

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
Willard Pease Oil & Gas Company

3. ADDRESS OF OPERATOR
P. O. Box, Grand Junction, Colo. 81501

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface
 At proposed prod. zone **C. SE. NE. SEC. 6, T. 14 S., R. 11 E., S. L. M. 1990' from N-line & 650' from E-line**

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
Approx. 5 miles NE. of Price, Utah

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) **2000'**

16. NO. OF ACRES IN LEASE **2450 ac.**

17. NO. OF ACRES ASSIGNED TO THIS WELL **160 ac.**

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

19. PROPOSED DEPTH **3650'**

20. ROTARY OR CABLE TOOLS
Rotary tools

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6180' grd.; 6190' K.B.

22. APPROX. DATE WORK WILL START*
1 Aug. 1975

5. LEASE DESIGNATION AND SERIAL NO.
U-17759

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Federal

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT
Price #4 Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 6-14S-11E, S.L.M.

12. COUNTY OR PARISH **Carbon** 13. STATE **Utah**

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
10 3/4"	7 5/8"	26.40#	300'	100 sks

It is planned to drill a well at the above location to test the oil and gas potential of the various sand reservoirs in the Ferron member, in the Dakota formation, and in the Cedar Mountain Formation. It is planned to drill a 6 3/4" hole below the surface casing with rotary tools, using air for circulation. In the event water flows are encountered, air mist with soap and water will be used thru the Dakota formation and then the system will be converted to mud. About 300' of surface casing (7 3/4") will be set and cemented with returns to the surface. A blowout preventer and rotating head will be installed on the top of the surface casing for well control. It is expected to encounter the top of the Ferron member at about 2300', the Dakota at about 2900', and the Cedar Mountain at about 2950'. If the well is successful, 4 1/2" casing will be set and cemented.

OK - C-3

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.

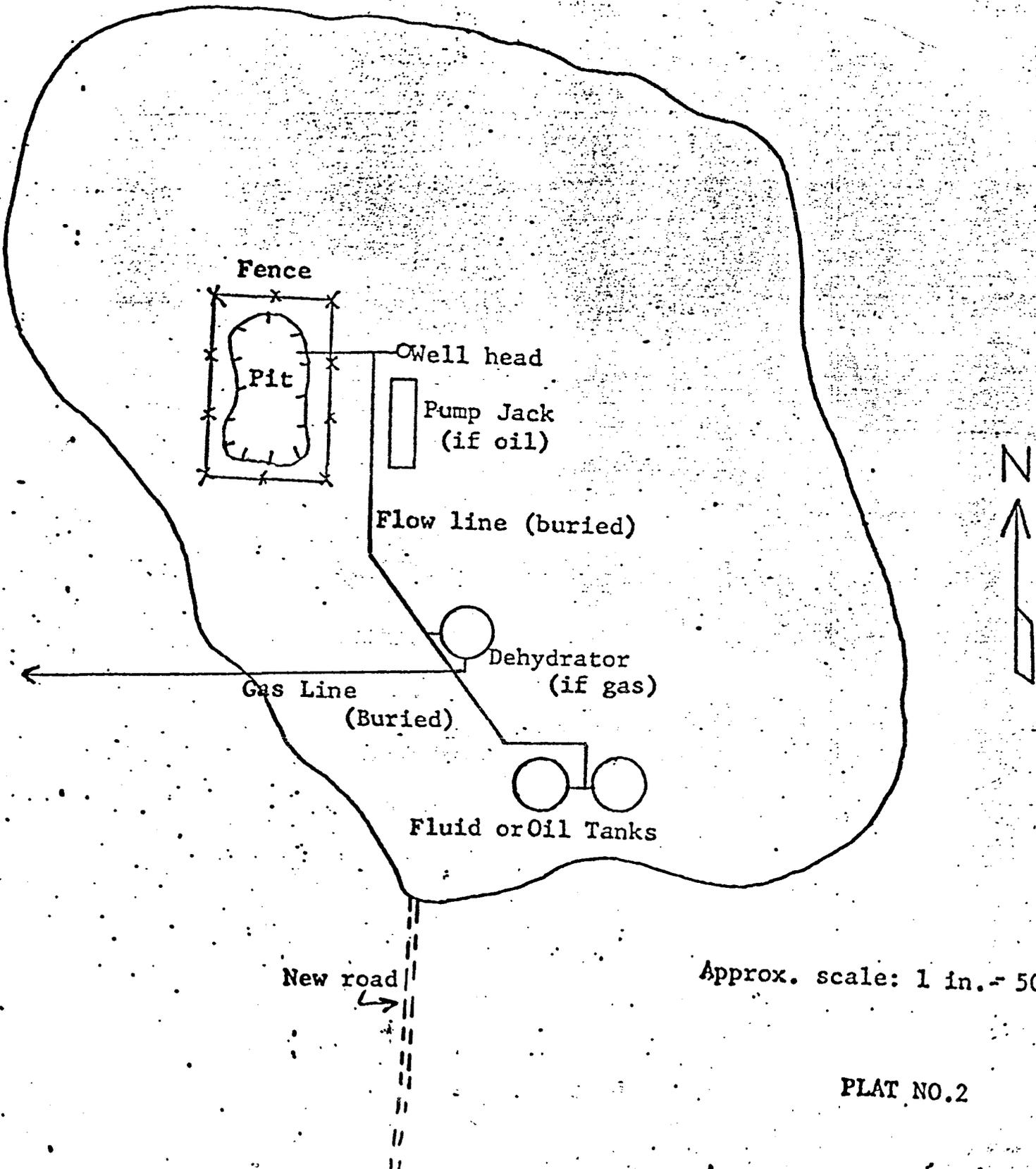
24. SIGNED *H. Don Quigley* TITLE Consulting Geologist DATE July 3, 1975

(This space for Federal or State office use)
 PERMIT NO. *43-001-3150* APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

