File

Liberal, Kansas
March 3, 1970

Mr. W. J. Poehling
Tulsa, Oklahoma

Re: Beacon Resources
Rustman #1 UT & LT
Section 12-33-34
Seward County, Kansas

At the request of Mr. Bill Atkinson, an eight hour flow test was conducted on the subject oil wells to determine what volume of gas is being vented to the atmosphere.

The subject tests were conducted through a "two-inch" critical flow prover, installed in the "two-inch" vent line downstream from the surface equipment with a constant recording pressure gauge connected to the prover. Flowing prover pressures were conducted at 30 minute intervals with a 1,000 psi dead weight pressure gauge on the prover and the flowing wellhead.

Prover pressures on the Lansing group fluctuated approximately 15 psi at 1.50 minute intervals. Pressures on the Toronto formation were more stable with a 5 psi fluctuation every 30 seconds. Pressures recorded on the Form 983 are average pressures taken between the high and low pressures. The average pressures and volumes are as follows:

Lansing Group

Flowing Tubing	Prover-¼" Plate	Volume
118.5 psig	111.6 psig	173 Mcf/D

Toronto Formation

Flowing Tubing	Prover- 3/4" Plate	Volume
518.8 psig	62.4 psig	920 Mcf/D

Total: 1093 Mcf/D

Due to the low delivery pressure on the subject well, compression will be required to produce ~~the~~ gas from Lans. Zone into Northern Natural Gas Company's gathering facilities at this time. Northern's line pressure in the area averages approximately 270.0 psig.

T. J. Strange by mk
T. J. Strange

TJS/nb

cc: Mr. John Agnew
File

Approved: Laura Clark

FORM 983
(REV. 4-22-65)

NORTHERN NATURAL GAS COMPANY
OBSERVED SURFACE DATA WORKSHEET
SHEET I

TYPE TEST: Flow [X] INITIAL [ ] ANNUAL [ ] RETEST [ ] SPECIAL TEST DATE: 3-3-7

OPERATOR Beacon Res. LEASE Rustman WELL NO. LT

SEC. 12 TWP. BLK. 33 RNG. SUR. 34 COUNTY Seward STA. NO. ______ PIPELINE CONN. ______

GA SYSTEM Hugoton FIELD Casing Head RESERVOIR Lansing

CSG. ______ WT. ______ TBG. SIZE ______ WT. ______ PERFS. ______ TO ______

TYPE COMPLETION: SINGLE ( ) GAS-GAS ( ) GAS-OIL ( ) PACKER@ ______ ft. FLOW STRING@ ______

DATE ON PREFLOW ______ TIME ______ DATE SHUT IN ______ TIME ______ LENGTH OF PREFLOW ______ AVG. PREFLOW RATE ______

DATE SHUT IN PRESS. TAKEN ______ TIME ______ LENGTH OF SHUT IN ______ SHUT IN CSG. PRESS. ______ psig SHUT IN TBG. PRESS. ______ psig

GAS GRAVITY (Gm) ______ (Gg) ______ API GRAVITY OF LIQUID @ 60°F 0.419 PROVER SIZE 2 METER RUN SIZE ______ ORIFICE SIZE 1/4 TYPE TAPS ______

DATE TIME OF READING	ELAP TIME HRS.	W.H. PRESSURE DATA CASING psig	ΔP CSG.	TUBING psig	ΔP TBG.	WELL HEAD TEMP.	METER OR PROVER DATA PRESS psig	DIFF.	TEMP.	LIQUID HYDRO-CARBONS BBLS.	WATER PRODUCED BBLS.	REMARKS PERTINENT TO TEST DATA QUALITY
		Flowing oil well										
Monday				3-3-70								
0845	installed 2 inch C.F. Prover down stream from heater Separator											
	w/ 1/4 inch plate											
0915				120.0			122.0		60°			Prover pressure fluctuates
0945				125.0			118.0					approximately 15 psi every
1015				121.0			115.0					1.5 minutes.
1045				120.0			104.0					
1315				118.0			102.0					
1345				112.0			110.0					
1415				109.0			105.0					
1445				110.0			108.0					
1515				120.0			115.0					
1545				115.0			110.0					Gas Sample
1615				122.0			114.0					
1645				120.0			116.0					
				118.5			111.6	AVG.				

TESTED BY: J. J. Strange WITNESSED BY: ______

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FORM 983
(REV. 4-22-65)

NORTHERN NATURAL GAS COMPANY
OBSERVED SURFACE DATA WORKSHEET
SHEET I

Bill Atkinson

TYPE TEST: Flow ☒ INITIAL ☐ ANNUAL ☐ RETEST ☐ SPECIAL TEST DATE: 3-3-70

OPERATOR Beacon Res. LEASE Rustman WELL NO. UT

SEC. 12 TWP. BLK. 33 RNG. SUR. 34 COUNTY Seward STA. NO. ____ PIPELINE CONN. ____

GA SYSTEM Hugoton FIELD Casino Head RESERVOIR Toronto

CSG. 5 1/2 WT. ____ TBG. SIZE 2 3/8 WT. 4.7 PERFS. ____ TO ____

TYPE COMPLETION: SINGLE ( ) GAS-GAS ( ) GAS-OIL ( ) PACKER @ ____ ft. FLOW STRING @ ____

DATE ON PREFLOW ____ TIME ____ DATE SHUT IN ____ TIME ____ LENGTH OF PREFLOW ____ AVG. PREFLOW RATE ____

DATE SHUT IN PRESS. TAKEN ____ TIME ____ LENGTH OF SHUT IN ____ SHUT IN CSG. PRESS. ____ psig SHUT IN TBG. PRESS. ____ psig

GAS GRAVITY (Gm) ____ (Gg) ____ API GRAVITY OF LIQUID @ 60°F 0.440 PROVER SIZE 2 METER RUN SIZE ____ ORIFICE SIZE 3/4 TYPE TAPS ____

DATE TIME OF READING	ELAP TIME HRS.	W.H. PRESSURE DATA CASING psig	ΔP CSG.	TUBING psig	ΔP TBG.	WELL-HEAD TEMP	METER OR PROVER DATA PRESS psig	DIFF.	TEMP.	LIQUID HYDRO-CARBONS BBLS.	WATER PRODUCED BBLS.	REMARKS PERTINENT TO TEST DATA QUALITY
		Flowing [illegible] well										
Monday				3-3-70								
0830	Installed 2 inch C.F. Prover down stream from heater Separator											
	w/ 3/4 inch plate											
0900				550.0			67.5		60°			pressure on prover fluc-
0930				545.0			66.0					tuates approximately 5 psi
1000				525.0			64.0					every 20 seconds.
1030				518.0			60.0					
1300				540.0			64.0					
1330				520.0			62.0					
1400				519.0			61.0					
1430				520.0			65.0					
1500				519.0			60.0					
1530				518.0			62.0					Gas Sample
1600				519.0			63.0					
1630				520.0			63.0					
				519.0			62.4	Avg.				

TESTED BY: Ted Strange WITNESSED BY: ____

PAGE 1 OF 1

(REV. 4-15-63)

BACK-PRESSURE CALCULATION SHEET

TYPE TEST: Flow ☒ INITIAL ☐ ANNUAL ☐ RETEST ☐ SPECIAL TEST DATE: 3-3-70

OPERATOR Beacon Resources LEASE Rustmon WELL NO. UT & LT

SEC. 12 TWP. BLK. 33 RNG. SUR. 34 COUNTY Seward STA. NO. PIPELINE CONN.

GA SYSTEM Hugoton FIELD Cosine Mead RESERVOIR Toronto — Lansing

CSG. SIZE WT. TBG. SIZE WT. PERFS: TO

TYPE COMPLETION PACKER@ ft. AVG. VERTICAL DEPTH ft.

TYPE LIQUID PRODUCED LIQUID COMPOSITION API GRAVITY

GAS GRAVITY (G_g)(G_m) .680 CO_2 % N_2 % H_2S P_{cr} 669 psia T_{cr} 385 °R

PRODUCING THRU TYPE TAPS (PROVER)(METER) SIZE 2 BAR. PRESS. 14.4

METER OR PROVER DATA

RATE NO.	OBSERVED DATA: ORIFICE SIZE IN.	(METER) (PROVER) TEMP °F	(METER) (PROVER) PRESSURE PSIG	$(P_m)(P_p)$ PSIA	DIFF. (H_w)	COMPRESSABILITY FACTOR: $\frac{(P_m)(P_p)}{P_{cr}}$	$\frac{(T_m)(T_p)}{T_{cr}}$	Z	REMARKS (QUALITY OF MEASUREMENT)
1	3/4	60	62.4	76.8		1.15	2.00	.966	
2	1/4	60	111.6	126.0		1.88	2.00	.969	
3									
4									
5									

FLOW RATE CALCULATION

RATE NO.	COEFF. MCF/DAY	$(P_m H_w)$ (P_p)	EXTENSION $\sqrt{P_m H_w}$	GRAVITY FACTOR	METER TEMP. FACTOR	DEVIATION FACTOR	FLOW RATE MCF/DAY	LENGTH OF FLOW	REMARKS (TYPE OF FLOW)
1	9.694	76.8		1.213	1.000	1.017	920	8.0	Ave. for 8 hr. flow
2	1.115	126.0		1.213	1.000	1.016	173	8.0	Ave. for 8 hr. flow
3									
4									
5									

WELLHEAD SHUT-IN AND FLOWING DATA

RATE NO.	CASING PRESSURE DATA: PSIG	(P_c) & $(P_w)(P_t)$ PSIA	$\frac{(P_w)(P_t)}{P_c}$	(P_c^2) & $(P_w^2)(P_t^2)$	TUBING PRESSURE DATA: PSIG	(P_c) & $(P_w)(P_t)$ PSIA	$\frac{(P_w)(P_t)}{P_c}$	(P_c^2) & $(P_w^2)(P_t^2)$	WELL-HEAD TEMP. °F	REMARKS (QUALITY OF PRESSURES)
SHUT IN										Hours shut in:
1										
2										
3										
4										
5										

SUMMARY

RATE NO.	WATER PROD. BBLS.	LIQUID PETR. BBLS.	GOR MCF/BBL	$(P_c^2 - P_w^2)$	Q	$(P_c^2 - P_t^2)$
1						
2						
3						
4						
5						

REMARKS:

WH slope (n): ABS slope (n):

WH potential: MCF/D after h

ABS potential: MCF/D after h

72 hr. WH potential MCF/

Stabl. WH potential MCF/

DEL @ after hr: MCF/

DEL @0.8 P_c after 72 hr: MCF/

Stabl. DEL @P_L = psig: MCF/

72 hr to t_{rb} hr stabl factor:

hr to 72 hr stabl factor:

TESTED BY: WITNESSED BY:

CALCULATED BY: CHECKED BY: