

Exhibit No.:
Issues: Temporary Treatment Facility
Witness: Aaron R. Archer
Sponsoring Party: MO PSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: SR-2014-0166
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MISSOURI PUBLIC SERVICE COMMISSION

REGULATORY REVIEW DIVISION

REBUTTAL TESTIMONY

OF

AARON R. ARCHER

HICKORY HILLS SEWER & WATER COMPANY

CASE NO. SR-2014-0166

*Jefferson City, Missouri
September 2014*

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of the Requested Rate)
Increase for Annual Sewer Operating)
Revenues by Hickory Hills Water &)
Sewer)

Case No. SR-2014-0166

AFFIDAVIT OF AARON R. ARCHER

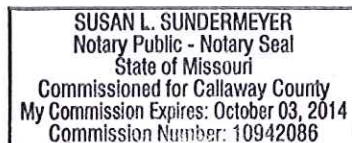
STATE OF MISSOURI)
) ss
COUNTY OF COLE)

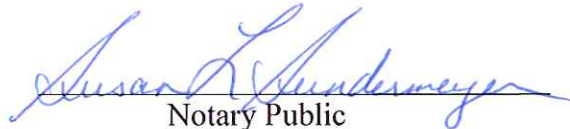
COMES NOW Aaron R. Archer, being of lawful age, and on his oath states the following: (1) that he is a Utility Policy Analyst in the Missouri Public Service Commission's Water and Sewer Unit; (2) that he participated in the Staff's investigation of the small company rate increase request that is the subject of the instant case; (3) that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form consisting of 12 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; and he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.



Aaron R. Archer

Subscribed and sworn to before me this 12th day of September, 2014.





Notary Public

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REBUTTAL TESTIMONY

OF

AARON R. ARCHER

HICKORY HILLS SEWER & WATER COMPANY

CASE NO. SR-2014-0166

Q. Please state your name and business address.

A. Aaron R. Archer, P.O. Box 360, Jefferson City, Missouri 65102.

Q. By whom are you employed and in what capacity?

A. I am employed with the Missouri Public Service Commission (“Commission”) as a Utility Policy Analyst I in the Water & Sewer Unit.

BACKGROUND OF WITNESS

Q. Please describe your educational background and other qualifications.

A. I attended Arkansas State University, Jonesboro, Arkansas, and received a Bachelor of Science Degree in Agriculture, a Master of Science Degree in Environmental Science with an Emphasis in Environmental Engineering, a Master of Science Degree in Agriculture with an Emphasis in Agricultural Economics. Also, I am an ABD Ph.D. in Civil Engineering with an Emphasis in Environmental Engineering at Missouri University of Science & Technology, Rolla, Missouri. These years of study involved topics such as, but not limited to, numerous aspects of water and wastewater installations, operations, and plant design. Prior to my employment with the Commission, I performed new home construction as well as remodeling, which included services such as water and sewer facilities installation, as well as being a small business owner involved in sales of HVAC equipment and various electronics. Additionally, I am a Missouri Department of Natural Resources (“DNR”)

1 licensed Class D Water, Class D Wastewater, and Level 1 Distribution System Operator, and
2 work directly with Mr. James A. Merciel, Jr., a Staff member in the Water & Sewer Unit and
3 a Professional Engineer licensed in the State of Missouri.

4 Q. What has been the nature of your duties with the Commission?

5 A. From March 2014 to present, I worked in the Water & Sewer Unit where my
6 duties consist of reviewing tariffs, performing engineering and policy analysis, performing
7 investigations and inspections of water and sewer utility systems, and investigating customer
8 complaints.

9 **EXECUTIVE SUMMARY**

10 Q. With reference to Case No. SR-2014-0166, have you made an examination and
11 study of the material filed by the Office of the Public Counsel (“Public Counsel”) relating to
12 the Disposition Agreement between Staff of the Commission and Hickory Hills Water &
13 Sewer Co., Inc.’s (“Hickory Hills” or “Company”) regarding the proposed increase in sewer
14 rates?

15 A. Yes.

16 Q. What is the purpose of your rebuttal testimony?

17 A. The purpose of my rebuttal testimony is to 1) describe the work Staff has
18 undertaken to study ways that the Company could improve sewage treatment such that it will
19 be in compliance with environmental regulations; 2) provide an overview of the issues the
20 Water & Sewer Unit Staff has with Public Counsel’s position, as outlined by Public Counsel
21 witness Keri Roth in her direct testimony, relating to the proposed temporary wastewater
22 treatment facility, that Staff has investigated and recommended to the Company and
23 Commission, as a solution available to the Company to resolve the water pollution issues; and

1 3) discuss some operating expense that Staff is not recommending to be included in rates at
2 this time.

3 **BACKGROUND OF TREATMENT PLANT POSSIBLE PROPOSALS**

4 Q. Are you familiar with the Company's sewer system?

5 A. Yes. I have visited the system numerous times, observed sewage flows under
6 both wet-weather and dry-weather conditions, and observed the condition and surroundings of
7 the existing treatment facility.

8 Q. Please describe the Company's sewer system.

9 A. Hickory Hills' sewer system serves approximately 47 sewer customers. The
10 sewer system consists of a single-cell lagoon treatment facility with a design flow capacity of
11 16,400 gallons per day, along with a collection system which operates by gravity.

12 Q. Is the Company's wastewater treatment facility in compliance with Missouri
13 Department of Natural Resources regulations?

14 A. No. The current lagoon providing wastewater treatment to the customers of
15 Hickory Hills is not in compliance with DNR regulations. Hickory Hills is accused by DNR
16 of violating state law by using the current treatment facility, and Hickory Hills is in
17 "enforcement" status with DNR. This facility is discharging unacceptably treated wastewater
18 into the waters of the State and needs to be fixed and/or replaced as quickly as possible. DNR
19 issued a Schedule of Compliance in 2004 with a completion of treatment facilities to meet
20 effluent limits set forth in the operating permit by March 18, 2009. The Company has not
21 fully complied with the Schedule of Compliance. In fact, the current facility is operating
22 without an approved operating permit due to the non-compliance.

1 Q. Does Staff have any opinions, or recommendations, regarding what the
2 Company could do to improve sewage treatment?

3 A. Yes. There are a number of treatment facility products, sometimes referred to
4 as “package plants,” that could feasibly be used to supplement or replace the Company’s
5 existing treatment facility. Based on this, Staff has recommended some possible solutions to
6 Hickory Hills, and put forth this information previously in this case, as shown in Schedule
7 ARA-1, included with this rebuttal testimony and incorporated herein by reference.

8 Q. Can you briefly describe how Staff formulated its opinion and
9 recommendations?

10 A. Yes. Please refer to Staff witness Mr. James Busch’s Rebuttal Testimony for a
11 more detailed description of Staff’s position. Beginning approximately in mid-March of this
12 year, Staff sought alternative treatment facility solutions to the Company’s environmental
13 issues. Staff researched and collected information about sewage treatment products that could
14 work for the Company’s operational application. This began by looking at a treatment facility
15 marketed by Frontier Environmental Technology, LLC (“Frontier”), which is intended as a
16 temporary-use facility. Some advantages of this particular product are quick set-up, and a
17 lease-own option, which could be advantageous to the Company since it is in receivership and
18 capital resources are limited. However, Staff also looked at more than a dozen other products
19 that seemed to be available. Some were informally ruled out by Staff as being cost-
20 prohibitive. At present, Staff has narrowed its list of possible recommendations as noted in
21 Schedule ARA-1, based on feasibility, to three products; 1) the Frontier deployable Baffled
22 Bioreactor (“dBBR”) treatment system; 2) the Pollution Control System, Inc. (“PCS”) model

1 PCS-14047; and, 3) the Headworks BIO Inc. (“Headwork”s) model HIT-CS.Q. What has
2 been filed in this case that indicates Staff’s research information, and recommendations?

3 A. In response to the March 20, 2014 order directing filing of a recommendation
4 issued by the Commission, Staff filed a recommendation memorandum on April 7, 2014, as
5 can be viewed in Schedule ARA-1. This memorandum was a report outlining the cost of
6 utilizing a treatment facility, along with the costs of some options regarding how it could be
7 utilized. This information was based on using the Frontier dBBR treatment system, and using
8 costs estimated directly by Staff. Staff made its estimates by using actual costs of certain
9 materials and parts, and by quotes from several vendors. These vendors included, but were not
10 limited to, Ameren UE, Menards, All Plumbing & Sewer, Ernie Perrin Electrical, and Gene
11 Haile Excavation. Staff’s estimated expenses and some numbers and assumptions used. The
12 estimates can be viewed in the workpaper included as a part of Schedule ARA-1 as well as
13 additional workpapers and other documentation that is included with this rebuttal testimony as
14 Schedule ARA-2. Additionally, Staff included what it considers appropriate expenses in the
15 Disposition Agreement that was filed on July 7, 2014, in order that the Company is able to
16 install and operate a treatment facility, which might or might not be utilized on a temporary
17 basis. The costs built into the Disposition Agreement were based on the PCS model PCS-
18 14047.

19 Q. Was all of Staff’s work, and your research, looking at treatment facilities
20 accomplished prior to the filing of Staff’s April 7 memorandum?

21 A. No. Staff’s research into products and treatment methodologies available to
22 the Company is ongoing. As new information becomes available Staff holds itself out to
23 study that information, and pass along to or discuss with the Company and others, as

1 appropriate. Staff is continually seeking the most cost-effective and appropriate solution to
2 this most serious environmental issue.

3 **RESPONSE TO DIRECT TESTIMONY**

4 Q. What are your specific issues with the direct testimony of Ms. Roth?

5 A. There are four fundamental issues, as follows:

6 Issue 1 – the nature and appropriate use of what is being called a portable
7 pollution control system and/or a temporary treatment facility.

8 Issue 2 – ownership and/or acquisition of a temporary treatment facility and
9 the associated useful life of this temporary treatment system.

10 Issue 3 – temporary versus permanent treatment facility installations relative to
11 how these systems would be included as costs into rates.

12 Issue 4 – cost effectiveness of utilizing a temporary treatment facility versus
13 implementing a more permanent solution.

14 ***Issue 1***

15 Q. Ms. Roth states numerous times in her Direct Testimony on pages 4, 5, and 6
16 that Public Counsel has an issue with a “portable pollution control system.” What is a
17 “portable pollution control system”?

18 A. As noted in Ms. Roth’s testimony the lagoon is out of compliance with DNR
19 regulations, and she presumably is acknowledging the need to correct the problem. It appears
20 that in her direct testimony Ms. Roth refers on page, 4 line 12, and elsewhere, to a “portable
21 pollution control system” as if it were generic terminology. Pollution Control Systems, Inc.,
22 referred to herein as PCS as noted above, is a corporation from Milford, Ohio that markets
23 sewage treatment products, and its model PCS-14047 is a pre-fabricated treatment plant that I

1 believe is cost effective for use by the Company, as is the Headworks model HIT-CS, if the
2 Company is able to purchase a treatment facility. If the purchase of a treatment facility is not
3 practical for the Company's receiver, then a lease arrangement for the Frontier dBBR is a
4 good alternative.

5 Q. Why is Staff referring to proposed improvements to be undertaken by the
6 Company as "temporary?"

7 A. Staff does not specifically recommend that a "portable" or a "temporary"
8 treatment facility absolutely should be installed versus a permanent treatment facility.
9 However, while the Company is in receivership Staff considers a solution that requires
10 minimal capital investment to be a factor in making a recommendation, both to the
11 Commission and to the Company. This means that if the Company could lease or buy
12 something to be used immediately, while a more permanent solution is developed, then that
13 would be positive progress in solving the current environmental concerns. Staff considers a
14 temporary portable wastewater treatment facility to conceptually be feasible, such as the
15 Frontier dBBR. Staff asserts that even a temporary solution would resolve the non-compliant
16 discharge of inadequately treated wastewater to waters of the state for an interim period. This
17 matter is being further addressed by Staff witness Busch, in his rebuttal testimony. Whether a
18 permanent or temporary arrangement is installed by the Company, any adequate improvement
19 for sewage treatment for the Company's service area would resolve the immediate pollution
20 issue, and eliminate the risk that customers could lose the usefulness of their homes. Further,
21 many sewer utilities utilize treatment facilities on an interim or "temporary" basis, depending
22 upon circumstances, and a temporary time frame could be many, many years in some

1 situations. The use of any given treatment facility, including the PCS model PCS-14047
2 wastewater treatment facility or others could well end up being in service for a very long time.

3 ***Issue 2***

4 Q. What is Ms. Roth's position regarding renting a treatment facility?

5 A. On page 5 line 3 of her direct testimony, Ms. Roth states that Staff calculated a
6 cost to rent a "temporary pollution control system." In its April 7 memorandum, Staff
7 included the lease cost of the Frontier dBBR temporary portable wastewater treatment system,
8 however in the Disposition Agreement, Staff calculated a cost to "purchase" on an annualized
9 basis, one of the "3" temporary portable wastewater treatment facilities it recommended to the
10 Company for its review. As Ms. Roth also stated in her direct testimony on page 4, lines 19
11 and 20, Staff also calculated an electrical cost to operate and upgrade the electrical service to
12 provide power to the Frontier dBBR that Staff was proposing to be used by the Company, or
13 most any other electric-powered wastewater treatment facility, as being \$3,000 annually. For
14 the Disposition Agreement, Staff also included other calculated annualized costs to operate,
15 set-up, install the associated infrastructure, and purchase a wastewater treatment facility, at
16 \$38,415. Any installed treatment facility product selected by the Company, as well as its set-
17 up configuration along with accessories like lift station facilities will need to be approved by
18 DNR. This will be the Company's responsibility, along with applying for permits to construct
19 this facility and its appurtenances.

20 Q. Is the Pollution Control Systems, Inc. product available for lease, and does it
21 require minimal capital investment?

22 A. No. There will be significant capital investment in this product. One of the
23 other products, the Frontier dBBR is available for lease.

1 Q. Is the Headworks product available for lease, and does it require minimal
2 capital investment?

3 A. No. At the time Staff was formulating rate and revenue calculations for the
4 Company, and at Staff's request, Headworks Bio Inc. was considering formulating a lease
5 arrangement that might have been available to the Company, but ultimately Headworks
6 decided against doing so. This product was ultimately determined to be the least desirable of
7 the three narrowed options, due to the capital cost being significantly higher than the PCS
8 system and no leasing options being available.

9 Q. Would you consider use of the PCS Model PCS-14047 to be prudent action by
10 the Company?

11 A. Yes. It appears to be a cost effective solution, even if the receiver of the
12 Company has to raise an appropriate amount of capital in order to undertake installation of
13 this product.

14 Q. Would you consider use of the Frontier dBBR to be prudent action by the
15 Company?

16 A. Yes. It appears to be a cost effective solution and is currently available for
17 lease as Staff understands it. However, Frontier is not as large nor does it have as much
18 experience with its products in the field under normal treatment facility operating conditions,
19 as PCS does.

20 ***Issue 3***

21 Q. Where does Public Counsel believe funds should come from to pay for
22 improvements to treat wastewater at Hickory Hills?

1 A. On page 5, lines 11 through 16 of her direct testimony, Ms. Roth states that
2 expenses for a temporary solution should not be included in rates. Staff does not understand
3 Public Counsel's position that a permanent solution for the Company's treatment facility
4 should be determined before customers are asked to pay for such a high cost in their rates.
5 Staff asserts that the Company and the customers desperately need a solution that would
6 resolve the water pollution issues associated with the currently-used lagoon treatment facility,
7 whether for an interim period or as a permanent solution. Either way, such prudent expenses
8 are appropriate to be included in rates.

