow. Pulled out of hole for bit.
3/1/80 0'	TD: 7197'; MW: 9.8; Vis 38. Stood back drill stem test tools. Ran in hole with bit to 7195'; conditioned mud to 9.8 ppg. Pulled out of hole; changed valve on drilling spool. Ran drill stem test tools and 5,000 foot water cushion for Drill Stem Test No. 1. Had 30 feet of fill. Set packer at 7152'. Initial open at 2:45 a.m. with strong blow. Cushion to surface in 30 minutes. Initial shut in at 3:15 a.m. Final open at 4:15 a.m.; 200 psi on 1/4" choke; 30 to 40 barrels per hour; slowed to 10 barrels per hour after 1-1/4 hours.
3/2/80 0'	TD: 7197'; MW: 9.8; Vis: 42. Continued with final flow (well flowing salt water). Final shut in. Reversed out mud to surface (136 barrels). Circulated through drill pipe to annulus. Mud weight dropped to 9 ppg. Built mud weight to 9.8 ppg. Lost 400 pounds pump pressure. Waited on final shut in. Bottom hole pressures were recorded at 7129' as follows: Initial hydrostatic pressure: 3,702 psi.

	Initial flowing pressure increased from 3,001 to 3,270 psi. Initial shut-in pressure: 3,515 psi. Final flowing pressure increased from 3,383 to 3,399 psi. Final shut-in pressure: 3,481 psi. Final hydrostatic pressure: 3,732 psi. Total recovery: 7,124 feet/161 barrels of formation water (16,000 ppm chlorides). Laid down test head. Chained out 10 stands. Pumped pill. Pulled out of hole; laid down test tools. Made up bit and ran in hole 10 stands. Repaired air line. Ran in hole to shoe; cut drilling line. Ran in hole to 7170'.
3/3/80 0'	TD: 7197'; MW: 9.8; Vis: 43. Circulated; pulled out of hole and rigged up to log. Ran in hole; could not pass 6530'. Ran in hole with bit; had 18 feet of fill. Circulated; pulled out of hole. Ran GR/SP/DIL, GR/CAL/CNL/FDC, and GR/BHCS/TTI. Rigged down logging unit; rigged up to test blowout preventer equipment.
3/4/80 48'	TD: 7245'; MW: 9.8; Vis: 52. Tested blowout preventer equipment. Cut Core No. 6, 7197' to 7227'; recovered 28 feet of core. Ran in hole; drilled ahead.
3/5/80 33'	TD: 7278'; MW: 9.9; Vis: 44. Drilled; circulated. Pulled out of hole; picked up core barrel. Ran in hole; cleaned 15 feet to bottom. Cut Core No. 7, 7248' to 7278'. Pulled out of hole; recovered 30 feet of core. Ran in hole with bit.
3/6/80 50'	TD: 7328'; MW: 10; Vis: 44. Ran in hole; drilled to 7293'. Circulated samples. Pulled out of hole for core barrel; ran in hole. Began coring.
3/7/80 70'	TD: 7398'; MW: 10; Vis: 43. Finished cutting Core No. 8, 7293' to 7346'. Circulated; pulled out of hole. Recovered 53 feet of core. Ran in hole; drilled ahead.
3/8/80 36'	TD: 7434'; MW: 10; Vis: 47. Drilled to 7424'; circulated samples. Waited on directional equipment and serviceman. Pulled out of hole; picked up core barrel. Ran in hole; cleaned 70 feet to bottom. Began coring.
3/9/80 46'	TD: 7480'; MW: 10; Vis: 47. Cut Core No. 9, 7424' to 7458'. Pulled out of hole; received 32.7 feet of core. Ran in hole with bit to 7400'; reamed to bottom with 10 feet of fill. Drilled ahead.
3/10/80 25'	TD: 7505'; MW: 10; Vis: 39. Drilled to 7505'; circulated. Pumped gel; surveyed. Pumped pill;

pulled 10 stands. Ran in hole; no fill. Pulled out of hole, steel-line measuring. Rigged up logging unit. Ran Temperature Survey, GR/SP/DIL, GR/CAL/CNL/FDC, and GR/BHCS/TTI.

3/11/80
0'

TD: 7505'; MW: 10; Vis: 50. Ran HDT-Dipmeter. Tripped in to 7505'; circulated and conditioned mud. Pulled out of hole. Ran Velocity Survey and Temperature Survey. Shot 23 sidewall cores; recovered 19. Ran in hole open-ended to plug back.

3/12/80

TD: 7505'; PBTD: 6214'; MW: 9.8; Vis: 39. Ran in hole open-ended to 7444'. Circulated and conditioned mud. Pumped 10 barrels of water, 200 sacks Class "G" cement with 0.75% D-65 and 0.2% D-13R at 15.8 ppg, two barrels water, and 123 barrels mud. Cement in place 3/11/80 at 7:15 p.m. Pulled out of hole to 6811'; circulated and conditioned mud. Pumped 10 barrels water, 125 sacks Class "G" cement at 15.8 ppg slurry, two barrels water and 114 barrels mud. Pulled out of hole to 6530'; circulated and conditioned mud. Pumped eight barrels water, 150 sacks cement, three barrels water, and 108 barrels mud. Cement in place 3/12/80 at 1:30 a.m. Pulled out of hole to 6214'. Circulated and conditioned mud. Pulled out of hole for 9-5/8" scraper.

3/13/80

TD: 7505'; PBTD: 6165'; MW: 9.2; Vis: 32. Ran in hole with 9-5/8" casing scraper to 6325'. Circulated and conditioned mud. Pulled out of hole. Set 9-5/8" retainer at 6310'. Circulated and conditioned mud. Pumped 8 barrels water, 50 sacks Class "G" cement with 0.75% D-65 and 0.2% D-13R at 15.8 ppg. Pumped three barrels water and 106 barrels mud. Pulled out of hole 10 stands. Reversed drill pipe. Pulled out of hole, laying down drill pipe and drill collars.

3/14/80

TD: 7505'; PBTD: 6165'; MW: 9.1; Vis: 33. Attempted to cut 9-5/8" casing at 2240' but would not cut. Pulled out of hole; serviced cutting tool. Ran in hole to 2110' and cut casing. Pulled out of hole; changed rams. Laid down 49 joints of 9-5/8" casing and a 13 foot stub (total of 2,090 feet of casing). Ran in hole with 13-3/8" casing scraper. Circulated and conditioned mud at 2110'. Pulled out of hole.

3/15/80

TD: 7505'; PBTD: 1977'. Pulled out of hole with scraper. Ran in hole with 13-3/8" retainer and set at 2090'. Spotted 100 sacks ArcticSet II cement on top of retainer; top of cement at 1977'. Waited on cement four hours; reversed mud to water and water to diesel. Laid down drill pipe; nippled down blowout preventers.

3/16/80	TD: 7505'; PBTD: 1977'. Continued nippling down blowout preventers. Cleaned mud pits. Installed dry hole marker. Released rig March 16, 1980, at 8:00 p.m. Began rigging down for move to Lonely.

DRILLING TIME ANALYSIS

EAST SIMPSON TEST WELL NO. 2

NABORS ALASKA DRILLING, INC., RIG 1

Spud 1/29/80; Rig released 3/16/80

Total Depth: 7,505 Feet

DRILLING TIME ANALYSIS (HOURS) - TIUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL NO. 2 Page 1 of 6

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
1980 12-31																							24		Crew arrived to begin digging out Camp & Rig
1-1																							24		Digging Out Camp & Rig
1-2																							24		Digging Out Camp & Rig
1-3																							24		Digging Out Camp & Rig
1-4																							24		Digging Out Camp & Rig
1-5																							24		Digging Out Camp & Rig
1-6																							24		Digging Out Camp & Rig
1-7	24																							Rigging Up	
1-8	24																							Rigging Up	
1-9	24																							Rigging Up	
1-10	24																							Rigging Up	
1-11	24																							Rigging Up	
1-12	24																							Rigging Up	
1-13	24																							Rigging Up	
1-14	24																							Rigging Up	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL NO. 2 Page 2 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1-15	24																							Rigging Up	
1-16	24																							Rigging Up	
1-17	24																							Rigging Up	
1-18	24																							Rigging Up	
1-19	24																							Rigging Up	
1-20	24																							Rigging Up	
1-21	24																							Rigging Up	
1-22	24																							Rigging Up	
1-23	24																							Rigging Up	
1-24	24																							Rigging Up	
1-25	24																							Rigging Up	
1-26	24																							Rigging Up	
1-27	22											1	1											Rigging Up	Set 20" at 99'
1-28				½						2½	21													Waiting on Cement	
1-29		10		2	½		7	1			2												1½	Working on Flow Line	Spudded Well at 12:00 Noon

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL NO. 2 Page 3 of 6

DATE	IRIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1-30		19½		3	1	½																		Drilling	
1-31		9½	½	3	½	8		1									½						1	Drilling	Core No. 1: 2380' - 2410'
2-1		5½	1	7½	1		1½	1½	3								2						1	Retrieving Core	
2-2			1	3½			3½	1½	14½															Logging	Ran Schlumberger Wireline Logs
2-3			16						1														7	Thawing Mud Line	
2-4								24																Circulate & Condition	
2-5			13	4½				1¼	2½														1½	Circulating	
2-6				10					1		10½												2½	Running Casing	Set 13 3/8" At 2635'
2-7												14	8										2	Nipple Up BOP	
2-8		11		2½									1										4½	Drilling Cement	
2-9		18½		2½	2			1																Drilling	
2-10		19½		3	½																		1	Drilling	
2-11		14½		5½	½		3																½	Drilling	
2-12		21		1	½		1		½															Drilling	
2-13		12	½	7½			2	2																Drilling	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL NO. 2 Page 4 of 6

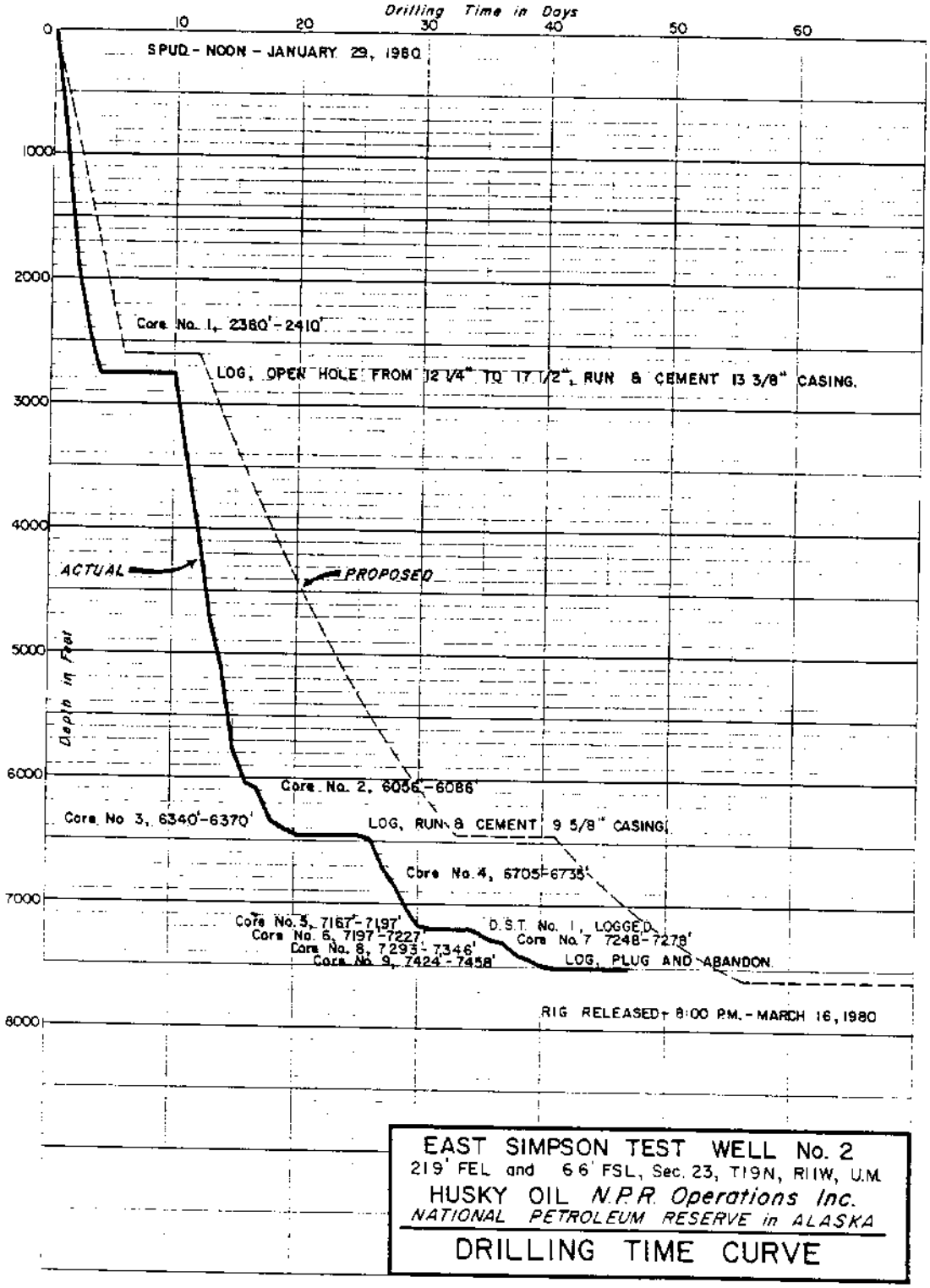
DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
2-14		4½	½	11	½		½	3									3½					½		Drilling	Core No. 2: 6056' - 6086'
2-15		13	2½	3	½		1½	3½									½							Reaming	
2-16			½	8½			1	½					5½				7					1		Testing BOP	Core No. 3: 6340' - 6370'
2-17		4½	1½	8½				2½	6½								½							Drilling	Ran Schlumberger Wireline Logs
2-18				5½				4	14½															Logging	
2-19				2				3		19														Running Casing	
2-20				11			2½	½		2½		6½										1		Nipple Up BOP	
2-21				2			4½	2		1½			8									6		Testing Upper FO	
2-22				9½			14															½		Picking Up BHA	
2-23		½		11			12															½		Working on Mud Pump	
2-24		14½		11½				6½														½		Drilling	
2-25		5	½	12¼				3									11¼					1½		Tripping Out For Core	Core No. 4: 6705' -6735'
2-26		16		6¾			½	½														¼		Drilling	
2-27		14¼		6¼				2¾														1		Drilling	
2-28				10			½	5									6½					2		Coring	Core No. 5: 7167' - 7197'

