



## e-FILING REPORT COVER SHEET

COMPANY NAME:

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: RE (Electric) RG (Gas) RW (Water) RT (Telecommunications)  
RO (Other, for example, industry safety information)

Did you previously file a similar report? No Yes, report docket number:

Report is required by: OAR  
Statute  
Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other  
(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? No Yes, docket number:

List Key Words for this report. We use these to improve search results.

Send the completed Cover Sheet and the Report in an email addressed to [PUC.FilingCenter@state.or.us](mailto:PUC.FilingCenter@state.or.us)

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.

February 16, 2021

**VIA ELECTRONIC FILING**

Public Utility Commission of Oregon  
201 High Street SE, Suite 100  
Post Office Box 1088  
Salem, Oregon 97308-1088

Re: RG 41: Meter Sampling Program Report for 2020

At the request of Commission Staff, Northwest Natural Gas Company, dba NW Natural, submits herewith its 2020 Meter Sampling Program Report.

As required by our Meter Testing Standards and Procedures document, the accuracies of all operating families of diaphragm meters with capacities 1000 ft<sup>3</sup>/hr and below have been statistically analyzed for the year 2020. This analysis utilized all relevant meter tests conducted during the five calendar years between January 1, 2015 and December 31, 2020. The results of this analysis are as follows:

- As of December 31, 2020, 732,541 installed meters are covered under the Meter Sampling Program. These meters formed 383 distinct meter families. This total does not include meters determined to be non-conforming.
- Over the course of 2020, the company tested 8,247 meters. Over the five-year period of 2015 through 2020, the company had a total of 31,269 meter samples from which to base its results.
- 372 meter families either had sufficient meter samples to establish statistical confidence in their accuracy, or are so new that they do not yet require minimum sampling. These meter families amount to 699,268 meters, or 95 percent of the total meter population. The performances of these families are exhibited in Appendix A.
- 11 new meter families were added in 2020. 20 meter families were removed from service due to small family size, during the normal course of business. 7 meter families were removed from service due to the number of supplementary samples required exceeding 50% of the family size, with a family size less than 100 meters.
- 40 meter families, consisting of a total of 27,204 meters, are not conforming. Due to the number of meters requiring change-out (3.7% of the total population), these meters have been put on the list to be removed over the course of the next 4 years, by December 2024, per Meter Sampling Program (MSP) guidelines outlined in NW Natural Engineering Procedure Z-1. The performance of these families is exhibited in Appendix B.
- A further breakdown of the non-conforming meter families and associated meters described above are as follows, the performance of these families is exhibited in Appendix B:
  - 13 meter families, totaling 27,069 meters had sufficient meter tests available to have their accuracy determined statistically and determined non-conforming.

- 20 meter families, totaling 45 meters, will be removed from service due to their small population size and age.
- 7 meter families, totaling 90 meters, will be removed from service due to a family size less than 100 meters, and sampling requirements exceeding 50% of the total family population.
- Compared to the results above, the Year 2019 report resulted in 42,046 meters being put on the list for removal by December 2023.
- Regarding the planned 4-year removal of meters determined non-conforming in 2019, 15,084 meters remain of the 42,046 meters determined non-conforming for removal in 2020 to 2023. The remaining meters are planned to be removed by December 2023.

If you have any questions or comments, please contact me at 503-610-7494.

Sincerely,  
*/s/ Michael J. McKenzie*

Michael J. McKenzie  
Gas Measurement and Station Design Engineering Supervisor  
Telephone: 503-610-7494  
Email: [mike.mckenzie@nwnatural.com](mailto:mike.mckenzie@nwnatural.com)

cc:

Andy Fortier  
Jon Huddleston  
Cliff Crawford

Dave Weber  
Kim Heiting  
Joe Karney

**Appendix A  
Meter Families in Conformance**

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
120	0	1970	Rockwell	175	50	622	92	5	0
120	0	1974	Rockwell	175	46	2547	162	18	4
120	0	1975	Rockwell	175	45	1776	98	13	1
120	0	1977	Rockwell	175	43	1334	89	5	3
120	0	1978	Rockwell	175	42	1431	104	5	4
120	0	1979	Rockwell	175	41	1596	96	8	5
120	0	1980	Rockwell	175	40	999	90	9	0
120	0	1981	Rockwell	175	39	672	83	10	1
120	0	1982	Rockwell	175	38	1155	87	14	1
120	0	1984	Rockwell	175	36	1426	92	14	1
120	0	1985	Rockwell	175	35	1916	100	13	1
120	0	1987	Rockwell	175	33	2193	119	12	1
120	0	1988	Rockwell	175	32	2158	100	9	2
120	0	1989	Rockwell	175	31	3481	142	8	3
120	0	1990	Rockwell	175	30	3528	145	12	1
120	0	1991	Rockwell	175	29	3804	187	6	4
120	0	1992	Rockwell	175	28	6669	268	9	3
120	0	1993	Rockwell	175	27	2631	123	5	3
120	0	1994	Rockwell	175	26	1359	63	2	2
120	0	1996	Rockwell	175	24	730	86	4	0
120	0	2012	Rockwell	175	8	1	0	0	0
120	0	2013	Rockwell	175	7	1	0	0	0
120	0	2014	Rockwell	175	6	1	0	0	0
125	0	1978	Rockwell	200	42	1556	98	6	1
125	0	1979	Rockwell	200	41	153	36	1	0
125	0	1980	Rockwell	200	40	1806	88	12	0
125	0	1981	Rockwell	200	39	2452	96	14	1
125	0	1982	Rockwell	200	38	3069	114	8	0
125	0	1983	Rockwell	200	37	1744	94	5	1
125	0	1987	Rockwell	200	33	553	24	0	0
125	0	1989	Rockwell	200	31	522	68	0	0
125	0	1991	Rockwell	200	29	695	40	0	0
125	0	1993	Rockwell	200	27	478	73	7	2
125	0	1994	Rockwell	200	26	384	76	6	1
125	0	1995	Rockwell	200	25	70	45	5	0
125	0	1996	Rockwell	200	24	231	27	0	0
125	0	1998	Rockwell	200	22	82	25	0	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
125	0	2017	Rockwell	200	3	1	3	0	0
125	0	2019	Rockwell	200	1	1	2	0	0
130	0	1971	American	175	49	1049	104	7	1
130	0	1973	American	175	47	719	82	10	0
130	0	1975	American	175	45	24	13	0	0
130	0	1977	American	175	43	3214	128	7	1
130	0	1979	American	175	41	6308	220	13	3
130	0	1980	American	175	40	6120	243	17	1
130	0	1983	American	175	37	2943	145	21	3
130	0	1984	American	175	36	4720	195	20	4
130	0	1986	American	175	34	3947	143	15	1
130	0	1987	American	175	33	5849	196	23	2
130	0	1988	American	175	32	3084	147	17	1
130	0	1989	American	175	31	3223	147	15	1
130	0	1990	American	175	30	3091	132	18	1
130	0	1991	American	175	29	4854	129	18	5
130	0	1993	American	175	27	3136	119	15	2
130	0	1995	American	175	25	546	66	2	0
130	0	1996	American	175	24	1039	45	1	0
130	0	1997	American	175	23	200	51	1	0
130	0	2013	American	175	7	1	0	0	0
130	0	2014	American	175	6	3	0	0	0
130	0	2016	American	175	4	2	7	0	0
140	0	1968	Sprague	175	52	986	76	0	16
140	0	1970	Sprague	175	50	334	35	0	2
140	0	1971	Sprague	175	49	959	72	0	8
140	0	1972	Sprague	175	48	148	36	0	2
140	0	1973	Sprague	175	47	2844	145	3	8
140	0	1974	Sprague	175	46	609	38	0	2
140	0	1975	Sprague	175	45	702	47	0	2
140	0	1976	Sprague	175	44	1078	63	2	2
140	0	1979	Sprague	175	41	129	36	1	2
140	0	1981	Sprague	175	39	622	38	0	1
140	0	1982	Sprague	175	38	568	49	2	4
140	0	1983	Sprague	175	37	805	52	0	3
140	0	1984	Sprague	175	36	699	34	0	3
140	0	1985	Sprague	175	35	1138	65	1	6
140	0	1986	Sprague	175	34	949	48	1	3
140	0	1987	Sprague	175	33	2931	122	0	13
140	0	1988	Sprague	175	32	738	61	2	2

