

MAY 5 1978

GAS ANALYSIS

Lab. No. K78NG-829 Date Run May 1, 1978  
 Company Kansas-Nebraska Natural Gas - Glen Date Sampled April 21, 1978  
 Description Rupe  
 Well Name Miller 1 Location Sec. 5-26-18  
 County Edwards State Kansas Zone \_\_\_\_\_  
 Perf. From \_\_\_\_\_ To \_\_\_\_\_ Sampled From At 1:30 PM  
 Field Determinations - Sample Press (psig) 184 Sample Temp (°F) 74  
 Ambient Temp (°F) \_\_\_\_\_ Sp. Gravity \_\_\_\_\_  
 Requested By LHeeke Sampled By Turner

CHROMATOGRAPH METHOD

Component	Mol %	G.P.M.*
Helium	0.39	
Hydrogen	0.01	
Carbon Dioxide	0.21	
Nitrogen	5.21	
Methane	88.97	
Ethane	3.28	
Propane	1.03	0.283
i-Butane	0.18	0.057
n-Butane	0.34	0.105
i-Pentane	0.10	0.037
n-Pentane	0.11	0.038
Hexanes-Plus	0.17	0.071
TOTAL	100.00	

\* Calculated value based on ideal gas values from latest G. P. A. pub. 2145 at 60° F and 14.65 psia.

\*\* Calculated value using method from G.P.A. pub. 2172 and latest gas values from 2145.

\*\* Z Factor at 60° F - 14.696 psia  
 \*\* Gross Heating Value per cu. ft. at 60° F - 30" Hg Sat. 1003.0 B.T.U.  
 \*\* Gross Heating Value per cu. ft. at 60° F - 30" Hg Dry 1020.9 B.T.U.  
 \*\* Net Heating Value per cu. ft. at 60° F - 30" Hg Sat. 905.2 B.T.U.  
 \*\* Net Heating Value per cu. ft. at 60° F - 30" Hg Dry 921.3 B.T.U.  
 \*\* Specific Gravity (Air = 1.00) 0.6188  
 Gross Heating Value per cu. ft. at 60° F - 30" Hg Sat.  
 Determined by Recording Calorimeter

REMARKS \_\_\_\_\_

cc: KNNG(5) CRC(2) ACCOUNT NUMBER \_\_\_\_\_  
 INVOICE KNNG  
% H. Truskett  
Lakin, KS. 67860

*mailed copy  
John Reed  
5/1/78*

RE-TEST

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

FORM NO. 8-7-58  
51978

TYPE TEST:  Deliverability  Open Flow TEST DATE: 27 April 78

COMPANY: Shaw RUPPE LEASE: MILLER WELL NO.: 1

COUNTY: EDWARDS LOCATION: KANSAS SECTION: 5 TWP: 26 RNG: 18 ACRES: 18

FIELD: \_\_\_\_\_ RESERVOIR: \_\_\_\_\_ PIPELINE CONNECTION: NONE

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

CASING SIZE: 4 1/2 WT. 9 1/2 I.D.: \_\_\_\_\_ SET AT: 4741 PERF. TO: 4689 TO: 4703

TUBING SIZE: 2 7/8 WT. \_\_\_\_\_ I.D.: \_\_\_\_\_ SET AT: \_\_\_\_\_ PERF. TO: \_\_\_\_\_

TYPE COMPLETION (Describe): SINGLE (NAG) TYPE FLUID PRODUCTION: \_\_\_\_\_

PRODUCING THRU: TUBING & CASING RESERVOIR TEMPERATURE: \_\_\_\_\_ BAR. PRESS - P<sub>o</sub>: 14.4 Psia

GAS GRAVITY - G<sub>s</sub>: 0.73 % CARBON DIOXIDE: \_\_\_\_\_ % NITROGEN: \_\_\_\_\_ API GRAVITY OF LIQUID: \_\_\_\_\_

VERTICAL DEPTH (H): \_\_\_\_\_ TYPE METER CONN.: \_\_\_\_\_ (METER RUN) (PROVER) SIZE: 21

SHUT-IN PRESSURE: SHUT IN 22 APRIL 78 AT 10:00 (AM)(PM) TAKEN 27 APRIL 78 AT 11:15 (AM)(PM)

FLOW TEST: STARTED 27 APRIL 78 AT 11:30 (AM)(PM) TAKEN 28 APRIL 78 AT 10:30 (AM)(PM)

OBSERVED DATA

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 WELL-HEAD PRESS		TUBING WELL-HEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P <sub>w</sub> )(P <sub>1</sub> )(P <sub>c</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>1</sub> )(P <sub>c</sub> ) psia		
SHUT-IN						1089	1043.4				
FLOW	3/16	106		85		216	230.4			23	

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P <sub>m</sub> h <sub>w</sub>	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR	G <sub>m</sub>
.8035	120.4		1.267	9768	—	120		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 1088.7; (P<sub>w</sub>)<sup>2</sup> = 53.1; P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_; (P<sub>w</sub>)<sup>2</sup> = 20.207; (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_w^2}{P_c^2 - P_d^2}$	LOG [ ]	"n"	n = LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R = ANTILOG Mcfd
1088.5	1035.6	1.051	0.0216	1.004	0.0216	1.0271	126

OPEN FLOW Mcfd @ 14.65 psia DELIVERABILITY 126 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 28 day of April, 1978.

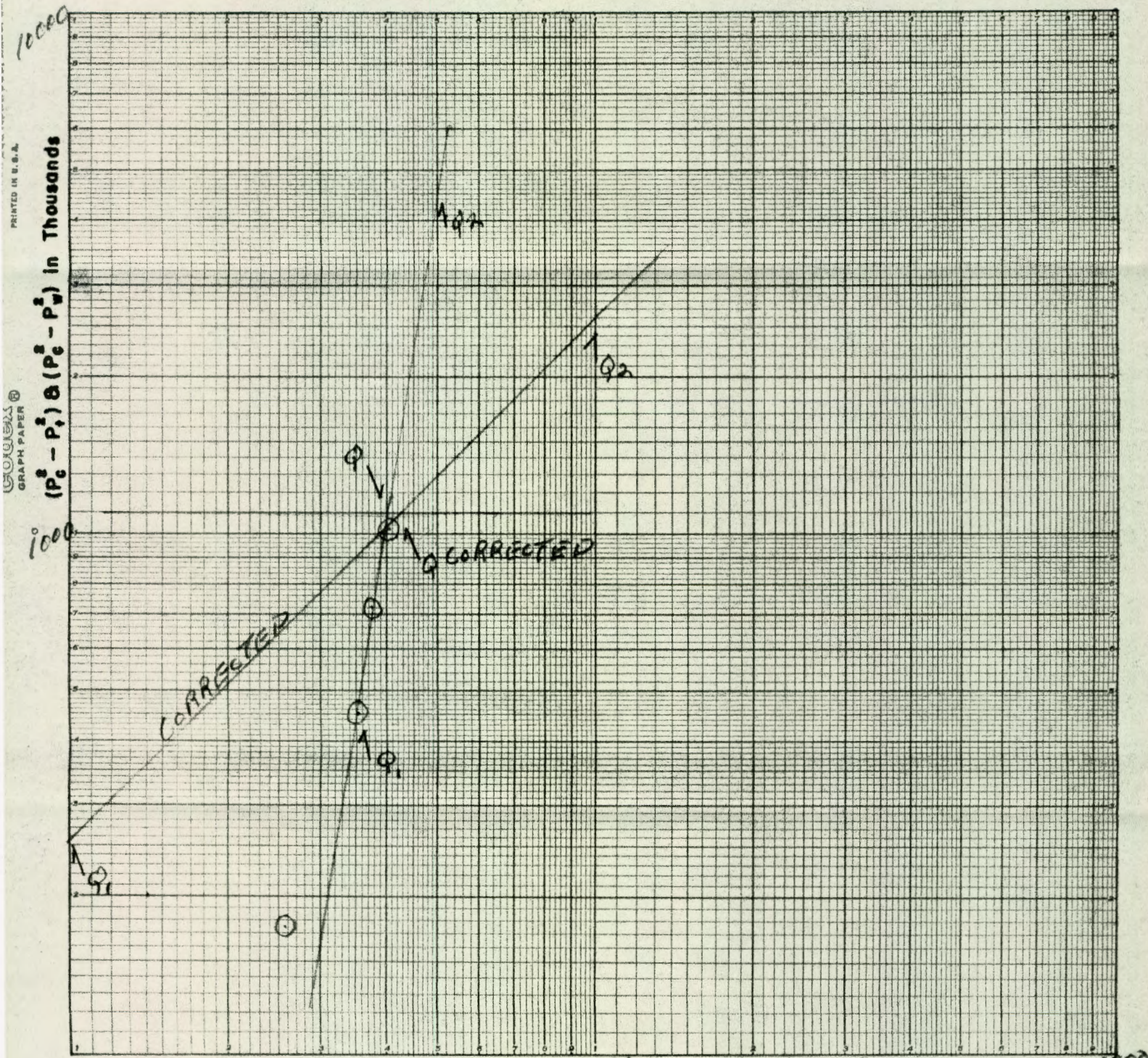
William E. J...  
For Company

Witness (if any)

