TYPE TEST:

☒ Open Flow

☐ Deliverability   TEST DATE: 11/20/01   API No. 15-071-20700

Company		Lease		Well Number
Midcontinent Resources		Angell		2

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Greeley	c NW	5	20s		640

Field	Reservoir	Gas Gathering Connection
Bradshaw	Winfield	Duke Energy

Completion Date	Plug Back Total Depth	Packer Set at
	2880	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052		2811	2824

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.995	2834		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
natural	water	pumping unit

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
annulus	.023	25.574	.838

Vertical Depth (H)	Pressure Taps	Meter Run Size
2820	flange	2.067

Pressure Buildup: Shut in	2001/11/16 @ 1300	TAKEN	2001/11/19 @ 1020
Well on Line: Started	2001/11/19 @ 1020	TAKEN	2001/11/20 @ 1245

OBSERVED SURFACE DATA

Static/ Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H_2O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. $(P_w)(P_t)(P_c)$ psig	Casing WellHead Press. psia	Tubing WellHead Press. $(P_w)(P_t)(F_c)$ psig	Tubing WellHead Press. psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						150	164				
Flow	1.000	106.0	15.00	56		106	120				

FLOW STREAM ATTRIBUTES

COEFFICIENT (F_b) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times H_w}$	GRAVITY FACTOR Fg	FLOWING TEMP FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW R Mcfd	GOR	G_m
5.070	120.4	42.50	1.0924	1.0039	1.0128	239	3510	1.701

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2 =$ 27.0 $(Pw)^2 =$ 14.7   Pd =   % $(Pc - 14.4) + 14.4 =$

$(Pa)^2 = 0.207$

$(Pd)^2 =$

$(P_c)^2 - (P_a)^2$	$(P_c)^2 - (P_w)^2$	$\dfrac{(P_c)^2 - (P_a)^2}{or}$ $\dfrac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	LOG [ ]	Backpressure Curve Slope"n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
26.82	12.31	2.179	.3383	.848	.2869	1.936	463

OPEN FLOW	463	Mcfd @ 14.65 psia	DELIVERABILITY		Mcfd @ 14.65 psia

The undersigned authority, on behaf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated herein and that said report is true and correct. Executed this the _____ day of _____ , 20 _____

_____   _____

Witness (if any)   For Company

_____   _____

For Commission   Checked by