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
140	0	1989	Sprague	175	31	753	35	0	3
140	0	1990	Sprague	175	30	1010	101	0	4
140	0	1991	Sprague	175	29	438	32	0	3
140	0	1992	Sprague	175	28	562	31	0	2
140	0	1993	Sprague	175	27	646	30	0	1
140	0	1998	Sprague	175	22	8	10	0	0
140	0	2011	Sprague	175	9	2	0	0	0
140	0	2016	Sprague	175	4	1	3	0	0
270	0	1998	Schlumberger	1000	22	25	15	0	0
270	0	2000	Schlumberger	1000	20	18	13	0	0
300	540	2005	Rockwell	800	15	10	11	0	0
450	0	1993	Schlumberger	400	27	188	29	0	0
450	0	1996	Schlumberger	400	24	262	41	0	0
450	0	1998	Schlumberger	400	22	438	45	0	0
450	0	2013	Schlumberger	400	7	1	0	0	0
452	0	2005	Actaris	400	15	17	14	0	0
470	472	1982	American	425	38	18	11	0	0
470	472	1983	American	425	37	26	15	0	0
470	472	1984	American	425	36	105	24	0	0
470	472	1985	American	425	35	23	25	2	0
470	472	1987	American	425	33	112	56	2	0
470	472	1990	American	425	30	25	14	0	0
470	472	1992	American	425	28	141	28	0	0
470	472	1993	American	425	27	61	37	6	0
470	472	1996	American	425	24	11	12	1	0
470	472	1999	American	425	21	248	42	0	0
470	472	2001	American	425	19	57	36	2	0
470	472	2003	American	425	17	203	37	1	0
470	472	2005	American	425	15	22	15	0	0
470	472	2006	American	425	14	34	36	0	0
470	472	2007	American	425	13	231	24	0	2
470	472	2008	American	425	12	12	11	0	0
470	472	2012	American	425	8	1	0	0	0
470	472	2017	American	425	3	1	0	0	0
471	0	2007	American	425	13	471	82	8	0
471	0	2008	American	425	12	38	36	3	0
471	0	2011	American	425	9	109	8	0	0
471	0	2012	American	425	8	10	0	0	0
475	0	2011	American	630	9	1042	57	1	0
475	0	2012	American	630	8	1438	72	1	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
475	0	2013	American	630	7	1490	90	2	0
475	0	2014	American	630	6	1553	66	0	0
475	0	2015	American	630	5	1250	75	2	0
475	0	2016	American	630	4	1637	35	1	0
475	0	2017	American	630	3	1693	34	2	0
475	0	2018	American	630	2	4705	53	2	1
475	0	2019	American	630	1	3013	21	0	0
480	486	1992	American	800	28	23	17	0	0
480	486	1993	American	800	27	28	30	2	2
480	486	1995	American	800	25	16	13	0	2
480	486	1996	American	800	24	7	6	0	0
480	486	2001	American	800	19	12	12	1	0
485	0	1997	American	800	23	8	7	0	0
485	0	2011	American	800	9	1	0	0	0
485	0	2016	American	800	4	1	0	0	0
487	0	2017	American	800	3	58	2	0	0
487	0	2018	American	800	2	196	6	0	0
487	0	2019	American	800	1	322	6	0	0
500	502	1998	American	1000	22	84	46	7	0
500	502	2001	American	1000	19	11	9	1	1
500	502	2002	American	1000	18	36	27	1	1
505	507	1981	American	1000	39	8	8	0	1
505	507	2008	American	1000	12	297	69	11	0
505	507	2011	American	1000	9	366	43	2	0
505	507	2012	American	1000	8	390	43	2	0
505	507	2013	American	1000	7	379	33	0	0
505	507	2014	American	1000	6	434	38	0	0
505	507	2015	American	1000	5	361	25	0	0
505	507	2016	American	1000	4	522	33	1	0
505	507	2017	American	1000	3	201	9	0	0
505	507	2018	American	1000	2	351	14	1	0
505	507	2019	American	1000	1	312	10	1	0
510	515	1974	Rockwell	310	46	23	24	0	4
510	515	1976	Rockwell	310	44	264	47	2	3
510	515	1978	Rockwell	310	42	96	48	1	3
510	515	1983	Rockwell	310	37	106	36	1	0
510	515	1984	Rockwell	310	36	15	15	1	1
510	515	1987	Rockwell	310	33	206	51	2	4
510	515	1989	Rockwell	310	31	84	31	1	1
510	515	1991	Rockwell	310	29	208	24	0	1

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
510	515	1993	Rockwell	310	27	94	46	4	2
510	515	1996	Rockwell	310	24	18	23	0	1
510	515	2011	Rockwell	310	9	1	0	0	0
510	515	2013	Rockwell	310	7	1	0	0	0
520	0	1978	Rockwell	415	42	35	15	0	0
520	0	1979	Rockwell	415	41	72	33	1	1
520	0	1982	Rockwell	415	38	33	16	0	0
520	0	1991	Rockwell	415	29	71	24	0	0
520	0	1996	Rockwell	415	24	95	48	2	1
520	0	2000	Rockwell	415	20	84	43	7	0
520	0	2005	Rockwell	415	15	46	20	0	0
520	0	2011	Rockwell	415	9	1	0	0	0
520	0	2017	Rockwell	415	3	1	0	0	0
520	0	2018	Rockwell	415	2	1	0	0	0
520	0	2019	Rockwell	415	1	1	0	0	0
555	0	1981	American	310	39	27	23	1	1
555	0	1986	American	310	34	84	32	1	0
555	0	1987	American	310	33	31	38	2	1
555	0	1989	American	310	31	14	27	2	0
555	0	2012	American	310	8	1	0	0	0
560	0	1986	American	250	34	6150	211	4	0
560	0	1987	American	250	33	428	25	0	0
560	0	1988	American	250	32	3129	92	1	1
560	0	1989	American	250	31	6952	241	3	5
560	0	1990	American	250	30	6251	202	3	6
560	0	1991	American	250	29	5520	202	4	3
560	0	1992	American	250	28	4777	102	2	2
560	0	1993	American	250	27	4050	106	2	1
560	0	1995	American	250	25	8156	193	10	1
560	0	1996	American	250	24	11041	236	9	3
560	0	1998	American	250	22	14378	235	30	3
560	0	1999	American	250	21	11207	156	9	1
560	0	2000	American	250	20	11207	216	6	1
560	0	2001	American	250	19	9384	160	2	2
560	0	2002	American	250	18	8474	116	5	0
560	0	2003	American	250	17	431	68	1	1
560	0	2005	American	250	15	76	34	1	1
560	0	2006	American	250	14	614	51	1	0
560	0	2007	American	250	13	191	25	0	0
560	0	2011	American	250	9	3	0	0	0



Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
560	0	2012	American	250	8	6	0	0	0
560	0	2013	American	250	7	3	0	0	0
560	0	2014	American	250	6	5	2	0	0
560	0	2015	American	250	5	1	8	0	0
560	0	2017	American	250	3	1	14	0	0
560	0	2018	American	250	2	3	14	1	0
561	0	2006	American	250	14	21404	363	38	1
561	0	2007	American	250	13	21896	421	37	1
561	0	2010	American	250	10	10069	212	6	0
561	0	2011	American	250	9	10624	196	3	0
561	0	2012	American	250	8	11926	183	1	0
561	0	2013	American	250	7	15296	247	1	3
561	0	2014	American	250	6	14679	192	1	0
561	0	2015	American	250	5	17928	216	3	0
561	0	2016	American	250	4	12652	120	0	0
561	0	2017	American	250	3	11813	125	2	1
561	0	2018	American	250	2	9754	84	1	0
561	0	2019	American	250	1	14604	44	0	0
561	0	2020	American	250	0	17	0	0	0
562	0	2017	American	250	3	22	0	0	0
562	0	2018	American	250	2	695	0	0	0
562	0	2019	American	250	1	1377	1	0	0
570	0	1989	Rockwell	275	31	744	41	1	0
570	0	1990	Rockwell	275	30	5367	125	11	3
570	0	1993	Rockwell	275	27	61	31	1	0
570	0	1995	Rockwell	275	25	6477	121	8	2
570	0	1996	Rockwell	275	24	7651	142	4	1
570	0	1997	Rockwell	275	23	2355	41	1	0
570	0	1999	Rockwell	275	21	10484	181	27	2
570	0	2000	Rockwell	275	20	8465	115	19	1
570	0	2001	Rockwell	275	19	8670	124	4	1
570	0	2002	Rockwell	275	18	10778	165	3	0
570	0	2003	Rockwell	275	17	19806	269	6	2
570	0	2004	Rockwell	275	16	3592	55	0	0
570	0	2005	Rockwell	275	15	12	10	0	0
570	0	2011	Rockwell	275	9	1	0	0	0
570	0	2012	Rockwell	275	8	3	1	0	0
570	0	2013	Rockwell	275	7	1	0	0	0
570	0	2014	Rockwell	275	6	2	0	0	0
570	0	2016	Rockwell	275	4	2	2	0	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
570	0	2017	Rockwell	275	3	3	3	0	0
570	0	2018	Rockwell	275	2	2	2	0	0
572	0	2004	Sensus	275	16	13900	201	16	2
572	0	2005	Sensus	275	15	24631	363	51	0
572	0	2008	Sensus	275	12	38	38	1	0
572	0	2011	Sensus	275	9	86	2	0	0
572	0	2012	Sensus	275	8	4	0	0	0
572	0	2013	Sensus	275	7	1	0	0	0
572	0	2014	Sensus	275	6	1	0	0	0
572	0	2015	Sensus	275	5	2	1	0	0
572	0	2016	Sensus	275	4	3	0	0	0
585	0	1992	Sprague	250	28	2093	64	0	0
585	0	1993	Sprague	250	27	3814	114	1	0
585	0	1994	Sprague	250	26	1645	49	1	1
585	0	1995	Sprague	250	25	1512	38	0	0
585	0	1996	Sprague	250	24	4409	108	1	0
585	0	1997	Sprague	250	23	5901	121	1	1
585	0	1998	Sprague	250	22	5388	139	0	1
585	0	1999	Sprague	250	21	243	23	0	0
585	0	2000	Sprague	250	20	36	29	2	0
585	0	2001	Sprague	250	19	49	17	0	0
585	0	2002	Sprague	250	18	44	16	0	0
585	0	2014	Sprague	250	6	2	0	0	0
590	0	1989	Lancaster	250	31	1300	77	0	0
590	0	1990	Lancaster	250	30	1311	55	0	1
590	0	1991	Lancaster	250	29	1707	73	1	0
590	0	1992	Lancaster	250	28	2651	87	1	1
590	0	1993	Lancaster	250	27	2823	72	1	0
590	0	1994	Lancaster	250	26	4350	172	10	5
590	0	1995	Lancaster	250	25	4802	145	7	11
590	0	1996	Lancaster	250	24	26	21	0	0
590	0	1997	Lancaster	250	23	2112	46	0	3
590	0	1998	Lancaster	250	22	28	14	0	0
590	0	2011	Lancaster	250	9	1	0	0	0
590	0	2016	Lancaster	250	4	1	2	0	0
590	0	2019	Lancaster	250	1	1	1	0	0
595	600	2000	Schlumberger	250	20	3174	316	18	12
595	600	2001	Schlumberger	250	19	3766	180	3	1
595	600	2002	Schlumberger	250	18	3240	180	0	4
595	600	2012	Schlumberger	250	8	1	0	0	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
595	600	2016	Schlumberger	250	4	1	1	0	0
602	0	2016	Itron	250	4	4360	35	0	0
602	0	2017	Itron	250	3	4587	42	0	0
602	0	2018	Itron	250	2	8182	52	2	0
602	0	2019	Itron	250	1	11485	30	0	0
602	0	2020	Itron	250	0	20	0	0	0
125	0	1984	Rockwell	200	36	2082	87	12	1
480	486	1989	American	800	31	24	13	0	0
510	515	1992	Rockwell	310	28	116	46	2	5
