

**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

March 2, 2022

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
Mail Service Center 4325
Raleigh, North Carolina 27699-4300

Re: Docket No. W-1333, Sub 0 and W-1130, Sub 11 - Application of Currituck Water and Sewer, LLC for Authority to Transfer the Sandler Utilities at Mill Run, LLC Wastewater System and Public Utility Franchise in Currituck County, North Carolina and for Approval of Rates

Dear Ms. Dunston:

In connection with the above-captioned docket, I transmit herewith for filing on behalf of the Public Staff Pre-Filed Direct Testimony of D. Michael Franklin.

By copy of this letter, we are forwarding copies to all parties of record.

Sincerely,

/s/ Gina C. Holt
Staff Attorney
gina.holt@psncuc.nc.gov

GCH
Attachments

Executive Director (919) 733-2435	Communications (919) 733-2810	Economic Research (919) 733-2902	Legal (919) 733-6110	Transportation (919) 733-7766
Accounting (919) 733-4279	Consumer Services (919) 733-9277	Electric (919) 733-2267	Natural Gas (919) 733-4326	Water (919) 733-5610

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Mar 02 2022

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-1333, SUB 0

DOCKET NO. W-1130, SUB 11

In the Matter of
Application by Currituck Water and)
Sewer, LLC, 4700 Homewood Court,)
Suite 108, Raleigh, North Carolina)
27609, and Sandler Utilities at Mill Run,)
LLC, 448 Viking Drive, Suite 220,)
Virginia Beach, Virginia 23452, for)
Authority to Transfer the Sandler)
Utilities at Mill Run Wastewater System)
and Public Utility Franchise in Currituck)
County, North Carolina, and for)
Approval of Rates)

TESTIMONY OF
D. MICHAEL FRANKLIN
PUBLIC STAFF – NORTH
CAROLINA UTILITIES
COMMISSION

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

**CURRITUCK WATER AND SEWER, LLC
DOCKET NO. W-1333, SUB 0**

**SANDLER UTILITIES AT MILL RUN, LLC
DOCKET NO. W-1130, SUB 11**

**TESTIMONY OF D. MICHAEL FRANKLIN
ON BEHALF OF THE PUBLIC STAFF -
NORTH CAROLINA UTILITIES COMMISSION**

MARCH 2, 2022

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**
2 **PRESENT POSITION.**

3 A. My name is D. Michael Franklin. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a
5 Public Utilities Engineer with the Water, Sewer and Telephone
6 Division of the Public Staff – North Carolina Utilities Commission
7 (Public Staff).

8 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

9 A. My qualifications and duties are included in Appendix A.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. The purpose of my testimony is to provide the North Carolina Utilities
12 Commission (Commission) with the results of my investigation of
13 specific areas of the application filed on May 19, 2021 by Currituck
14 Water and Sewer, LLC (Currituck) in Docket No. W-1333, Sub 0 and
15 Sandler Utilities at Mill Run, LLC (Sandler) in Docket No. W-1130,

1 Sub 11, for transfer of public utility franchise and for approval of rates
2 (the Joint Application) and whether the transfer is in the best interest
3 of the using and consuming public.

4 **Q PLEASE DESCRIBE THE SERVICE AREA AND WASTEWATER**
5 **SYSTEM.**

6 A. The Eagle Creek wastewater utility system serves approximately 420
7 residential customers in the Eagle Creek Subdivision and two non-
8 residential customers, Mill Creek Golf Club and Moyock Middle School,
9 in Currituck County.

10 Sandler is the franchise holder for the Eagle Creek wastewater utility
11 system, which is the only vacuum wastewater collection system the
12 Commission regulates. The Eagle Creek wastewater collection system
13 consists of an Airvac brand vacuum collection system. **Franklin**
14 **Exhibit 1** provides a figure of an Airvac vacuum collection system,
15 similar to that installed at Eagle Creek.

16 The Joint Testimony of David May and Robert Tankard describes the
17 vacuum collection system and wastewater treatment plant (WWTP) in
18 further detail.

19 **Q. PLEASE DESCRIBE SANDLER'S COMPLIANCE STATUS WITH**
20 **THE COMMISSION ORDER THAT WAS ISSUED DECEMBER 11,**
21 **2015 AND BECAME FINAL AND EFFECTIVE ON DECEMBER 29,**
22 **2015, IN DOCKET W-1130, SUB 8.**

1 A. On December 11, 2015, the Commission issued the Recommended
2 Order Granting Rate Increase, Requiring Refund, and Customer
3 Notice in Docket No. W-1130, Sub 8, which became final and effective
4 on December 29, 2015 (2015 Rate Case Order). Finding of Fact 5 of
5 the 2015 Rate Case Order stated, “the overall quality of service
6 provided by Sandler to its customers in Eagle Creek Subdivision is only
7 marginally adequate.” This Finding of Fact was supported in part by
8 testimony provided during the public hearing held on September 24,
9 2015. Due to Sandler’s marginal quality of service, Ordering
10 Paragraphs 4 through 6 of the 2015 Rate Case Order require Sandler
11 to take certain actions to improve the Eagle Creek wastewater utility
12 system performance.

13 Ordering Paragraph 4 of the 2015 Rate Case Order states that Sandler
14 shall do the following:

15 (a) within 60 days of the effective date of this order,
16 physically inspect every Air Vac valve pit package as to
17 whether the pit package is subject to rain water intrusion
18 during heavy rains; (b) within 150 days of the effective
19 date of this order, complete renovations to reduce the
20 rain water intrusion, including but not limited to raising
21 and sealing pit packages subject to rain water intrusion;
22 (c) within 180 days of the effective date of this order, file
23 a written report with the Commission describing the
24 completed renovations for each of the pit packages
25 where renovations were necessary.

26 Ordering Paragraph 5 states,

27 That Sandler shall, within 180 days of the effective date
28 of the [2015 Rate Case Order], complete renovations to

1 the second bank of UV lights at the wastewater
2 treatment plant to bring the UV system in compliance
3 with North Carolina Department of Environmental
4 Quality, Division of Water Resources regulations.

5 Ordering Paragraph 6 states,

6 That Sandler shall: (a) within 60 days of the effective
7 date of [this order] file with the Commission a detailed
8 plan for the isolation of sections of the Eagle Creek
9 sewage collection system, including the installation of
10 isolation valves and also plans for the installation of any
11 other necessary equipment to prevent the collection
12 system losing its vacuum; (b) within 150 days of the
13 effective date of this order, complete the necessary
14 collection system isolation renovations, and installation
15 of isolation valves, and the installation of any other
16 necessary equipment to prevent the collection system
17 losing its vacuum, pursuant to Sandler's detailed plan;
18 (c) within 180 days of the effective date of this rate
19 increase order, file a written report with the Commission
20 describing the completed collection system isolation
21 renovations, including the installation of necessary
22 isolation valves, and the installation of any other
23 necessary equipment to prevent the collection system
24 losing its vacuum, pursuant to the detailed plan.

25 Based on my investigation, Sandler has not completed all actions
26 required under the 2015 Rate Case Order.

27 On May 9, 2016, Enviro-Tech, the Eagle Creek wastewater utility
28 system operator, filed a report in Docket No. W-1130, Sub 8, on the
29 status of the actions required under the 2015 Rate Case Order. The
30 report indicated that the only actions that had been taken to address
31 Ordering Paragraph 4 were the inspection of the Airvac valve pit
32 packages and the ranking of those pit packages on "a scale of 1 to 5,"
33 with one being "Ok" and five being "Worst". In addition, the report

1 stated that options were being researched for remedial actions on the
2 valve pits ranked as a “5”, which at the time was 39 pits, and that the
3 least intrusive and least expensive option was being researched for
4 those pits. No actions to complete renovations to the valve pits to
5 reduce the rainwater intrusion, including but not limited to raising and
6 sealing valve pit packages subject to rainwater intrusion, were
7 identified in the report. No other filings were submitted to the
8 Commission documenting whether the renovations required by
9 Ordering Paragraph 4 to reduce rainwater intrusion were completed.
10 Furthermore, a written report describing the completed renovations for
11 each of the valve pit packages where renovations were necessary was
12 not filed with the Commission. Lastly, prior to December 4, 2020, no
13 other documents were filed with the Commission demonstrating that
14 renovations to reduce rainwater intrusion into the valve pits were
15 completed.

16 With respect to Ordering Paragraph 5, the Enviro-Tech report provided
17 that the UV system repairs and renovations were completed in late
18 February 2016 and the system had been functioning properly since the
19 completion of this work. Based on the representations made in the
20 Enviro-Tech report, it appears that Sandler complied with Ordering
21 Paragraph 5 of the 2015 Rate Case Order.

1 With respect to Ordering Paragraph 6, the Enviro-Tech report advised
2 that two new isolation valves were added in late December 2015. The
3 report further stated that the addition of the two isolation valves
4 enabled failed vacuum valves to be located and corrected in a shorter
5 timeframe and helped avoid cascading failures caused by low vacuum
6 pressure for extended periods. While a detailed plan for the isolation
7 of sections of the Eagle Creek wastewater collection system was never
8 filed with the Commission, two isolation valves were installed, and,
9 based on the Enviro-Tech report, no additional actions were needed to
10 prevent a loss of vacuum pressure in the collection system.

