

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 9-1-65

Type Test ☐ Initial ☐ Annual ☒ Special				Test Date 2-14/2-18-77	
Company Koch Industries			Connection New Well		
Pool Blanco			Formation Mesa Verde		Unit
Completion Date		Total Depth 6105	Plug Back TD 6065	Elevation 6532 GL	Farm or Lease Name Gardner
Csg. Size 4.500	Wt. 10.5	d 4.052	Set At 6105	Perforations: From 5083 To 5946	Well No. #4
Tbg. Size 2.375	Wt. 4.7	d 1.995	Set At 5925	Perforations: From To	Unit Sec. Twp. Rge. 25 32 2
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Gas - Single				Packer Set At None	County San Juan
Producing Thru Tubing		Reservoir Temp. °F @	Mean Annual Temp. °F	Baro. Press. - P _a 12.0	State New Mexico
L	H	Gg .60	% CO ₂	% N ₂	% H ₂ S
				Prover 2"	Meter Run Taps

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							987		1024		SIP
1.	2" X	3/16"		930		53°	930		984		2 hrs.
2.	2" X	1/4"		893		57°	893		936		2 hrs.
3.	2" X	5/16"		819		60°	819		884		2 hrs.
4.	2" X	3/8"		729		60°	729		829		2 hrs.
5.	2" X	3/8"		617		65°	617		704		12hrs.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	0.6082		942	1.007	1.291	1.100	819
2	1.087		905	1.003	1.291	1.093	1392
3	1.672		831	1.000	1.291	1.084	1944
4	2.378		741	1.000	1.291	1.073	2441
5	2.378		629	.9952	1.291	1.060	2037

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2					Specific Gravity Separator Gas _____ X X X X X X X X
3					Specific Gravity Flowing Fluid _____ X X X X X
4					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
5					Critical Temperature _____ R _____ R

F _c 1036 F _c ² 1073296	
NO.	P _t ² P _w ² P _w ² - P _t ² P _c ² - P _w ²
1	996 992016 81280
2	948 898704 174592
3	896 802816 270480
4	841 707281 366015
5	716 512656 560640

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{1073296}{1073296 - 512656} = 1.44$

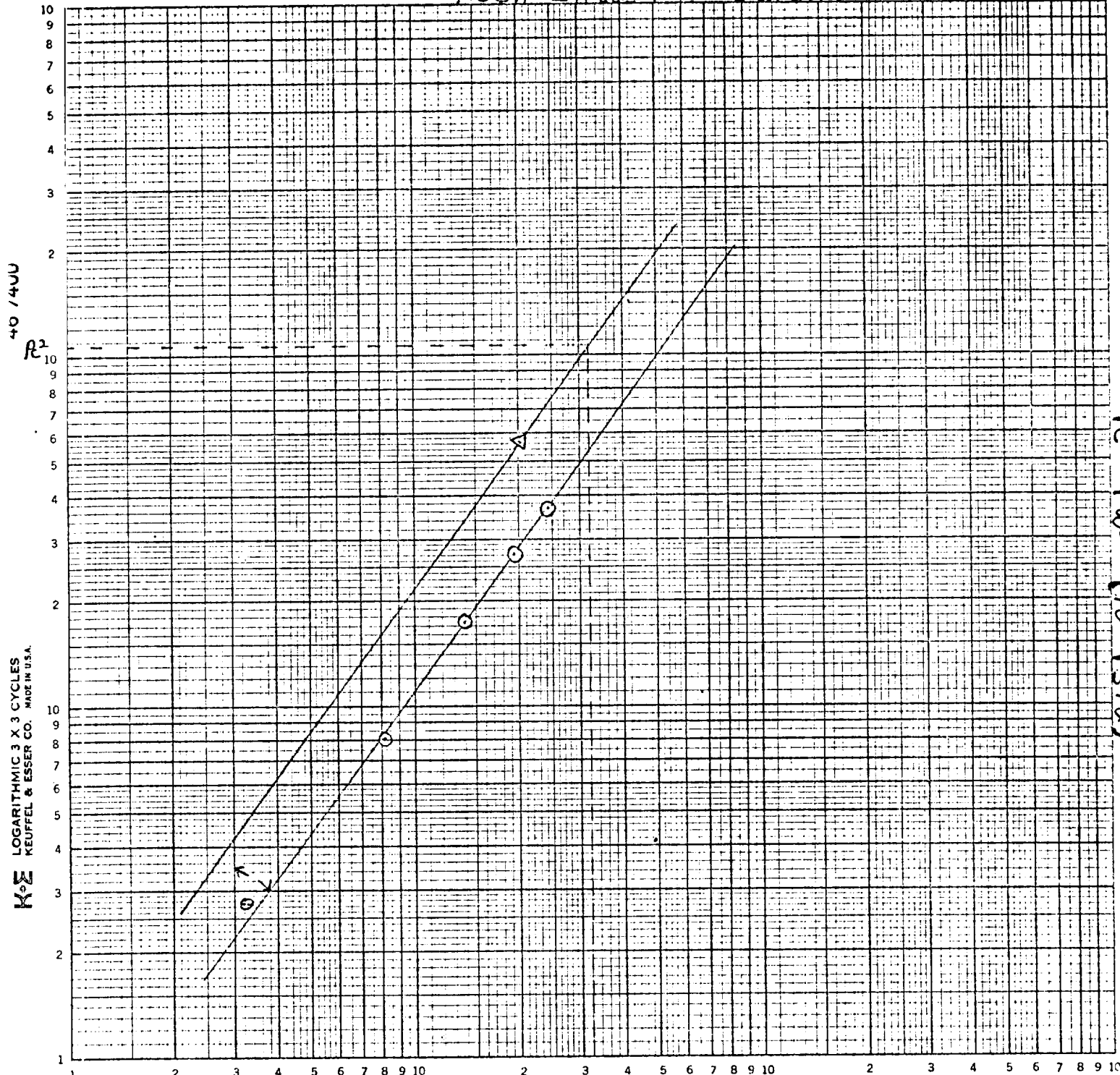
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.44^2 = 2.07$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2037 \times 2.07 = 4216$