Checked by

# BACK PRESSURE CURVE

Operator YLEN RUPE Lease MILLER Well No. 1  
 County EDWARDS Field NE-SW-SE Location 5-26-18  
 Date of Test 21 April 78 Slope "n" 1.000 W.H. \_\_\_\_\_ Abs. \_\_\_\_\_  
 Calc. W.H. Potential \_\_\_\_\_ MCF/D Calc. Abs. Potential 425 MCF/D



*William E. Gurney*

1000	$Q_2$ 500 [LOG]	2.699
400	$Q_1$ 353 [LOG]	2.548
		.151
CORRECTED		
425	$Q_2$ 1000 [LOG]	3.000
	$Q_1$ 100 [LOG]	2.000
	$n = 1.000$	

KANSAS-NEBRASKA NATURAL GAS COMPANY, INC.

BACK PRESSURE TEST SHEET

Field \_\_\_\_\_ Lease MILLER Well No. 1 Date of Test 21 APRIL 78  
 Formation \_\_\_\_\_ County EDWARDS State KANSAS Location NE-SW-5E 5-26-18  
 Casing: Size 4 1/2 Wt. 9 1/2 Set at 4741 Perf 4689 To 4703 L. \_\_\_\_\_ Packer \_\_\_\_\_ G \_\_\_\_\_  
 Tubing: Size 2 3/8 Wt. \_\_\_\_\_ Set at 4679 Perf \_\_\_\_\_ To \_\_\_\_\_ Reservoir Temp \_\_\_\_\_  
 Test Run on Tubing, Casing, Annulus. (Cross out those not applicable) Meter Run \_\_\_\_\_ Conn \_\_\_\_\_

OBSERVED FIELD DATA

Run No.	Time of Run, Min.	Flow Data		Press. psia	Diff. in. H <sub>2</sub> O	Temp. °F.	Tubing Data		Casing Data	
		(Prover) (Line) size	(Orifice) (Choke) Size				Press. psia	Temp. °F.	Press. psia	Temp. °F.
Shut in							1043.4		1043.4	
1	60	2"	3/16	118.4		62	955.4		955.4	
2	60	2"	5/16	162.4		74	799.4		799.4	
3	60	2"	5/16	172.4		75	614.4		614.4	
4	60	2"	5/16	188.4		82			283.4	
5										

FLOW CALCULATIONS

Run No.	Coefficient (24-Hour)	$\sqrt{h_w P_t}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD
1	1.714		118.4	.9981	1.267	—	257
2	1.714		162.4	.9868	1.267	1.014	353
3	1.714		172.4	.9859	1.267	1.015	375
4	1.714		188.4	.9795	1.267	1.016	407
5							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/dbl. Specific Gravity Separator Gas 1.623  
 Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg. Specific Gravity Flowing Fluid \_\_\_\_\_  
 F<sub>c</sub> \_\_\_\_\_ (1-e<sup>-m</sup>) \_\_\_\_\_ P<sub>c</sub> 1043.4 P<sub>c</sub><sup>2</sup> 1088.7

Run No.	P <sub>w</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-m</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> /P <sub>c</sub>
1	955.4					912.8	175.9	257	
2	799.4					639.0	449.7	353	
3	614.4					377.5	711.2	375	
4	283.4					80.3	1008.4	407	
5									

Absolute Potential 425 MCFPD at 14.4 psia; n 1.000

Company Yelow Raper Address \_\_\_\_\_

Tested By: William E Turner Jr.

Calculated By: Same

Witnessed By: John Lewis Company Yelow Raper Drilling

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

FORM NO. 8-7-58

TYPE TEST:  Deliverability     Open Flow    TEST DATE: 21 APRIL 78

COMPANY: HELEN RUPE    LEASE: MILLER    WELL NO.: 1

COUNTY: EDWARDS KANSAS    LOCATION: NE-SW-SE 5    SECTION: 5    TWP: 26    RNG: 18    ACRES: 18

FIELD: \_\_\_\_\_    RESERVOIR: \_\_\_\_\_    PIPELINE CONNECTION: NONE

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

CASING SIZE: 4 1/2    WT.: 9 1/2    I.D.: \_\_\_\_\_    SET AT: 4741    PERF.: 4689    TO: 4703

TUBING SIZE: 2 7/8    WT.: \_\_\_\_\_    I.D.: \_\_\_\_\_    SET AT: 4699    PERF.: \_\_\_\_\_    TO: \_\_\_\_\_

TYPE COMPLETION (Describe): SINGLE (NAS)    TYPE FLUID PRODUCTION: WELL LOGGED OFF ON 1 POINT

PRODUCING THRU: TUBING & CASING    RESERVOIR TEMPERATURE F: \_\_\_\_\_    BAR. PRESS - P<sub>a</sub>: 14.4 Psia

GAS GRAVITY - G: .623    % CARBON DIOXIDE: \_\_\_\_\_    % NITROGEN: \_\_\_\_\_    API GRAVITY OF LIQUID: \_\_\_\_\_

VERTICAL DEPTH (H): \_\_\_\_\_    TYPE METER CONN.: \_\_\_\_\_    (METER-RUN) (PROVER) SIZE: 2'

SHUT-IN PRESSURE: SHUT IN 30 DAYS 19\_\_ AT \_\_\_\_\_ (AM)(PM) TAKEN 21 APRIL 1978 AT 11:00 (AM)(PM)

FLOW TEST: STARTED 21 APRIL 1978 AT 11:00 (AM)(PM) TAKEN 22 APRIL 1978 AT 10:00 (AM)(PM)

**OBSERVED DATA**

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>i</sub> )(P <sub>c</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>i</sub> )(P <sub>c</sub> ) psia		
SHUT-IN						1029	1043.4	1029	1043.4		
FLOW	<u>3/16</u>	<u>12</u>		<u>70°</u>		<u>78</u>	<u>82.4</u>			<u>23</u>	

**RATE OF FLOW CALCULATIONS**

COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. FACTOR F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR	G <sub>m</sub>
<u>1.914</u>	<u>26.4</u>		<u>1.267</u>	<u>.9905</u>	<u>—</u>	<u>57</u>		

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

(P<sub>c</sub>)<sup>2</sup> = 1088.7; (P<sub>w</sub>)<sup>2</sup> = 6.8; P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_; (P<sub>w</sub>)<sup>2</sup> = 0.207; (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG [ ]	"n"	n = LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R = ANTILOG Mcfd
<u>1088.7</u>	<u>1081.9</u>	<u>1.006</u>	<u>.0026</u>	<u>1.000</u>	<u>.0026</u>	<u>1.006</u>	<u>57</u>

OPEN FLOW    Mcfd @ 14.65 psia    DELIVERABILITY 57    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 22 day of April, 1978.

William E. Turnoff  
For Company

Witness (if any)

For Commission

Checked by



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

8-7-58

TYPE TEST:  Deliverability  Open Flow TEST DATE: 31 July 78  
 COMPANY: GLEN RUPE LEASE: MILLER WELL NO.: 1  
 COUNTY: EDWARDS LOCATION: KANSAS. SECTION: NE-SW-SE 5 TWP: 26 RNG: 18 ACRES: 18  
 FIELD: RESERVOIR: PIPELINE CONNECTION: K.N.U.G.

AUG 8 1978

COMPLETION DATE: PLUG BACK TOTAL DEPTH: PACKER SET AT:  
 CASING SIZE: 4 1/2 WT. L.D. SET AT 4741 PERF. TO 4703  
 TUBING SIZE: 2 3/8 WT. L.D. SET AT 4699 PERF. TO  
 TYPE COMPLETION (Describe): SINGLE (GAS) TYPE FLUID PRODUCTION  
 PRODUCING THRU: CASING RESERVOIR TEMPERATURE F: BAR. PRESS - P<sub>a</sub>: 14.4 Psia  
 GAS GRAVITY - G<sub>g</sub>: 1.623 % CARBON DIOXIDE % NITROGEN API GRAVITY OF LIQUID  
 VERTICAL DEPTH (M): TYPE METER CONN.: FLANGE (METER RUN) (PROVER) SIZE: 2"

SHUT-IN PRESSURE: SHUT IN 28 April 1978 AT (AM)(PM) TAKEN 31 July 1978 AT 10:30 (AM)(PM)  
 FLOW TEST: STARTED 31 July 1978 AT 10:29 (AM)(PM) TAKEN 16:14 1978 AT 1:00 (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN \_\_\_\_\_ HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (FLOWER) 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>e</sub> )(P <sub>a</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>e</sub> )(P <sub>a</sub> ) psia		
SHUT-IN						563	577.4				
FLOW	.750	239	3	88		372	386.4			26	

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>o</sub> ) (F <sub>o</sub> ) M <sub>cd</sub>	(METER) (FLOWER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. FACTOR F <sub>L</sub>	DEVIATION FACTOR F <sub>gv</sub>	RATE OF FLOW R M <sub>cd</sub>	GOR	G <sub>g</sub>
2.779	253.4	27.57	1.267	1.9741	1.020	96		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>e</sub>)<sup>2</sup> = 333.4, (P<sub>w</sub>)<sup>2</sup> = 149.3, P<sub>a</sub> = \_\_\_\_\_ % (P<sub>e</sub> - 14.4) + 14.4 = \_\_\_\_\_, (P<sub>e</sub>)<sup>2</sup> = 0.207, (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_e)^2 - (P_w)^2}{(P_e)^2 - (P_a)^2}$	$(P_e)^2 - (P_w)^2$	$\frac{P_e^2 - P_w^2}{P_e^2 - P_a^2}$	LOG [ ]	"n"	n = LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R = ANTILOG M <sub>cd</sub>
333.2	184.1	1.810	.2577	1.000	.2577	1.810	174

OPEN FLOW M<sub>cd</sub> @ 14.65 psia 174 DELIVERABILITY M<sub>cd</sub> @ 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 4 day of July, 1978.

William E. Sumner  
For Company

Witness (if any)

For Commission

Checked by

mailed copy John Carl 8/8/78

ANNEX

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

FORM 62  
8-7-54

AUG 18 1979

TYPE TEST:  Deliverability  Open Flow TEST DATE: 13 AUG 79

COMPANY: GREEN ROPE LEASE: THICKER WELL NO.: 1

COUNTY: EDWARDS LOCATION: KANSAS SECTION: 5 TWP: 26 RNG: 18 ACRES: \_\_\_\_\_

FIELD: \_\_\_\_\_ RESERVOIR: \_\_\_\_\_ PIPELINE CONNECTION: K.N.N.G.

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

CASINO SIZE: \_\_\_\_\_ WT. \_\_\_\_\_ I.D. \_\_\_\_\_ SET AT \_\_\_\_\_ PERF. \_\_\_\_\_ TO \_\_\_\_\_

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

TYPE COMPLETION (Describe): SINGLE (WAE) TYPE FLUID PRODUCTION: \_\_\_\_\_

PRODUCING THRU: CASING RESERVOIR TEMPERATURE F: \_\_\_\_\_ BAR. PRESS - P<sub>a</sub>: 14.4 Psia

GAS GRAVITY - G<sub>g</sub>: 0.623 % CARBON DIOXIDE: \_\_\_\_\_ % NITROGEN: \_\_\_\_\_ API GRAVITY OF LIQUID: \_\_\_\_\_

VERTICAL DEPTH (H): \_\_\_\_\_ TYPE METER CONN.: FRANK (METER RUN) (PROVER) SIZE: 2"

SHUT-IN PRESSURE: SHUT IN 11 AUG 79 AT 10:00 (AM)(PM) TAKEN 13 AUG 79 AT 10:00 (AM)(PM)

FLOW TEST: STARTED 13 AUG 79 AT 10:00 (AM)(PM) TAKEN 14 AUG 79 AT 10:15 (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN: 72 HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h <sub>w</sub> )(h <sub>g</sub> )	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO 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						616	630.4				
FLOW	1.500	329	1	68		376	390.4			24 1/4	DISPOSAL WELLS

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>b</sub> )(F <sub>d</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P <sub>m</sub> h <sub>w</sub>	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. FACTOR F <sub>t</sub>	DEVIATION FACTOR F <sub>dv</sub>	RATE OF FLOW R Mcfd	GOR	G <sub>m</sub>
1.219	343.4	18.53	1.267	0.9924	1.031	29		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>d</sub>)<sup>2</sup> = 397.4, (P<sub>w</sub>)<sup>2</sup> = 152.4, P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_, (P<sub>d</sub>)<sup>2</sup> = 0.207

(P <sub>d</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG [ ]	"n"	n = LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R = ANTILOG Mcfd
397.2	245.0	1.621	0.2099	1.000	0.2099	1.621	47

OPEN FLOW Mcfd @ 14.65 psia 47 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 15 day of August, 1979.

William E. Turner  
For Company

Witness (if any) \_\_\_\_\_  
For Commission

Checked by \_\_\_\_\_