560	0	1994	American	250	26	6126	121	7	1
300	540	1996	Rockwell	800	24	20	15	0	2
480	486	1990	American	800	30	22	12	0	0
505	507	2007	American	1000	13	339	72	11	0
510	515	1990	Rockwell	310	30	201	61	6	3
561	0	2005	American	250	15	1636	88	13	0
120	0	1983	Rockwell	175	37	1329	92	11	2
125	0	1992	Rockwell	200	28	604	41	1	0
130	0	1992	American	175	28	1388	91	10	0
130	0	1994	American	175	26	2599	89	11	0
140	0	1994	Sprague	175	26	563	46	1	2
270	0	2001	Schlumberger	1000	19	33	28	2	0
272	0	2004	Actaris	1000	16	7	8	0	0
572	0	2009	Sensus	275	11	744	41	0	0
470	472	1986	American	425	34	53	17	0	0
485	0	1984	American	800	36	54	29	1	1
520	0	1987	Rockwell	415	33	38	22	1	2
555	0	1980	American	310	40	58	36	4	0
585	0	1991	Sprague	250	29	736	24	0	0
470	472	1994	American	425	26	215	36	1	1
570	0	1992	Rockwell	275	28	128	55	5	0
570	0	1994	Rockwell	275	26	4979	119	8	0
120	0	1972	Rockwell	175	48	814	78	10	2
125	0	1999	Rockwell	200	21	135	22	0	0
470	472	1997	American	425	23	280	74	5	0
120	0	1976	Rockwell	175	44	1062	83	7	2
120	0	1995	Rockwell	175	25	312	75	5	0
125	0	1986	Rockwell	200	34	335	68	3	0
125	0	1990	Rockwell	200	30	289	70	10	0
140	0	1997	Sprague	175	23	459	25	0	0
570	0	1991	Rockwell	275	29	2829	92	8	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
590	0	1999	Lancaster	250	21	141	23	0	0
595	600	2003	Schlumberger	250	17	51	18	0	0
595	600	2004	Schlumberger	250	16	21	13	0	0
120	0	1969	Rockwell	175	51	168	66	4	0
120	0	1986	Rockwell	175	34	1253	89	5	3
140	0	1977	Sprague	175	43	292	39	0	4
475	0	2010	American	630	10	619	56	2	0
570	0	1998	Rockwell	275	22	5340	115	11	1
585	0	1988	Sprague	250	32	178	22	0	0
585	0	2004	Sprague	250	16	47	18	0	0
120	0	1973	Rockwell	175	47	598	81	10	0
120	0	1997	Rockwell	175	23	157	37	1	0
120	0	1998	Rockwell	175	22	70	19	0	0
130	0	1985	American	175	35	2013	88	11	2
480	486	2002	American	800	18	21	12	0	0
560	0	1985	American	250	35	1397	74	3	1
140	0	1978	Sprague	175	42	242	30	0	3
140	0	1980	Sprague	175	40	273	60	4	7
510	515	1981	Rockwell	310	39	188	21	0	1
510	515	1986	Rockwell	310	34	16	10	0	0
520	0	1981	Rockwell	415	39	220	23	0	1
555	0	1997	American	310	23	21	18	2	1
590	0	1988	Lancaster	250	32	73	19	0	0
120	0	1968	Rockwell	175	52	57	40	2	0
125	0	1988	Rockwell	200	32	343	82	4	0
450	0	2005	Schlumberger	400	15	7	6	0	0
470	472	2000	American	425	20	385	39	1	0
520	0	1988	Rockwell	415	32	42	15	0	1
452	0	2003	Actaris	400	17	77	37	1	1
470	472	1998	American	425	22	136	56	5	0
485	0	1981	American	800	39	19	16	0	3
510	515	1977	Rockwell	310	43	138	35	1	0
520	0	1992	Rockwell	415	28	49	27	1	1
450	0	2003	Schlumberger	400	17	16	10	0	0
470	472	1995	American	425	25	76	23	0	0
470	472	2002	American	425	18	384	76	3	0
470	472	2004	American	425	16	49	32	1	0
471	0	2010	American	425	10	83	22	0	0
510	515	1982	Rockwell	310	38	39	34	1	2
520	0	1980	Rockwell	415	40	55	29	1	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
520	0	1997	Rockwell	415	23	44	16	0	0
555	0	1983	American	310	37	79	41	2	0
555	0	1984	American	310	36	162	61	2	2
452	0	2004	Actaris	400	16	401	73	4	3
450	0	1999	Schlumberger	400	21	91	20	0	0
520	0	2003	Rockwell	415	17	141	21	0	0
555	0	1985	American	310	35	89	32	1	0
450	0	1997	Schlumberger	400	23	54	18	0	0
520	0	1994	Rockwell	415	26	83	19	0	1
510	515	1973	Rockwell	310	47	62	33	1	4
470	472	1989	American	425	31	18	19	2	0
510	515	1979	Rockwell	310	41	118	49	5	7
510	515	1994	Rockwell	310	26	29	14	0	0
520	0	1977	Rockwell	415	43	39	16	0	0
520	0	2004	Rockwell	415	16	60	38	3	0
<b>Totals</b>						<b>699,268</b>	<b>22,537</b>	<b>1,209</b>	<b>363</b>