Absolute Open Flow	3,100	Mcf/d @ 15.025	Angle of Slope	36.5°	Slope, n	.74
Remarks:						

Approved By Commission:	Conducted By: Fred S. Hamrick	Calculated By: Fred S. Hamrick	Checked By: BJ B
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Koch Industries Gardner # 4 MV



$\odot$ 2 hr flow Points
 Δ 12 hr extended flow

$\theta = 36.5^\circ$
 $N = \tan \theta = 0.74$
 $AOF = 3,100$

SUGGESTED FIELD DATA SHEET (Not Required To File)									
Type Test ☐ Initial ☐ Annual ☒ Special Test Date 2/14/77								Lease No. or Serial No.	
Company Koch Industries Connection New Well								Allottee	
Field Mesa Verde Reservoir Mesa Verde Location NE/SW 25-32-9								Unit	
Completion Date		Total Depth 6105		Plug Back To 6065		Elevation 6532 GL		Form of Lease Name Gardner	
Csg. Size 4.500	Wt. 10.5	d 4.052	Set At 6105	Perforations: From 5083	To 5946	Well No. #4			
Thg. Size 2.375	Wt. 4.7	d 1.995	Set At 5925	Perforations: From	To	Sec. 25	Twp. 32	Rge. 9	
Type Completion (Description) S/W Frac								County or Parish San Juan	
Producing Thru Tubing		Reservoir Temp. F		Mean Annual Temp. F		Baro. Press. - P _a 12.0		State New Mexico	
L		H		C _g .60		% CO ₂		% H ₂	
						% H ₂ S		Prover 2" Meter Run Taps	