11 On December 4, 2020, after a significant Eagle Creek wastewater
12 utility system outage, the Public Staff filed a letter that it had sent to
13 Sandler in Docket No. W-1130, Sub 8. In part, the letter requested that
14 Sandler file with the Commission the written report required under
15 Ordering Paragraph 4 of the 2015 Rate Case Order and detail in that
16 report the completed renovations for each of the valve pit packages
17 where renovations were necessary. Sandler filed its response with the
18 Commission on January 27, 2021 in Docket No. W-1130, Sub 8,
19 stating,

20 . . . in the 24 months since receiving the
21 Recommended Order Granting Rate Increase on
22 December 11, 2015, 99 upgraded controllers were
23 installed throughout the community, 6 upgraded valves
24 were installed, 6 valve and controller combinations were

1 installed, 1 new controller and surge suppressor were
2 added, and 4 entirely new valve pits were installed.

3 The Public Staff reviewed Sandler's response and in a letter dated and
4 filed on February 26, 2021, stated that Sandler's actions in response
5 to Ordering Paragraph 4(b) of the 2015 Rate Case Order, specifically
6 to complete renovations including raising and sealing certain pit
7 packages to reduce rainwater intrusion, were ineffective. The letter
8 further stated that the Public Staff is of the opinion that Sandler's
9 continued practice of primarily replacing controllers is a temporary
10 repair and does not adequately address Ordering Paragraph 4(b) of
11 the 2015 Rate Case Order. The Public Staff requested Sandler to
12 respond within 20 days from the date of the letter and fully describe the
13 actions Sandler would take to comply with Ordering Paragraph 4(b),
14 specifically to reduce rainwater intrusion and minimize flooding of the
15 valve pits.

16 On April 1, 2021, Sandler responded to the Public Staff's February 26,
17 2021 letter (See **Franklin Exhibit 2**), identifying proposed remedial
18 actions and improvements to reduce rainwater intrusion and minimize
19 flooding of the valve pits in the Eagle Creek wastewater utility system.
20 The proposed actions were based on recommendations provided to
21 Sandler by Flovac, Inc. (Flovac), a wastewater vacuum collection
22 system vendor. Sandler retained the services of Flovac to provide

1 recommendations to address and correct the problems with the Eagle
2 Creek vacuum collection system.

3 For compliance, in part, with the consent judgment between the North
4 Carolina Department of Environmental Quality – Division of Water
5 Resources and Sandler, which the Currituck County Superior Court
6 entered on July 1, 2021 (the Consent Judgment), Sandler has begun
7 making renovations to the valve pits by installing pedestal-mounted
8 controllers that elevate the controllers and has located them outside
9 valve pits. However, pedestal-mounted controllers have not been
10 installed on all the valve pits, nor would installation of the pedestal-
11 mounted controllers on all the pits prevent rainwater and run-off from
12 flowing into the pits and adversely impacting valve pit operation.

13 **Q. BRIEFLY DESCRIBE THE CURRENT SYSTEM OPERATOR,**
14 **ENVIROLINK, INC. AND ITS RELATIONSHIP WITH SANDLER.**

15 A. Envirolink, Inc. (Envirolink) is the current contract operator Sandler
16 hired to operate the Eagle Creek wastewater utility system.
17 Envirolink is a full-service utility management company that
18 specializes in the management of water, wastewater, and public
19 works services for clients across North Carolina. Michael J. Myers is
20 the president of Envirolink.

21 The original contract operator of the Eagle Creek wastewater utility
22 system was William G. Freed, Inc., doing business as Enviro-Tech.

1 Enviro-Tech was a professional water and wastewater treatment
2 services company based in Currituck County. On page 6, lines 3 and
3 4 of Ms. Brittney Willis' direct testimony, Ms. Willis states that on
4 February 6, 2020, Sandler was notified that Enviro-Tech had been
5 acquired by Envirolink. On page 14, lines 19 and 20 of Mr. Myers'
6 direct testimony, Myers states Envirolink took over as Sandler's
7 contract operator in late summer 2020 (page 14, lines 19 and 20).
8 The current service agreement between Envirolink and Sandler was
9 signed on January 6, 2021.

10 In Mr. Myers' direct testimony, page 15, lines 1 through 7, Mr. Myers
11 describes significant service issues Envirolink discovered with the
12 Eagle Creek wastewater utility system. Public Staff Data Requests
13 11 and 16¹ requested Sandler and Currituck respectively to provide
14 written communications from Envirolink to Sandler identifying these
15 service issues and recommendations to address these issues,
16 including Sandler's responses. Based on Sandler's responses to
17 discovery, the earliest written request dated back to September 30,
18 2020, in which Envirolink provided a quote to Sandler for a new
19 vacuum pump, a rebuilt vacuum pump, and the services of a

¹ Currituck has requested that certain emails provided in response to this data request be kept confidential. Without waiving any objections the Public Staff could raise regarding this requested designation, this testimony solely refers to and cites discovery responses Sandler provided, which Sandler provided prior to Currituck and did not request be kept confidential.