**Appendix B  
 Meter Families Not Conforming (To Be Removed Over 4 Years)**

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	Determination
120	0	2010	Rockwell	175	10	1	Small Family
125	0	2009	Rockwell	200	11	3	Small Family
130	0	1972	American	175	48	2661	Determined
130	0	1978	American	175	42	1534	Determined
130	0	2019	American	175	1	1	Small Family
140	0	2009	Sprague	175	11	2	Small Family
470	472	2009	American	425	11	4	Small Family
470	472	2010	American	425	10	2	Small Family
470	472	2019	American	425	1	2	Small Family
471	0	2009	American	425	11	3	Small Family
475	0	2002	American	630	18	1	Small Family
485	0	1980	American	800	40	17	Determined
505	507	1980	American	1000	40	6	Small Family
510	515	2009	Rockwell	310	11	1	Small Family
510	515	2010	Rockwell	310	10	1	Small Family
520	0	2009	Rockwell	415	11	3	Small Family
555	0	2009	American	310	11	1	Small Family
560	0	2010	American	250	10	2	Small Family
560	0	2019	American	250	1	4	Determined
561	0	2008	American	250	12	22887	Determined
570	0	2019	Rockwell	275	1	4	Determined
585	0	2009	Sprague	250	11	5	Small Family
590	0	2009	Lancaster	250	11	2	Small Family
590	0	2010	Lancaster	250	10	1	Small Family
602	0	1982	ltron	250	38	1	Small Family
485	0	1996	American	800	24	6	Small Family
505	507	2009	American	1000	11	270	Determined
480	486	1991	American	800	29	37	Determined
500	502	2003	American	1000	17	14	Determined
130	0	2009	American	175	10	19	Sampling Limit
450	0	2004	Schlumberger	400	15	8	Sampling Limit
510	515	1997	Rockwell	310	22	9	Sampling Limit
520	0	1983	Rockwell	415	36	17	Sampling Limit
570	0	2009	Rockwell	275	10	16	Sampling Limit
572	0	2010	Sensus	275	10	15	Sampling Limit
585	0	2003	Sprague	250	16	12	Sampling Limit

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	Determination
555	0	1994	American	310	26	6	Determined
470	472	1988	American	425	32	39	Determined
470	472	1991	American	425	29	15	Determined
520	0	1995	Rockwell	415	25	266	Determined
<b>Total</b>						<b>27204</b>	