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April 9, 2020

# VIA ELECTRONIC TRANSMISSION

Ms. Lynn Retz Executive Director Kansas Corporation Commission 1500 S.W. Arrowhead Road Topeka, KS 66604

Re: In the Matter of the Application of Kansas Gas Service, a Division of ONE Gas, Inc., Regarding the filing of its Plan for the Replacement of Obsolete Materials in Populated Areas.

Docket Number 18-KGSG-317-CPL

Dear Ms. Retz:

Enclosed please find the *Compliance Filing of Kansas Gas Service* for filing in the abovereferenced matter. Please feel free to contact me with any questions or concerns regarding this filing.

Sincerely,

Is G.G. Hitchye Judy Jenkins Hitchye

JH/sef Encl.

cc: Attorneys of Record

## BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS

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In the Matter of the Application of Kansas Gas Service Company, a Division of ONE Gas, Inc., Regarding the filing of its Plan for the Replacement of Obsolete Materials in Populated Areas.

Docket No. 18-KGSG-317-CPL

#### **COMPLIANCE FILING OF KANSAS GAS SERVICE**

Kansas Gas Service, a Division of ONE Gas, Inc., (also referred to as "KGS" or the "Company") in accordance with the memorandum filed by the Staff of the State Corporation Commission of the State of Kansas ("Staff") on December 19, 2018, in Docket No. 15-GIMG-343-GIG respectfully submits this report detailing progress made on its accelerated plan for replacing obsolete pipe in populated areas in the preceding year. The Company states as follows:

On April 24, 2018, KGS filed in this docket its *Compliance Filing of Kansas Gas Service Final Plan for Replacement of Obsolete Materials in Populated Areas* ("Plan"). Within the Plan, KGS indicated that it would begin working its plan in 2019.

On December 19, 2018, Staff filed a memorandum in Docket No. 15-GIMG-343-GIG making recommendations for the monitoring of various issues raised in the docket, including the monitoring of plans for the accelerated replacement of obsolete pipe. Among its recommendations, on page 8 of the memorandum, Staff suggested that the utilities file an annual compliance report by March 31 detailing progress made in the preceding year on the accelerated replacement plan, to include an explanation of any deviation from initial projections, any deviations from the previous year's projections, and a revision of remaining plan projections. Staff also recommended that utilities update Tables LMH-1 and LMH-2 and provide a discussion on the progress toward adopting/implementing a Pipeline Safety Management System ("PSMS").

While the Commission has not yet issued an order concerning Staff's recommendation for updating the plan, KGS is documenting its progress in accordance with the recommendations set out in Staff's memorandum.

KGS implemented its plan in January 2019. The attachments to this filing provide an update on the Company's progress made during 2019 and include information regarding any deviations from the Company's initial Plan or deviations from revised projections. At this time, KGS has no revisions to its Plan. Additionally, KGS is providing an update to the information in Tables LMH-1 and LMH-2 and a discussion of its progress toward adopting PSMS. KGS is also including within this report its mileage of mains by type and by community and leak information, as ordered by the Commission in Docket No. 15-GIMG-343-GIG. In addition to the information contained in this filing, KGS is confirming that, on February 28, 2020, KGS filed in this docket its lost and unaccounted for gas by community report as ordered by the Commission in Docket No. 15-GIMG-343-GIG.

Should Staff so desire, KGS will arrange to meet with Staff after making its 2020 Gas System Reliability Surcharge ("GSRS") filing to further discuss the progress made toward the completion of the Plan.

WHEREFORE, Kansas Gas Service, a division of ONE Gas, prays the Commission enter an Order accepting this compliance filing and for such other relief as the Commission may deem just and proper.

Respectfully submitted,

<u>/s/ J. J. Hitchye</u> Judy Jenkins Hitchye, KS # 23300 7421 West 129<sup>th</sup> Street Overland Park, Kansas 66213 Phone: 913-319-8615 Email: judy.jenkinshitchye@onegas.com

### Plan Update

Kansas Gas Service ("KGS" or "Company") began its systematic accelerated replacement plan ("Plan") in January 2019 and expects to replace all cast iron mains, bare steel service lines and bare steel mains located in populated areas within 35 years of the plan commencement date. Specifically, KGS's plan indicated that all remaining cast iron mains would be replaced by the end of 2019; all bare steel service lines in populated areas would be replaced by the end of 2024; the majority of unprotected bare steel mains in populated areas would be replaced by the end of 2028 and all replaced by the end of 2053; and all protected bare steel mains in populated areas would be replaced by the end of 2053.

In accordance with the Plan, in 2019, KGS established a goal to replace 8 miles of cast iron mains, 7,500 service lines, 10 miles of unprotected bare steel mains and 7 miles of protected bare steel mains. Actual replacements in 2019 are discussed below.

As a result of the Company's systematic accelerated replacement plan, KGS has accelerated the replacement footage of problematic pipe. In 2019, KGS completed the replacement of cast iron mains as planned. All known cast iron mains have now been removed from the Company's system. Additionally, in 2019, KGS replaced 7,814 bare steel service lines exceeding its goal of 7,500 replacements. KGS remains on target to remove all bare steel service lines by 2024. KGS has also replaced 6 miles of unprotected bare steel mains. Although this is slightly less than planned, it should be noted that for purposes of tracking replacements by location type (as is necessary to account for all removal under this plan), all associated projects need to be completed and entered into the Asset Register system of the Company's Geographic Information System. Because updating the Asset Register takes additional time to complete after the project

is in-service, it is possible that unprotected bare steel main projects were completed in 2019 but have not yet been updated in the Asset Register. As a result, the total footages for the calendar year which are reported from this system are potentially "under-reported." Further, first year "ramp-up" issues may have also contributed to KGS not realizing the target reduction of 10 miles of unprotected bare steel mains. However, KGS remains on target to complete the replacement of unprotected bare steel mains in populated areas by the end of 2053. Finally, KGS replaced 28 miles of protected bare steel mains in 2019, which is in excess of our goal. Likewise, KGS remains on target to complete the replacement of protected bare steel mains in 2019.