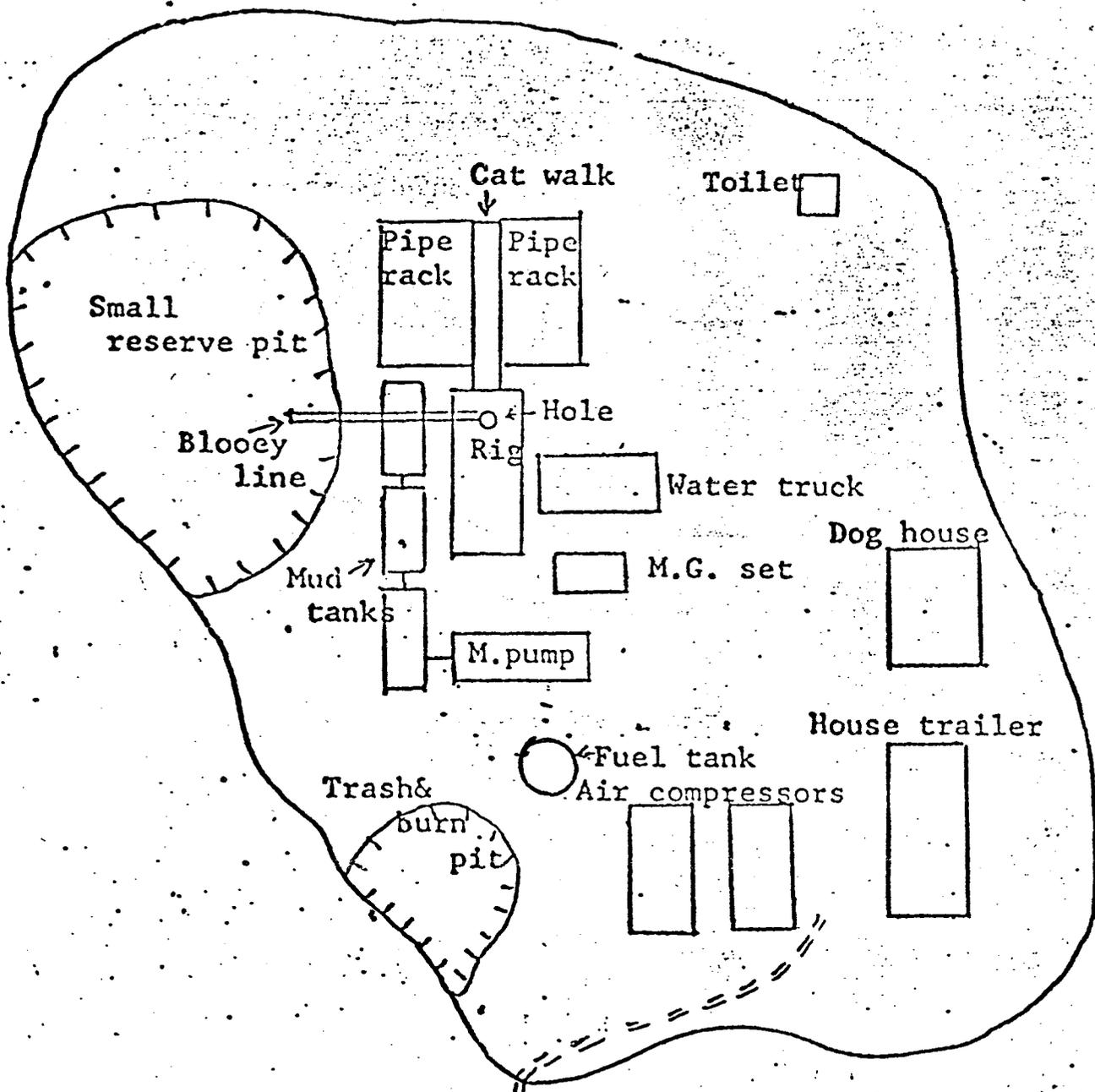
PLAN FOR COMPLETION EQUIPMENT
WILLARD PEASE OIL AND GAS CO.
PRICE #4 WELL
E.S.E.NE.SEC.6-14S-11E.
CARBON COUNTY, UTAH



Approx. scale: 1 in. = 50 ft.

PLAT NO.2

LAYOUT OF DRILLING EQUIPMENT
WILLARD PEASE OIL AND GAS CO.
PRICE #4 WELL
C. SE. NE. SEC. 6-14S-11E.
CARBON COUNTY, UTAH



New road

Approx. scale: 1 in. = 50 ft.

PLAT NO. 3

W. DON QUIGLEY

OIL AND MINERALS CONSULTANT
803 PHILLIPS PETROLEUM BLDG. - SALT LAKE CITY, UTAH 84101

WELL CONTROL EQUIPMENT FOR
WILLARD PEASE OIL AND GAS CO.
PRICE #4 WELL
C.SE.NE.SEC.6-14S-11E.
CARBON COUNTY, UTAH

The following control equipment is planned for the above designated well:

1. Surface Casing:

- A. Hole size for surface casing is 11".
- B. Setting depth for casing is approx. 250'.
- C. Casing specs. are: 7 5/8", J-55, 26.40#, 8 rd. thread new or used.
- D. Anticipated pressure at setting depth is approx. 50 #.
- E. Casing will be run and cemented with 100sks of cement with returns to the surface.
- D. Top of casing will be just above ground level.

2. Casing Head:

Flange size: 8 (nominal); A.P.I. pressure rating: 2000#; Cameron or OCT; new or used; equipped with two 2" ports with nipples and 2", 1500# W.P. valves. Casing head and valves set above ground.

3. Intermediate Casing:

None planned.

4. Blowout Preventers:

- A. Double rams; hydraulic; one set of blind rams; one set of rams for 3 1/2" drill pipe; #8 flange or spool with #8 to #10 flange; 3000# W.P.; Series 900; equipped with mechanical wheels and rods for back-up; set on top of casing head flange and secure y bolted down and tested for leaks up to 1500# pressure; Cameron, Shaffer, or equivalent.
- B. Rotating head: 10"; set on top of blowout preventer and bolted securely; complete with Kelly drive, pressure lubricator; 3 1/2" stripper rubber for 1500# W.P.; Shaffer or equivalent.
- C. The fill and kill lines (2") are to be connected thru

the 2" valves on the casing head.

5. Auxillary Equipment:

A float valve (2000#) is to be used in the bottom drill collar at all times. A string-float will also be used in the drill pipe and kept within 200'-300' below the surface at maximum.

6. Anticipated Pressures:

The shut-in pressure of the gas zones in wells near to the proposed well is about 750 lbs. at depths of around 2500'. Pressures of all other zones should be only about 200-300# more than this.

7. Drilling Fluids:

Air will be used down thru the Dakota sands and then may be converted to mud to keep control of the thick bentonite zones in the upper Cedar Mt. formation at depths of 2900'-3600'

8. Production Casing:

A. Hole size: 6 3/4"

B. Approximate setting depth: 4300' which will be thru the gas sand but the casing will be cemented above the sand.

C. Casing specs: 4 1/2" O.D.. J-55, 9.50#, 8-rd. thread, new or used.

D. Casing will be run with a Lynes packer set above the top of the gas sand and one or two joints of casing below the packer (plugged at the bottom). The bottom of the casing will be set on the bottom of the hole. The casing will then be cemented above the packer thru perforations or thru a D-V tool with 50 sacks of cement. The cement will be allowed to cure for 24 hrs., and then the casing will be set on the slips (4 1/2") in the casing head, holding at least 10,000#, and cut off. A tubing head, 8" to 2" series 600, 2000# W.P. will be installed on the casing head flange and bolted securely.

E. Tubing, 2 3/8" O.D., upset, J-55, 4.70#, new, will be run with a 3 1/2" bit and the plug will be drilled out. The bit will then be removed and a seating nipple and and perforated joint will be installed on the bottom of the tubing and run back in the hole and landed just below the Lynes packer. The tubing xixix head flange will be connect to the tobing and secured to the top of the head. A 2" master valve will be installed on top. About 1/2 of the water will then be swabbed out of the casing and tubing, and the well will be perforated below the bottom of the tubing,

DIVISION OF OIL, GAS, AND MINING

FILE NOTATIONS

Date: July 9, 1975
 Operator: Willard Pease Oil & Gas
 Well No: Bill Fed. #4
 Location: Sec. 6 T. 14S R. 11E County: Carbon

File Prepared Entered on N.I.D.
 Card Indexed Completion Sheet

Checked By:

Administrative Assistant: AW
 Remarks: No other wells in township & range
 Petroleum Engineer/Mined Land Coordinator: PD (Pulled)
 Remarks: See Below
 Director: Z
 Remarks:

Include Within Approval Letter:

Bond Required Survey Plat Required
 Order No. Blowout Prevention Equipment
 Rule C-3(c) Topographical exception/company owns or controls acreage within a 660' radius of proposed site
 O.K. Rule C-3 O.K. In _____ Unit
 Other:

Letter Written

Plz include in letter

It appears that the anticipated amount of cement to be used in cementing the surface casing is inadequate in order to insure good returns to surface. It is suggested that approximately 150 sacks or more be considered.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.

U-17759

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal

9. WELL NO.

Price #4

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK.
AND SURVEY OR AREA

Sec. 6-14S-11E, S.L.M.

12. COUNTY OR PARISH

13. STATE

Carbon

Utah

1a. TYPE OF WORK

DRILL

DEEPEN

PLUG BACK

b. TYPE OF WELL

OIL WELL

GAS WELL

OTHER

SINGLE ZONE

MULTIPLE ZONE

2. NAME OF OPERATOR

Willard Pease Oil & Gas Company

3. ADDRESS OF OPERATOR

P. O. Box, Grand Junction, Colo. 81501

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface

C. SE. NE. SEC. 6, T. 14 S., R. 11 E., S. L. M.

At proposed prod. zone 1990' from N-line & 650' from E-line

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

Approx. 5 miles NE. of Price, Utah

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

2000'

16. NO. OF ACRES IN LEASE

2450 ac.

17. NO. OF ACRES ASSIGNED TO THIS WELL

160 ac.

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

19. PROPOSED DEPTH

3650'

20. ROTARY OR CABLE TOOLS

Rotary tools

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

6180'grd.; 6190'K.B.

22. APPROX. DATE WORK WILL START*

1 Aug. 1975

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
10 3/4"	7 5/8"	26.40#	300'	100 sks

It is planned to drill a well at the above location to test the oil and gas potential of the various sand reservoirs in the Ferron member, in the Dakota formation, and in the Cedar Mountain Formation. It is planned to drill a 6 3/4" hole below the surface casing with rotary tools, using air for circulation. In the event water flows are encountered, air mist with soap and water will be used thru the Dakota formation and then the system will be converted to mud. About 300' of surface casing (7 3/4") will be set and cemented with returns to the surface. A blowout preventer and rotating head will be installed on the top of the surface casing for well control. It is expected to encounter the top of the Ferron member at about 2300', the Dakota at about 2900', and the Cedar Mountain at about 2950'. If the well is successful, 4 1/2" casing will be set and cemented.

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.

SIGNED H. Don Guigley TITLE Consulting Geologist DATE July 3, 1975

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY [Signature] TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