1 technician from Airvac's parent company, Aqseptence Group, Inc.
2 This request followed the September 27, 2020 failure of one of the
3 two vacuum pumps, which resulted in extensive, wastewater utility
4 system problems. Neither Sandler nor Currituck provided any
5 documentation evidencing Envirolink identified issues or requested
6 equipment or supplies prior to September 30, 2020.

7 **Q. BRIEFLY DESCRIBE THE ORGANIZATIONAL RELATIONSHIP**
8 **BETWEEN ENVIROLINK AND CURRITUCK.**

9 A. Envirolink and Currituck have at least one principal in common. Mr.
10 Myers is the President of Envirolink and the Vice-President,
11 Secretary, and Treasurer of Currituck. Due to Mr. Myers' involvement
12 with both companies, residents who have issues with Envirolink's
13 operation of the Eagle Creek wastewater utility system have
14 expressed doubts as to whether Currituck can address the ongoing
15 Eagle Creek system performance issues.

16 **Q. HAS THE PUBLIC STAFF RECEIVED ANY CUSTOMER**
17 **COMPLAINTS?**

18 A. Yes. The Public Staff Consumer Services Division (Consumer
19 Services) has received three customer complaints, all of which
20 occurred in the fall of 2020. On September 30, 2020, the Eagle Creek
21 Golf Community Homeowner's Association President notified
22 Consumer Services that Eagle Creek residents were experiencing

1 sewage backups into their homes. The Public Staff contacted
2 Sandler, requested its expedited attention to the matter, and
3 confirmed that the North Carolina Department of Environmental
4 Quality (DEQ) was aware of the issue. On October 5, 2020, an Eagle
5 Creek resident contacted Consumer Services to report the Eagle
6 Creek subdivision was experiencing sewage backups and other
7 sewage safety issues as a result. On that same day, another Eagle
8 Creek resident contacted Consumer Services, stating that the
9 wastewater utility system had been down since Sunday, September
10 27, 2020. The customer also complained of not receiving notification
11 from Envirolink regarding the wastewater utility system operational
12 problems. Both customers were directed to contact DEQ.

13 In addition, I received email complaints from Eagle Creek residents
14 Ms. Stephanie Harlow, Mr. Gary Lickfeld, and Ms. Susan Powers.

15 Ms. Harlow's complaint was filed with the Commission on December
16 21, 2021, in Docket Nos. W-1130, Sub 11CS and W-1333, Sub 0CS.

17 In her complaint, Ms. Harlow stated that she would like to see the
18 vacuum system repaired and Envirolink replaced. She also raised
19 concerns regarding the disruptions the installation of a gravity
20 collection system would have on her home and the Eagle Creek
21 subdivision, given her experience with the installation of the force
22 main connecting the Fost subdivision to the Eagle Creek WWTP.

1 Mr. Lickfeld's complaint was filed with the Commission on January
2 31, 2022, in Docket Nos. W-1130, Sub 11CS, and W-1333, Sub 0CS.
3 His complaint provides a table listing the wastewater system impacts
4 at his residence from January 1, 2021 through December 9, 2021
5 and indicating that there were 57 days when he had no sewer service
6 at his residence. In particular, the table identifies six wastewater
7 backups into his home and 13 backups into his yard.

8 In the document titled Consumer Statement of Position
9 (Powers/Leone) that was filed with the Commission on February 9,
10 2022 in Docket Nos. W-1130, Sub 11CS and W-1333, Sub 0CS, Ms.
11 Powers provided a list of the outages in the Eagle Creek Subdivision
12 based on emails she had received. According to her list, from August
13 2020 through December 10, 2021, there were 20 system events
14 resulting in 98 days when either (1) Eagle Creek Subdivision
15 residents were told to conserve water or (2) Eagle Creek Subdivision
16 residents were without partial or total wastewater service. This
17 consumer statement of position contains similar information to that
18 provided in the document titled Email and Sewage Outage List
19 Exhibit, which was filed with the Commission on Ms. Powers' behalf
20 in Docket Nos. W-1333, Sub 0 and W-1130, Sub 11 on December
21 17, 2021.

1 In addition, beginning on December 14, 2021, I received emails from
2 Ms. Trudy Elder providing a continuous daily sewer log documenting
3 (1) communications Envirolink has posted on Facebook regarding
4 the Eagle Creek wastewater utility system's status and (2) any
5 Facebook posts Eagle Creek Subdivision residents submitted
6 regarding the wastewater system (the Elder Sewer Report). On
7 February 4, 2022, I filed with the Commission the Elder Sewer Report
8 on Ms. Elder's behalf in Docket Nos. W-1333, Sub 0CS and W-1130,
9 Sub 11CS. Between December 8, 2021 and February 3, 2022,
10 residents identified 11 individual wastewater system issues over
11 eight different days, specifically either a wastewater backup in their
12 home or yard or no wastewater service at their home. There were no
13 resident comments on Facebook on 43 of the 57 days listed in the
14 Elder Sewer Report.

15 Furthermore, I reviewed a complaint from an Eagle Creek
16 Subdivision resident who was not in contact with the Public Staff prior
17 to filing consumer statements of position with the Commission. On
18 January 24, 2022, in Docket Nos. W-1333, Sub 0 and W-1130, Sub
19 11, Ms. Rhonda Klussmann filed with the Commission a document
20 titled Eagle Creek Petitions, which Eagle Creek homeowners signed
21 indicating their support for either upgrading the existing vacuum
22 collection system or replacing the vacuum collection system with a
23 gravity system. As indicated in Ms. Klussmann's cover letter, 247

1 homeowners, or 58% of the total number of Eagle Creek Subdivision
2 homeowners, signed the petitions, with 234 supporting upgrading the
3 existing vacuum collection system and 13 supporting replacing the
4 vacuum collection system with a gravity system. Ms. Klussmann also
5 spoke at the February 2, 2022 Commission public hearing describing
6 the petition process and results.

7 As previously stated, a public hearing was held on February 2, 2022.
8 During the public hearing, eight Eagle Creek subdivision residents
9 provided testimony. The Public Staff has given this testimony proper
10 consideration in formulating its recommendations.

11 **Q. ARE YOU AWARE OF OTHER CUSTOMER COMPLAINTS?**

12 A. Yes. Beginning in November 2020, the Washington Regional Office
13 of the North Carolina Department of Environmental Quality - Division
14 of Water Resources (Washington Regional Office) began forwarding
15 me email messages, text messages, and voice mails the North
16 Carolina Department of Environmental Quality - Division of Water
17 Resources (DWR) was receiving from Eagle Creek Subdivision
18 residents. I compiled the communications that provided a service
19 address and were related to a wastewater system operational
20 service complaint. I did not compile complaints regarding Sandler or
21 Envirolink's inadequate or inaccurate communications. The compiled
22 information is included in **Franklin Exhibit 3**. Complaints include

1 wastewater utility service being unavailable, wastewater backups
2 onto lawns or into homes, and issues with valve pits being full or
3 sinking. Between January 26, 2021 and November 5, 2021, there
4 were 52 complaints from 34 residences, with nine residences having
5 multiple complaints.

6 Additionally, between November 1, 2021 and November 24, 2021,
7 the North Carolina Department of Justice, Consumer Protection
8 Division received 28 complaints from Eagle Creek residents. Eagle
9 Creek residents complained of frequent wastewater system outages
10 and wastewater overflows into their yards and homes. Most
11 complaints were for service issues since the fall of 2020. The North
12 Carolina Department of Justice complaints were filed with the
13 Commission on December 9, 2021 in Docket Nos. W-1130, Sub
14 11CS and W-1333, Sub 0CS.

15 **Q. HAVE YOU INSPECTED THE WASTEWATER UTILITY SYSTEM,**
16 **AND IF SO, WHAT WERE YOUR OBSERVATIONS?**

17 A. Yes. On October 21, 2020, I performed a site inspection of Sandler's
18 vacuum collection system with Washington Regional Office staff.
19 The site visit was performed approximately one week after a
20 significant wastewater system outage due to the failure of a vacuum
21 pump. At the time of the site visit, a sewerage pump had also failed.
22 Since a spare sewerage pump was not available, Sandler installed a

1 temporary bypass sewerage pump. During my inspection, the
2 wastewater system was operational.

3 Vacuum station equipment was showing its age, with piping covered
4 in rust and paint peeling off. The overall cleanliness was poor, with
5 parts and packaging debris lying around. Residential vacuum pits
6 and candy canes² were also inspected. Numerous pits were located
7 in low-lying areas, and it was evident that the actions required under
8 Ordering Paragraph 4 of the 2015 Rate Case Order to complete
9 renovations to reduce rainwater intrusion had not been fully
10 implemented.

11 In addition, a limited site inspection was performed on October 18,
12 2021 with Public Staff attorney William Grantmyre. During that
13 inspection, the Public Staff met with Envirolink technicians and
14 inspected valve pits with installed pedestal-mounted controllers. The
15 pedestal-mounted controllers are intended to prevent tampering with
16 the controllers and ensure the controllers are above elevated water
17 levels due to weather events and valve pit overflows. Each pedestal-
18 mounted controller is installed on a metal post in a lock box

² The candy cane is a wastewater system component that is installed above ground at each residence, provides the vacuum collection system with a source of atmospheric air, and prevents the vacuum system from drawing water from plumbing traps that block sewer gas from entering the home. Candy canes are built with PVC, with piping connected directly to a valve pit sump. See **Franklin Exhibit 1** for a diagram of a typical Airvac vacuum collection system.

1 approximately four feet above grade, with a special tool required to
2 access the lock box. At the time of the site inspection, the pedestal-
3 mounted controllers had been installed at approximately a dozen
4 valve pits. Sandler plans to install the pedestal-mounted controllers
5 at all valve pits. The pedestal-mounted controllers will increase the
6 reliability and useful life of the controllers, provided the controllers
7 are installed in accordance with the manufacturer's instructions.

8 **Q. HAVE YOU INSPECTED OTHER WASTEWATER VACUUM**
9 **COLLECTION SYSTEMS, AND IF SO, WHAT WERE YOUR**
10 **OBSERVATIONS?**

11 A. Yes. On January 20, 2022, Public Staff attorney William Grantmyre
12 and I, with the assistance of the Town of Oak Island Wastewater
13 Superintendent, performed a site inspection of the Town of Oak
14 Island, North Carolina's wastewater utility system. The site visit was
15 conducted to gather information and compare Oak Island's vacuum
16 collection system performance with the Eagle Creek vacuum
17 collection system. The Oak Island wastewater system was selected
18 because it is an Airvac vacuum collection system and because of its
19 proximity to Raleigh. My notes from that inspection are provided in
20 **Franklin Exhibit 4.**

21 A portion of the Oak Island wastewater utility system is a gravity
22 collection system and a portion is a vacuum collection system. The

1 vacuum collection system is an Airvac designed system initially
2 installed in 2007 and consisting of approximately 4,025 valve pits, 90
3 miles of vacuum mains, sized from 4" to 10", and nine vacuum
4 stations. For reference, this is approximately 19 times as many valve
5 pits and 85 more miles of vacuum mains than the Eagle Creek
6 wastewater collection system. The vacuum collection system
7 continues to expand as new homes are built and added to the
8 system. The Oak Island installed Airvac valve pit sizes are larger in
9 size and capacity than the valve pits installed in the Eagle Creek
10 Subdivision, although in some areas of Oak Island, four homes are
11 connected to a single pit versus two at Eagle Creek. Additionally, the
12 larger home sizes, some of which have comparable numbers of
13 bedrooms and bathrooms as small hotels, necessitate larger valve
14 pits.

15 Similar to Eagle Creek, the valve pit setpoint is ten gallons, which
16 when reached, causes the vacuum valve to open and the valve pit
17 contents to be removed by vacuum force. At Oak Island, overflows
18 are rare but occasionally occur due to controller or sensor failures in
19 the valve pit. According to Oak Island, controller failures occur
20 approximately five times per month. In contrast, Sandler indicated in
21 response to a Public Staff data request that from August 20, 2020
22 through January 24, 2022 (542 days), Envirolink has rebuilt or
23 replaced 3,081 controllers or **5.7 controllers per day**.

1 Two to three spares of each vacuum collection system component
2 are kept in stock. Depending on budget and time constraints, onsite
3 utility personnel will sometimes refurbish controllers. The wastewater
4 utility system has five employees. Turnover of utility personnel is low
5 with the newest wastewater utility system employee hired
6 approximately five years ago.

7 The Oak Island wastewater system does not remotely monitor each
8 individual vacuum pit. Instead, a Supervisory Control and Data
9 Acquisition (SCADA) system monitors vacuum station parameters,
10 including vacuum tank level(s), vacuum pressure, and vacuum and
11 sewerage pump run times. Each vacuum station is checked daily,
12 and each valve pit is inspected annually. Airvac performs an
13 inspection of the system at least once a year, rendering system
14 adjustments and providing inspection results.

15 Based on my inspection and discussions with the Oak Island
16 Wastewater Superintendent, the Oak Island vacuum collection
17 system operates well due to the experience of the system's
18 personnel, preventative maintenance performed, and the availability
19 of spare equipment. The Oak Island vacuum collection system's
20 reliability is comparable to the Oak Island gravity collection system's.
21 The performance of the Oak Island vacuum collection system
22 demonstrates that if a vacuum collection system is maintained

1 properly, it can provide reliable service comparable to that of a
2 gravity collection system. However, as compared to a gravity
3 collection system, the vacuum collection system requires continuous
4 maintenance.

5 **Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE BOND**
6 **FOR THIS WASTEWATER UTILITY SYSTEM?**

7 A. I recommend a bond of \$1,000,000 for the wastewater utility system
8 serving Eagle Creek Subdivision, Mill Creek Golf Club, and Moyock
9 Middle School. Consistent with N.C. Gen. Stat. § 62-110.3, my bond
10 amount recommendation is based on the following factors:

11 a) Currituck does not hold any other water or sewer franchises in this
12 State, and, as a result, does not have a record of operation.

13 b) Currituck does not currently serve any customers. However, the
14 Eagle Creek wastewater utility system that Currituck seeks to acquire
15 serves approximately 420 residential customers in the Eagle Creek
16 Subdivision and two non-residential customers, Mill Creek Golf Club
17 and Moyock Middle School, in Currituck County. Furthermore, as
18 stated on page 13, lines 19 and 20 of Mr. Myers' direct testimony,
19 Currituck intends to add customers from the Fost and Flora
20 subdivisions to the Eagle Creek WWTP. In response to a Public Staff
21 data request, Currituck stated that Fost will add an additional 479
22 residential equivalent units (REU) and Flora will add 277 REUs. This

1 would be in addition to the 420 residential and two non-residential
2 customers currently served by the Eagle Creek wastewater utility
3 system. Although both the Fost and Flora subdivisions will have
4 gravity collection systems, the additional customers would
5 significantly increase the current number of customers relying on the
6 Eagle Creek wastewater utility system.

7 c) As stated above, assuming the Joint Application is approved, there
8 is a likelihood of future expansion needs of the service. The Fost
9 subdivision will add an additional 479 residential equivalent units
10 (REU) and Flora will add 277 REUs, which would significantly
11 increase the current number of customers relying on the Eagle Creek
12 WWTP for wastewater service.

13 d) Currituck is not acquiring an existing company.

14 e) With regards to other relevant factors, I would note the following:

15 i) Currituck and Envirolink, which is the current contract operator of
16 the Eagle Creek wastewater utility system, have a least one principal
17 in common. Mr. Myers is the President of Envirolink and the Vice-
18 President, Secretary, and Treasurer of Currituck. In DWR's Civil
19 Penalty Assessments for the Eagle Creek WWTP NOVs (See **May**
20 **and Tankard Exhibit 10**), specifically assessments for Case
21 Numbers LV-2021-0350, LV-2021-0351, LV-2021-0352, LV-2021-
22 0353, and LV-2021-0354, DWR states the following in the section

1 titled Assessment Factors with regards to Item 2) The duration and
2 gravity of the violation: “[t]he facility has not been meeting effluent
3 limits since the new operator took over the plant.” DWR further
4 states, “[t]he gravity of the violations are significant!” In Item 6),
5 captioned Whether the violation was committed willfully or
6 intentionally, DWR states, “[t]he operator [Envirolink] is not managing
7 the system as required.”

8 In response to a Public Staff data request, Currituck stated that it
9 intends to outsource operation and maintenance of the Eagle Creek
10 wastewater utility system to Envirolink. The similarities in
11 management between Currituck and Envirolink, Currituck’s intention
12 to use Envirolink as the Eagle Creek wastewater utility system
13 operator, and DWR’s stated concerns with Envirolink’s tenure as the
14 Eagle Creek wastewater utility system operator provide additional
15 justification for the bond amount.

16 ii) On page 13, lines 9 and 13 of Mr. Myers’ direct testimony, Myers
17 states that the current WWTP will be upgraded and the wastewater
18 collection system will be replaced. While the exact upgrade and
19 replacement costs are unknown at this time, preliminary costs
20 estimates to upgrade the Eagle Creek wastewater utility system and
21 replace the current vacuum collection system with a gravity collection
22 system are \$3.1 million, as indicated in Attachment I of the Joint

1 Application. As indicated in a response to a Public Staff data request,
2 the actual costs may be higher since the number of lift stations has
3 increased from four to seven and the number of manholes has
4 increased from 64 to over 100.

5 iii) On page 15, lines 19 and 20, of Ms. Brittney Willis' direct
6 testimony, Ms. Willis states that Sandler has invested approximately
7 \$673,834 in the Eagle Creek wastewater utility system in 2020 –
8 2022 to comply with both the Consent Judgment and amended
9 consent judgment between Sandler and DWR. The amended
10 consent judgment between Sandler and DWR requires certain
11 improvements and actions to enhance the Eagle Creek wastewater
12 utility system's reliability and reduce sanitary sewer overflows (the
13 Amended Consent Judgment). Although the final costs to comply
14 with the Amended Consent Judgment have not yet been determined,
15 it is reasonable to conclude Sandler's total investment will be
16 significant.

