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COLORADO OIL & GAS CONS. COMM.



02358236

GEOLOGICAL REPORT

DYCO PETROLEUM CORP. JEFFERY NO. 1

660' FSL, 1320' FEL Section 20, T 9 N, R 56 W

Logan County, Colorado

DVR	
FJP	
HHM	✓
JAM	✓
JJD	
GCH	
CGM	

*file*

Well: Jeffery No. 1

Location: 660' FSL, 1320' FEL Section 20, T 9 N, R 56 W  
Logan County, Colorado

Operator: Dyco Petroleum Corp.

Contractor: Gear Drilling Company  
Denver, Colorado

Elevations: 4504' K.B. 4497 G.L.

Casing: Set 8-5/8" casing at 97' K.B., cemented with  
85 sacks reg. cement, 3% CaCl<sub>2</sub>. Plug down  
8:00 P.M. 7-12-74.

Well History: 7-12-74 Spud 6:30 P.M. Set surface casing  
7-13-74 Drilling at 1000'  
7-14-74 Drilling at 3300'  
7-15-74 Drilling at 4700'  
7-16-74 Drilling at 5422'  
7-17-74 Drilling at 5782'  
7-18-74 Running DST No. 2 at 5830'  
7-19-74 Logging at 5880'  
7-20-74 Prep. to run production casing

Cores: None

Drill Stem Tests: DST #1 "D" Sand, straight test run before reaching  
T.D. Test interval 5742' to 5811' driller's measure-  
ments, adjusted to the log 5750' to 5819'. Tool open  
7", shut in 30", open 75", shut in 60". Tool opened  
with a strong blow, gas to surface in 5". Reopened  
tool with a strong blow, mud to surface in 40", water  
to surface in 63". Recovered 40' clean oil, 910' water.  
Resistivity of the water .8 ohms at 98° F. equivalent  
to 5400 PPM Cl. at top of water.  
.6 ohms at 96° F. equivalent to 7400 PPM Cl in middle water.  
.58 ohms at 96° F. equivalent to 7600 PPM Cl at bottom

Minutes	PSI	Orifice Size	Volume
10	15	1"	603,000
20	25	1"	840,000
30	28	1"	907,000
35	28	1"	907,000
40	Mud hit surface. Gauge jumping from 20-45 lbs.		
50	43	1"	1,226,000 with gauge working 35-50 lbs.
60	50	1"	1,379,000 with gauge wor ing 45-60 lbs.
65	Water flowing after 63 min. open		
70	50	1"	1,379,000 with gauge wor ing 45-60 lbs.
75	50	1"	1,379,000 with gauge wor ing 45-60 lbs.
	2		10

## Pressures:

Initial hydrostatic pressure		3197#
Final hydrostatic pressure		3172#
Initial Flow pressure	1	282#
Final Flow pressure	1	306#
Initial Flow pressure	2	365#
Final flow pressure	2	824#
Initial shut in pressure		1425#
Final shut in pressure		1425#

DST #2, "J" Sand run before reaching T.D. Test interval 5820' to 5830' driller's measurements, adjusted to the log 5828' to 5838'. Tool open 10", shut in 30", open 30", shut in 60". Tool opened with a weak blow which was dead in 10". No blow after opening the tool for the second flow period. Reset tool after 15" of second flow period. Recovered 15' drilling mud.

## Pressures:

Initial hydrostatic pressure		3171#
Final hydrostatic pressure		3171#
Initial flow pressure	1	0#
Final flow pressure	1	13#

Flow pressures from the second flow period were not read and either the formation was too tight to register any pressure build up, or there was a malfunction of the recording instruments.

Initial shut in pressure	593#
Final shut in pressure	26#

DST #3, straddle test run after reaching T. D. and logging. Test interval 5750' to 5758', using a T. D. of 5886', which was a compromise between the 5885' T. D. obtained by the loggers on the CN log, and the 5888' which was obtained from adjusting the drilling time formation tops to the log. Tool open 5", shut in 30", open 90", shut in 60". Strong blow, gas to surface in 4", recovered 40' water cut mud.

## Rates of gas flow:

<u>Minutes</u>	<u>PSI</u>	<u>Orifice Size</u>	<u>Volume</u>
5	18	1/2"	166 MCF
10	12	1"	526
20	26	1"	865
25	32	1"	994
35	40	1"	1162
45	44		1247
55	46		1291
65	50		1379
75	54		1466
85	56		1509

Pressures:

Initial hydrostatic pressure 3197#  
 Final hydrostatic pressure 3171#  
 Initial flow pressure 1 39#  
 Final flow pressure 1 92#  
 Initial flow pressure 2 105#  
 Final flow pressure 2 316#  
 Initial shut in pressure 1452#

Final flow pressure not recorded, packers failed while shutting in tool for final shut in pressure.

Logs: Schlumberger Simultaneous Compensated Neutron-Formation Density; Induction-Electrical Log

Log Formation Tops:	Formation	Electric Log	Subsea
	Niobrara	4956	
	Carlile	5310	
	Greenhorn	5433	
	Bentonite	5639	
	"D" Sand	5744	(-1240)
	"J" Sand	5830	(-1326)
	TD	5882 Log	
		5880 Driller	

Mud: On the morning of 7-17-74, the mud had the following properties:

Weight	10.0 #/gal.
Viscosity	67 API funnel
Water Loss	4.4 cc/30"
Filter Cake	2/32"

Bit Record:	No.	Size	Make	Type	Depth Out	Feet	Hours
	1	7-7/8"	Sec.	S3J	2815	2725	19-1/2
	2	7-7/8"	Smith	DTJ	4170	1355	14-1/4
	3	7-7/8"	Smith	DTJ	5205	1035	13
	4	7-7/8"	Smith	DTJ	5620	415	14-1/2
	5	7-7/8"	Hughes	OSCLG	5751	131	5-3/4
	6	7-7/8"	Sec.	S6J	5811	60	5
	7	7-7/8"	Sec.	S88	5880	70	13-1/4

Deviation Surveys:	Depth	Degrees from Vertical
	2504	1/2
	2815	3/4
	4110	2-1/4
	5205	1-3/4
	5620	1-1/4
	5751	1

Sample Description: Log depths used.

5700-5744' Shale, black.

5744-5752' Sandstone, fine grained, white, poorly sorted, siliceous, hard, tight, faint yellow fluorescence in one cluster, no discernable either cut fluorescence, no stain, Trace pyrite.

5752-5764' Sandstone, fine grained, white, well sorted, some porosity, small amount sandstone with good fluorescence, cut, most appears wet, no shows, no fluorescence.

5764-5810' Shale, gray, black, tan. Pyrite.

5810-5830' Siltstone, gray to black; pyrite.

5830-5846' Sandstone, fine grained to very fine grained, gray, poorly sorted, siliceous, silty, very hard and tight, no porosity, scattered pale yellow fluorescence, leaves light yellow ring on spot tray.

5846-5852' Sandstone, fine grained, white, well sorted, very good porosity, good bright yellow fluorescence, very light tan oil stain and good ether cut fluorescence in 30%, remainder wet, no shows, no fluorescence.

5852-5876' Sandstone, as above, wet, no shows, no fluorescence.

5876-5882' Sandstone, fine to medium grained, light tan, heavily clay filled, silty, low porosity, friable, wet, no shows, no fluorescence.

Discussion:

Pipe is currently being run for a completion in the "D" Sand. The second drill stem test in the "D" sand which was water free was sufficient encouragement to warrant running pipe. The objective "J" Sand interval which was present in the Tuley and Carter hole to the south was not present in this hole, and the drill stem test of the interval yielded only drilling mud.

Jack D. Gray  
July 22, 1974

# DISTRIBUTION OF FINAL DST REPORTS

Company Operating Well \_\_\_\_\_ Dyco Petroleum Corporation \_\_\_\_\_ Tkt. No. 16531  
16331  
Lease Jeffery Well No. 1 Field Wildcat  
County Weld State Colorado Sec. 20 Twp. 9 N Rng. 56 W Spot. 660' FSL  
1320' FEL  
DST. No. 2 Date of Test 7-18-74 Interval Tested 5820-5830  
1 7-17-74 5742-5811

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Our Tester \_\_\_\_\_ Approved by \_\_\_\_\_

DYCO PETROLEUM CORPORATION  
 Jeffery #1 DST #1 Ticket #16331

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<u>Initial Shut-in</u>		<u>Final Shut-in</u>	
3 min.	1411 lbs.	6 min.	1417 Min.
6 "	1432 "	12 "	1422 "
9 "	1437 "	18 "	1425 "
12 "	1439 "	24 "	1427 "
15 "	1440 "	30 "	1429 "
18 "	1440 "	36 "	1431 "
21 "	1441 "	42 "	1432 "
24 "	1441 "	48 "	1433 "
27 "	1441 "	54 "	1433 "
30 "	1441 "	60 "	1434 "

Gas Volume Report

10 min.	15 lbs. on 1" orifice =	603,000	CFPD
20 "	25 " " " "	= 840,000	"
30 "	28 " " " "	= 907,000	"
35 "	28 " " " "	= 907,000	"
40 "	Mud hit surface. Gauged from 20-45 lbs.		
50 "	43 " " " "	= 1,226,000	"
60 "	50 " " " "	= 1,379,000	"
65 "	Water flowing after 63 minutes.		
70 "	50 " " " "	= 1,379,000	"
75 "	50 " " " "	= 1,379,000	"

At 50 minutes gauge working 35-50 lbs.  
 At 60 and 70 minutes gauge working 45-60 lbs.  
 At 75 minutes gauge working 45-60 lbs.

Water R.W.

Top - .80 @ 98° = 5400 ppm chl.  
 Bottom - .58 @ 96° = 7600 ppm chl.  
 Middle - .60 @ 96° = 7400 ppm chl.