State O&G - Approval Notice
*See Instructions On Reverse Side

7

LOCATION PLANS FOR
WILLARD PEASE OIL AND GAS CO.
PRICE #4 WELL
C.SE.NE.SEC.6-14S-11E
CARBON COUNTY, UTAH

1. A survey plat for the location of the subject well is attached, A portion of the topographic map of the area is attached as Map No.1 and shows the route to the well site from Price, Utah. The present trail to the well from the Deadman Canyon road is shown on this map.
2. The proposed well site is about 1500 ft. from the present trail. The new road to the well site is along a flat area beside a short and shallow wash.
3. The map shows the location of the wells drilled in the area in the past.
4. See 1 and 2 above.
5. A plan for the location of the completion equipment, in the event the well is successful, is shown on Plat No. 2.
6. It is planned to haul the water required for the rig use and drilling operations from the town of Price by truck. This will be about $4\frac{1}{2}$ miles.
7. A plan for the drilling equipment placement is shown on Plat No.3. This plat shows the small reserve pit and trash or burn pit. The dust cuttings from the drilling operations will be blown into the reserve pit and all trash and burnable material will be put into the burn pit. At the completion of the well these pits will be folded-in and levelled.
8. See location of house trailers on Plat No.3. No other camp facilities will be needed.
9. There are no air strips, other than the Price Airport, in use around the proposed well site.
10. See Plat No. 3 for the drilling equipment layout.
11. There is little or no topsoil at the well site. The area is near the east edge of a gentle plateau and the surface is fairly flat. No deep cuts or removal of rock will be required. The area is covered by sage brush and juniper trees. After the well is finished and abandoned, if dry, the site will be cleaned and levelled, and the pits will be covered. The surface will be restored as required.
12. As can be seen by the map herewith the area is quite rugged with sharp and high cliffs, with canyons and washes dissecting the area into a dendritic pattern. Access roads are limited to the canyons with a few crossing the lower and less steep ridges. Rocks belonging to the Measverde and Mancos formations are exposed around the cliffs and on the surface of the well site. Coal deposits are found in the general area; but none are located on or near the well site. There are no gas or oil pipelines in the immediate area.

July 11, 1975

Willard Pease Oil & Gas Company
P.O. Box 548
Grand Junction, Colorado 81501

Re: Well No. Price Federal #4
Sec. 6, T. 14 S, R. 11 E,
Carbon County, Utah

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to well is hereby granted in accordance with Rule C-3, General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

PATRICK L. DRISCOLL - Chief Petroleum Engineer
HOME: 272-5813
OFFICE: 328-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling.

It should be noted that it appears that the anticipated amount of cement to be used in cementing the surface casing is inadequate in order to insure good returns to surface. It is suggested that approximately 150 sacks or more be considered.

The API number assigned to this well is 43-007-30030.

Very truly yours,
DIVISION OF OIL, GAS, AND MINING

CLEON B. FEIGHT
DIRECTOR

CBF:sw



ORAL APPROVAL TO PLUG AND ABANDON WELL

Operator W. Ward Pease Oil Co. Representative Don Quigley

Well No. Price # 4 Located SE 1/4 NE 1/4 Sec. 6 Twp 14S Range 11E SLM

Lease No. U-17759 Field W/C Carbon Co State Utah

Unit Name and Required Depth _____ Base of fresh water sands Ferron/Dak

T.D. 3485' Size hole and Fill Per Sack 9 5/8" @ 336' 3 3/4" @ 336' Mud Weight 9.2 #/gal. Mud _____
to TD

Casing Size	Set At	Top of Cement	To Be Pulled	Plugging Requirements		
				From	To	Sacks Cement
<u>7 5/8</u>	<u>336'</u>	<u>9 5/8" hole 80 SX Circ</u>	<u>None</u>	<u>165x @ sur w/ req marker</u>	<u>240</u>	<u>100' cement plug</u>

Formation	Top	Base	Shows	From	To	Sacks Cement
<u>Mancos</u>	<u>Sur</u>					
<u>Ferron</u>	<u>2160</u>			<u>2200</u>	<u>2100</u>	<u>100' cement plug 25SX</u>
<u>Dakota</u>	<u>2760</u>			<u>2800</u>	<u>2700</u>	<u>100' cement plug</u>
<u>Cedar Mt.</u>	<u>2780</u>					
<u>Morrison</u>	<u>3460</u>			<u>3485</u>	<u>3385</u>	<u>100' cement plug</u>
<u>Buckhorn</u>	<u>3420</u>					

Remarks

DST's, lost circulation zones, water zones, etc. Wtr in Ferron & Dakota
V. Small show gas in Ferron (coal & carb. sh. zone) No DST
No Cores No sig. shows

Approved by E.W. Snymer Date 10/29/75 Time 4:45 P.M.

cc: Opr
 Don Quigley, Phillips Pet. Bldg (803) SLC 84101
 Blm, Price
 USGS, Vernal ✓ 04-22 Conn. Cambrian

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

State PI 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other _____

b. TYPE OF COMPLETION:

NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RESVR. Other _____

2. NAME OF OPERATOR

Willard Pease Oil & Gas Company

3. ADDRESS OF OPERATOR

P. O. Box 348, Grand Junction, Colorado 81501

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface

C. SE. NE. SEC. 6, T. 14 S., R. 11 E., S. L. M.

At top prod. interval reported below **1990' from N-line & 650' from E-line, Sec. 6, -148-11K-81M**

At total depth

14. PERMIT NO. DATE ISSUED

43-007-30030

12. COUNTY OR PARISH
Carbon

13. STATE
Utah

15. DATE SPUNDED 16. DATE T.D. REACHED 17. DATE COMPL. (Ready to prod.) 18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 19. ELEV. CASINGHEAD

Oct. 19 '75

Oct. 29 '75

Oct. 30 '75

6151' grd.; 6161' K.S.

20. TOTAL DEPTH, MD & TVD

3485'

21. PLUG, BACK T.D., MD & TVD

XXXXX

22. IF MULTIPLE COMPL., HOW MANY*

NONE

23. INTERVALS DRILLED BY

→

ROTARY TOOLS

0' - 3485'

CABLE TOOLS

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

NONE

25. WAS DIRECTIONAL SURVEY MADE

NO

26. TYPE ELECTRIC AND OTHER LOGS RUN

Gamma-Density-Neutron; Induction-Electrical; Velocity

27. WAS WELL CORED

NO

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

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
7 5/8"	24.00#	336' K.S.	9 7/8"	80 sks.	none

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
NONE				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)

NONE

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
NONE	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
NONE		

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
NONE							

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

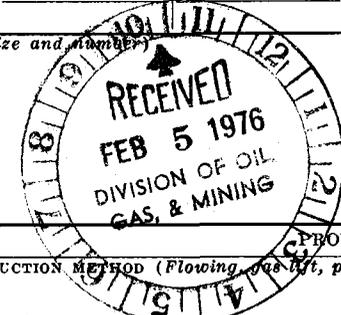
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS
Drilling History and Geologic Report