9 ***Issue 4***

10 Q. On page 5, line 20 and page 6, line 1 of her Direct Testimony, Ms. Roth states
11 that Staff used "only untested, estimated costs for installation and operation of the temporary
12 pollution control system". What costs are untested and estimated?

13 A. As noted above, Staff has studied and estimated expenses as best it can, and
14 her statement regarding Staff's work being "untested and estimated" is inaccurate.
15 Documentation of how Staff formulated its estimates is shown in Schedule ARA-2, as
16 previously noted.

17 Q. Ms. Roth stated in her testimony that Staff did not explore similarly-effective,
18 less-expensive options adequately which would avoid imposing a heavy rate burden on
19 customers. Is her testimony accurate with respect to Staff not exploring less-expensive
20 alternatives?

21 A. No. As stated and described previously in this rebuttal testimony, Staff studied
22 numerous commercially available temporary and permanent solutions to resolve the water
23 pollution issues that are available to the Company and the receiver, until either a permanent

1 solution can be found or a buyer is found for the system. This documentation was provided in
2 Staff's April 7 memorandum, and was provided to the Company through various emails in
3 April and May of 2014. These emails, as well as some other pertinent emails regarding
4 information sharing, can be reviewed in Schedule ARA-3, included with this direct testimony
5 and incorporated herein by reference. Staff has assisted, and continues to assist, in seeking
6 out feasible solutions. The Company is required to comply with environmental regulations,
7 and must include in rates those costs that are necessary in order to carry out that task. If
8 Public Counsel can provide similarly-effective, less-expensive options that would prevent a
9 heavy rate burden to the customers of the Company, then the Staff would be more than happy
10 to discuss and study any such proposals.

11 Q. Is Ms. Roth's direct testimony accurate with respect to "untested estimates?"

12 A. No. Ms. Roth's claim that Staff is using "only untested, estimated costs for
13 installation and operation of a temporary pollution control system" is completely inaccurate.
14 As described in my testimony above, in Staff's April 7 memorandum Schedule ARA-1, and in
15 the filed disposition agreement, Staff undertook formulating estimates based on the
16 experience of myself as well as other PSC Staff members, researched costs of products,
17 materials and parts, and obtained bids for necessary electric upgrades and rates, excavation
18 rates, and plumbing rates.. The financial information pertaining to this work was provided to
19 Public Counsel, the Company and others, and is included as Schedule ARA-2.

20 **OPERATING EXPENSES**

21 Q. Did Staff include costs for disinfection of effluent discharged from the
22 proposed treatment facility, such as chlorine application or ultraviolet disinfection?

1 A. No. Staff did not include costs for any type of disinfection for the proposed
2 treatment facility.

3 Q. Please explain why Staff did not include these types of costs in Staff's
4 recommendation.

5 A. The reason that Staff did not include these types of costs is that future DNR
6 requirements are unknown at this time. If disinfection becomes required by DNR in the
7 future and the Company is required to disinfect the effluent, then the cost should be included
8 in rates in a future rate calculation.

9 Q. Did Staff include costs for sludge removal from the proposed treatment
10 facility?

11 A. No. Staff did not include costs for sludge removal in its recommendation.

12 Q. Why is sludge removal not included in Staff's recommendation?

13 A. In an effort to economize the operation of this facility, Staff proposed to utilize
14 the currently-used lagoon treatment facility as a sludge holding tank. This was stated in
15 Staff's memorandum filed on April 7, 2014. However, sludge will indeed need to be removed
16 from any of the treatment facilities Staff is suggesting and proposed to be utilized by the
17 Company. Based on the uncertainty of how DNR will approach closing the lagoon treatment
18 facility, and decisions the Company could make regarding the lagoon, costs of sludge disposal
19 is not being addressed at this time.

20 Q. Does this conclude your rebuttal testimony?

21 A. Yes it does.