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL NO. 2 Page 5 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
2-29				12¼				5¼															6¼	Laying Down Test Tool	
3-1				7⅛			1½	2½										9½					3¼	Drill Stem Testing	DST No. 1
3-2			½	10¼				5½	5¼														2	Circulating	Ran Schlumberger Wireline Logs
3-3			½	7					5				3½				6						2	Testing BOPE	Core No. 6: 7197' - 7227'
3-4		2½	1¼	10			1	7⅛															1½	Drilling	
3-5		1½	1	11½		⅛		2⅛									6⅛						¾	Tripping	Core No. 7: 7248' - 7278'
3-6		2½	1	6⅛		¾		⅛									12⅛						⅛	Coring	Core No. 8: 7293' - 7346'
3-7		10½		6				7⅛																Drilling	
3-8			1¼	6				⅛									12						3⅛	Coring	Core No. 9: 7424' - 7458'
3-9		7	1	7				1⅛	6⅛														1	Drilling	Ran Schlumberger Wireline Logs
3-10				5				2⅛	16⅛															Logging	
3-11				6¼				9	5½	3														Tripping	
3-12				13				8½		2⅛														Tripping	
3-13				11½																			12⅔	Laying Down Drill Collar	
3-14				8½				11		1													3½	Laying Down Scraper	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. EAST SIMPSON TEST WELL No. 2 Page 6 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
3-15	3											10											11	Nippling Down BOPs	
3-16	24																							Rigging Down	Rig Released at 8:00 p.m.
3-17	24																							Rigging Down	
3-18	24																							Rigging Down	
3-19																							24	Moved Rig by Truck & Rolligon to Camp Lonely	
3-20																							24	Moved Rig	
3-21																							24	Moved Rig	
3-22																							24	Moved Rig	
3-23																							24	Moved Rig	
3-24																							24	Moved Rig	
3-25																							24	Moved Rig	
TOTAL HOURS	5/7	237¼	46½	299	7¼	9	59¼	136¼	78¼	42½	23	31½	27	-0-	-0-	-0-	59	9½	-0-	-0-	-0-	-0-	253½		


Drilling Time in Days
0
10
20
30
40
50
60
SPUD - NOON - JANUARY 29, 1980
1000
2000
3000
4000
5000
6000
7000
8000
Depth in Feet
Core No. 1, 2380'-2410'
LOG, OPEN HOLE FROM 12 1/4" TO 17 1/2", RUN & CEMENT 13 3/8" CASING.
ACTUAL
PROPOSED
Core No. 2, 6056'-6086'
Core No. 3, 6340'-6370'
LOG, RUN & CEMENT 9 5/8" CASING.
Core No. 4, 6705'-6735'
Core No. 5, 7167'-7197'
Core No. 6, 7197'-7227'
Core No. 8, 7293'-7346'
Core No. 9, 7424'-7458'
D.S.T. No. 1, LOGGED.
Core No. 7 7248'-7278'
LOG, PLUG AND ABANDON.
RIG RELEASED - 8:00 P.M. - MARCH 16, 1980
EAST SIMPSON TEST WELL No. 2
219' FEL and 66' FSL, Sec. 23, T19N, R11W, U.M.
HUSKY OIL N.P.R. Operations Inc.
NATIONAL PETROLEUM RESERVE in ALASKA
DRILLING TIME CURVE

DRILLING MUD RECORD

ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska CASING PROGRAM: 20 inch at 99 ft.

WELL East Simpson Test Well No. 2 COUNTY North Slope Borough 13 3/8 inch at 2635 ft.

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA SEC 23 TWP 19N RNG 11W 9 5/8 inch at 6427 ft.

STOCKPOINT _____ DATE _____ ENGINEER Gary Monroe/Jim Lary TOTAL DEPTH 7505 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	RETORT			CEC	REMARKS AND TREATMENT
1980	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec/10 min	Strip Cl Meter Cl	ml API	@ THP °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
1/27		8.8	44	5	10	1/7	7.5	18		4			250	20	0	3	0	97		Mixed spud mud.
1/27		8.8	52	7	13	2/5	8.0	10		3			250	20	0	3	0	97		Squeezed 180 sacks cement.
1/28		8.8	56	8	15	2/10	8.0	8.5		3			250	20	0	3	0	97		
1/28		8.8	57	9	14	2/7	8.0	9		3			250	20	0	3	0	97		Waited on cement.
1/29		8.8	57	9	15	2/8	8.0	9		3			250	20	0	3	0	97		Attempting to drill out.
1/29	140	9.1	41	9	16	10/14	9.0	30		4			500	20	Tr	5	0	95		
1/30	690	9.4	40	8	14	9/11	8.5	24		4			750	10	1/4	7	0	93		Low solids mud.
1/30	1270	9.8	40	8	15	10/14	8.5	18		3			800	10	2	10	0	90		Running water to reduce solids.
1/31	1800	9.8	42	9	14	10/12	8.5	16.5		3			850	10	1	11	0	89		Running desander while drilling.
1/31	-	10.1	41	8	15	10/15	8.5	15.5		3			900	10	1/2	13	0	87		Cut core at 2380'.
2/1	2395	9.9	40	7	14	10/16	8.5	14		3			900	10	1/4	12	0	88		Running water to reduce solids.
2/1	2650	9.8	60	13	27	10/32	8.5	18.5		3			800	Tr	Tr	12	0	88		Increased viscosity for logging
2/2	2650	9.8	60	13	26	11/30	8.5	17.5		3			800	10	Tr	12	0	88		Logging.
2/2	2650	9.9	65	14	30	12/36	8.0	17		3			800	Tr	Tr	13	0	87		
2/3	2650	9.9	47	11	24	10/26	8.0	19		3			800	Tr	Tr	13	0	87		Finished logging.
2/3	2650	9.8	42	9	16	10/23	8.0	18		3			800	Tr	Tr	13	0	87		
2/4	2650	9.7	47	12	22	7/20	8.0	12		3			800	10	1/2	13	0	87		Running water to reduce solids.
2/4	2650	10.0	44	10	17	9/24	8.0	13		3			800	10	1/4	13	0	87		
2/5	2650	10.2	41	11	14	8/22	8.0	15		3			800	10	Tr	14	0	86		Running water to reduce solids.
2/5	2650	10.1	41	10	15	8/21	8.0	16		3			800	10	Tr	13	0	87		Opening hole.
2/5	2650	10.2	63	18	25	10/27	8.0	15		3			800	10	Tr	14	0	86		
2/6	2650	10.3	62	19	25	12/36	8.0	16		3			800	10	Tr	14	0	86		POH to run 13 3/8" casing.
2/6	2650	10.3	58	16	22	11/31	8.0	16		3			800	10	Tr	14	0	86		Circulating for cementing.
2/6	2650	10.3	36	9	4	0/1	8.0	9		2			800	Tr	Tr	14	0	86		Cleaned mud pits.
2/7	2650	8.8	33	3	4	0/1	8.0	14		3			800	10	0	3	0	97		Built new volume.
2/8	2650	9.4	45	8	19	5/20	10.5	12.5		3			800	40	0	8	0	92		
2/8	2740	9.4	38	7	14	5/10	10.5	21		3			800	220	Tr	8	0	92		Testing formation.
2/9	3245	9.6	39	8	14	4/12	9.5	10.5		3			800	180	Tr	9	0	91		Running 2" stream of water.
2/9	3780	9.7	37	8	10	4/14	9.0	12		3			800	80	Tr	10	0	90		Running water to mntn low solids
2/10		9.7	38	8	11	5/9	9.0	11		3			800	60	Tr	10	0	91		" " " " " "
2/10	4270	9.7	37	6	10	4/9	8.5	10.5		2			700	40	Tr	10	0	90		" " " " " "
2/11	4715	9.7	38	7	11	4/8	8.5	9.5		1			700	10	Tr	10	0	90		" " " " " "
2/11	5041	9.7	39	11	13	4/12	8.5	9		2			700	10	Tr	10	0	90		
2/12	5055	9.7	41	12	13	4/16	8.5	9.5		2			700	10	Tr	10	0	90		Trip gas: 600 units.
2/12	5480	9.8	42	11	15	9/18	8.5	9.6		2			600	10	Tr	11	0	89		

DRILLING MUD RECORD

ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska CASING PROGRAM: 20 inch at 99 ft.

WELL East Simpson Test Well No. 2 COUNTY North Slope Borough 13 3/8 inch at 2635 ft.

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA SEC 23 TWP 19N RNG 11W 9 5/8 inch at 6427 ft.

STOCK POINT _____ DATE _____ ENGINEER Gary Monroe/Jim Larry TOTAL DEPTH 7505 ft.

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS				SAND	REPORT			CEC	REMARKS AND TREATMENT
1980	feet	lb/gal	Sec API @ °F	PV @ °F		10 sec / 10 min	Strip (Meter)	ml API	(1)HP @ °F	Cake 32nds	Pm	Pf/Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud, me/ml	
2/13	5761	9.9	41	11	14	9/21	8.5	9.8		2			600	20	Tr	12	0	88		
2/13	5765	9.5	40	11	15	6/21	8.5	10.		2			600	20	Tr	12	0	88		
2/14	5995	9.9	40	11	14	7/19	8.5	9.5		2			600	40	Tr	12	0	88		Running water to reduce solids.
2/14	6086	9.9	39	11	14	7/18	8.5	9.5		2			600	40	Tr	12	0	88		
2/15	6086	9.9	39	11	13	7/17	8.5	9.5		2			600	40	Tr	12	0	88		
2/15	6340	9.9	40	10	11	2/19	8.5	8.5		2			600	40	Tr	12	0	88		
2/16	6340	9.9	40	10	11	2/19	8.5	8.5		2			600	40	Tr	12	0	88		
2/16	6370	9.9	40	10	11	2/17	8.5	8.5		2			600	40	Tr	12	0	88		
2/17	6379	9.9	40	11	9	2/17	8.5	8.5		2			600	40	Tr	12	0	88		
2/17	6450	9.9	80	18	30	6/24	8.0	7.4		2			550	40	Tr	12	0	88		
2/18	6450	9.9	80	18	30	6/24	8.0	7.4		2			550	40	Tr	12	0	88		
2/18	6450	9.9	80	18	30	6/24	8.0	7.4		2			550	40	Tr	12	0	88		Ran logs; RIH for clean out.
2/19	6450	9.9	42	10	10	1/7	8.0	8.0		2			550	40	Tr	12	0	88		
2/20	6450	9.7	36	9	4	1/2	8.0	8.8		2			400	20	Tr	10	0	90		
2/21	6450	9.7	36	9	4	1/2	8.0	8.8		2			400	20	Tr	10	0	90		WOC
2/22	6450	9.4	35	10	3	1/6	9.0	11.0		2			500	120	Tr	8	0	92		
2/22	6450	9.2	31	9	3	1/1	8.0	10.0		2			700	60	Tr	7	0	93		Circ & conditioned contaminated
2/23	6450	9.2	31	3	1	1/1	9.5	12.4		2			700	120	Tr	7	0	93		mud
2/24	6450	9.3	34	6	3	1/1	11.5	12.8		2			700	60	Tr	8	0	92		Tested formation
2/24	6470	9.3	40	10	8	1/2	11.5	10.2		2			700	60	Tr	8	0	92		Raised viscosity to 40-42 and
2/24	6563	9.2	44	14	8	2/6	11.0	4.8		2			600	40	Tr	7	0	93		weight to 9.6 #/gal
2/25	6705	9.4	44	15	11	1/6	11.0	4.4		2			550	40	Tr	8	0	92		
2/25	6735	9.3	44	15	12	1/6	10.0	4.8		2			600	40	Tr	7	0	93		
2/26	6837	9.3	44	15	15	2/8	9.5	5.0		2			600	40	1/4	7	0	93		
2/26	6860	9.4	44	18	17	2/8	9.5	5.0		2			550	40	1/4	8	0	92		POH, looking for hole in DP
2/27	7030	9.4	43	20	20	2/9	9.0	5.0		2			550	40	1/4	8	0	92		
2/27	7161	9.4	42	17	16	2/8	9.0	5.0		2			600	40	1/4	8	0	92		
2/28	7165	9.4	45	16	14	2/6	9.0	4.8		2			600	40	1/4	8	0	92		
2/28	7197	9.3	41	11	10	1/5	9.0	5.4		2			600	40	1/4	7	0	93		
2/29	7192	9.3	38	9	7	1/4	9.0	5.6		2			600	40	Tr	7	0	93		
2/29	7197	9.8	38	11	9	1/8	8.0	7.6		2			2300	120	1/4	11	0	89		Well started to flow; POH
3/1	7197	9.8	38	11	9	1/8	8.0	7.6		2			2300	120	1/4	11	0	89		RIH; killed well; RIH for DST
3/1	7197	9.8	38	11	9	1/8	8.0	7.6		2			2400	120	1/4	11	0	89		Ran DST; flowed salt water; POH
3/2	7197	9.8	42	14	9	2/7	8.0	7.6		2			2400	120	1/4	11	0	89		Circulated & conditioned for log
3/2	7197	9.8	43	14	10	2/7	8.0	7.6		2			2500	140	1/4	11	0	89		

DRILLING MUD RECORD

ARCTIC DRILLING SERVICES

COMPANY Husky Oil NPR Operations, Inc. STATE Alaska CASING PROGRAM: 20 inch at 99 ft.

WELL East Simpson Test Well No. 2 COUNTY North Slope Borough 13 3/8 inch at 2635 ft.

CONTRACTOR Nabors Alaska Drilling, Inc. LOCATION NPRA SEC 23 TWP 19N RNG 11W 9 5/8 inch at 6427 ft.

STOCKPOINT ______ DATE ______ ENGINEER Gary Monroe/Jim Larry TOTAL DEPTH 7505 ft.

DATE 1980	DEPTH feet	WEIGHT lb/gal	VISCOSITY Sec API at ___ °F	VISCOSITY PV at ___ °F	YP	GELS 0 sec/10 min	pH Strip ( ) Meter ( )	FILTRATION ml API	FILTRATION HTHP at ___ °F	FILTRATION Cake 1/32 in.	FILTRATE ANALYSIS Pm	FILTRATE ANALYSIS Pf/Mf	FILTRATE ANALYSIS Cl ppm	FILTRATE ANALYSIS Ca ppm	SAND %	RETORT Solids %	RETORT Oil %	RETORT Water %	CEC Mud, me/ml	REMARKS AND TREATMENT
3/3	7197	9.8	43	14	10	2/7	8.0	7.6		2			2500	140	1/4	11	0	89		RIH; circulated & conditioned
3/3	7199	9.8	43	14	10	1/7	8.0	8.4		2			2500	140	1/4	11	0	89		
3/4	7231	9.8	52	19	16	2/11	8.0	6.4		2			2500	140	1/4	11	0	89		
3/4	7248	9.9	50	15	12	2/10	8.0	6.2		2			2500	100	1/4	12	0	88		
3/5	7278	9.9	44	14	10	1/9	8.0	6.2		2			2400	100	1/2	12	0	88		
3/5	7296	10.0	43	14	9	2/7	8.0	6.2		2			2300	100	1/2	12	0	88		
3/6	7324	10.0	44	18	9	2/7	8.0	6.4		2			2150	80	1/4	12	0	89		
3/6	7346	10.0	45	17	10	2/8	8.0	6.2		2			2000	80	1/4	12	0	88		
3/7	7390	10.0	43	16	11	2/11	8.0	5.4		2			1950	80	1/4	12	0	88		
3/7	7424	10.0	48	16	14	2/13	8.0	5.4		2			1600	80	1/4	12	0	88		Circulated & conditioned
3/8	7429	10.0	47	16	16	2/16	8.0	5.2		2			1600	80	1/4	12	0	88		
3/8	7456	10.0	42	18	12	2/10	8.0	5.8		2			1700	80	1/4	12	0	88		
3/9	7472	10.1	47	17	16	2/12	8.0	6.2		2			1700	80	1/4	13	0	87		
3/9	7505	10.1	46	17	14	2/11	8.0	6.2		2			1750	80	1/4	13	0	87		
3/10	7506	10.0	39	14	7	1/5	8.0	6.8		2			1750	80	1/4	12	0	88		
3/10	7505	10.0	48	17	15	2/12	8.0	6.6		2			1750	80	1/4	12	0	88		
3/11	7505	10.0	50	18	15	2/14	8.0	6.6		2			1750	80	1/4	12	0	88		
3/12	7505	9.8	39	7	3	1/2	8.0	12.4		2			1100	80	Tr	11	0	89		
3/13	-	9.2	32	6	2	1/3	12.0	16		3			1000	240	Tr	7	0	93		
3/14	-	9.1	33	7	2	1/2	12.0	18		3			1000	260	Tr	6	0	94		

