



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

400 North Fourth Street  
Bismarck, ND 58501  
701-222-7900

March 23, 2022

Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
Bismarck, ND 58505-0480

Re: Gas Meter Test Results

Montana-Dakota Utilities Co. (Montana-Dakota) herewith electronically submits the results of its gas meter testing program for the period July 1, 2020 through June 30, 2021. The test results included herein reflect the gas meter testing performed in accordance with the Company's Gas Meter Testing Program Rate 105 tariff, as authorized on February 24, 2016, in Case No. PU-13-585, by the North Dakota Public Service Commission.

Montana-Dakota's meter testing program consists of the following three categories:

1. New Test - New meters purchased were tested and found to be satisfactory prior to release. 100% of new meters were tested at the factory. Montana-Dakota tested 302 meters during the period July 1, 2020 through June 30, 2021 resulting in an average accuracy of 100.05% at an open test (100% of meter rating) and 100.08% accuracy at a check test (20% of meter rating).
2. Periodic Test – Meters with ratings of greater than 650 cubic feet per hour are tested at a periodic interval of at least once in ten years.
3. Random Test - All other active meters with ratings of 650 cubic feet per hour or less are assigned to lots and are selected for testing via a computer generated random selection process and meters pulled from customers' premises in correlation with service technicians being on site for other service-related work.

All damaged or non-registering meters are incapable of measuring gas accurately due to damaged indexes, mechanical malfunctions, or break(s) in the meter body and are either retired or given a complete overhaul and re-tested before being placed back in service.

Test calculations of all lots in the Random Sample Program are made in accordance with the program detailed in Department of Defense Bulletin dated June 11, 1957, entitled "Military Standard Sampling Procedure & Tables for Inspections by Variable for Percent Defective," as approved in Case No. I-5083.

The Random Test results are provided in Attachment A. With the exception of those meter lots identified herein, all lots were below the maximum allowable defective percentage for this test period.

Three new meter lot groups were determined to have defective percentages in 2021 that exceeded the maximum allowable limits. A description of the lot groups impacted along with the number of meters and plans for the group is outlined below:

- Meter Lot AC-630 with install dates of 2005 through 2009: After further analysis, Montana-Dakota removed a sub-group of 2005 vintage meters from active service to be adjusted. The 122 meters removed and adjusted were returned to the Company's meter inventory,
- Meter Lot ER01 with install dates of 1995 through 1999: After further analysis, Montana-Dakota removed a sub-group of 1974 through 1976 vintage meters from active service and retired the 194 meters removed, and
- Meter Lot ER03 with install dates of 1990 through 1994: After further analysis, Montana-Dakota removed a sub-group of 1977 and 1978 vintage meters from active service and retired the 869 meters removed.

The Company also identified one meter lot group that had a population of under ten meters and therefore prudent to remove the meters from the following sub group:

- Meter Lot ER02 – install date of 1980 through 1984.

The Periodic test results are provided in Attachment B. As shown, 718 meters were tested during this review period resulting in an average accuracy of 98.74% at an open test (100% of meter rating) and 99.61% accuracy at a check test (20% of meter rating).

Please contact me if you have questions regarding the gas meter testing results.

Montana-Dakota respectfully requests that this filing be accepted as being in full compliance with the filing requirements of this Commission.

