

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of Black Hills/Kansas Gas Utility)
Company, LLC, d/b/a Black Hills Energy ("Black)
Hills"), Compliance Filing of its Accelerated Pipe) Docket No. 18-BHCG-319-CPL
Replacement Plan Pursuant to the Commission)
Orders in Docket No. 15-GIMG-343-GIG)

FINAL ACCELERATED PIPE REPLACEMENT PLAN

Black Hills/Kansas Gas Utility Company, LLC, d/b/a Black Hills Energy ("Black Hills"), submits the following final plan for the replacement of obsolete pipe pursuant to the Final Order issued by the Kansas Corporation Commission ("Commission") on September 12, 2017, and confirmed through the Order Denying Petitions for Reconsideration and Granting Clarification ("Order") on October 26, 2017, in Docket No. 15-GIMG-343-GIG ("343 Docket"):

(1) A seven-year Phase 1 plan to eliminate all bare steel mains, bare steel service lines, and bare steel yard lines in Class 3/urban locations and a ten-year Phase 2 plan to eliminate all remaining obsolete pipe in Kansas.

(2) A plan for increased leak detection of obsolete plastic pipe as ordered by the Commission.

(3) An annual lost and unaccounted for gas ("L&U") report for cities having over 10,000 customers as ordered by the Commission.

I. BACKGROUND: BLACK HILLS' INTEGRITY SPENDING IN KANSAS SINCE IT ACQUIRED THE AQUILA KANSAS GAS OPERATIONS IN 2008

A. BLACK HILLS' KANSAS OPERATIONS

1. Black Hills acquired Aquila Inc.'s ("Aquila") Kansas gas operations in 2008.¹ Black

¹Direct Testimony of Todd J. Jacobs ("Jacobs Direct"), page 4, lines 10-12, filed October 8, 2015, in the 343 Docket.

Hills' serves approximately 113,000 retail customers in 65 communities and areas in 48 counties in Kansas.² The Kansas operations have service centers in Lawrence, Wichita, Garden City, Dodge City, Liberal and Goodland.³ At the time the 343 Docket was opened, Black Hills served 27,959 customers in Wichita, 33,534 customers in Lawrence and 49,769 customers in the remainder of the state.⁴ Most towns in the service territory experience minimal to low growth and some are struggling to maintain population.⁵ As indicated in the testimony filed in the 343 Docket, Black Hills operates approximately 293 miles of transmission pipeline, 2,801 miles of distribution pipeline and 99,570 service/yard lines in the State of Kansas.⁶

B. PIPE REPLACEMENT DURING THE 2008-2013 PERIOD

2. As set forth in its testimony submitted in the 343 Docket, Black Hills has increased integrity capital spending to replace aged and deteriorated assets since its 2008 acquisition of Aquila's Kansas gas operations.⁷ Between 2008 and 2013 Black Hills nearly doubled the amount of miles of main that Aquila replaced the last year it operated the gas system, from around nine miles replaced in 2007 to an average of about 18 miles replaced per year between 2008 and 2013. Black Hills also continued to replace over 1,100 service lines per year.⁸

C. BLACK HILLS' EXPERIENCE WITH THE GSRS MECHANISM

²Direct Testimony of Jerry A. Watkins ("Watkins Direct"), page 3, lines 9-21, filed October 8, 2015, in the 343 Docket.

³*Id.* at page 3, lines 12-14.

⁴*Id.* at page 3, lines 15-17.

⁵*Id.* at page 3, lines 17-19.

⁶*Id.* at page 3, lines 19-21.

⁷Jacobs Direct, page 4, lines 10-12.

⁸*Id.* at page 4, lines 12-17 (Table 1).

3. Since 2008, Black Hills has been replacing pipe and other assets that are eligible under the Gas Safety and Reliability Policy Act ("GSRS") at or near the maximum allowed under the GSRS residential cap, spending over \$30 million since 2008.⁹ Between 2008 and 2014, system leaks declined significantly, demonstrating these investments have had an impact on safety. Black Hills has replaced about \$6.4 million in GSRS eligible pipe and other assets per year and improved safety by reducing leaks, with a reasonable impact on customers' bills.¹⁰

D. 2014 RATE CASE ACCELERATED PIPE REPLACEMENT PROPOSAL

4. Black Hills proposed a three-year accelerated pipeline replacement rider in its 2014 rate case.¹¹ That plan proposed replacement of two high pressure lines near Wichita, replacement of bare steel risers and services in Lawrence and installation of odorization equipment on all farm taps, which take unodorized natural gas off interstate pipelines.¹² Black Hills proposal was deferred to the 343 Docket.¹³

E. 343 DOCKET PROPOSAL

5. Black Hills' proposal in the 343 Docket would have authorized it to spend approximately \$6.5 million additional investment per year under a pilot program to target replacement of the highest risk piping using Black Hills' replacement prioritization model.¹⁴ Under the proposal, Black Hills would have reduced the replacement time required to eliminate

⁹*Id.* at page 6, lines 10-18.

¹⁰*Id.* at page 6, lines 16-22.

¹¹*Id.* at page 5, lines 14-20.

¹²*Id.* at page 5, lines 16-19.

¹³*Id.* at page 5, lines 19-20.

¹⁴*Id.* at page 10, lines 4-10.

undesirable piping in its system from 74 years to 31 years.¹⁵ In general, the plan would focus on replacement of all bare steel service lines and yard lines in the next ten years due to the close proximity of these lines to dwellings and small commercial businesses.¹⁶ In order to avoid more frequent rate cases, Black Hills proposed a tracker that would have permitted it to earn a return on and return of its investment, similar to the current GSRS mechanism, however, the earnings would have begun to accrue at the rate of return approved in Black Hills' last rate case from the month the eligible assets were placed in service and being used by the customers.¹⁷ Carrying charges would have been held in a regulatory asset account and treated as additions to rate base, so a return would be earned on both the asset and carrying charges and so there would have been no regulatory lag on the invested capital.¹⁸ A tariff filing outlining a process similar to the GSRS process would have been made annually to request the surcharge, then approved by the Commission using a process and timeline similar to the process used by the Commission to review and approve the utility's GSRS annual filing.¹⁹ The pilot program would require annual filings and be reviewed every five years.²⁰ As part of the plan, Black Hills committed to a three year rate moratorium unless it was willing to forego recovery of a portion of its rate case expenses and provided there were no extenuating events.²¹ The rate impact to residential customers under the proposed plan was about \$0.21 per

¹⁵*Id.* at page 10, lines 6-10.

¹⁶*Id.* at page 10, lines 11-14.

¹⁷*Id.* at page 10, lines 14-17.

¹⁸*Id.* at page 10, lines 17-20.

¹⁹*Id.* at page 10, line 20 through page 11, line 3.

²⁰*Id.* at page 11, lines 3-10.

²¹*Id.* at page 12, lines 4-6.

month in year one, increasing to \$0.55 per month in year two and \$0.88 per month in year three.²²

II. ACCELERATION OF PIPE REPLACEMENT PLAN

A. BLACK HILLS' CURRENT INVENTORY OF OBSOLETE PIPE

6. Black Hills' estimated current inventory in Class 3 or urban areas consists of 139 miles of bare steel main, 6,725 bare steel service lines, and 22,217 bare steel yard lines in Kansas.

7. Black Hills estimated current inventory in all other locations consists of 71 miles of bare steel mains, 100 miles of Aldyl-A mains, 498 miles of PVC mains and 8,031 obsolete service and yard lines in Kansas. Black Hills current inventory listed above does not include pipeline tap or farm tap scenarios.

B. PIPE REPLACEMENT PLAN

8. Black Hills will initiate a systematic accelerated pipe replacement program for all mains, service lines and yard lines made of obsolete materials in two phases, with the first phase ("Phase 1") being Class 3 or urban locations and the second phase ("Phase 2"), being all remaining areas in Kansas.

a. PHASE 1 OF PLAN

9. The Order in the 343 Docket recommended a 10-year schedule to replace bare steel in Class 3 urban areas. Black Hills defines the transmission term 'Class 3' as 'within city limits', or 'urban areas' thus capturing the concentrated, or more urban-like, distribution customers. Therefore, all bare steel mains, bare steel service lines and bare steel yard lines within the city limits of the communities served by Black Hills will be the focus of Phase 1. Black Hills will perform the recommended replacements in all Class 3 locations within seven (7) years, commencing in

²²*Id.* at page 13, lines 8-12.

mid-2018.

10. Table 1, which is attached to this plan as Exhibit A and incorporated herein by reference, shows the replacement plan by year for 2018-2024, including estimated costs and number of units, by category. Estimated costs per unit have been increased three percent (3%) annually for inflation. The estimated replacements shown by year in Table 1 may vary year to year depending upon such things as increases in investment for pipeline relocations due to government road projects and for other investments, however, it is the intent of Black Hills to complete the replacement of all steel mains, bare steel service lines and bare steel yard lines within the city limits of the communities served by Black Hills by the end of the seven (7) year period.

11. The total cost of Phase 1 replacements is estimated to be \$79,016,987, and will result in the replacement of approximately 139 miles of bare steel main, 22,217 bare steel yard lines, and 6,725 bare steel service lines.

b. PHASE 2 OF PLAN

12. In Phase 2 of the plan, all remaining bare steel mains, bare steel service lines, and bare steel yard lines, plus all remaining obsolete pipe comprised of Aldyl-A and PVC materials throughout all of Black Hills' service territory will be replaced. Black Hills proposes Phase 2 commence at the conclusion of Phase 1 and be completed within an additional ten (10) year time period.

13. Table 2, which is attached hereto as Exhibit B and incorporated herein by reference, shows the total estimated cost by asset type for Phase 2 of the replacement plan. The total estimated cost of Phase 2 investment, including inflation of three percent (3%) per year, is \$138,609,603.

C. PRIORITIZATION MODEL

14. Black Hills will utilize and enhance its existing Project Capital Allocation

Prioritization Model²³ and develop other prioritization tools to help determine a systematic and targeted replacement criteria based on risk as deemed necessary as execution of the plan progresses. Prioritization methodology may be adjusted initially and from time to time to account for proactive replacement and updated knowledge of the system. Black Hills prioritization methodology will also consider geographical areas and their proximity to other projects to minimize customer, neighborhood, or traffic impacts.

15. Black Hills will gather data to determine the prioritization score of each replacement project. The prioritization ranking developed from the model, as well as other factors, will be used by Black Hills to determine the order of pipe replacement. The current point system used by Black Hills positively correlates with and supports this 17-year replacement schedule as being proactive for the reliability of our system. All materials would be given priority using the current point system as necessary, and certain projects within each Phase will be given priority status, as appropriate.

D. FINANCIAL AND RATE IMPACT

16. Black Hills currently invests, on average, approximately \$8 million dollars annually on projects that are eligible for the GSRS mechanism, of which approximately \$2 million is for government-mandated road relocation projects and other safety related items. The remainder is for specific safety-related system replacement projects. Black Hills proposes to increase its spend level under this program by an additional \$5 million each year, more or less, to eliminate obsolete pipe in Kansas.

17. Black Hills will continue utilizing the GSRS mechanism over the course of the accelerated replacement plan and will file the proactive replacement projects completed under this plan for recovery through the GSRS mechanism and/or through general and abbreviated rate case

²³ Attached as Exhibit JAW-3 of Watkins Direct.

flings. The newly enacted legislation raising the GSRS cap from \$0.40 to \$0.80 will help Black Hills to recover its investments made under this plan and should delay general rate case proceedings.

18. Assuming a general rate case filing in the 2020-2021 period, an abbreviated rate case filing in 2022 and another general rate case filing in 2025, the estimated monthly impact to residential customers under the plan is \$1.76 in 2021, an additional \$0.20 in 2022, and an additional increase of \$1.56 after 2025. These rate impacts are in addition to the \$0.40 per month that is currently allowed to be recovered under the GSRS surcharge.