As of the date of this report, KGS does not have any revisions to the Final plan for Replacement of Obsolete Materials in Populated Areas.

## LMH-1 and LMH-2 Update

See below for the update to exhibits LMH-1 and LMH-2 as requested in the memorandum filed by KCC Staff on December 19, 2018.

LMH-1

Number of Urban Areas	348
Miles bare steel main <sup>1</sup>	1,267
Planned (miles/yr.) Replacement Rate	15-26
Number bare steel service lines <sup>1</sup>	31,950
Planned svc (line/yr.) Replacement Rate	7,500
Miles of cast iron mains	0
Years to completion	34
CY2019 underground leaks per 100 miles obsolete piping	10.71

<sup>&</sup>lt;sup>1</sup> As of 3/6/2020

Total project cost, current \$	\$1,760 million
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# LMH-2

Main Replacement Estimate (\$/mile)	\$500,000
Service Line Replacement Estimate (\$/ea.)	\$2,611
2019 CAPEX for safety for distribution system	\$47,104,867
Miles undesirable pipe replaced	126 miles
Average costs of replacing undesirable pipe (\$/mile-equivalent)	
Derived from Docket 20-KGSG-090-TAR	\$380,200

### Pipeline Safety Management System (PSMS) Implementation Update

KGS has been actively working to implement the American Petroleum Institute's (API) Recommended Practice (RP) 1173: Pipeline Safety Management System (PSMS) since 2016. On May 20, 2019, the American Gas Association (AGA) board asked member companies to commit to implementing PSMS within 3 years. KGS was an early and enthusiastic supporter of this industry-wide commitment.

To date, ONE Gas and KGS has placed an emphasis on four (4) of the 10 PSMS elements.

The elements, along with notable activities, are listed below.

- 1. Leadership and Management Commitment:
  - 2017 Dedicated resources were hired to focus on PSMS efforts and to move the initiatives forward.
  - 2017 An Environmental, Health, Safety and Compliance (EHS&C) Steering Committee was implemented. It is made up of Executive Leadership and ex-officio members and meets monthly to discuss key operations programs and areas.

• 2018 A gap assessment was performed to determine the then current state of PSMS.

• 2019 A signed AGA commitment letter towards implementing PSMS was delivered from the Senior Vice President of Operations and the CEO.

#### 2. Operational Controls:

• 2019 A ONE Gas procedure manual re-write was completed which consolidated three historical state-based operating procedures into one version to be utilized by all three divisions.

### 3. <u>Safety Assurance</u>:

• 2016 An internal Pipeline Safety Compliance Group (PSCG) was established and to focus on reviewing and generating action plans for gaps identified regarding key compliance programs and tasks.

#### 4. Emergency Preparedness and Response:

- 2019 The Pipeline Emergency Response Procedure (PERP) was updated to include the use of an Incident Command Structure (ICS) as noted in PSMS.
- 2019 PERP and ICS training was conducted for key stakeholders.
- 2019 Emergency response drills were conducted including local public officials. The Company attended Local Emergency Planning Committee (LEPC) meetings with emergency responders.

ONE Gas and KGS will continue toward implementation of all 10 elements and will monitor the overall maturity of its PSMS.

Below is Kansas Gas Service's submission reporting miles of facilities by material type and location. The information is provided in the format prescribed by Staff and reflects data as of March 6, 2020. The Company also provides the leak information as of December 31, 2019.

Miles of	Main by L	ocation	
	Urban	Rural	Total
Protected Coated	2,429	1,388	3,817
Protected bare	1,065	682	1,747
Unprotected Coated	0	1	1
Unprotected Bare	191	40	231
Cast Iron	0	0	0
PVC	1	146	147
PE	2,842	1,192	4,034
Aldyl-A & Marlex	1,084	451	1,535
Other	0	0	0
Total	7,612	3,900	11,512

Number of	Services by	y Location	
	Urban	Rural	Total
Protected Coated	5,894	2,088	7,982
Protected bare	5,049	2,346	7,395
Unprotected Coated	3,428	1,265	4,693
Unprotected Bare	19,949	4,606	24,555
Cast Iron	0	0	0
PVC	1	56	57
PE	362,166	106,805	468,971
Aldyl-A & Marlex	106,523	12,827	119,350
Other	0	0	0
Total	503,010	129,993	633,003

Leaks Found During Inspection Year by Leak Classification										
	Class 1	Class 2	Class 3	Total						
# of Leaks Found	1476	247	935	2658						
# of Leaks Repaired	1484	514	1479	3477						
# of Current Leaks	0	20	1249	1269						

# Note:

The differentiation between the urban and rural areas for this report is determined using a population density of 360 people per square mile based on census data. This delineation was derived after a review of Census Blocks at metropolitan interfaces between populated and rural

Because many of the small communities served by Kansas Gas Service have low population densities, they are likely within the rural location type.

Further, the number of distribution mains and services will not reconcile to the PHMSA distribution reports due to changes made to the Company's database systems over the last several months.

Kansas Gas Service will continue to refine this report as system improvements are made.

