

STATE OF TEXAS - OIL AND GAS COMMISSION
 ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

8-7-58

REC'D
 10-06-76

TYPE TEST: Deliverability Open Flow TEST DATE: 8-13-76

COMPANY: TEXAS ENERGIES LEASE: LEMON WELL NO.: #1

COUNTY: BARBER LOCATION: LOCATION: SECTION: 21 TWP: 13S R1G: 3013W ACRES: 88.00

FIELD: W.S. RESERVOIR: MISS. PIPELINE CONNECTION: CENTRAL STATES GAS CO.

COMPLETION DATE: 6-15-76 PLUG BACK TOTAL DEPTH: 4256 PACKER SET AT: None

CASING SIZE: 5 1/2 WT: 14.5 I.D.: SET AT: 4285 PERF.: 4203 TO: 4204

TUBING SIZE: 2 3/8 WT: 4.7 I.D.: SET AT: 4210 PERF.: TO

TYPE COMPLETION (Describe): TYPE FLUID PRODUCTION: H 2o and Condensate

PRODUCING THRU: Tubing RESERVOIR TEMPERATURE F: BAR. PRESS - P_a: 14.4 Psia

GAS GRAVITY - G_g: .706 % CARBON DIOXIDE: % NITROGEN: API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): 4256 TYPE METER CONN.: Flange (METER RUN) (PROV) SIZE: 3"

SHUT-IN PRESSURE: SHUT IN 8-10 19.76 AT 9:00 (AM) TAKEN 8-13 19.76 AT 9:45 (AM) (P_{sh})
 FLOW TEST: STARTED 8-13 19.76 AT 3:00 (PM) TAKEN 8-14 19.76 AT 1:30 (PM) (P_{sh})

OBSERVED DATA DURATION OF SHUT-IN 75 HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) PRESSURE psig	DIFF. in. (h _w /h _d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS		TUBING WELLHEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN						1096	1110.4	880	894.4	75	
FLOW	1"	407	7	53		795	809.4			24	

RATE OF FLOW CALCULATIONS

COEFFICIENT (V _d) ² / (V _p) ² Mcfd	(METER) PRESSURE psia	EXTENSION √P _m h _w	GRAVITY FACTOR γ _g	FLOWING TEMP. F _t	DEVIATION FACTOR γ _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
4.912	421.4	54.31	1.190	1.007	1.056	338		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_d)² = 1232.9 ; (P_w)² = 655.1 ; P_d = X % (P_c - 14.4) + 14.4 = X ; (P_w)² = 0.207 X (P_d)²

$\frac{(P_d)^2 - (P_w)^2}{(P_c)^2 - (P_w)^2}$	(P _c) ² - (P _w) ²	$\frac{P_c^2 \cdot P_w^2}{P_c^2 \cdot P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1232.7	569.2	2.1334	.3290	.845	.2780	1.899	642

OPEN FLOW 642 Mcfd @ 14.65 psia DELIVERABILITY 642 Mcfd @ 14.65 psia

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

Executed this the _____ day of _____, 19____

Frank McNamey
 Witness (if any)

 For Company

 Checked by

p 14 AD 10-13-76

TYPE TEST: Initial Annual Special TEST DATE: 8-13-76

COMPANY TEXAS ENERGIES LEASE LEMON WELL NO. #1

COUNTY BARBER LOCATION SECTION 21 TWP 13 30 R1G 30 13W AUB 111 ACRES

FIELD RESERVOIR MISS. PIPELINE CONNECTION CENTRAL STATES GAS

COMPLETION DATE 6-15-76 PLUG BACK TOTAL DEPTH 4256 PACKER SET AT None

CASING SIZE 5 1/2 WT. 14.5 ID SET AT 4285' PERF. 4203' TO 4204'

TUBING SIZE 2 3/8 WT. 4.7 ID SET AT 4210 PERF. TO

TYPE COMPLETION (Describe) TYPE FLUID PRODUCTION H2O and Condensate

PRODUCING THRU Tubing RESERVOIR TEMPERATURE F BAR PRESS - P_a 14.4 Psia

GAS GRAVITY - G_g .706 % CARBON DIOXIDE % NITROGEN API GRAVITY OF LIQUID

VERTICAL DEPTH (H) 4256 TYPE METER CONN. Flange (METER RUN) (BELOW) SIZE 3"

REMARKS

OBSERVED DATA

DURATION OF SHUT-IN 72 HR.

RATE NO.	ORIFICE SIZE In.	(METER) PRESSURE psig	DIFF. (h _w) (h _d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _i)(P _o) psia	psig	(P _w)(P _i)(P _o) psia		
SHUT IN						1096	1110.4	880	894.4	72	
1	1"	318	2	84		1054	1068.4	823	837.4	1	
2	1"	316	4.5	82		1016	1030.4	774	788.4	1	
3	1"	320	8.5	78		975	789.4	760	774.4	1	
4	1"	338	19	70		881	895.4	784	798.4	1	
5											

RATE OF FLOW CALCULATIONS

RATE NO.	COEFFICIENT (F _d)(F _p) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR %	FLOWING TEMP. FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW Q Mcfd	GOR	Q _m
1	4.912	332.4	25.78	1.190	.9777	1.035	130		
2	4.912	330.4	42.24	1.190	.9795	1.036	214		
3	4.912	334.4	53.31	1.190	.9831	1.039	318		
4	4.912	352.4	81.83	1.190	.9905	1.041	493		
5									

PRESSURE CALCULATIONS

RATE NO.	P _i psia	P _o psia	P _w psia	(P _o) ² THOUSANDS	(P _w) ² THOUSANDS	PLOTTING POINTS		% SHUT-IN $100 \left[\frac{P_w - P_a}{P_o - P_a} \right]$
						(P _o) ² - (P _w) ² THOUSANDS	Q Mcfd	
1	837.4	1110.4	1068.4	1232.9	1141.5	90.3	130	96
2	788.4	1110.4	1030.4	1232.9	1167.3	168.9	214	93
3	774.4	1110.4	789.4	1232.9	623.2	250.6	318	89
4	798.4	1110.4	895.4	1232.9	801.7	425.1	493	80
5								

INDICATED WELLHEAD OPEN FLOW 1700 Mcfd @ 14.65 psia "n" = 0.845

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

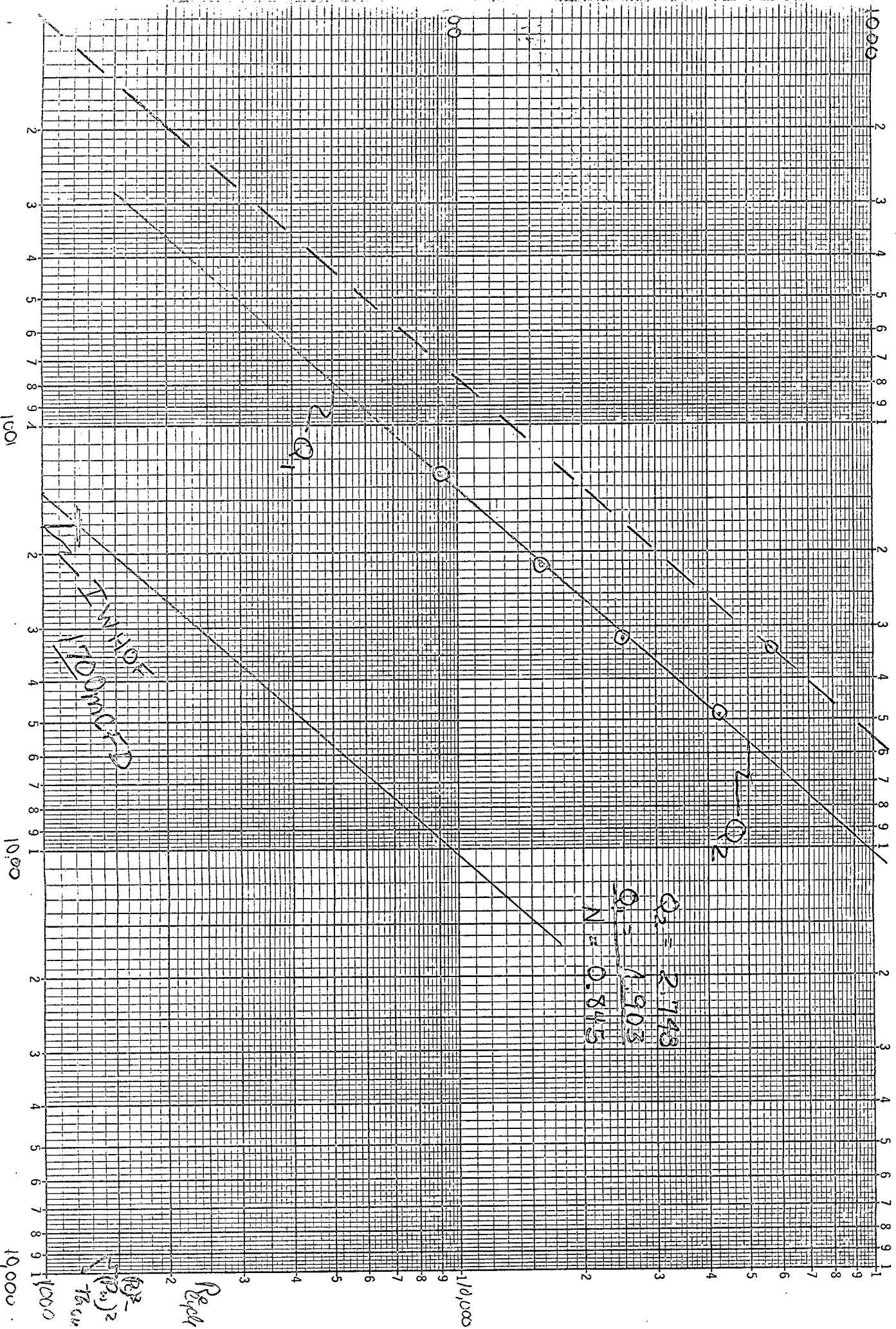
Executed this the _____ day of _____, 19____.

Frank McAnarney WB
Witness (If any)
For Commission

For Company

Checked by

$(P_c)^2 - (P_w)^2$ Thous



mCFD @ 14.4 PSI

Read Cycle
 $(P_c)^2 - (P_w)^2$
 10000