III. REPORTING AND COMPLIANCE

A. INCREASE IN LEAK DETECTION SURVEYS

19. Black Hills will increase leak detection surveys of obsolete plastic pipe from five (5) years to three (3) years beginning with one-third of total obsolete plastic pipe in 2018. Black Hills identifies obsolete plastic pipe as pre-1973 Aldyl-A and PVC mains, service and yard lines in Class 3 or urban areas.

B. L&U REPORTS

20. Black Hills acknowledges the Commission's requirement for an annual reporting of L&U for communities of 10,000 or more customers. For Black Hills, this will include the communities of Lawrence, Wichita, and Garden City. Black Hills will continue reporting L&U for the state of Kansas as it has historically done. Black Hills has concerns as to whether such L&U reports can be a meaningful tool in measuring the effectiveness of the accelerated pipe replacement plan. L&U is primarily used as an accounting mechanism to balance the receipts and deliveries of gas and is the difference between the total gas that Black Hills purchases and the amount it ultimately delivers to customers. It includes all components of loss, such as third party damages, leakage, venting, theft, measurement and billing errors, billing cycles, and other considerations. The

amount and variability of diverse contributors to L&U make specific quantification of an individual components impact, in this case leakage, a very difficult task.

C. PERIODIC MEETINGS WITH STAFF AND CURB

21. Black Hills is supportive of a meeting with Staff and CURB on a regular basis to update them of the progress of the plan.

IV. BLACK HILLS' DECISION NOT TO IMPLEMENT THE COMMISSION'S PROPOSED ARP

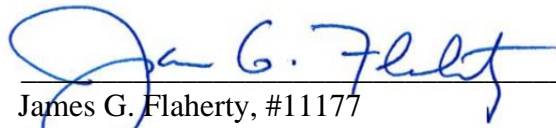
22. Black Hills intends to begin implementing its plan by mid-2018. Under present circumstances, Black Hills has no plans to file a general rate case in the near future. Since use of the Commission's proposed ARP first requires the gas utility to file a general rate case, Black Hills does not currently plan to implement the ARP.

V. SUMMARY

23. Black Hills will increase its level of spending by approximately \$5 million each year for the next 17 years to eliminate all obsolete pipe in Kansas. This amount is above and beyond the current spend level in the GSRS rider program.

24. The accelerated replacement plan will be completed in two phases. The timeline for Black Hills' Phase 1 accelerated pipe replacement plan, which includes replacing all bare steel main, bare steel service lines, and bare steel yard lines in Class 3 or urban areas is seven years with a total estimated investment of \$79,016,987. The timeline for Black Hills Phase 2 accelerated pipe replacement plan, which includes replacing all remaining obsolete pipe in Kansas is 10 years with a total estimated investment of \$ 138,609,603. Black Hills feels this timeline is achievable and the right course of action to ensure the ongoing safety and integrity of its distribution system.

WHEREFORE, Black Hills Energy submits this final plan as requested by the Commission in the 343 Docket.



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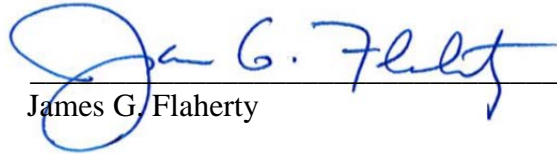
Attorneys for Black Hills/Kansas Gas Utility
Company, LLC, d/b/a Black Hills Energy

VERIFICATION

STATE OF KANSAS)
)ss:
COUNTY OF FRANKLIN)

James G. Flaherty, of lawful age, being first duly sworn on oath, states:

That he is an attorney for Black Hills/Kansas Gas Utility Company, LLC, d/b/a Black Hills Energy ("Black Hills"), named in the foregoing Compliance Filing, and is duly authorized to make this affidavit; that he has read the foregoing Compliance Filing, and knows the contents thereof; and that the facts set forth therein are true and correct to the best of his knowledge, information and belief.



James G. Flaherty

SUBSCRIBED AND SWORN to before me this 23rd day of April, 2018.





Notary Public

Appointment/Commission Expires:

CERTIFICATE OF SERVICE

I hereby certify that a copy of the above and foregoing was sent via U. S. Mail, postage prepaid, hand-delivery, or electronically, this 23rd day of April, 2018, addressed to:

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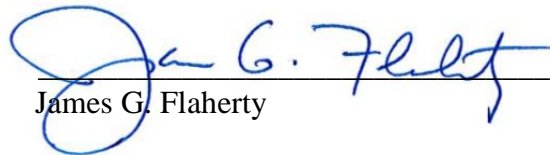

James G. Flaherty

Table 1.

Phase 1 Category	Total Units	7 Year Plan		2018		2019		2020		2021		2022		2023		2024	
		Total Category	2017 Unit Costs	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units
Bare Steel Yard Lines - Class 3	22,217	\$37,841,853	\$1,508.15	\$3,944,215	2539	\$5,585,994	3491	\$5,753,574	3491	\$5,387,437	3174	\$5,549,060	3174	\$5,715,532	3174	\$5,886,998	3174
Bare Steel Service Lines - Class 3	6,725	\$11,758,349	\$1,548.17	\$1,225,576	769	\$1,735,722	1057	\$1,787,793	1057	\$1,674,025	961	\$1,724,245	961	\$1,775,973	961	\$1,829,252	961
Bare Steel Main - Class 3	139	\$29,441,712	\$35.54	\$3,070,210	16	\$4,348,185	22	\$4,478,630	22	\$4,193,626	20	\$4,319,435	20	\$4,449,018	20	\$4,582,489	20
		\$79,016,987		\$8,240,000		\$11,669,900		\$12,019,997		\$11,255,088		\$11,592,741		\$11,940,523		\$12,298,739	

EXHIBIT A

Table 2.

Phase 2 Category	Total Units	10 Year Plan Total Costs by Category		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034	
		Units	Costs	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units	Budget	Units
Aldyl-A Mains Pre-1973	5	\$1,171,192	\$35.02	\$1,171,192	5	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0
Bare Steel Mains - Rural	71	\$18,967,061	\$35.00	\$1,586,565	7	\$1,800,640	7	\$1,854,659	7	\$1,910,299	7	\$1,967,608	7	\$2,026,636	7	\$2,087,436	7	\$2,150,059	7	\$2,214,560	7	\$1,368,598	4
Aldyl A Mains	95	\$25,378,462	\$35.00	\$2,122,869	9	\$2,409,307	10	\$2,481,587	10	\$2,556,034	10	\$2,632,715	10	\$2,711,697	10	\$2,793,048	10	\$2,876,839	10	\$2,963,144	10	\$1,831,223	6
PVC Mains	498	\$75,678,804	\$19.91	\$6,330,414	48	\$7,184,576	52	\$7,400,114	52	\$7,622,117	52	\$7,850,780	52	\$8,086,304	52	\$8,328,893	52	\$8,578,760	52	\$8,836,123	52	\$5,460,724	31
Aldyl-A Services	7,450	\$16,154,267	\$1,500.00	\$1,351,279	711	\$1,533,607	784	\$1,579,616	784	\$1,627,004	784	\$1,675,814	784	\$1,726,089	784	\$1,777,871	784	\$1,831,207	784	\$1,886,144	784	\$1,165,637	470
PVC Services	581	\$1,259,816	\$1,500.00	\$105,382	55	\$119,601	61	\$123,189	61	\$126,884	61	\$130,691	61	\$134,612	61	\$138,650	61	\$142,810	61	\$147,094	61	\$90,904	37
		\$138,609,603		\$12,667,701		\$13,047,732		\$13,439,164		\$13,842,339		\$14,257,609		\$14,685,337		\$15,125,897		\$15,579,674		\$16,047,064		\$9,917,086	

EXHIBIT B