			MATE	RIALS SECTION		_	INSTALLATION AND OPERATIONS SECTION						
Line No.	Reporting Date	TYPE OF MATERIAL	(DESCRIBE IF OTHER)	MANUFACTURER	SDR,DR, SCHEDULE or WALL THICKNESS	SIZE	METHOD OF INSTALLATION (Open Trench, Bored, Plowed In, Insertion, Joint Trench, Planted, Unknown, Other - describe, Direct Bury)	METHOD_S TAND	TYPE OF SOIL IN CONTACT WITH PIPE (Sand, Loam, Clay, Rocky, Slurry, Other - describe)	OPERATING PRESSURE AT TIME OF FAILURE (psig)	OPERATING PRESSURE NORMAL RANGE MINIMUM (if known) (psig)	OPERATING PRESSURE NORMAL RANGE MAXIMUM (if known) (psig)	DATE OF INSTALLATION
1	Jan-19	HDPE3408		Drisco	0.090"	1/2" CTS	Open Trench		Clay	18			3/13/1968
2			Nylon Tee			2" IPS	Open Trench		Clay	18			2/25/1982
3			Nylon Tee			2" IPS	Open Trench		Other	25			8/25/1979
4			Nylon Tee	Amp		2" IPS	Open Trench		outor	25	20	40	8/18/1979
5			Nylon Tee	•		2" IPS	Open Trench			25	20	40	1979
6			Nylon Tee			2" IPS	Open Trench			25	20	40	7/27/1979
7			Nylon Tee	•		2" IPS	Open Trench			25	20	40	8/30/1979
8	Jan-19	MDPE2306	Nylon Tee	•	SDR 11	2" IPS	Open Trench		Clay	48			12/23/1980
9	Jan-19	HDPE3408	Nylon Tee	Amp	SDR 11	2" IPS	Open Trench			12	10	20	9/30/1980
10	Jan-19	MDPE2306		Plexco	SDR 11	2" IPS	Open Trench		Clay	45			1978
11		MDPE2306		Driver	0.090"	3/4" CTS	Open Trench		Loam	15			2/13/1985
12		HDPE3408				2" IPS	Unknown		Clay	25			1986
13 14		HDPE3408 MDPE2406		Drisco Drisco	0.090" 0.090"	3/4" CTS 3/4" CTS	Open Trench		Clay Clay	15 0.75			5/26/1989 5/8/2001
14		HDPE3408		Drisco	0.090"	3/4 CTS 3/4" CTS	Open Trench Open Trench		Clay	18			9/13/1995
16		MDPE2406		Diisco	0.030	3/4" CTS	Open Trench		Loam	0.88			7/12/2006
10		MPDE2406				3/4" CTS	Open Trench		Loam	0.88			7/12/2006
17		HDPE3408			0.090"	3/4" CTS	Open Trench		Loam	35			6/7/1980
10		MDPE2306		DuPont		2" IPS	Open Trench		Clay	18			1971
20			Nylon Tee	Amp		2" IPS	Open Trench		Clay	18			1/20/1982
21		HDPE3408		•		2" IPS	Open Trench		Clay	25			9/12/1979
22		HDPE3408		Amp		2" IPS	Open Trench		Clay	25			9/1/1979
23		HDPE3408	,			2" IPS	Open Trench			25			1979
24	Feb-19	HDPE3408	Nylon Tee		SDR 11	2" IPS	Open Trench		Rocky	1.25			1987
25		HDPE3408	,			2" IPS	Open Trench		Clay	25			10/19/1979
26	Feb-19	HDPE3408	Nylon Tee	Amp		2" IPS	Open Trench		Clay	58			1/13/1982
27		HDPE3408	,			2" IPS	Open Trench						10/18/1980
28		HDPE3408	,	Amp		2"	Open Trench	0	Clay	15			6/25/1979
29		HDPE3408	, ,	Amp		2"	Open Trench	0	Clay	50			11/15/1982
30		HDPE3408				2"	Open Trench	0	Clay	18			5/13/1979
31		HDPE3408		Amp		2"	Open Trench	0	Clay	48			11/28/1980
32		HDPE3408	,	•		2"	Open Trench	0	Clay	13			4/5/1977
33		HDPE3408		•		2"	Open Trench	0	Loam	18			11/6/1980
34		HDPE3408	,	Amp		2"	Open Trench	0	Clay	18			9/23/1981
35		HDPE3408	,	Amp		2"	Open Trench	0	Clay	18			1979
36		HDPE3408	,	•		2"	Open Trench	0	Clay	1.5			4/6/1982
37	war-19	HDPE3408	Nylori i ee	Amp	SDR 11	2"	Open Trench	0	Clay	1.75			4/13/1982
38	Mar-19	MDPE2406			0.090"	3/4 CTS	Open Trench	0	Clay	32			5/3/2005

