

**STATE OF KANSAS - CORPORATION COMMISSION**  
**ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST**

FORM O-2  
8-7-58

2-8-88

15-091-21207-0000

TYPE TEST:  Deliverability  Open Flow TEST DATE: 1/22/88

COMPANY Hoppin Oil Company LEASE Arndt WELL NO. #4

COUNTY Johnson LOCATION 1320' fsl 990' fel Section 31 TWP 13 S. RNG 23 E. ACRES 40

FIELD Olathe RESERVOIR Bartlesville & Cattleman Sd's PIPELINE CONNECTION Enterprise Prod, Inc.

COMPLETION DATE 2/9/84 PLUG BACK TOTAL DEPTH 842 ft PACKER SET AT

CASING SIZE 2.5" WT. I.D. 2.5" SET AT 842 ft PERF. 764 TO 780

TUBING SIZE 1" WT. I.D. SET AT 842 ft insert pump/weighted anchor PERF. TO

TYPE COMPLETION (Describe) dual gas TYPE FLUID PRODUCTION 8-10 bbl/day salt water

PRODUCING THRU casing RESERVOIR TEMPERATURE F 70°F BAR. PRESS - P<sub>a</sub> 14.4 Psia

GAS GRAVITY - G<sub>g</sub> .5750 % CARBON DIOXIDE .03 % NITROGEN 4.69% API GRAVITY OF LIQUID

VERTICAL DEPTH (H) 764 ft TYPE METER CONN. flange (METER RUN)(PROVER) SIZE 2"

SHUT-IN PRESSURE: SHUT IN before 1/16 19.88 AT (AM)(PM) TAKEN 1/22 19.88 AT 12:01 (AM)(PM)

FLOW TEST: STARTED 1/22 19.88 AT 12:02 (AM)(PM) TAKEN 1/23 19.88 AT 6 (AM)(PM)

**OBSERVED DATA** DURATION OF SHUT-IN 72<sup>+</sup> HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h <sub>w</sub> )(h <sub>d</sub> )	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P <sub>w</sub> )(P <sub>c</sub> )(P <sub>d</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>c</sub> )(P <sub>d</sub> ) psia		
SHUT-IN	.375	49.0		@36°							
FLOW	.375	40.0	5.0	@39°		40.0	54.4			30	@6.0

**RATE OF FLOW CALCULATIONS**

COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mafd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mafd	GOR	G <sub>m</sub>
.6860	54.4	16.49	1.319	1.021	1.011	15.40		

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>c</sub>)<sup>2</sup> = 4020 ; (P<sub>w</sub>)<sup>2</sup> = 2959 ; P<sub>d</sub><sup>2</sup> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ (P<sub>c</sub>)<sup>2</sup> = 0.207 (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mafd
38.13	1061	3.593	.5555	.85	.4721	2.9655	4 RECEIVED

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OPEN FLOW 45.67 Mafd @ 14.65 psia DELIVERABILITY Mafd @ 14.65 psia 1988

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 6<sup>th</sup> day of JULY, 1988.

CONSERVATION DIVISION  
Wichita, Kansas

*Jim Stepan* - HOPPIN OIL CO.  
For Company

Witness (if any)

For Commission

Checked by