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

SIGNED H. Don Gungley TITLE Consulting Geologist DATE Jan. 28, 1976

* (See instructions and spaces for additional data on reverse side)



DRILLING HISTORY
AND
GEOLOGIC REPORT
ON
WILLARD PEASE OIL & GAS CO.
PRICE #4 WELL
CARBON COUNTY, UTAH

By

W. Don Quigley
Consulting Geologist
Salt Lake City, Utah

January 26, 1976

DRILLING HISTORY
OF
WILLARD PEASE OIL & GAS CO.
PRICE #4 WELL
CARBON COUNTY, UTAH

Operator: Willard Pease Oil & Gas Co., P.O. Box 548, Grand
Junction, Colorado 81501

Contractor: Willard Pease Drilling Co., P.O. Box 548,
Grand Junction, Colorado 81501

Location: C. SE. NE. Sec. 6, T 14S., R 11E., S.L.M. (1990'
from N-line and 650' from E-line)

Elevations: 6151' grd; 6161' K.B.

Spudded-in: Oct. 19, 1975

Finished Drilling: Oct. 29, 1975

Total Depth: 3485'

Surface Casing: 11 jts. of 7 5/8", 24.00#, J-55 casing,
landed at 336' K.B. and cemented with 80 sks.
cement with returns to surface.

Producing Formation: none

Producing Zones: none

Abandoned: Act. 30, 1975

History

Oct. 16-17: Moving-in and rigging up.

- Oct. 18: Finished rigging-up. Drilled rat hole.
- Oct. 19: Drilled mouse hole. Set 10 $\frac{1}{4}$ " surface conductor pipe at 51 ft. and cemented. Waited on cement to set and nipped up to drill with air.
- Oct. 20: Drilled 51' to 361' (310'). Drilled ahead with 9 7/8" bit and air. Hit some water at 89' but continued drilling with air. Came out of hole and ran surface casing. Ran 11 jts. of 7 5/8", 24.00#, J-55 casing and landed at 336' K.B. Cemented with 80 sacks of cement (Type "G") and 2% CaCl. Had returns to the surface. Plug down at 7:30 P.M. Waiting on cement.
- Oct. 21: Waiting on cement and nipped-up. Worked on rig.
- Oct. 22: Worked on rig. Put in new torque-convertor.
- Oct. 23: Drilled 361' to 1413' (1052'). Drilled ahead with 6 3/4" bit and air. Drilled at avg. rate of 60 ft. per hr. in Mancos shale. Made rd-trip at 1410' for new bit. Bit #3 (Security-RR) made 1039 ft. (361' to 1410') in 18 $\frac{1}{2}$ hrs. Drilled at an avg. rate of 57 ft/hr.
- Oct. 24: Drilled 1413' to 2294' (881'). Made rd-trip at 2208' for new bit. Bit #4 (Reed-12J (RR) made 798' (1410' to 2208') in 12 $\frac{1}{2}$ hrs. Drilled at avg. rate of 66 ft/hr. Estimate top of Ferron sandstone member at 2158' due to a marked decrease in the drilling rate. (Electric logs indicate the top of the Ferron is at 2150'.) Encountered some coal at 2250' that had strong gas odor and had water at 2260' and had to start mist-drilling at 2278'.
- Oct. 25: Drilled 2294' to 2810' (516'). Made rd-trip at 2368' for new bit. Bit #5 (Security-H7J) made 160 ft. (2208' to 2368') in 8 $\frac{1}{2}$ hrs. Drilled at an avg. rate of about 20 ft/hr. Had a small flare of

Oct. 30: Finished logging at 9:30 A.M. Decided to plug and abandon hole. Called Fleet cementers and plugged well as follows:

Plug #1 - 25 sks cement at 3485' to 3385'
(across top of Morrison and Buckhorn sand).

Plug #2 - 25 sks cement at 2800' to 2700'
(across top of Cedar Mt. and Dakota).

Plug #3 - 25 sks cement at 2200' to 2100'
(across top of Ferron sand member).

Plug #4 - 25 sks cement at 340' to 240'
(across bottom of surface casing).

Placed 10 sks of cement in top of surface casing with well marker.

Oct. 31: Began rigging down.

GEOLOGIC REPORT
ON
WILLARD PEASE OIL & GAS CO.
PRICE #4 WELL
CARBON COUNTY, UTAH

General Geology

The Price #4 well was located on a seismic high (based on old seismic data) and was designed to test the gas and/or oil possibilities in the Ferron member of the Mancos formation, and in the Dakota and Cedar Mountain formations. The seismic data was old data and interpretation may have been unreliable due to the poor quality of the data; also any structural anomaly in the area would probably be much more pronounced in the older sediments - lower Triassic and Paleozoic formations.

The well is located south of the Book Cliffs and on the northeast flank of the surface structural feature known as the Price Anticline. This position was not particularly significant, because there are a number of faults in the area which are not discernible at the surface and which could alter the favorability of the structural position. However, the well was structurally higher than the Price #2 well which was located about $3\frac{1}{2}$ miles west of the subject well. It was only 1 ft. higher on the top of the Ferron, but was 50 ft. higher on the top of the Dakota, and over 100 ft. higher on the top of the Morrison. Thus it is evident that the structural difference was increasing with depth. Likewise, the subject well was structurally higher than the Price #1 well which was located about 2 miles to the northwest. It was about 300 feet higher than the Price #1 well on the top of the Ferron and about 265' higher on the top of the Dakota formation. As noted above this may not be significant except as it relates to the older and deeper sediments.

The natural gas accumulations found in the area in the Ferron sandstone member of the Mancos may depend considerably on the

porosity and permeability of the sand, the amount of coal beds in the section, and probably to some extent on the structural position. To date, seven wells have been drilled on the Price block and every well has had some gas in the Ferron but the quantity has been very small; and, in general, the porosity and permeability have been poor. A complete and detailed geophysical investigation of the entire Price block has not been accomplished to date. An investigation of this sort could outline a good and more favorable structural position, particularly in the deeper and older sediments.

The surface structure of the area is quite simple and regular. Aside from the Price Anticline and Farnham Dome, there is a fairly regular and even dip of the surface strata exposed in the area of about 7° to the north-northwest. Sub-surface faulting and structural irregularity undoubtedly changes this simplicity with depth. It is also known that there are numerous depositional irregularities with depth; particularly in the lower Triassic, Permian, Pennsylvanian, and Mississippian strata.

The Price #4 well was spudded in the upper third of the Mancos formation. Mancos sediments are exposed in the surrounding area of the well and Mesaverde sediments are exposed in the cliffs about 4 miles north of the well site.

To date, only the Ferron sandstone section in the Mancos formation has produced hydrocarbons (natural gas) in the wells drilled in the general region. The Clear Creek gas field, producing from the Ferron sandstone, is located on the east flank of the Wasatch Plateau, and is about 30 miles west of the subject well. A very small and shallow gas field, Miller Creek, with unknown productivity, has wells completed in the basal Ferron sands and upper Tununk siltstones, and is located about 11 miles south of the subject well. Some carbon dioxide gas has been produced from the Navajo sandstone on the Farnham Dome structure about 18 miles southeast of the well site. No other production has been found in the area; thus the Ferron was the principle objective in the well, with possible secondary

objectives in the lenticular sands in the Dakota and Cedar Mountain formations, if they could be drilled without encountering serious trouble.

Drilling History and Gas Shows

A complete drilling history of the Price #4 well precedes this section of the report. Unlike the previous wells drilled on the Price block, no great difficulty was encountered in the drilling of this well. The usual difficulty was avoided by converting to mud at the top of the Cedar Mt. formation; and as soon as the hole started caving and sticking. This procedure was more or less dictated by the experience obtained from the drilling of the previous wells. The upper 2810 feet of the well was drilled with air and air-mist and the lower part of the hole, 2810' to 3485', was drilled with mud. Thus any accumulations of hydrocarbons encountered in the well above 2810' would have surfaced within a few minutes after being tapped. The samples of the cuttings from the lower portion of the hole were carefully inspected and studied for hydrocarbon shows; none were found.

There were minor gas shows in the Ferron member of the Mancos. A small gas flare, about 5 ft. in length, was observed on a connection made at 2314'. This was after having converted to air-mist drilling. A test of this gas volume at 2328' failed to find any measurable volume of gas. Another check of the gas volume was made at 2368', after a 5 hr. trip and work on the draw works, and failed to find any pressure build up or measurable volume of gas.

Another small gas flare was observed on a connection at 2438'; but again failed to last more than a few seconds and had no measurable volume. It is fairly obvious that the small gas flows were emanating from the coal zones and thus constituted no volume or continuous flow of gas.

The lower Mancos section, Tununk member, the Dakota formation, and the sandstone lenses found in the Cedar Mountain formation did not have any shows or signs of hydrocarbons.

Stratigraphy of the Well

The Price #4 well was started in the upper third of the Mancos formation and was drilled about thirty feet into the top of the Morrison formation. The stratigraphic section was fairly normal; but did appear to thin gradually with depth; suggesting that an old and slowly emergent anomaly could be present in the older sediments.

The sandstone benches found in the Ferron member were relatively thin, fine-grained, calcareous and tight. The thickest bench at 2218' to 2245' had less than 8% porosity and calculations from the electric log data indicate 85% water saturation. The interval from 2245' to 2335' had thin, tight, sandstone beds with interfingering coal and silty, carbonaceous shale beds. A lower sandstone bench at 2338' to 2358' was medium-grained, loose, and clean; but appeared wet. Porosity was about 10% and calculations from the logs indicated 85% water saturation.

The Dakota formation had very little sand, less than 6 feet thick, and it was very quartzitic and tight. There was a very thin streak, about 2 ft. thick, that had better porosity, but appeared to be wet.

The Cedar Mt. formation had two reasonably thick sandstone benches. The first one at 2850' to 2880' was fine-grained to medium-grained, light gray, calcareous and tight. The logs indicated a porosity of about 8% average and calculated about 95% water saturation. There were no hydrocarbon shows in the samples. The second sandstone bench in the Cedar Mountain was at the base of the formation and was the so-called Buckhorn member. This bench was about 18 feet thick (3432' to 3450')

and according to the samples was mostly chert. The logs indicated a possible porosity of about 8% and calculated about 85% water saturation. There were no hydrocarbon shows in the samples.

The formations with their tops, thicknesses, and datum points which were encountered in the Price #4 well, as determined from the electric logs, are as follows:

<u>Formation</u>	<u>Depth to Top</u>	<u>Thickness</u>	<u>Datum</u>
Mancos	Surface	2150'	6161' K.B.
(Ferron)	2150'	275'	4011'
(Tununk)	2425'	315'	3736'
Dakota	2740'	25'	3421'
Cedar Mountain	2765'	689'	3396'
Morrison	3454'		
Total Depth	3485'		

Comparisons with similar data on the Price #1 and Price #2 wells to the west are as follows:

	<u>Price #1</u>		<u>Price #2</u>		<u>Price #4</u>	
	<u>Thickness</u>	<u>Datum</u>	<u>Thickness</u>	<u>Datum</u>	<u>Thickness</u>	<u>Datum</u>
Ferron	249'	3704'	280'	4010'	275'	4011'
Tununk	300'	3455'	352'	3730'	315'	3736'
Dakota	20'	3158'	61'	3378'	25'	3421'
Cedar Mt.	—	3138'	711'	3314'	689'	3396'
Morrison	—	—	725'	2603'	—	2707'

It is obvious from this comparison that the subject well is the highest structurally and this structural difference increases with depth. Thus there seems to be a definite improvement of structural difference in the deeper and older sediments. A well drilled to the older sediments on the best structural position that could be found from the well data and from additional geophysical data could have a good chance of success.

A detailed sample descriptive log from 1600' to total depth is attached hereto.

Conclusion and Recommendation

The Price #4 well is the seventh well drilled recently on the Price block without success. Little or no science has been used in the location of these wells. The Ferron sandstone member of the Mancos has been the main objective with lesser possibilities in the sands of the Dakota and Cedar Mountain formations. The cost of these wells has been far in excess of the normal costs for wells of comparable depths in many other areas. This is due to the difficulties encountered in trying to penetrate the Cedar Mountain formation.

It is obvious that the potential natural gas productive possibilities of the Ferron member in the Price block are quite limited and do not warrant further investigation prior to extensive geophysical work, and then they should be considered secondary to the deeper prospects that may exist in the lower Triassic, Permian, Pennsylvanian, and Mississippian sediments.

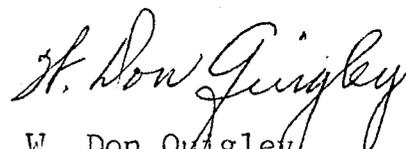
Whereas the results of the Price #4 were disappointing and unsuccessful, the information does give a partial lead to a deeper potential structure. This information can possibly be expanded to further outline the structure.

The Ferron section in the well had some small shows of natural gas but the amount was too small to measure and discontinuous. It is probable that the gas emanated from coal beds without any reservoir capacity. The sandstone beds were quite thin, tight, had poor porosity, and according to log calculations had high water saturation.

As noted in the previous reports on wells in the area, the best prospective objectives for hydrocarbons on the Price block could well be in the deeper formations; particularly in the lower Moenkopi, Kaibab, and Coconino formations. A number of strati-

graphic irregularities and pinch-outs exist in the Pennsylvanian and Mississippian sediments also, and could afford favorable traps for hydrocarbons. Therefore, an effort should be made to locate the most favorable position on the block for a deep test (7,500' to 10,000'), and this could also be a more favorable position for natural gas accumulations in the Ferron.

The position of the Price block in relation to the Oquirrh Basin to the west, the Paradox Basin to the east, the Uinta Basin to the north and the Castle Valley trough to the south make the block highly prospective for possible hydrocarbon accumulations. There are a large number of sub-surface faults in the area, and the sub-surface structural attitude of the strata is probably considerably different than the surface attitude. If a favorable structural position could be found on the block, the possibility of finding commercial amounts of hydrocarbons there could be more successful than random drilling. A future well should be designed to go, at least, to the Coconino formation.

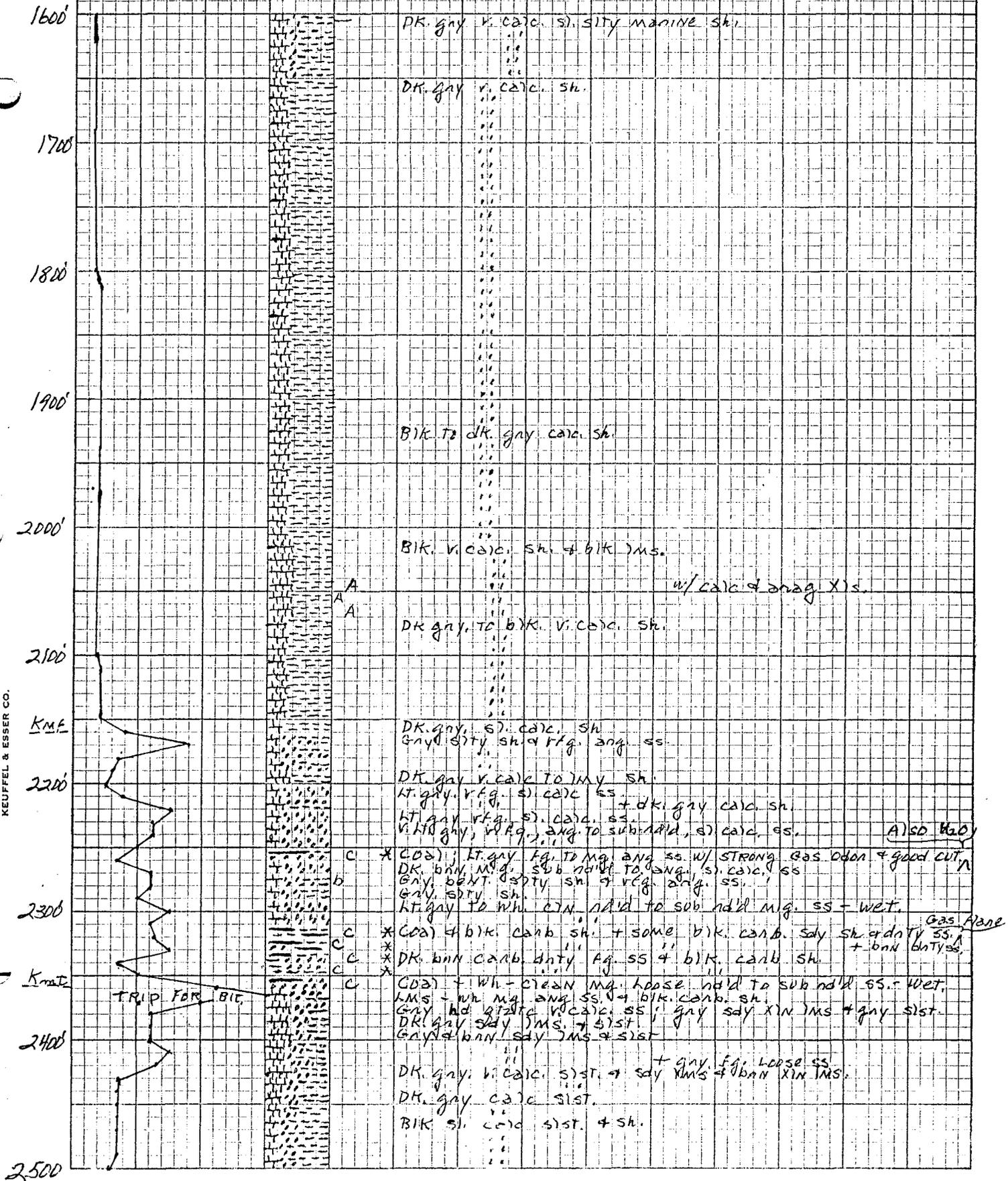


W. Don Quigley
Consulting Geologist
A.A.P.G. Cert. #1296

Fraser Oil & Gas Co.