						FAILURE ANALYSIS SECT	ΓΙΟΝ		Appendi
	FAILURE LOCATION (Pipe, Fitting or Joint)	FAILURE IN FITTING (Transition, Valve, Meter Riser, Mechanical Fitting, Heat Fusion Fitting, Electrofusion Fitting, Other describe)	Description of Other Fitting Type	Electrofusion, Butt	Description of Other Joint Type	FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	ADDITIONAL FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	Description of Material Defect or Other Failure Cause	DATE OF FAILURE
Line No.									
1	Joint			Mechanical, Nut Follower		Expansion/Contraction	OTHER		1/27/2019
2	Joint			Mechanical, Bolted		OTHER			5/4/2017
3	Joint Joint			Mechanical, Bolted		OTHER OTHER			12/19/2018 12/20/2018
4 5	Joint			Mechanical, Bolted		OTHER			12/20/2018
6	Joint			Mechanical, Bolted		OTHER			12/20/2018
7	Joint			Mechanical, Bolted		OTHER			12/20/2018
8	Joint			Mechanical, Bolted		OTHER			8/23/2018
9	Joint			Mechanical, Bolted		OTHER			2/22/2017
10	Joint			Butt Fusion		EXCESS EXTERNAL EARTH LOADING	INSTALLATION ERROR		1/11/2019
11	Joint			Mechanical, Nut Follower		OTHER			1/14/2019
12	Pipe					POINT LOADING			9/25/2018
13	Pipe					EXCESS EXTERNAL EARTH LOADING			1/4/2019
14	Pipe					EXCESS EXTERNAL EARTH LOADING			1/17/2019
15	Pipe					EXCESS EXTERNAL EARTH LOADING			8/30/2018
16	Fitting	Threaded Cap				Threaded Cap - Loose			1/31/2019
17	Fitting	Threaded Cap				Threaded Cap - Loose			1/31/2019
18	Fitting	Threaded Cap				Threaded Cap - Loose		Loose Threaded Cap on Tap Tee	2/26/2019
19	Joint			Socket Fusion		INSTALLATION ERROR			1/23/2018
20	Joint			Mechanical, bolted		OTHER			9/21/2017
21	Joint			Mechanical, bolted		OTHER			12/21/2018
22	Joint			Mechanical, bolted		OTHER			1/2/2019
23	Joint			Mechanical, bolted		OTHER			1/2/2019
24	Joint			Mechanical, bolted		OTHER			2/26/2019
25	Joint			Mechanical, bolted		OTHER			12/27/2018
26	Joint			Mechanical, bolted		OTHER			4/17/2017
27	Joint			Mechanical, bolted		OTHER Conduct/Oring			1/13/2019
28	Joint	l		Mechanical Saddle Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	3/6/2019
29	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	2/19/2019
30 31	Joint Joint			Mechanical Saddle		Gasket/Oring Gasket/Oring		Amp Saddle Leaking at Joint	3/13/2019 1/1/2019
31	Joint		+	Mechanical Saddle		Gasket/Oring Gasket/Oring		Amp Saddle Leaking at Joint Amp Saddle Leaking at Joint	3/8/2019
33	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint Amp Saddle Leaking at Joint	3/18/2019
33	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint Amp Saddle Leaking at Joint	3/19/2019
35	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	3/18/2019
36	Joint		+	Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	3/26/2019
37	Joint		1	Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	2/26/2019
<u> </u>		1		Mechanical, Nut			1		
38	Joint			Follower		INSTALLATION ERROR		Compression Coupling Pull Out	3/5/2019

			MATE	RIALS SECTION				INST	ALLATI	ON AND OPE	RATIONS S	SECTION	
Line No.	Reporting Date	TYPE OF MATERIAL	(DESCRIBE IF OTHER)	MANUFACTURER	SDR,DR, SCHEDULE or WALL THICKNESS	SIZE	METHOD OF INSTALLATION (Open Trench, Bored, Plowed In, Insertion, Joint Trench, Planted, Unknown, Other - describe, Direct Bury)	METHOD_S TAND	TYPE OF SOIL IN CONTACT WITH PIPE (Sand, Loam, Clay, Rocky, Slurry, Other - describe)	OPERATING PRESSURE AT TIME OF FAILURE (psig)	OPERATING PRESSURE NORMAL RANGE MINIMUM (if known) (psig)	OPERATING PRESSURE NORMAL RANGE MAXIMUM (if known) (psig)	DATE OF INSTALLATION
39	Mar-19	HDPE3408			0.090"	3/4 CTS	Open Trench	0	Clay	30			9/15/1985
40		HDPE3408		Drisco		3/4 CTS	Open Trench	0	Clay	14			8/11/1994
41		MDPE2406		Direct	0.090"	3/4 CTS	Open Trench	0	Clay	45			8/5/2003
42		HDPE3408				3/4 CTS	Open Trench	0	Clay	48			6/3/1992
43		MDPE2406			SDR 11	2"	Open Trench	0	Clay	35			2002
44		MDPE2406		Drisco		- 3/4 CTS	Open Trench	0	Clay	45			4/17/1992
45		HDPE3408				3/4 CTS	Open Trench	0	Clay	12			4/12/1994
46		MDPE2406		Plexco	0.090"	3/4 CTS	Open Trench	0	Clay	48			1/21/1999
47		MDPE2306			0.090"	1/2 CTS	Open Trench	0	Loam	18			2/19/1975
48		MDPE 2708				3/4" CTS	Open Trench	0	Clay	28			1/31/2005
49			Nylon Tee	Amp	SDR 11	2" IPS	Open Trench	0	Clay	20			7/20/1981
50		MDPE 2306	Ĺ	•		3/4"CTS	Open Trench	0	, í				9/7/1976
51	Apr-19	MDPE 2306				3/4"CTS	Open Trench	0					10/10/1979
52		MDPE 2406			SDR 11	2"	Open Trench	0					1994
53	Apr-19	HDPE3408			SDR 11	1.25"	Open Trench	0					1989
54	Apr-19	MDPE 2708				3/4"CTS	Open Trench	0	Clay	58			4/23/2014
									, i				
55	Apr-19	MDPE 2406				3/4"CTS	Open Trench	0	Clay	15			5/19/1995
56	Apr-19	MDPE 2708				3/4"CTS	Open Trench	0	Loam	35			3/11/2015
57	Apr-19	MDPE 2406			SDR 11	2"	Open Trench	0	Loam	58			1992
58	Apr-19	HDPE3408	MDPE2406		SDR 11	2" IPS	Open Trench	0					1991
59	Apr-19	MDPE 2306				3/4"CTS	Open Trench	0	Clay	36			10/25/1977
60	Apr-19	HDPE3408				3/4"CTS	Open Trench	0	Clay	48			8/8/1990
61	Apr-19	HDPE3408				3/4"CTS	Open Trench	0	Clay	48			5/29/1991
62	Apr-19	Nylon Tee/Ca		Amp		1/2" CTS	Open Trench	0	Clay	18			7/16/1979
63	May-19	HDPE3408	Nylon Tee	Amp	SDR 11	2"	Open Trench	0	Clay	45			6/10/1978
64	May-19	HDPE3408	Nylon Tee	Amp	SDR 11	2"	Open Trench	0	Clay	12			1980
65	May-19	HDPE3408		Driscopipe	0.090"	3/4" CTS	Open Trench	0	Clay	15			8/7/1981
66		HDPE3408				3/4" CTS	Open Trench	0	Clay	45			10/10/1990
67		HDPE3408	Nylon Tee	Amp	SDR 11	2"	Open Trench	0	Sand	18			11/6/1981
68	,	HDPE3408		Drisco		1" CTS	Open Trench	0	Clay	48			11/6/1989
69	May-19	MDPE2406		Drisco		3/4" CTS	Open Trench	0					12/1/1987
70		MDPE2406		Drisco		3/4" CTS	Open Trench	0					11/16/1987
71		HDPE3408		Drisco		3/4" CTS	Open Trench	0	Clay	48			12/27/1987
72	May-19	MDPE2406	Nylon Tee	Amp	SDR 11	2"	Open Trench	0	Clay	15			3/11/1983
73	May-19	MDPE2406				3/4" CTS	Open Trench	0	Clay	18			6/30/2004
74	May-19	HDPE3406				1/2" CTS	Open Trench	0					9/29/1979

						FAILURE ANALYSIS SECT	ION		Appendi
	FAILURE LOCATION (Pipe, Fitting or Joint)	FAILURE IN FITTING (Transition, Valve, Meter Riser, Mechanical Fitting, Heat Fusion Fitting, Electrofusion Fitting, Other - describe)	Description of Other Fitting Type	Electrofusion, Butt	Description of Other Joint Type	FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	ADDITIONAL FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	Description of Material Defect or Other Failure Cause	DATE OF FAILURE
Line No.				Mechanical, Nut					
39	Joint			Follower		Pipe Pullout of Coupling		Compression Coupling Pull Out	3/13/2019
40	Fitting	Threaded Cap				Threaded Cap - Loose		Loose Threaded Cap on Tap Tee	3/10/2019
41	Fitting	Threaded Cap				Threaded Cap - Loose		Loose Threaded Cap on Tap Tee	3/15/2019
42	Fitting	Threaded Cap				Threaded Cap - Loose		Loose Threaded Cap on Tap Tee	3/31/2017
43	Fitting	Threaded Cap				Threaded Cap - Loose		Loose Threaded Cap on Tap Tee	3/11/2019
44	Pipe					EXCESS EXTERNAL EARTH LOADING		Pipe sheared at transtion to steel	7/13/2018
45	Pipe					EXCESS EXTERNAL EARTH LOADING		Pipe sheared at transtion to steel	3/20/2017
46	Pipe					EXCESS EXTERNAL EARTH LOADING		Pipe sheared at transtion to steel	8/10/2018
47	Pipe					POINT LOADING		Tree Roots Grew Into Pipe	5/30/2018
48	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	1/16/2019
49	Joint			Mechanical Saddle		Gasket/Oring?		Amp Saddle Leaking at Joint	1/22/2018
50	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	12/10/2018
	i nang			Mechanical Nut					12/10/2010
51	Joint			Follower		Gasket/Oring		Loose Nut Follower	2/21/2019
52	Fitting	Tee Cap				Gasket/Oring		Loose cap on tap tee	1/7/2019
52	i nung			Mechanical Nut		Gaskeroning			1/1/2013
53	Joint			Follower		Gasket/Oring		Leak at Nut Follower	4/8/2019
54	Joint			PE/Steel Transition		Ground Movement		Leak at Transition	5/2/2019
54	30111			Mechanical Nut		Glound Movement			5/2/2019
55	Joint			Follower		Ground Movement		PE Pulled at Stiffener	5/7/2019
56	Pipe					Gopher		Gopher chewed through pipe	5/6/2019
57	Fitting	Purge Point Cap				Threaded Cap - Loose			5/10/2019
58	Joint			Butt Fusion		INSTALLATION ERROR		Loose cap on purge point Compatibility fusion failure	5/16/2019
		Sonvice Tee Con		Duit i usion					4/24/2019
59	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	
60	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	9/11/2017
61	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee Loose cap on Amp saddle tee	9/25/2017
62	Fitting	Service Tee Cap		Mechanical Saddle		Threaded Cap - Loose Gasket/Oring		Amp Saddle Leaking at Joint	5/28/2019 4/5/2018
63	Joint			Mechanical Saddle				· · · ·	
64	Joint					Gasket/Oring		Amp Saddle Leaking at Joint	2/4/2019
65	Joint			Mechanical Nut Follower		EXCESS EXTERNAL EARTH LOADING		Pipe pull out of Service Head Adapter	4/2/2019
66	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	8/8/2018
67	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	5/23/2017
68	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	7/31/2017
69	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	8/15/2017
70	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	8/15/2017
71	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	8/21/2017
72	Joint			Mechanical Saddle		Gasket/Oring		Amp Saddle Leaking at Joint	8/23/2017
73	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee/replaced gasket	8/25/2017
74	Fitting	Service Tee Cap				Threaded Cap - Loose		Loose cap on tap tee	8/28/2017

			MATE	RIALS SECTION		-	INSTALLATION AND OPERATIONS SECTION						
Line No.	Reporting Date	TYPE OF MATERIAL	(DESCRIBE IF OTHER)	MANUFACTURER	SDR,DR, SCHEDULE or WALL THICKNESS	SIZE	METHOD OF INSTALLATION (Open Trench, Bored, Plowed In, Insertion, Joint Trench, Planted, Unknown, Other - describe, Direct Bury)	TAND	TYPE OF SOIL IN CONTACT WITH PIPE (Sand, Loam, Clay, Rocky, Slurry, Other - describe)	OPERATING PRESSURE AT TIME OF FAILURE (psig)	OPERATING PRESSURE NORMAL RANGE MINIMUM (if known) (psig)	OPERATING PRESSURE NORMAL RANGE MAXIMUM (if known) (psig)	DATE OF INSTALLATION
75	May-19	PVC				2"	Open Trench	0	Loam	36			1973
76	May-19					2"	Open Trench	0	Loam	36			1973
10	May 10					2		Ů	Loann				1070
77	May-19	PVC	Dresser			2"	Open Trench	0	Loam	36			1973
	<u> </u>												
78	May-19	HDPE3408		Driscopipe	0.090"	3/4"CTS	Open Trench	0	Loam	18			11/17/1981
79	May-19	HDPE3408		Driscopipe8000	0.090"	3/4"CTS	Open Trench	0	Clay	50			5/29/1992
80	Jun-19	HDPE3408		Performance Pipe		3/4" CTS	Open Trench	0	Clay	18			6/21/2017
81		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Clay	1.88			4/28/1997
82		HDPE3408		Driscopipe		4" IPS	Open Trench	0	Clay	18			
83		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Clay	1.5			
84		MDPE2406		Driscopipe		3/4" CTS	Open Trench	0	Clay	15			9/29/1975
85		HDPE3408		Driscopipe		1/2" CTS	Open Trench	0	Clay	18			8/30/1973
86		HDPE3408		Driscopipe		3/4" CTS		0					2/13/1993
87		MDPE2406		Polypipe		3/4"CTS	Open Trench	0	Sand	10			7/23/1991
88		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Clay	48			12/20/1996
89		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Sand	46			10/13/2006
90		HDPE3408		Performance Pipe		3/4" CTS		0		40			4/15/2009
91		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Sand	18			8/3/1992
92		HDPE3408		Other	_	2" IPS		0		45			4/11/1983
93		HDPE3408		Driscopipe	_	1" CTS	Open Trench	0	Clay	15			1/31/2006
94		MDPE2406		Plexco		2" IPS	Open Trench		Clay	6			4/4/4000
95	Jul-19			Other		2" IPS	Open Trench	0	Sand	36			1/1/1930
96		HDPE3408		Driscopipe		1/2" CTS	Open Trench	0	Clay	18			6/28/1979
97		HDPE3408 MDPE2406	+	Driscopipe		1/2" CTS 1" CTS	Open Trench	0	Clay	18 0.81			6/7/2017
98 99		HDPE3406	+ +	Driscopipe		2" CTS	Open Trench Open Trench	0	Loam Clay	45			2/16/2016 9/23/1987
100		HDPE3408		Driscopipe Driscopipe		3/4" CTS	Open Trench	0	Clay	15			9/23/1907
100		HDPE3408		Driscopipe		3/4"CTS	Open Trench	0	Clay	36			8/14/1979
101		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Clay	12			3/23/1976
102		HDPE3408		Other		3/4" CTS	Open Trench	0	0	12			8/3/1987
103		MDPE2406	+ +	Driscopipe		1-1/4" IPS		0	Clay	45			9/30/2019
104		HDPE3408	1	Other	1	3/4" CTS	Open Trench	0	Clay	20			4/6/1983
106		HDPE3408		Driscopipe		3/4" CTS	Open Trench	0	Clay	18			4/11/1983
107		MDPE2406		Driscopipe		3/4" CTS	Open Trench	0	, í				7/25/2007
108	-	HDPE3408		Driscopipe		1" CTS	Open Trench	0	Clay	45			1/10/1989
109	-	MDPE2406	1	Driscopipe		1" IPS	Open Trench	0	Loam	45			7/19/2005
110	-	MDPE2406	1	Driscopipe		4" IPS	Open Trench	0		0			1
111	Aug-19	MDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	45			10/24/1979
112		HDPE3408		Other		2" IPS	Open Trench	0	Clay	24			

						FAILURE ANALYSIS SECT	ION		Appendi
			1	1	1				
Line No.	FAILURE LOCATION (Pipe, Fitting or Joint)	FAILURE IN FITTING (Transition, Valve, Meter Riser, Mechanical Fitting, Heat Fusion Fitting, Electrofusion Fitting, Other - describe)	Description of Other Fitting Type	Electrofusion, Butt	Description of Other Joint Type	FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	ADDITIONAL FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	Description of Material Defect or Other Failure Cause	DATE OF FAILURE
LINE NO.				Mechanical Nut					
75	Joint			Follower		Gasket/Oring		Loose threads on 3-way connecting PVC	4/10/2019
76	Fitting	90 Elbow - Solvent Cement				Unknown - abandoned		Leaking PVC elbow	4/10/2019
				Mechanical Nut					
77	Joint			Follower		Gasket/Oring		eak between PVC pipe and Dresser coupling	4/10/2019
				Mechanical Nut					
78	Joint			Follower		Gasket/Oring		Service Head Adapter leaking	4/16/2019
79	Pipe					Ground Settling		Pipe sheared at transition stiffener	4/24/2019
80	Pipe							Shovel excavation pierced pipe6/3/2019	6/3/2019
81	Pipe					Ground movement around tapping tee		Pipe leaking	6/4/2019
82	Joint			Butt Fusion		Installation error		Fusion Defect	6/4/2019
83	Fitting	Tap Connection				O-Ring failed		Gasket Failure	6/4/2019
84	Fitting	Meter Riser				O-ring failure		O-ring failure	6/5/2019
85	Fitting	Tap Connection				Threaded Cap-Loose		Loose cap on tee	6/6/2019
86	Fitting	Meter Riser				Tree root around riser	Unknown-not excavated	Tree root grew around riser	6/11/2019
87	Pipe					Excessive external earth loading	Unknown-Not excavated	Bank collapse severed service line at tap	6/12/2019
88	Pipe					Natural Forces	Unknown-not excavated	Lightning struck tree, put pin hole in pipe	6/15/2019
89	Pipe	Excess Flow Valve				Installation error	Excessive external earth loading	tiffner pierced EFV due to improper backfillin	
90	Pipe					Unknown	Unknown	Service sheared at service tee	6/19/2019
91	Fitting	Service Tee Cap				Natural Forces		Tree root stress loosened cap	6/22/2019
92	Fitting	Tap Connection		Mechanical	Gasket	Equipment Failure		Fitting loosened leaking at gasket	6/24/2019
93	Pipe					Point loading		Water Pipe rubbing on gas line	6/24/2019
94	Fitting	Service tee cap				Natural forces		High volume tee cap loose	7/2/2019
95	Fitting	Collar				Natural forces		Collar leaking	7/3/2019
96	Joint	Service tee cap				Natural forces		Tee cap loose	7/9/2019
97	Fitting	Service tee cap				Natural forces		Tee cap loose	7/10/2019
98	Fitting	Meter Riser				Equipment failure		Riser coming apart at sleeve	7/10/2019
99	Fitting	Тар Сар				Installation error		Tracer wire in cap-removed and tightened	7/15/2019
100	Pipe	Our is a t				Installation error	Point loading	Service sheared at casing-improper backfilling	
101	Fitting	Service tee cap				Installation error	Empresident and an all the P	Tee cap loose	7/16/2019
102	Pipe	Comies to a ser				Natural Forces	Excessive external earth loading	Service line sheared	7/17/2019
103	Fitting	Service tee cap				Installation error	Outtor backed out to for	Tee cap loose	7/22/2019
104	Fitting	Service tee cap				Installation error	Cutter backed out to far	Cutter backed out to far-cap leaking	7/25/2019
105	Pipe Pipe	0				Installation error Installation Error		Improper backfilling	7/26/2019 7/27/2019
106 107	Fitting	Service tee cap				INSTALLATION ERROR		No sleeve installed-pipe sheared Tee cap loose	8/7/2019
107	Fitting	Service Tee Cap	+			Expansion/Contraction		Tee Cap loose	8/30/2019
108	Pipe		+			Installation error		Pipe was damaged during installation	7/19/2005
110	Fitting	Purge Cap				Equipment Failure		Cap loose - O-ring leaking	9/3/2019
110	Fitting	Saddle Tee oring				Equipment failure		Saddle tee o-ring leaking	9/14/2019
112	Fitting	Amfit Saddle				Installation error		Saddle o-ring leaking	8/19/2019
112	inung		4	ļ	Į		<u>I</u>		0/10/2013

MATERIALS SECTION							INSTALLATION AND OPERATIONS SECTION						
Line No.	Reporting Date	TYPE OF MATERIAL	(DESCRIBE IF OTHER)	MANUFACTURER	SDR,DR, SCHEDULE or WALL THICKNESS	SIZE	METHOD OF INSTALLATION (Open Trench, Bored, Plowed In, Insertion, Joint Trench, Planted, Unknown, Other - describe, Direct Bury)	METHOD_S TAND	TYPE OF SOIL IN CONTACT WITH PIPE (Sand, Loam, Clay, Rocky, Slurry, Other - describe)	OPERATING PRESSURE AT TIME OF FAILURE (psig)	OPERATING PRESSURE NORMAL RANGE MINIMUM (if known) (psig)	OPERATING PRESSURE NORMAL RANGE MAXIMUM (if known) (psig)	DATE OF INSTALLATION
113	Sep-19	MDPE2406		Driscopipe		3/4" CTS	Open Trench	0					7/25/2007
114	Sep-19	HDPE3408		Driscopipe		1" CTS	Open Trench	0	Clay	45			1/10/1989
115		MDPE2406		Driscopipe		1" IPS	Open Trench	0	Loam	45			7/19/2005
116	Sep-19	MDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	45			10/24/1979
117		HDPE3406		Other		2" IPS	Open Trench	0	Clay	15			12/9/1992
118	Sep-19	MDPE2406		Driscopipe		7/8" CTS	Open Trench	0	Clay	25			8/12/2009
119	Sep-19	HDPE3408		Other		3/4" CTS	Open Trench	0	Clay	45			7/13/1979
120		HDPE3408		Other		7/8" CTS	Open Trench	0					9/10/1983
121	Oct-19	MDPE2406		Driscopipe		4" IPS	Open Trench	0	Clay	50			12/12/2001
122	Oct-19	MDPE2406		Plexco		3/4" CTS	Open Trench	0	Clay	48			10/1/2004
123	Oct-19	MDPE2406		Poly Pipe, Inc		2" IPS	Open Trench	0	Clay	20			7/19/2005
124	Oct-19	M-8000		Driscopipe		3/4"CTS	Open Trench	0	Loam	30			1/10/1989
125	Oct-19	HDPE3406		Other		3/4" CTS	Open Trench	0	Clay	35			4/7/1981
126	Oct-19	HDPE3406		Driscopipe		2" IPS	Open Trench	0	Sand	40			10/25/1979
127	Oct-19	HDPE2406		Driscopipe		3/4" CTS	Open Trench	0	Clay	45			1/1/1973
128	Nov-19	MDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	15			6/5/2019
129	Nov-19	MDPE2406		Plexco		3/4" CTS	Open Trench	0	Clay	50			11/21/1991
130	Nov-19	MDPE2406		Driscopipe		3/4" CTS	Open Trench	0	Clay	10			2/25/2014
131	Nov-19	MDPE2406		Other		3/4"CTS	Open Trench	0	Clay	18			4/18/2019
132	Nov-19	HDPE3406		Other		2" IPS	Open Trench	0	Clay	18			5/25/1981
133	Nov-19	HDPE3406		Other		3/4" CTS	Open Trench	0	Clay	36			10/25/1979
134	Dec-19	MDPE2406		Performance		3/4" CTS	Open Trench	0	Clay	23			9/4/2015
135	Dec-19	HDPE3406		Driscopipe		2" IPS	Open Trench	0	Clay	20			3/28/2005
136		HDPE3406		Driscopipe		3/4" CTS	Open Trench	0	Clay	38			4/9/2014
137		HDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	5			1/1/1980
138		MDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	18			1/17/1979
139	Dec-19			AldylA		2" IPS	Open Trench	0	Clay	45			8/15/1991
140		MDPE2406		Driscopipe		1-1/4" IPS		0	Clay	30			12/7/1970
141		MDPE2406		Driscopipe		2" IPS	Open Trench	0	Clay	18			1/8/1982
142		MDPE2406		Driscopipe		1-1/4" IPS		0	Clay	15			7/17/2006
143	Dec-19	HDPE3406		Driscopipe		2" IPS	Open Trench	0	Clay	32			5/30/1978

	FAILURE ANALYSIS SECTION										
Line No.	FAILURE LOCATION (Pipe, Fitting or Joint)	FAILURE IN FITTING (Transition, Valve, Meter Riser, Mechanical Fitting, Heat Fusion Fitting, Electrofusion Fitting, Other - describe)	Description of Other Fitting Type	FAILURE IN JOINT (Mechanical, Electrofusion, Butt Fusion, Socket Fusion, Saddle Fusion, Solvent, Other - describe)	Description of Other Joint Type	FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	ADDITIONAL FAILURE CAUSE (Squeeze Off, Point Loading, Excessive Expansion/Contraction, Excessive External Earth Loading, Installation Error, Previous Impact, Unknown, Unknown - not excavated - abandoned, Unknown - not excavated - replaced, Material Defect - describe, Other - describe)	Description of Material Defect or Other Failure Cause	DATE OF FAILURE		
113	Fitting	Service tee cap				INSTALLATION ERROR		Tee cap loose	8/7/2019		
114	Fitting	Service Tee Cap				Expansion/Contraction		Tee Cap Loose	8/30/2019		
115	Pipe					Installation error		Pipe was damaged during installation	9/3/2019		
116	Fitting	Saddle Tee oring				Equipment failure		Saddle tee o-ring leaking	9/4/2019		
117	Fitting	Saddle Tee				Equipment Failure		Leak under top part of saddle tee	9/13/2019		
118	Fitting	Meter Riser				Excessive Ground Movement		Riser had leak	9/17/2019		
119	Fitting	Amp-Fit Saddle				Equipment Failure		Saddle leaking	9/20/2019		
120	Fitting	Tap Connection				Equipment Failure		Cap leaking	9/23/2019		
121	Joint	•		Butt fusion		Installation Error		Butt Fusion Leaking	10/2/2019		
122	Fitting	Meter Riser				Equipment Failure		Nut Casing leaking	10/4/2019		
123	Valve	Other		Valve Stem		Equipment Failure		Valve leaking around stem	10/9/2019		
124	Pipe	Heat Fusion				Other(Describe): Cold Fusion		Fusion Leaking	10/13/2019		
125	Fitting	Mechanical Fitting				Equipment Failure		Gasket O-Ring Leaking	10/15/2019		
126	Fitting	Mechanical Fitting				Equipment Failure		Gasket O-Ring Leaking	10/15/2019		
127	Pipe					Excessive External Earth Loading	Point Loading	Pipe failed at casing edge	10/23/2019		
128	Pipe			Pipe Wall		Unknown		Possible Material Defect	11/13/2019		
129	Valve	Valve				Extensive Expansion/Contraction		Valve Cap O-ring Leaking	11/19/2019		
130	Pipe					Excessive External Earth Loading		Pipe sheared at stiffner	11/1/2019		
131	Fitting	Valve	EFV			Unknown	Unknown	Valve body leaking	11/7/2019		
132	Fitting	Transition				Equipment Failure		Gasket O-Ring Leaking	11/1/2019		
133	Pipe					Excessive External Earth Loading		Pipe sheared at stiffner	11/18/2019		
134	Fitting	Tapping Tee Cap		Pipe Wall		Equipment Failure		Valve Cap O-ring Leaking	11/6/2019		
135	Fitting	Tapping Tee		Joint		Equipment Failure		Gasket O-ring leaking	12/2/2019		
136	Fitting	Tapping Tee		Сар		Incorrect Operations		Cap not tightened	11/17/2019		
137	Fitting	Tapping Tee		Joint		Equipment Failure		Gasket o-ring leaking	5/13/2019		
138	Fitting	Tapping Tee		Joint		Equipment Failure		Gasket O-Ring Leaking	1/23/2018		
139	Pipe			Joint		Equpment Failure		Fusion joint leaked	12/11/2019		
140	Fitting	Tapping Tee		Сар		Equipment Failure		Cap gasket leaking	12/12/2019		
141	Fitting	Tapping Tee		Joint		Equipment Failure		Gasket O-ring leaking	2/2/2018		
142	Pipe			Pipe Wall		POINT LOADING		Pipe Wall Pierced by Asphalt	1/17/2019		
143	Fitting	Tapping Tee		Сар		Natural Forces		Cap Loosened, Leaking	9/28/2019		

#### VERIFICATION

STATE OF KANSAS COUNTY OF JOHNSON

I, Judy Jenkins Hitchye, of lawful age, being first duly sworn upon oath, states as follows: I am a Managing Attorney for Kansas Gas Service, a Division of ONE Gas, Inc. I have read the above *Compliance Filing* and all the statements therein are true to the best of my knowledge, information and belief.

<u>/s/ G.G. Hitchye</u> Judy Jenkins Hitchye

Affiant

SUBSCRIBED AND SWORN to before me on  $\frac{4/9/2020}{2020}$ .

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Notary public

My Appointment Expires:

06/05/2022



#### **CERTIFICATE OF SERVICE**

I, Judy Jenkins Hitchye, hereby certify that a copy of the above and foregoing *Compliance Filing* was forwarded this 9<sup>th</sup> day of April, 2020, addressed to:

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1sl g.g. Hitchye

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