Sincerely,

*/s/ Travis R. Jacobson*

Travis R. Jacobson  
Director of Regulatory Affairs

Attachments

**MONTANA - DAKOTA UTILITIES CO.  
ND, SD, WY - 2021 TEST YEAR  
RANDOM SAMPLE TEST RESULTS**

<b>Lot Type</b>	<b>Size (in CIS)</b>	<b>Install Year</b>	<b>Count</b>	<b>Minimum Sample*</b>	<b>Defective [%]</b>	<b>Allowable [%]</b>
<b>AC-250</b>	<b>AC250</b>	90-94	255	20	5.77	24.53
		95-99	7,654	50	1.63	22.00
		00-04	24,361	100	12.50	20.66
		05-09	30,193	100	17.89	20.66
		10	3,213	50	5.11	22.00
<b>AL-425</b>	<b>AL425</b>	95-99	12	3	0.00	40.47
		00-04	414	25	20.55	23.97
		05-09	543	30	15.92	23.58
		10	105	10	15.46	27.57
<b>AC-630</b>	<b>AC630</b>	00-04	20	4	0.00	36.90
		05-09	429	25	27.92	23.97
		10	138	15	4.25	25.61
<b>AS02</b>	<b>AL175, AL225 &amp; AI250</b>	75-79	155	15	0.79	25.61
		80-84	69	10	0.31	27.57
		85-89	237	20	6.66	24.53
		90-94	1,059	35	13.75	22.91
		95-99	1,698	40	12.53	22.86
		00-04	615	30	0.66	23.58
		05-09	317	25	3.48	23.97
		10	45	7	0.00	30.50
<b>ER01</b>	<b>175</b>	85-89	60	7	2.51	30.50
		90-94	293	20	8.48	24.53
		95-99	526	30	24.34	23.58
		00-04	85	10	0.00	27.57
<b>ER02</b>	<b>250</b>	85-89	363	25	16.53	23.97
		90-94	4,248	50	8.61	22.00
		95-99	6,946	50	9.82	22.00
		00-04	1,972	40	4.46	22.86
		05-09	121	15	0.05	25.61
		10	13	3	0.00	40.47

**MONTANA - DAKOTA UTILITIES CO.  
ND, SD, WY - 2021 TEST YEAR  
RANDOM SAMPLE TEST RESULTS**

<b>Lot Type</b>	<b>Size (in CIS)</b>	<b>Install Year</b>	<b>Count</b>	<b>Minimum Sample*</b>	<b>Defective [%]</b>	<b>Allowable [%]</b>
<b>ER03</b>	<b>R200 &amp; R275</b>	85-89	613	30	7.603	23.58
		90-94	3,613	50	26.94	22.00
		95-99	6,678	50	11.11	22.00
		00-04	8,568	75	7.95	21.11
		05-09	2,921	40	4.42	22.00
		10	1,005	35	3.97	22.91
<b>NL-250</b>	<b>NL-250</b>	90-94	35	5	21.87	33.99
		95-99	28	5	16.96	33.99
		00-04	75	10	10.13	27.57
		05-09	207	20	2.30	24.53
		10	52	7	1.65	30.50
<b>S250</b>	<b>S250</b>	90-94	1,129	35	4.63	22.91
		95-99	944	35	3.69	22.91
		00-04	598	30	1.24	23.58
		05-09	532	30	1.08	23.58
		10	162	15	2.99	25.61
<b>SL250</b>	<b>SL250</b>	95-99	885	35	1.18	22.91
		00-04	199	20	0.00	24.53
		05-09	242	20	0.03	24.53
		10	86	10	0.74	27.57
<b>S400</b>	<b>S400</b>	10	18	4	10.00	36.90
<b>S400A</b>	<b>S400A</b>	95-99	19	4	15.67	36.90
		05-09	29	5	14.62	33.99
		10	32	5	3.99	33.99
<b>415</b>	<b>415</b>	10	208	10	9.62	24.53

\* - Military Standard No. 414, Inspection Level IV with specification limit of  $\pm 2\%$

**Montana-Dakota Utilities Co.  
North Dakota, South Dakota, and Wyoming  
July 1, 2020 through June 30, 2021  
Periodic Test Results**

<b>Meter Size</b>	<b>Quantity Tested</b>	<b>Open Accuracy</b>	<b>Check Accuracy</b>
		<b>[%]</b>	<b>[%]</b>
R1000	198	99.27	100.14
10000	3	95.03	98.33
R1600	72	98.82	100.14
3000	13	98.55	98.11
5000	12	98.08	98.02
R750	236	99.24	100.24
S800A	8	101.1	100.88
AL1000	57	99.83	100.64
AL1400	2	97.9	99.7
AL800	117	99.53	99.88
<b>Totals</b>	<b>718</b>	<b>98.74%</b>	<b>99.61%</b>