Prize #4 Well
SE. NE. Sec. 6-145-11E
Elev.: 6161 K.B.

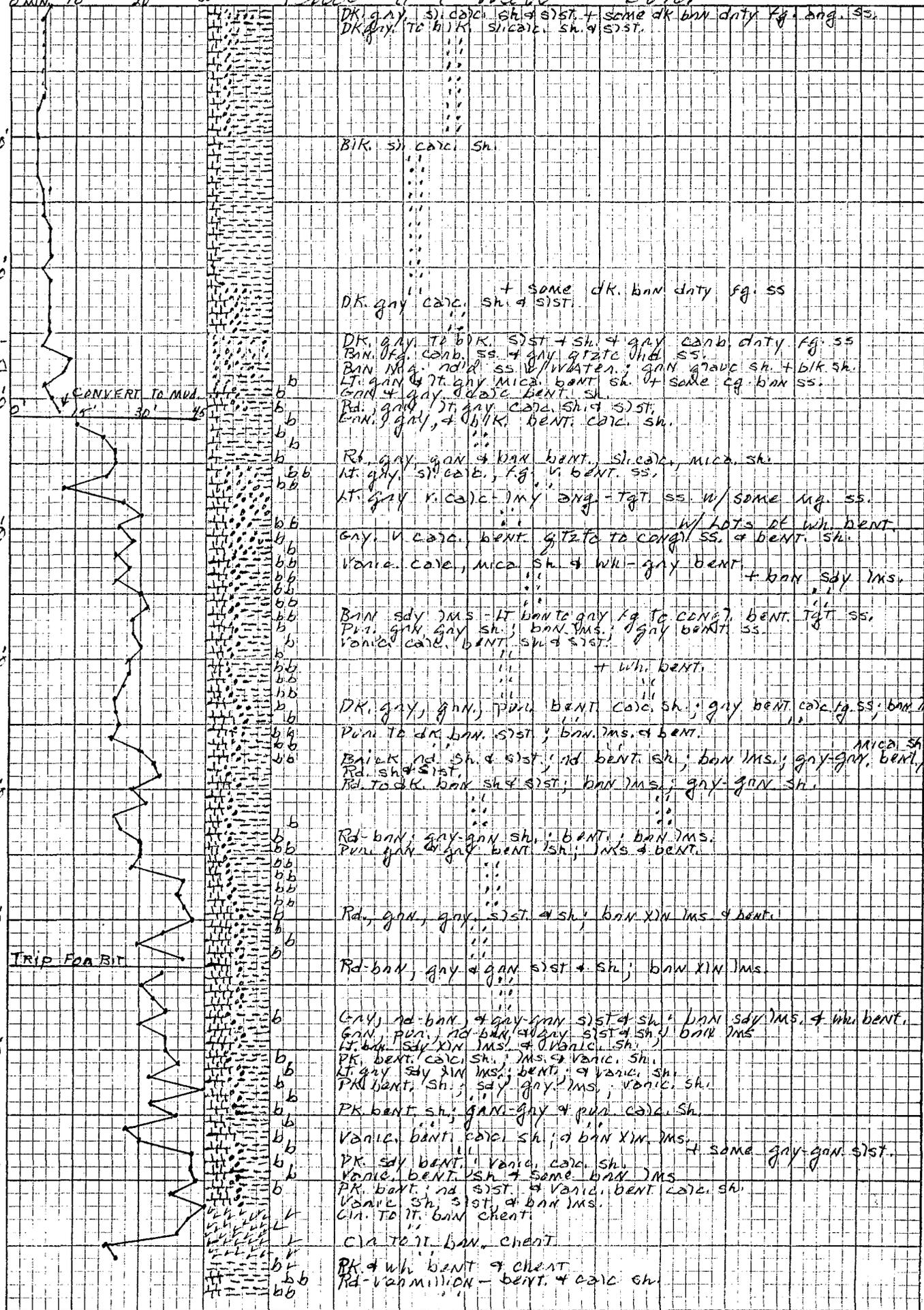
Drilling Time 15 ft. Int.
0 MIN. 10 20 30



K&E 5 X 5 TO 1 1/2 INCH 46 0863 MADE IN U.S.A. KEUFFEL & ESSER CO.

2500 10' 20' 30'

Rice #4 Well Cont



5 X 5 TO 1/2 INCH 46 0863
 7 X 10 INCHES
 KEUFFEL & ESSER CO.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPlicate*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-17759

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

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 "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL GAS WELL OTHER Dry Hole

2. NAME OF OPERATOR
Willard Pease Oil & Gas Company

3. ADDRESS OF OPERATOR
P. O. Box 548, Grand Junction Colorado 81501

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*
See also space 17 below.)
At surface C. SE. NE. Sec. 6, T. 14 S., R. 11 E., S. L. M.
1990' from N-line and 650' from E-line

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Federal

9. WELL NO.
Price #4

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 6-14S-11E-SLM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
6151' grd.; 6161' K.B.

12. COUNTY OR PARISH
Carbon

13. STATE
Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO :

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
(Other) <input type="checkbox"/>	

SUBSEQUENT REPORT OF :

WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input checked="" type="checkbox"/>
(Other) <input type="checkbox"/>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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.)*

Subject well has been abandoned as specified by oral approval of Oct. 29, 1975. In June 1976 the location was cleaned, levelled, and reseeded. Inspection of this location by the undersigned on Aug. 10, 1976, revealed that this work has been done in a very satisfactory manner. The grass has not come up yet, but probably will in the Spring.

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

SIGNED St. Nor Jungley TITLE Bons. Seal DATE Aug. 11, 1976

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY: