. 21752(3-68)

Autho	rizatio	n			
Work (	Order	No. <u>/072</u>	129.	24913	<u>-/2</u> 2.

### MONTANA-DAKOTA UTILITIES CO.

## RECORD OF PRESSURE TEST OF GAS PIPELINE

Date Tested: 5-27-93
Division: BISMARK Town: GETTYSBURG SD-
Line Location: THE WEST PART OF TOWN Street (s)
From:
То:
Line Size & Length: 2"- PLASTIC MAIN
Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure
(Check One) (Up to 8 oz.) (8 oz. to 60 psig) (Less than transmission but more than medium)
Design Pressure: 50 psig; Test Pressure: 100 psig
Toot Madium: Water : Air X : Cas
Time: At Start of Test 5-17 - 1.00 P.M. At End of Test 5-21-93 P.M.
Length of Test: 4 days Hrs Minutes
Pressure and Temperature Readings During Test
Elapsed Time Pressure, psig Temperature, °F.
At Start of Test 100
30 Minutes
One Hour
At End of Test
Pressure Correction Factor: (To be calculated only if there is a change in the temperature of the (For Air or Gas Only) test medium.)
Final Pressure = $\frac{(P_1 + P_a) (T_2 + 460)}{(T_1 + 460)} P_a$
P <sub>a</sub> = Atmospheric Pressure in psia
P <sub>1</sub> = Pressure of Test Medium at End of 30 Minute Reading, psig
T <sub>1</sub> = Temperature of """"""""""", °F.
T <sub>2</sub> = Temperature " " " " Test, °F.
Calculated Final Pressure: 100 lbs
Test Made by: Von Schlog Approved: TF Spilman
(Foreman) (Superintendent)

Authorization	
Work Order No. 1072 129 24913 12	ξ.

## RECORD OF PRESSURE TEST OF GAS PIPELINE

Division: BISMARK Town: Street (  From:  To:  Line Size & Length: 2" - PLASTIC MAIN  Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure   (Less than transmission but more than medium)  Design Pressure: 50 psig; Test Pressure: 100 ps  Test Medium: Water ; Air ; Gas  Time: At Start of Test 5-17 - 1.60 P.M. At End of Test 5-21-93 P.M.  Length of Test:	
Line Location: THE WEST PIPET OF TOWN Street (  From: To: Line Size & Length: 2" - PIRSTO MAIN  Proposed Service: Low Pressure ; Medium Pressure ; Intermediate Pressure (Less than transmission but more than medium)  Design Pressure: 50 psig; Test Pressure: 100 ps  Test Medium: Water ; Air ; Gas  Time: At Start of Test 5-17   1.60 P.M.; At End of Test 5-21-93 P.M.  Length of Test: Hrs. Minut  Pressure and Temperature Readings During Test  Elapsed Time Pressure, psig Temperature, °F.  At Start of Test 100	
From:  To:  Line Size & Length:  2"-PIST C MAIN  Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure   (Less than transmission but more than medium)  Design Pressure:  50 psig; Test Pressure:  100 psig  Test Medium: Water  ; Air  ; Gas  Time: At Start of Test  P.M.  At End of Test  Pressure and Temperature Readings During Test  Elapsed Time Pressure, psig Temperature, °F.  At Start of Test  100  Minut	(s)
Line Size & Length: 2" - PLASTIC MAIN  Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure     (Check One) (Up to 8 oz.) (8 oz. to 60 psig)   (Less than transmission but more than medium)  Design Pressure:   50	
Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure   (Less than transmission but more than medium)  Design Pressure:   50	
Proposed Service: Low Pressure   ; Medium Pressure   ; Intermediate Pressure   (Less than transmission but more than medium)  Design Pressure:   50	
Check One) (Up to 8 oz.) (8 oz. to 60 psig) but more than medium)  Design Pressure:	
Test Medium: Water; Air; Gas; Gas; Gas; Gas; Gas; A.M; Gas; A.M; A.M.	
Time: At Start of Test 5-17 - 1.60 P.M.; At End of Test 5-21-93 P.M.  Length of Test: Hrs. Minut  Pressure and Temperature Readings During Test  Elapsed Time Pressure, psig Temperature, °F.  At Start of Test 100	sig
Length of Test: Hrs Minut  Pressure and Temperature Readings During Test  Elapsed Time Pressure, psig Temperature, °F.  At Start of Test / O	
Length of Test: Hrs Minut  Pressure and Temperature Readings During Test  Elapsed Time Pressure, psig Temperature, °F.  At Start of Test / O	
Elapsed Time Pressure, psig Temperature, °F.  At Start of Test 100	ites
At Start of Test 100	
At State of Test	
30 Minutes	
One Hour	
At End of Test	
Pressure Correction Factor: (To be calculated only if there is a change in the temperature of the (For Air or Gas Only) test medium.)	
Final Pressure = $\frac{(P_1 + P_a) (T_2 + 460)}{(T_1 + 460)} - P_a$	
Pa = Atmospheric Pressure in psia	•
P <sub>1</sub> = Pressure of Test Medium at End of 30 Minute Reading, psig	
$T_1$ = Temperature of """"""""", $^{\circ}F$ .	
T <sub>2</sub> = Temperature " " " " Test, °F.	
Calculated Final Pressure:	11
Test Made by: Con Schlad Approved: OGODINSON // (Foreman) (Superintendent)	"h

# RECORD OF PRESSURE TEST OF GAS PIPELINE

	(	Date Tested	5/2/	<u> 193                                    </u>
Division:	BISMARK	Town:		S.D.
Line Locatio	on: South WEST PART	of fowN.		Street (s)
	From:			
	То:			
Line Size &	Length: 2" PLASTIC	MAIN		
Proposed Se	ervice: Low Pressure 🔲 ; Medi	um Pressure 🎾 ; Int	termediate Pressu	re . 🗆
Check One	(8 oz.)		ess than transmis ut more than me	
Design Press	sure: <u>50</u> psig;			
Fest Mediun	n: Water; Air	; Gás		
Time: At S	tart of Test	.M.) At End of Tes	5-21-93 9	00 P.M.
Length of T	est:	Hrs		
_	•	perature Readings Duri	ng Test	
	Elapsed Time	Pressure, psig	Temperat	ure,°F.
	At Start of Test	100		
	30 Minutes	***************************************	***************************************	······································
	One Hour	-	•	National Control of the Control of t
	At End of Test	100		
Pressure Cor For Air or (			ige in the temper	ature of the
	Final Pressure = $\frac{(P_1 + P_a)}{(T_1 + 460)}$	)		
Pa = Atmos	pheric Pressure in psia			
P <sub>1</sub> = Pressur	re of Test Medium at End of 30 M	Minute Reading, psig	•	
$T_1 = Tempe$	erature of """"""	" " ,° F.	:	
T <sub>2</sub> = Tempe	erature " " " " Test	, °F.		
	Final Pressure:  Dy: won Schlag	Approved: OG	abrillson (S	Mu full Superintendent)

## RECORD OF PRESSURE TEST OF GAS PIPELINE

₹	. Data	Tested: 5	121 /93	}
Division: BISMARK		GEMYSB4	RD S	, D ·
Line Location: South west PART	OF TOW.	N·		Street (s)
From:	·			
То:				
Line Size & Length: 2" PLASTIC	NAIN .			
Proposed Service: Low Pressure    ; Mediu	1			
(Check One) (Up to 8 oz.) (8 oz.	to 60 psig)	(Less that but more	n transmission e than medium)	
Design Pressure: psig;	Test Pressure	e:	100	psig
Test Medium: Water; Air				- N.
Time: At Start of Test //30 P.	M. At End	of Test <u>5-2</u>	193 9,00 \$	.M.
Length of Test: 4 All Lays	Hrs		•	Minutes
Pressure and Temp	erature Readin	gs During Test		
Elapsed Time	Pressure, psig	manage state	Temperature, °F	! • •
At Start of Test	100	Herministragio Alliber		organii C
30 Minutes				
One Hour			. '	
At End of Test	100			
Pressure Correction Factor: (To be calculated (For Air or Gas Only) test medium.)	only if there is	a change in t	ne temperature o	of the
Final Pressure = $\frac{\binom{P}{1} + \binom{P}{a} \binom{T}{2} + \binom{T}{1} + 460}$	<u>460)</u> _P <sub>a</sub>	·		
Pa = Atmospheric Pressure in psia				•
P <sub>1</sub> = Pressure of Test Medium at End of 30 M	inute Reading,	psig		
$T_1$ = Temperature of " " " " "	" " "	,° F.		,
T <sub>2</sub> = Temperature " " " Test,	°F.			
Calculated Final Pressure: 100 psig  Test Made by: won Schlag	Approved	TF&	alman	
		(Foreman	i) (Superin	itendent)

Autho	orizatio	on			<del>,</del>		•
Work	Order	No.	-5101	129-	249	13-1	حح

## RECORD OF PRESSURE TEST OF GAS PIPELINE

		6 · 11-93-	
Division: BISMAREK	Town:	BURG. SIL	<u> </u>
Line Location:			Street (s)
From: TESTED	ALL THE 4"+2"	PLASTOC	PIPE-
To: THIN WIS includes everything except 2"(1) Line Size & Length:	INSTAULED SO EA	Proplement.)	
Proposed Service: Low Pressure	, , , , , , , , , , , , , , , , , , ,	nediate Pressure	•
(Check One) (Up to 8 oz.)	(8 oz. to 60 psig) (Less but r	than transmission nore than medium)	
Design Pressure:	psig; Test Pressure:	100	psig
Test Medium: Water;			
Time: At Start of Test	P.M.: At End of Test	8:00	5
Length of Test:	: 6 Hrs		Minutes
·	nd Temperature Readings During 1	Гest	
Elapsed Time	Pressure, psig	Temperature, °F.	
At Start of Test	100		
30 Minutes	•	•	
One Hour		· .	
At End of Test	200		
Pressure Correction Factor: (To be carefor Air or Gas Only) test med	diram )	in the temperature of (	the
Final Proseura = (P <sub>1</sub> + P <sub>2</sub>	1 (T2 + 460) P-		•
Final Pressure = $\frac{(P_1 + P_2)}{(T_1 + P_2)}$	1 + 460)		
Pa = Atmospheric Pressure in psia	•		
P <sub>1</sub> = Pressure of Test Medium at End	of 30 Minute Reading, psig	-	
$T_1$ = Temperature of " " "	" " " " ,°F.		
T <sub>2</sub> = Temperature " " " "	"Test, F.		
Calculated Final Pressure:	•	· And	1/1/
$\sim$ $\langle a \rangle$	hlog Approved (Porer	man) (Superinter	Hull 16 K