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File

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 12-9-83		RECEIVED BY DEC 16 1983 O. C. D. UNIT ARTESIA, OFFICE			
Company Holly Energy Corporation				Connection Llano							
Pool <i>W. Locant</i> ✓				Formation Morrow							
Completion Date 7-15-83		Total Depth 9428' 205		Plug Back TB 9215' 200		Elevation 3754K.B.					
Casing Size 4 1/2"		Wt. 10.5		d 4.052		Set At 9728'		Perforations: From 9138 To 9146		Farm or Lease Name North King Camp	
Thq. Size 2 3/8"		Wt. 4.6		d 1.995		Set At 9120'		Perforations: From Open To Open		Well No. 11	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple						Packer Set At 9097'		Unit Sec. Twp. Rge. 35 13S 29E			
Single						Baro. Press. - P _a 13.2		County Chaves			
Producing Thru Tubing		Reservoir Temp. °F 165°		Mean Annual Temp. °F 60°		State New Mexico		Meter Run 2" Taps flange			
L 9142		H 9142		G _g .7193		% CO ₂ .358		% N ₂ .542		% H ₂ S	
Prover		Meter Run		Taps							

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI							1091	69°	PKR	CHOKE	48 Hrs
1.	2.067 x	1.125	4.1 71#	1"	96°	997	68			8/64	1 Hr.
2.	2.067 x	1.125	4.1 71	6.3	95	867	68			10/64	1 Hr.
3.	2.067 x	1.125	4.2 75	14.4	93	638	67			14/64	1 Hr.
4.	2.067 x	1.125	4.3 79	29.2	93	358	66			20/64	1 Hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	6.393	9.18	84.2	.9671	1.179	Nil	67
2	6.393	23.02	84.2	.9680	1.179	Nil	168
3	6.393	35.64	88.2	.9697	1.179	Nil	260
4	6.393	51.89	92.2	.9697	1.179	Nil	379
5							

NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio Mcf/bbl.	A.P.L. Gravity of Liquid Hydrocarbons Deg.
1	.13	556	1.41	Nil	Specific Gravity Separator Gas .7193	XXXXXXXXXX
2	.13	555	1.41	Nil	Specific Gravity Flowing Fluid XXXXX	
3	.13	553	1.40	Nil	Critical Pressure 668 P.S.I.A.	P.S.I.A.
4	.14	553	1.40	Nil	Critical Temperature 395 R	R
5						

$P_F^2 = 1445.2$ $P_F^2 = 2088.6$				(1) $\frac{P_F^2}{P_F^2 - P_{s2}^2} = 1.071$ (2) $\left[\frac{P_F^2}{P_F^2 - P_{s2}^2} \right]^n = 1.071$		
NO.	P ₁ ²	P _w	P _w ²	P _c ² - P _w ²	AOF = $\left[\frac{P_F^2}{P_F^2 - P_{s2}^2} \right]^n = .406$	
1		1010.2	1020.5	1068.1		
2		880.2	774.8	1313.8		
3		651.2	424.1	1664.5		
4		371.2	137.8	1950.8		
5						

Absolute Open Flow 406 Mcfd @ 15.025		Angle of Slope θ 45°		Slope, n 1.00	
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Remarks: Calculated from known bottom hole pressures, measured with Kuster gauge.

Approved By Commission:	Conducted By: W.S.	Calculated By: R.R.	Checked By: R.R.
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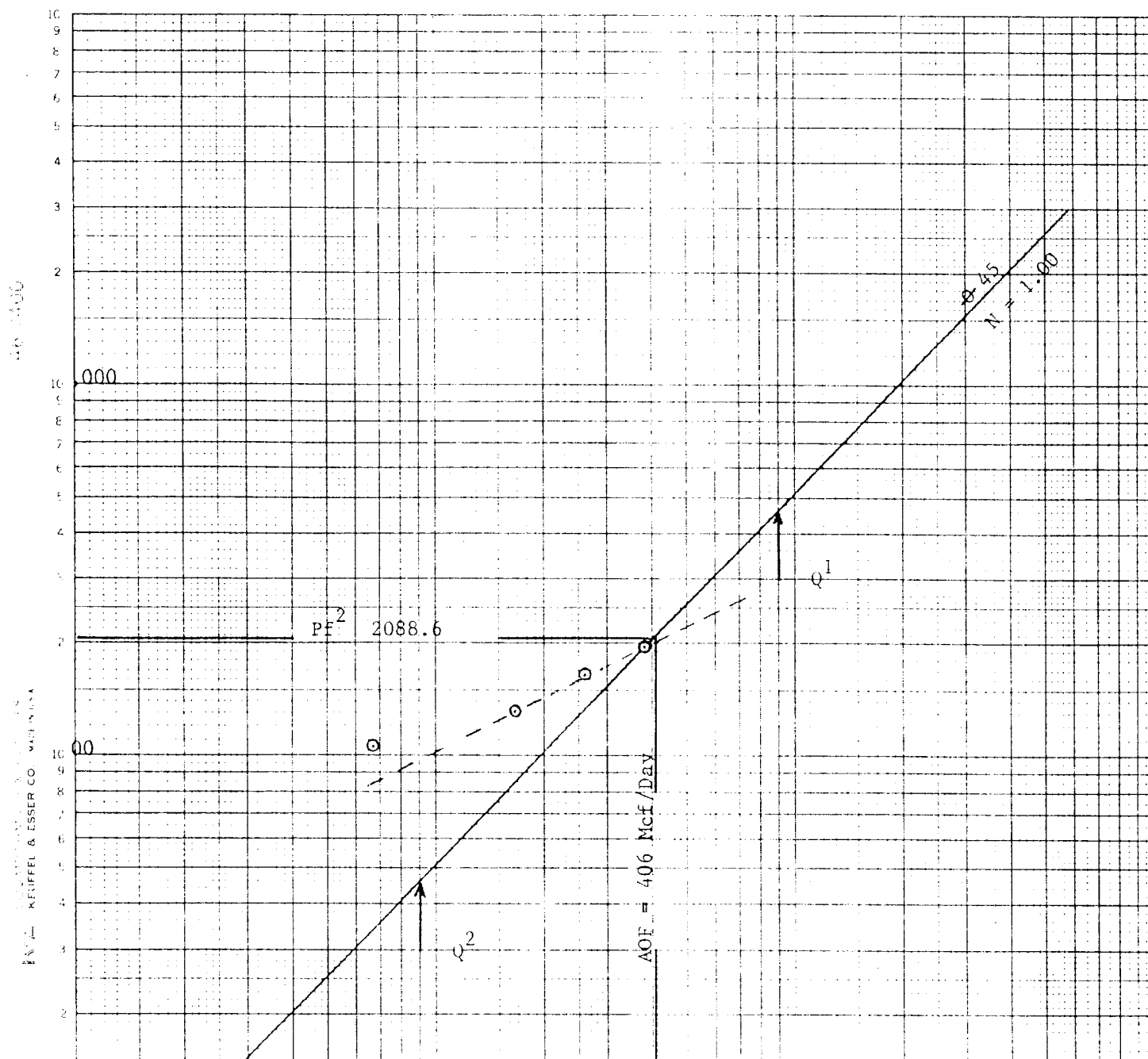
olly Energy Corporation

North King Camp No. 11

December 9, 1983

$$\text{AOF} = 379 \frac{(2088.6)^{1.00}}{1950.8} = 406 \text{ Mcf/Day}$$

$$\begin{aligned} Q_1 &= 900 = 2.954243 \\ Q_2 &= 90 = 1.954243 \\ N &= 1.000000 \end{aligned}$$



COMPANY Holly Energy Corp. LEASE King North Camp WELL NO. 11 DATE 12-9-83

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 9142 H 9142 L/H 1.00 G 1.719 % CO₂ 0.358 % N₂ 542.4 H₂S _____

GH 6523 P_{cr} 668 T_{cr} 395

Shardin

Line		1	2	3	4	5	6	7	8
1	T (W.H. °R)	534	534						
2	T (B.H. °R)	625	625						
3	$T = \left(\frac{T_w + T_s}{2} \right)$	579	579						
4	Z (Est.)	814	829						
5	TZ	471.7	482.4						
6	GH/TZ	13.93	13.62						
7	e ^s (Table XIV)	1.69	1.62						
8	P _f or P_g	1445.2	1445.2						
9	P _f ²	2088.6	2088.6						
10	P _c ² = P _f ² /e ^s	1238.6	1250.3						
11	P _c	1112.9	1118.2						
12	$P = \left(\frac{P_w + P_s}{2} \right)$ or $\left(\frac{P_c + P_f}{2} \right)$	1279.1	1281.7						
13	P _r = (P/P _{cr})	1.91	1.91						
14	T _r = (T/T _{cr})	1.47	1.47						
15	Z (Table XI)	829	829						

COMPANY Holly Energy Corp. LEASE King Mathis Canyon WELL NO. 11 DATE 12-9-83

LOCATION: Unit 35 Section 35 Township 13S Range 29E

L 9/42 H 9/42 L/H 1.00 G 7/4 % CO₂ 358 % N₂ 542 % H₂S —

GH 6573 Pcr 668 Tcr 395

Line		#1	#2	#3	#4
1	T (W.H. °R)	534	534	534	534
2	T (B.H. °R)	625	625	625	625
3	$T = \frac{T_w + T_s}{2}$	579	579	579	579
4	Z (Est.)	858	874	904	943
5	TZ	497.2	505.3	523.9	546.5
6	GH/TZ	13.22	12.98	12.55	12.02
7	e ^s (Table XIV)	1.64	1.62	1.60	1.57
8	P _f or P _s	1010.2	880.2	651.2	374.2
9	P _g ²	1020.5	774.8	424.1	137.8
10	P _w ² = P _f ² /e ^s	621.6	476.2	264.9	87.8
11	P _w	788.4	692.4	514.1	296.3
12	$P = \left(\frac{P_w + P_s}{2} \right) \text{ or } \left(\frac{P_c + P_f}{2} \right)$	899.3	786.3	582.9	333.7
13	P _r = (P/P _{cr})	1.35	1.18	.87	.50
14	T _r = (T/T _{cr})	1.47	1.47	1.47	1.47
15	Z (Table XI)	.872	.886	.914	.949

TEST DATE: DECEMBER 9, 1983
TEST DEPTH: 9142 Feet

ELEMENT NO: 8534
RANGE: 0-5750 psi
CLOCK NO: B-13032
RANGE: 0-12 Hours

NOTE: TEST CONDUCTED BY:
JOHN WEST ENGINEERING CO.

DATE
12-9-83

TIME

10:00 A.M.
10:45 A.M.
11:00 A.M.
11:15 A.M.
11:30 A.M.
11:45 A.M.

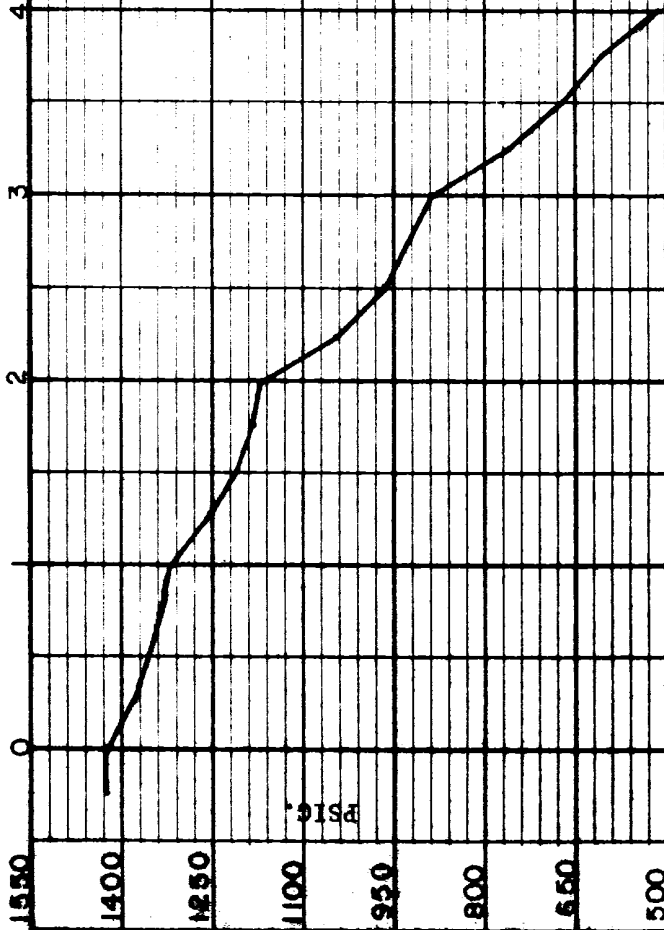
12:00 Noon
12:15 P.M.
12:30 P.M.
12:45 P.M.

1:00 P.M.
1:15 P.M.
1:30 P.M.
1:45 P.M.

2:00 P.M.
2:15 P.M.
2:30 P.M.
2:45 P.M.

12-9-83

TIME IN HOURS



PSIG @ 9142 FEET

1428 gauge reached 9142'
1428 Open choke begin test.
1379 8/64 Choke
1351
1333
1319 End Rate I

End Rate I

1253 10/64 Choke
1207
1184
1164 End Rate II

End Rate II

1043 14/64 Choke
965
916
884 End Rate III

End Rate III

757 20/64 Choke
673
604
555 End Rate IV

End Rate IV

HOLLY ENERGY CORPORATION

NORTH KING CAMP No. 11

4-POINT BACK PRESSURE TEST.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 12-12-83 Drawn by: bsm Scale: as shown

TEST DATE: DECEMBER 9, 1983
TEST DEPTH: 9142
ELEMENT NO: 56353
RANGE: 0-4600 psi
CLOCK NO: B-12174
RANGE: 0-12 Hours

NOTE: TEST CONDUCTED BY:
JOHN WEST ENGINEERING COMPANY

DATE
12-9-83

CUM HRS./MIN.

TIME

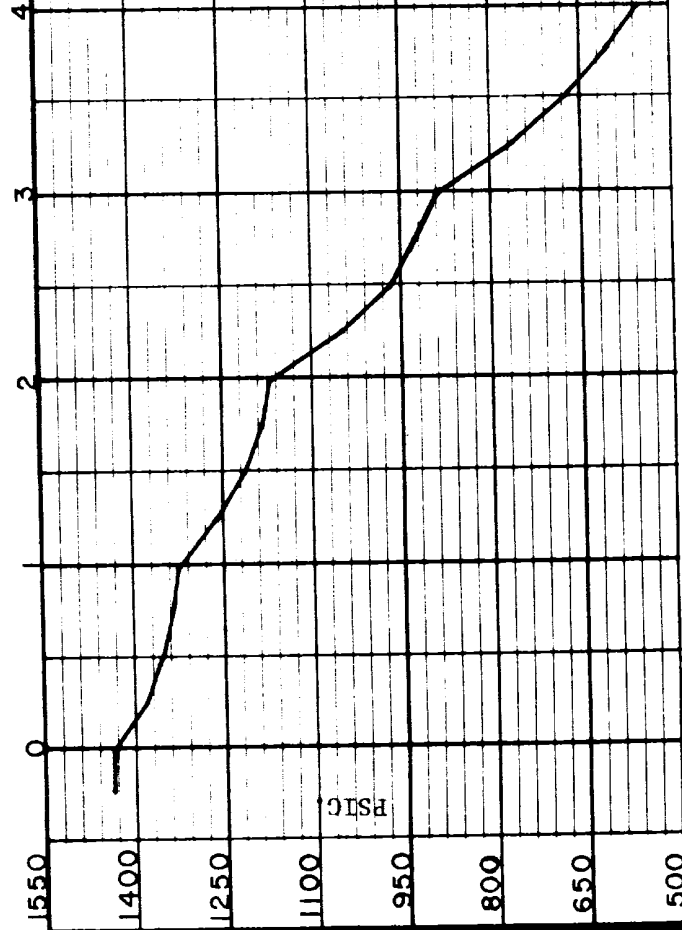
PSIG @ 9142 FEET
1432 gauge reached 9142 Feet
1432 Open Choke, Begin Test.
1385 8/64 Choke
1356
1337
1323 End Rate I
1257 10/64 Choke
1212
1188
1169 End Rate II
1046 14/64 Choke
968
921
888 End Rate III
762 20/64
678
607
559 End Rate IV.

00 Hrs. 00 Min.
00 15
00 30
00 45
01 00
01 15
01 30
01 45
02 00
02 15
02 30
02 45
03 00
03 15
03 30
03 45
04 00

10:00 A.M.
10:45 A.M.
11:00 A.M.
11:15 A.M.
11:30 A.M.
11:45 A.M.
12:00 Noon
12:15 P.M.
12:30 P.M.
12:45 P.M.
1:00 P.M.
1:15 P.M.
1:30 P.M.
1:45 P.M.
2:00 P.M.
2:15 P.M.
2:30 P.M.
2:45 P.M.

12-9-83

TIME IN HOURS



HOLLY ENERGY CORPORATION

NORTH KING CAMP NO. 11

4-POINT BACK PRESSURE TEST.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 12-12-83 Drawn by: ham Scale: as shown

NEW-TEX LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: JOHN WEB ENGINEERS & ARCHITECTS
ADDRESS: 412 N. 1st St.
CITY, STATE: HOBBS, NM 88240
ANALYSIS NUMBER: 2013
DATE OF RUN: 12-10-83
DATE RECEIVED: 12-9-83
SAMPLE IDENT: FILL OILS - NORTH AND CAMP #11
SAMPLING PRESS: 100 PSI

REMARKS: SEC 35 T1T2 R29H - 100 PSI

***** GAS ANALYSIS *****

COMPONENT	PERCENT	PERCENT
NITROGEN	0.041	
CARBON DIOXIDE	0.014	
METHANE	82.125	
ETHANE	0.012	0.012
PROPANE	0.013	0.013
ISOBUTANE	0.013	0.013
NORMAL BUTANE	0.013	0.013
ISOPENTANE	0.013	0.013
NORMAL PENTANE	0.013	0.013
ISOPENTANE	0.013	0.013
HEXANES	0.013	0.013
HEPTANES PLUS	0.013	0.013
TOTAL	100.000	100.000

PROPANE GPM: 1.44
ETHANE GPM: 2.41
BUTANES GPM: 0.01
HEPTANES PLUS GPM: 0.01

SPECIFIC GRAV (CALC): 0.750
MOLE WEIGHT: 24.67

HHV-BTU/CU FT	PRESENCE (PERCENT)	WGT	WGT
14.696	20.7	20.7	20.7
14.682	12.1	12.1	12.1
14.730	10.0	10.0	10.0
14.735	12.5	12.5	12.5

DEAN B. HARRIS

John A. Simpson