BIT RECORD

COMPANY: Husky Oil Company
CONTRACTOR: Nabors Alaska Drilling, Inc.
COUNTY: North Slope Borough
STATE: Alaska
LEASE: National Petroleum Reserve
WELL NO: E. Simpson No. 2
SEC: 23
TOWNSHIP: 19N
RANGE: 11W
BLOCK:
FIELD:
TOOL PUSHER:
DAY DRILLER:
EVENING DRILLER:
MORNING DRILLER:
DRILL PIPE: MAKE / SIZE / TYPE
TOOL JOINT:
DRILL COLLAR: NO / O.D. / I.D. / LENGTH
DRILL COLLAR: NO / O.D. / I.D. / LENGTH
DRAW WORKS:
POWER: H.P.
PUMP NO. 1: MAKE / MODEL / STROKE
PUMP NO. 2: MAKE / MODEL / STROKE
UNDER SURF:
INT. DATE:
T.D. DATE:

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	2	3	DEPTH OUT	FTGE	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R.P.M	VERT DEV	PUMP PRESS	PUMPS No.	Liner	SPM	MUD Wt	Vis	DULL CODE T	B	G	REMARKS FORMATION CIRC. FLUID, ETC	DATE
1	12¼	HTC	OSC 3AJ	2D385	11	11	11	1737	1633	29.5	29.5	55	15/25	110	1/4	2300	1	6½	54	9.8	42	2	2	I	Clay, silt, stone.	
2	12¼	HTC	OSC 3AJ	AT895	11	11	11	2380	643	9.5	39	67.7	35	110	1/4	2300	1	6½	53	9.9	40	I	I	I	Clay, silt, stone.	
CH1	8½	CDP	MC 201	9W1827				2410	30	1.5	40.5	20	20	60	1/4	800	1	6½	34	9.9	40	G	0	O	D	Cut Core No. 1.	
RR2	12¼	HTC	OSC 3AJ	AT985	11	11	11	2650	240	5.5	46	43.6	35	110	1/4	2200	1	6½	50	9.8	60	2	2	I	Clay & sandstone.	
HO1	17½	Grnt		20681	16	16	16	1929	1825	34																
HO2	17½	Grnt		20680	12	12	12	2650	721	11															Ran casing & cement	
3	12¼	HTC	OSC 3AJ	KL839	12	11	11	3930	1280	29.5	75.5	43	40	110	1/4	2300	1	6½	60	8.5	38	3	6	I	Clay & siltstone	
4	12¼	HTC	OSC 3AJ	KV365	12	12	12	5072	1142	34	109.5	33.5	40	110	1/4	2200	1	6½	60	9.7	41	3	6	I	Shale & siltstone	
5	12¼	HTC	OSC 3AJ	ZC186	12	13	13	5764	692	26.5	136	26	50	110	1/4	1800	1	6½	60	9.9	40	4	7	I	Sandstone & siltstone	
6	12¼	HTC	OSC 3AJ	JM096	12	13	13	6056	292	11.5	147.5	25.4	50	110	1/4	1800	1	6½	60	9.9	39	2	4	I	Sandstone & siltstone	
CH1	8½	CDP	MC 201	9W1827				6086	30	3.5	151	8.5	20	60	1/4	800	1	6½	35	9.9	39	G	0	O	D	Cut Core No. 2	
7	12¼	STC	SOS	AK2634	12	13	13	6340	254	13	164	19.5	50	110	1/4	2400	1	6½	60	9.9	40	2	2	I	Shale, sdstn, & slstn	
CH1	8½	CDP	MC 201	9W1827				6370	30	7	171	4.3	20	60	1/4	800	1	6½	35	9.9	40	G	0	O	D	Cut Core No. 3	
8	12¼	HTC	X1G	2J975	12	13	13	6450	80	4.5	175.5	17.8	50	110	1/4	2300	1	6½	60	9.9	45	I	I	I	Shale	
9	8½	HTC	X3A	AT976	10	10	10	6563	113	7.25	183,25	14.5	35	60	1/4	1450	1	5½	52	9.4	44	6	2	I	Float, shoe, cement Sandstone & shale	
10	8½	STC	F2	V5722	10	10	10	6705	142	8.5	191,25	17.7	35	65	1/4	1500	1	5½	52	9.4	44	I	I	I	Sandstone & shale	
CH1	8½	CDP	MC 201	9W1827				6735	30	1.25	192.5	24	20	60	1/4	800	1	5½	52	9.3	43	G	0	O	D	Cut Core No. 4	
RR10	8½	STC	F2	V5722	10	10	10	7167	432	32.75	225,25	13.2	40	65	1/4	1650	1	5½	52	9.5	45	3	I	I		
CH1	8½	CDP	MC 201	9W1827				7197	30	6.5	231,75	4.6	20	65	1/4	900	1	5½	52	9.3	38				Cut Core No. 5	
CH2	8½	CDP	MC 201	9W2566				7227	30	6	237,75	5	20	65	1/4	800	1	5½	54	9.8	43	G	0	O	D	Cut Core No. 6	
11	8½	STC	F2	VS432	10	10	10	7248	21	2.5	240,25	8.4	35	50	1/4	1800	1	5½	52	9.9	44	I	I	I	Sandstone	

SMITH REPRESENTATIVE: _____ PHONE: _____

Compliments of SMITH TOOL

P.O. BOX C19511 • IRVINE, CALIF. 92713
DIVISION OF SMITH INTERNATIONAL, INC.

BIT RECORD

COMPANY: Husky Oil Company
CONTRACTOR: Nabors Alaska Drilling, Inc.
COUNTY: North Slope Borough
STATE: Alaska
LEASE: National Petroleum Reserve
WELL NO: E. Simpson No. 2
SEC: 23
TOWNSHIP: 19N
RANGE: 11W
BLOCK:
FIELD:
TOOL PUSHER:
DRILL PIPE:
DRAW WORKS:
DAY DRILLER:
TOOL JOINT: MAKE / SIZE / TYPE
POWER: H P
UNDER SURF:
EVENING DRILLER:
DRILL COLLAR: NO / O D / I D / LENGTH
PUMP NO 1: MAKE / MODEL / STROKE
INT DATE:
MORNING DRILLER:
DRILL COLLAR: NO / O D / I D / LENGTH
PUMP NO 2: MAKE / MODEL / STROKE
T D DATE:

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	JET SIZE 2	JET SIZE 3	DEPTH OUT	FTGE	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R P M	VERT DEV	PUMP PRESS	PUMPS No	PUMPS Liner	PUMPS SPM	MUD WT	MUD Vis	DULL CODE I	DULL CODE B	DULL CODE G	REMARKS FORMATION, CIRC FLUID, ETC	DATE
CH2	8½	CDP	MC 201	9W2566				7278	30	5.25	245.5	5.7	20	65	1/4	800	1	5½	54	9.9	44	C	O	O	D Cut Core No. 7	
RR11	8½	STC	F2	VS432	10	10	10	7293	15	1.25	246.75	12	40	60	1/4	1800	1	5½	52	10	47	I	I	I	Sandstone & siltstone	
CH2	8½	CDP	MC 201	9W2566				7346	53	19.25	266	2.7	20	65	1/4	900	1	5½	54	10	53	C	O	O	D Cut Core No. 8	
12	8½	STC	F3	BB605	10	10	10	7424	78	13	279	6	40	45	1/4	1800	1	5½	52	10	49	I	I	I	Chert, Ss, shale	
CH2	8½	CDP	MC 201	9W2566				7458	34	12	291	2.8	20	65	1/4	1000	1	5½	54	10	43				Cut Core No. 9	
RR12	8½	STC	F3	BB605	10	10	10	7505	47	7	298	6.7	40	50	1/4	1800	1	5½	52	10	47	I	I	I	Argillite	

Compliments of SMITH TOOL
P O BOX C19511 • IRVINE, CALIF 92713
DIVISION OF SMITH INTERNATIONAL, INC

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.

The proposed casing program for East Simpson Test Well No. 2 was as follows: 20" conductor at ±100'; 13-3/8" casing at ±2600'; 9-5/8" casing at ±6450'; 7" liner to a total depth of 7600' if needed for formation evaluation. Actual casing run was 20" at 99'; 13-3/8" at 2635'; 9-5/8" at 6427'. The running of a 7" liner was not warranted.

The 9-5/8" casing was cut off at 2110' and recovered back to surface when the well was plugged. The 13-3/8" annulus was left full of diesel to permit U. S. Geological Survey personnel to take future temperature readings in the wellbore.

CASING TALLY
SUMMARY SHEET

DATE: February 6, 1980

FIELD National Petroleum Reserve in AK LEASE & WELL NO. East Simpson Test Well No. 2 TALLY FOR 13 3/8" CASING

SUMMARY OF PAGE MEASUREMENTS

	NO. OF JOINTS	FEET	00'S
PAGE 1	50	2059	66
PAGE 2	14	575	45
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	64	2635	11

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	64	2635	11
2	LESS CASING OUT (JTS NOS.	0	0	0
3	TOTAL (1 – 2)	64	2635	11
4	SHOE LENGTH		1	60
5	FLOAT LENGTH		1	60
6	MISCELLANEOUS EQUIPMENT LENGTH	–	–	–
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		2638	11
8	LESS WELL DEPTH (KB REFERENCE)		–	–
9	"UP" ON LANDING JOINT		3	31

Weight indicator before cementing: 154,000 ; after slack-off: 30 ; inches slacked off 15" .

SUMMARY OF STRING AS RUN

WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW/USED	LOCATION IN STRING	NO. OF JOINTS	FOOTAGE	INTERVAL
72#	S-95	Buttress		New	JT NO. THRU NO.	64	2635	–
					JT NO. THRU NO.			–
					JT NO. THRU NO.			–
					JT NO. THRU NO.			–
					JT NO. THRU NO.			–
					JT NO. THRU NO.			–
					JT NO. THRU NO.			–

PAGE 1 OF 2

CASING TALLY

DATE: February 2, 1980

FIELD NPRA LEASE & WELL NO. E. Simpson No. 2 TALLY FOR 13 3/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	40	70			
2	41	95			
3	42	10			
4	42	24			
5	41	32			
6	41	58			
7	41	65			
8	42	35			
9	42	76			
0	42	72			
TOTAL A	919	37			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	40	62			
2	37	40			
3	37	50			
4	41	77			
5	39	74			
6	43	20			
7	39	03			
8	36	80			
9	42	00			
0	42	33			
TOTAL D	400	39			

1	42	48			
2	40	97			
3	42	00			
4	42	52			
5	41	85			
6	42	15			
7	42	08			
8	38	08			
9	42	35			
0	41	60			
TOTAL B	416	08			

1	42	65			
2	42	90			
3	40	40			
4	43	05			
5	40	60			
6	39	40			
7	41	80			
8	42	30			
9	41	18			
0	41	56			
TOTAL E	415	84			

1	41	90			
2	42	45			
3	39	28			
4	42	08			
5	41	70			
6	40	85			
7	40	72			
8	40	00			
9	39	55			
0	39	45			
TOTAL C	407	98			

TOTAL A	419	37		
TOTAL B	416	08		
TOTAL C	407	98		
TOTAL D	400	39		
TOTAL E	415	84		
TOTAL PAGE	2059	66		

PAGE 2 OF 2 CASING TALLY DATE: February 2, 1980

FIELD NPRA LEASE & WELL NO. E. Simpson No. 2 TALLY FOR 13 3/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	41	88			
2	43	00			
3	40	50			
4	41	84			
5	40	55			
6	40	37			
7	40	67			
8	42	04			
9	40	54			
0	41	64			
TOTAL A	413	03			

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

1	41	55			
2	39	64			
3	41	90			
4	39	33			
5					
6					
7					
8					
9					
0					
TOTAL B	162	42			

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	413	03		
TOTAL B	162	42		
TOTAL C				
TOTAL D				
TOTAL E				
TOTAL PAGE	575	45		

CASING AND CEMENTING REPORT

WELL NAME E. Simpson Test Well No. 2

LOCATION National Petroleum Reserve in Alaska

RAN CASING AS FOLLOWS:

64	Jts	13 3/8"	S-95	72#			
	Jts						
	Jts						

Shoe @ 2635' Float @ 2553' DV @ _____

Centralizers 10 feet up on shoe joint; first, third, fourth, fifth, then every other collar to the 13th joint.

FIRST STAGE

Sx of Cement 2742 Type AS II Additives - % Excess 21

Preflush 20 Barrels Water Initial Pressure 400 psi

Displacement 45 bbls. Final Pressure 900 psi

Cement in Place 6:45 -AM- PM

SECOND STAGE - Stage Collar @ _____

Sx of Cement _____ Type _____ Additives _____ % Excess _____

Preflush _____ Initial Pressure _____

Displacement _____ bbls. Final Pressure _____

Plug Down _____ AM PM

Well Depth 2650 Overall Casing Tally 2635.11

KB to Top of Cut Off Casing 21.25 Length of Landing Jt Removed 24.56

Weight Indicator Before Cementing 155,000 lbs.

Weight Indicator After Slacking Off 30,000 lbs.

Inches Slacked Off 5

Remarks: None.

CASING TALLY
SUMMARY SHEET

DATE: February 20, 1980

FIELD National Petroleum Reserve in AK LEASE & WELL NO. East Simpson Test Well No. 2 TALLY FOR 9 5/8" CASING

SUMMARY OF PAGE MEASUREMENTS

	NO. OF JOINTS	FEET	00'S
PAGE 1	50	2172	78
PAGE 2	50	2144	91
PAGE 3	50	2110	68
PAGE 4	26	1124	73
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL	176	7553	10

SUMMARY OF DEPTH CALCULATIONS

		NO. OF JOINTS	FOOTAGE FEET	FOOTAGE 00'S
1	TOTAL CASING ON RACKS	176	7553	10
2	LESS CASING OUT (JTS NOS.)	27	1158	73
3	TOTAL (1 - 2)	149	6394	37
4	SHOE LENGTH		1	73
5	FLOAT LENGTH		1	50
6	MISCELLANEOUS EQUIPMENT LENGTH		40	94
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		6438	54
8	LESS WELL DEPTH (KB REFERENCE)		6450	
9	"UP" ON LANDING JOINT		11	46

Weight indicator before cementing: 345,000 ; 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. Shoe THRU NO.		1.73	6427.24 ' - 6425.51'
53.5	S-95	Buttress		New	JT NO. 1 THRU NO. 2	2	84.19	6425.51 ' - 6341.32'
					JT NO. Float Collar THRU NO.		1.50	6341.32 ' - 6339.82'
53.5	S-95	Buttress		New	JT NO. 3 THRU NO. 94	92	3981.89	6339.82 ' - 2357.93'
					JT NO. FO THRU NO. Cementer		3.93	2357.93 ' - 2354.00'
53.5	S-95	Buttress		New	JT NO. 95 THRU NO. 99	5	210.13	2354.00 ' - 2143.87'
					JT NO. FO THRU NO. Cementer		3.88	2143.87 ' - 2139.99'
					100 149	50	2118.16	2139.99 ' - 21.83'
					Hanger		2.83	21.83 ' - 19.00'

19 feet, KB to top of hanger

PAGE 1 OF 4 CASING TALLY DATE: February 19, 1980

FIELD NPRA LEASE & WELL NO. E. Simpson No. 2 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	42	30			
2	41	89			
3	38	75			
4	41	47			
5	42	10			
6	43	30			
7	46	70			
8	42	83			
9	40	40			
0	46	33			
TOTAL A	426	07			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	45	47			
2	36	94			
3	40	33			
4	45	10			
5	41	40			
6	43	03			
7	46	37			
8	44	15			
9	41	47			
0	41	26			
TOTAL D	425	52			

1	45	90			
2	43	93			
3	46	80			
4	42	08			
5	46	05			
6	45	70			
7	46	90			
8	44	47			
9	42	58			
0	45	53			
TOTAL B	449	94			

1	44	96			
2	44	18			
3	46	20			
4	43	83			
5	47	10			
6	37	50			
7	45	35			
8	45	52			
9	42	10			
0	46	24			
TOTAL E	442	98			

1	42	65			
2	41	87			
3	41	77			
4	46	72			
5	41	58			
6	38	27			
7	46	60			
8	45	15			
9	42	46			
0	41	20			
TOTAL C	428	27			

TOTAL A	426	07		
TOTAL B	449	94		
TOTAL C	428	27		
TOTAL D	425	52		
TOTAL E	442	98		
TOTAL PAGE	2172	78		

PAGE 2 OF 4 CASING TALLY DATE: February 19, 1980

FIELD NPRA LEASE & WELL NO. East Simpson No. 2 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	13			
2	41	65			
3	43	47			
4	42	86			
5	46	33			
6	43	53			
7	41	67			
8	43	84			
9	41	65			
0	47	00			
TOTAL A	433	13			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	40	60			
2	41	47			
3	46	10			
4	39	35			
5	44	32			
6	39	30			
7	41	98			
8	45	26			
9	44	77			
0	39	80			
TOTAL D	422	95			

1	43	13			
2	42	30			
3	46	53			
4	42	28			
5	44	55			
6	43	20			
7	41	83			
8	46	55			
9	39	32			
0	46	60			
TOTAL B	436	29			

1	42	92			
2	41	80			
3	43	46			
4	45	92			
5	40	68			
6	42	62			
7	40	33			
8	45	10			
9	41	40			
0	41	48			
TOTAL E	425	71			

1	46	70			
2	46	30			
3	37	92			
4	37	48			
5	39	65			
6	45	90			
7	41	41			
8	44	83			
9	44	72			
0	41	92			
TOTAL C	426	83			

TOTAL A	433	13		
TOTAL B	436	29		
TOTAL C	426	83		
TOTAL D	422	95		
TOTAL E	425	71		
TOTAL PAGE	2144	91		

PAGE 3 OF 4 **CASING TALLY** DATE: February 19, 1980

FIELD NPRA LEASE & WELL NO. East Simpson No. 2 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	58			
2	46	10			
3	42	92			
4	41	22			
5	39	27			
6	39	10			
7	38	15			
8	41	02			
9	41	65			
0	43	53			
TOTAL A	415	54			

1	43	07			
2	46	83			
3	43	87			
4	42	19			
5	41	91			
6	42	10			
7	45	61			
8	41	60			
9	41	22			
0	41	85			
TOTAL B	430	25			

1	37	00			
2	44	08			
3	42	31			
4	41	90			
5	39	43			
6	45	64			
7	35	20			
8	45	70			
9	46	21			
0	42	27			
TOTAL C	419	74			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	46	87			
2	42	13			
3	46	58			
4	42	67			
5	42	13			
6	47	12			
7	38	90			
8	39	62			
9	42	25			
0	41	01			
TOTAL D	429	28			

1	47	02			
2	41	76			
3	35	97			
4	41	85			
5	46	51			
6	40	85			
7	41	16			
8	44	87			
9	41	88			
0	34	00			
TOTAL E	415	87			

TOTAL A	415	54		
TOTAL B	430	25		
TOTAL C	419	74		
TOTAL D	429	28		
TOTAL E	415	87		
TOTAL PAGE	2110	68		

PAGE 4 OF 4 **CASING TALLY** DATE: February 19, 1980

FIELD NPRA LEASE & WELL NO. East Simpson No. 2 TALLY FOR 9 5/8 " CASING

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	41	72			
2	45	80			
3	43	41			
4	46	31			
5	45	93			
6	43	90			
7	44	28			
8	39	84			
9	46	85			
0	40	90			
TOTAL A	438	94			

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

1	46	87			
2	41	28			
3	41	50			
4	42	22			
5	45	67			
6	40	95			
7	40	75			
8	40	84			
9	47	40			
0	43	27			
TOTAL B	430	75			

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

1	40	57			
2	41	82			
3	44	05			
4	44	90			
5	42	90			
6	40	80			
7					
8					
9					
0					
TOTAL C	255	04			

TOTAL A	438	94		
TOTAL B	430	75		
TOTAL C	255	04		
TOTAL D				
TOTAL E				
TOTAL PAGE	1124	73		

CASING AND CEMENTING REPORT

WELL NAME E. Simpson Test Well No. 2

LOCATION National Petroleum Reserve in Alaska

RAN CASING AS FOLLOWS:

92	Jts	9 5/8"	S-95	53.5#		
	Jts					
	Jts					

Shoe @ 6427' Float @ 6513' DV @ _____

Centralizers 10 feet above shoe first, third, fourth, fifth, and every other collar through 25th; two above and below each FO and every fifth collar to 12 joints below hanger.

FIRST STAGE

Sx of Cement 1000 Type "G" Additives 0.75% D-65, 0.2% D-13R % Excess _____

Preflush _____ Initial Pressure _____

Displacement _____ bbls. Final Pressure _____

Plug Down _____ AM/PM

SECOND STAGE - Stage Collar @ 2357'

Sx of Cement 300 Type AS II Additives _____ % Excess _____

Preflush _____ Initial Pressure _____

Displacement _____ bbls. Final Pressure _____

Plug Down _____ AM/PM

Well Depth _____ Overall Casing Tally _____

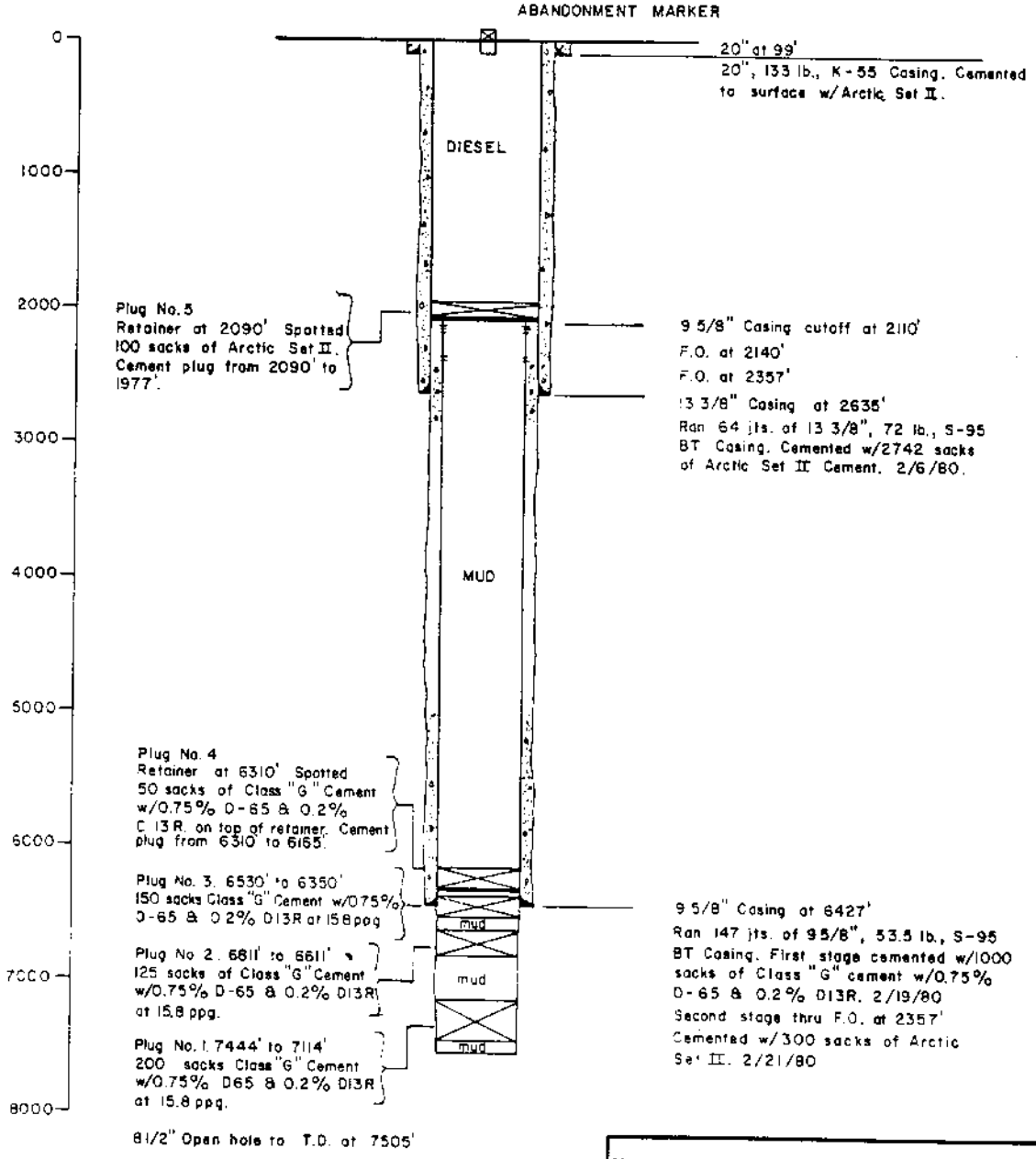
KB to Top of Cut Off Casing _____ Length of Landing Jt Removed _____

Weight Indicator Before Cementing _____ lbs.

Weight Indicator After Slacking Off _____ lbs.

Inches Slacked Off _____

Remarks:



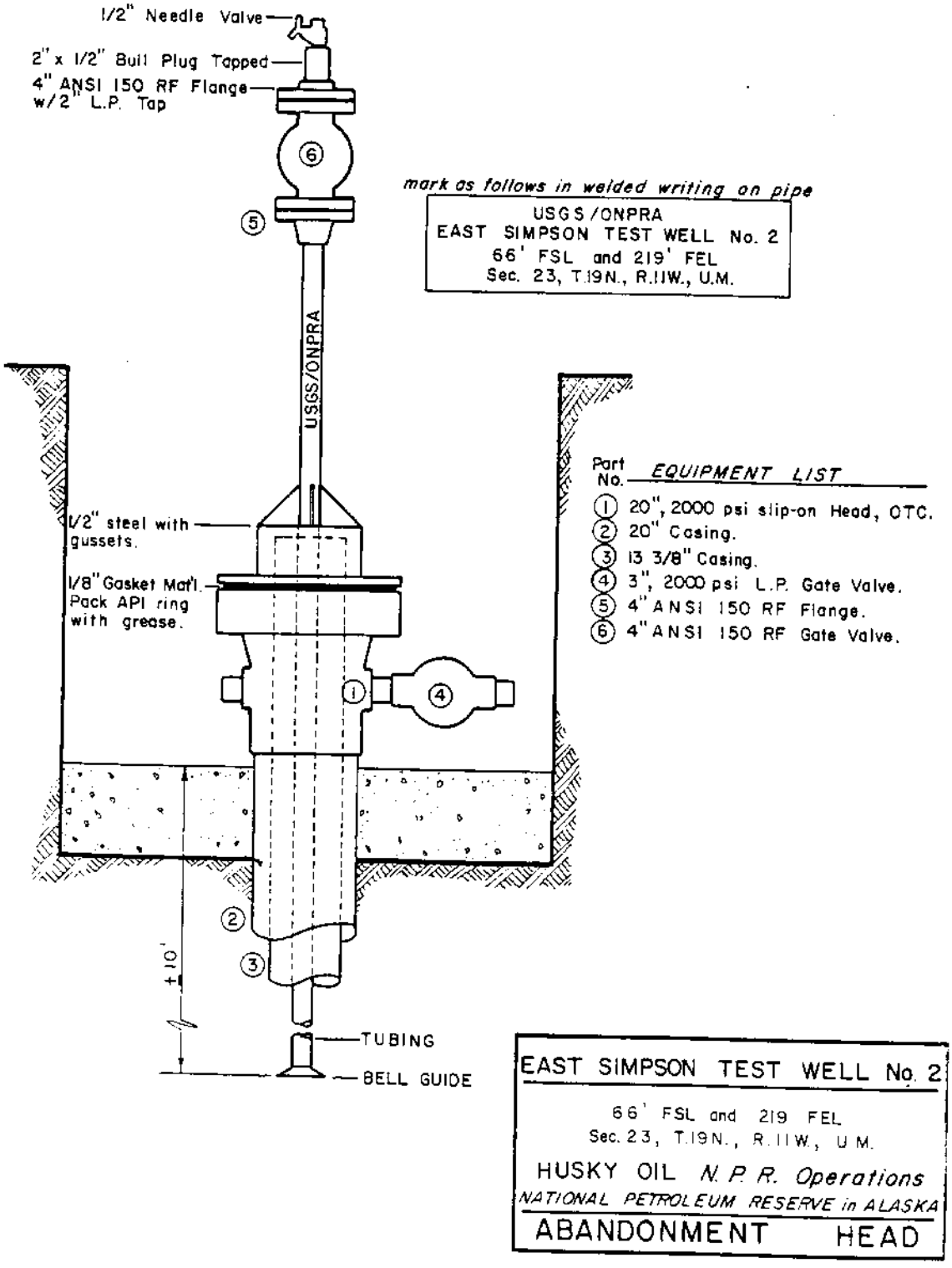
EAST SIMPSON TEST WELL No. 2

66' FSL and 219' FEL
Sec. 23, T.19N., R.11W., U.M.

HUSKY OIL *N.P.R. Operations*

NATIONAL PETROLEUM RESERVE in ALASKA

WELLBORE SCHEMATIC


1/2" Needle Valve
2" x 1/2" Bull Plug Tapped
4" ANSI 150 RF Flange w/2" L.P. Tap
⑥
⑤
mark as follows in welded writing on pipe
USGS/ONPRA
EAST SIMPSON TEST WELL No. 2
66' FSL and 219' FEL
Sec. 23, T.19N., R.11W., U.M.
USGS/ONPRA
1/2" steel with gussets.
1/8" Gasket Mat'l. Pack API ring with grease.
①
④
②
③
±10'
TUBING
BELL GUIDE
Part No. EQUIPMENT LIST
① 20", 2000 psi slip-on Head, OTC.
② 20" Casing.
③ 13 3/8" Casing.
④ 3", 2000 psi L.P. Gate Valve.
⑤ 4" ANSI 150 RF Flange.
⑥ 4" ANSI 150 RF Gate Valve.
EAST SIMPSON TEST WELL No. 2
66' FSL and 219 FEL
Sec. 23, T.19N., R.11W., U.M.
HUSKY OIL N.P.R. Operations
NATIONAL PETROLEUM RESERVE in ALASKA
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. 68B1724 and 68B1726.

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 pounds.

Blocks

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

Swivel

Emsco L 400; Serial No. 14T.

Rotary Table

26" Oilwell.

Tongs

BJ; Type DB.

Blowout Preventers

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

One 13-5/8", 5,000 pound 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 lbs. water, 8,000 gallons fuel.

Two upright water tanks; capacity: 400 lbs.

Drill Collars

Twenty-one 7-3/4" OD, 2-7/8" ID drill collars; 6-5/8" H90 connections.

Twenty-one 6-1/4" OD, 2-7/8" ID drill collars; 4-1/2" H90 connections.

Drill Pipe

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

Air Heater

One Tioga 4,200,000 BTU.

Generator

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

6