DATE	ELAP. TIME	Wellhead Working Pressure			METER OR PROVER				REMARKS
Time of Reading	Hrs.	Thg. Psg.	Csg. Psg.	Temp. F	Pressure Psg.	Diff.	Temp. F	Orifice	(Include liquid production data; Type-A, P, L, Gravity-Amount)
7:00AM		987	1024					3/16"	SIP - Start Flow #1
:15		966	1009		966				12-14-77
:30		958	1005		958		47°		
:45		954	998		954		49°		
8:00		950	994		950		50°		
:15		943	991		943		50°		Light mist
:30		938	987		938		51°		" "
:45		933	985		933		52°		" "
9:00	2hr	930	984		930		53°		End Flow #1
11:00	2hr	960	1009					1/4"	2hr. SIP - Start Flow #2
:15		900	982		900		53°		Blowing light mist
:30		884	969		884		55°		" " "
:45		876	964		876		56°		" " "
12:00N		892	959		892		56°		" " "
:15		900	954		900		56°		" " "
:30		900	946		900		56°		" very light mist
:45		895	941		895		57°		" " "
1:00PM	2hr.	893	936		893		57°		End Flow #2
3:00	2hr	974	994					5/16"	2 hr. SIP - Start Flow #3
:15		851	947		851		58°		
:30		854	936		854		58°		Blowing light mist
:45		852	922		852		59°		" very light mist
4:00		845	909		845		60°		" " " "
:15		836	903		836		60°		" " " "
:30		828	894		828		60°		" " " "
:45		824	890		824		60°		" " " "
5:00	2hr.	819	884		819		60°		End Flow #3
7:00	2hr	955	967					3/8"	2 hr SIP - Start Flow #4
:15		781	904		781		55°		Blowing very light mist
:30		777	886		777		56°		" med. mist
:45		770	860		770		57°		" " " "
8:00		756	850		756		59°		" " " "
:15		743	846		743		59°		" " " "

SUGGESTED FIELD DATA SHEET (Not Required To File)									
Type Test ☐ Initial ☐ Annual ☒ Special Test Date 2/14/77							Lease No. or Serial No.		
Company Koch Industires Connection New Well							Allottee		
Field (Reservoir) Location							Unit		
Completion Date Total Depth Plug Back TD Elevation							Farm or Lease Name Gardner		
Csg. Size		Wt.	d	Set At	Perforations: From To		Well No. #4		
Tub. Size		Wt.	d	Set At	Perforations: From To		Sec. 25	Twp. 32	Rge. 9
Type Completion (Descriptive) Parker Set At							County or Parish San Juan		
Producing Thru Reservoir Temp. F Mean Annual Temp. F Baro. Press. - P _a							State New Mexico		
L H C _g .60 % CO ₂ % H ₂ % H ₂ S Prover Meter Run Taps							2"		

DATE	ELAP. TIME	Wellhead Working Pressure			FILTER OR PROVER				REMARKS (Include liquid production data; Type-A, P, L, Gravity-Amount)
		Tub. Psig.	Csg. Psig.	Temp. F	Pressure Psig.	Diff.	Temp. F	Orifice	
8:30		738	838		738		59°	3/8"	Blowing light mist
:45		734	833		734		60°		" " "
9:00 PM	2hr.	729	829		729		60°		End Flow #4 - Start extended flow (12hrs)
10:00		710	805		710*				
11:00		692	788		692*				
12:00 M.N.		678	775		678*				*Estimated from pressure recorder
1:00 AM		665	765		665*				
2:00		657	755		657*				
3:00		651	747		651*				
4:00		645	738		645*				
5:00		640	732		640*				
6:00		635	726		635*				Blew light mist of H ₂ O through-
7:00		630	717		630*				out test.
8:00		623	710		623*				Collected gas samples.
9:00	12hr	617	704		617				Shut-in @ 9:00 AM 2-15-77
9:05		728	729						
:10		739	739						Vented 1578 mcf while testing
:15		763	763						
:20		771	771						
:25		776	777						
:30		783	786						
:40		791	799						
:50		798	807						
10:00	1hr	806	815						
:10		-	-						
:20		815	824						
:30		821	828						
:40		824	834						
11:00	2hr	830	839						
:15		835	845						
:30		841	850						
12:00 N	3hr	849	859						
:30		854	864						
1:00	4hr	859	870						
:30		865	875						
2:00	5hr	867	877						

SUGGESTED FIELD DATA SHEET (Not Required To File)							
Type Test ☐ Initial ☐ Annual ☒ Special Test Date 2/14/77						Lease No. or Serial No.	
Company Koch Industries Corporation Location New Well						Allottee	
Field Reservoir Location						Unit	
Completion Date		Total Depth		Plug back To		Elevation	
Csg. Size		Wt.	d	Set At	Perforations: From		To
Tbg. Size		Wt.	d	Set At	Perforations: From		To
Type Completion (Describe)						Parker Set At	
Producing Thru						Reservoir Temp. F	
Mean Annual Temp. F						Baro. Press. - P ₀	
L H C ₉ .60 % CO ₂ % H ₂ % H ₂ S						State New Mexico	
Prover 2 1/2						Meter Run Taps	

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