

STATE OF KANSAS - CORPORATION COMMISSION

FORM O-2
8-7-58

10
19
3-27-90

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST 15-023-20028-0000

TYPE TEST: Deliverability Open Flow TEST DATE: 1-14-90

COMPANY: Lobo Production Inc LEASE: Welch WELL NO.: 1-3

COUNTY: Cheyenne LOCATION: SECTION: 3 TWP: 5S RNO: 42W ACRES:

FIELD: Benkelman RESERVOIR: Niobrara PIPELINE CONNECTION: KNE

COMPLETION DATE: PLUG BACK TOTAL DEPTH: PACKER SET AT:

CASING SIZE: 4 1/2 WT.: 10.5 I.D.: SET AT: 1490 PERF.: 1285 TO: 1316

TUBING SIZE: WT.: I.D.: SET AT: PERF.: TO:

TYPE COMPLETION (Describe): Single TYPE FLUID PRODUCTION: None

PRODUCING THRU: CS9 RESERVOIR TEMPERATURE F: BAR. PRESS - P_s: 14.4 Psia

GAS GRAVITY - G_s: .594 % CARBON DIOXIDE: % NITROGEN: API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): Same TYPE METER CONN.: Flange (METER RUN) (PROVER) SIZE: 2" Flange

SHUT-IN PRESSURE: SHUT IN 1-4 1990 AT (AM)(PM) TAKEN 1-10 1990 AT (AM)(PM)

FLOW TEST: STARTED 1-14- 1990 AT (AM)(PM) TAKEN 2-7 1990 AT (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN: 144 hr.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) 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 _t)(P _c) psia	psig	(P _w)(P _t)(P _c) psia		
SHUT-IN		190				190	204.4			144	
FLOW	.250	94	5"			100	114.4			24	

RATE OF FLOW CALCULATIONS

COEFFICIENT (F ₁)(F ₂) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_{ms}h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	GOR	Q _m
.3067	108.4	$\frac{22.85}{104.4 \times 5}$	1.298	1.00	1.00	9.1		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 41.78, (P_w)² = 13.09, P_d = _____ % (P_c - 14.4) + 14.4 = _____ (P_w)² = 0.207 (P_d)² = _____

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	(P _c) ² - (P _w) ²	$\frac{P_c^2 - P_w^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
41.56	28.69	1.4486	0.160945	0.95	0.1368	1.37026	12.5

OPEN FLOW 13 Mcfd @ 14.65 psia DELIVERABILITY 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 20 day of Mar, 1990

John Sanders
For Company

Witness (if any)

For Commission

Checked by