17 Therefore, pursuant to N.C.G.S. § 62-110.3, the Public Staff believes
18 that a \$1 million bond would be required to ensure the provision of
19 adequate and sufficient service within all of Currituck's service areas.

20 **Q. WHAT ARE THE EXISTING AND PROPOSED WASTEWATER**
21 **UTILITY SERVICE RATES?**

1 A. Currituck proposes charging the current Commission-approved rates
 2 and connection charges for Sandler as specified in Docket Nos. W-
 3 1130, Sub 9 and M-100, Sub 138. However, Currituck proposes
 4 charging different reconnection charges than the current,
 5 Commission-approved reconnection charges for Sandler. The
 6 present and proposed rates and charges are as follows:

<u>Monthly Flat Rate Wastewater Service:</u>			
	<u>Present</u>	<u>Proposed</u>	
7			
8			
9	Residential Service	\$ 52.60	\$ 52.60
10	Mill Creek Golf Club	\$ 364.67	\$ 364.67
11	Moyock Middle School	\$ 884.20	\$ 884.20
12	<u>Connection Charge:</u>		
13	Residential, per residence	\$3,000	\$3,000
14	Commercial, per REU		
15	(360 gpd)	\$3,000	\$3,000
16	<u>Reconnection Charge:</u>		
17	If wastewater service cut off		
18	by utility for good cause:	Actual ³	NA
19	Next Day Restore	NA	\$ 35.00
20	Same Day Restore ⁴	NA	\$ 55.00
21	After Hours Restore	NA	\$ 100.00

22 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE**
 23 **REQUESTED APPROVAL OF RATES?**

³ Neglect or failure to pay amounts due or otherwise comply with the provisions of this tariff shall be deemed to be sufficient cause for discontinuance of service. If such discontinuance of service becomes necessary, Sandler Utilities at Mill Run, LLC, will install a valve or other device to cut off and block the sewer line. The customer will be charged the actual cost of installing the valve or device including parts and labor.

⁴ Same day restores will be billed at next day rate if request before 10:00 am (M-F), excluding holidays. Holidays billed at after-hours rate.

1 A. For the most part, the recommended rates are the same as the
2 current Commission-approved rates for Sandler. Although the
3 reconnection charges differ, the proposed rates and fees are just and
4 reasonable.

5 **Q. WHAT ADJUSTMENTS HAVE YOU MADE TO PLANT**
6 **ADDITIONS SINCE THE LAST RATE CASE?**

7 A. In the Joint Application and responses to Public Staff data requests,
8 Sandler has provided plant additions from 2016, the year following
9 its last rate case, through January 2022. I have reduced the plant
10 addition amounts proposed by Sandler by \$207,633. I did not allow
11 two items that Sander included as 2016 plant additions. These are
12 replacing a starter and contactor on a vacuum pump for \$1,679 and
13 replacing blower bearings for \$1,235. I consider both items to be
14 repairs and not capital expenses.

15 I made significant adjustments to 2020 plant additions. I did not allow
16 the addition of any controller or vacuum valve replacement in 2020,
17 which totaled \$130,744. In 2020, Sandler had not completed
18 renovations to reduce rainwater intrusion such as raising and sealing
19 pit packages, which was required under Ordering Paragraph 4 of the
20 2015 Rate Case Order. These controllers and valves were
21 specifically replaced in 2020 because of ongoing flooding of valve

1 pits and other ongoing maintenance issues, which could have been
2 avoided had Sandler been in compliance with Ordering Paragraph 4
3 at that time. Many of the controllers and vacuum valves were
4 replaced numerous times, and therefore retired. For similar reasons,
5 I did not allow the cost of the temporary sewerage pump and
6 emergency fee in the amount of \$3,941. I do not consider these
7 additions to be prudent or justified.

8 Additionally, Sandler proposed \$43,441 in plant additions that
9 include both labor and equipment charges associated with the
10 November 2020 outage. Of this amount, I allowed \$739 of the \$1,155
11 invoiced for parts required for the sewerage pumps. The \$1,155 was
12 reduced to \$739 to account for insurance payments received by
13 Sandler. I did not allow the remaining \$42,702 for labor and
14 equipment expenses to be included because the November 2020
15 outage stemmed from Sandler's continuing failure to properly
16 maintain the Eagle Creek wastewater utility system and take
17 appropriate action to improve wastewater system reliability.

18 I also did not allow a 2021 plant addition for repairs to pump house
19 and irrigation system, pipe and sprinkler heads for \$27,333. These
20 additions do not directly benefit the Eagle Creek wastewater
21 customers. Furthermore, as stated on page 2, line 22 and pages 1-6
22 of Ms. Willis' direct testimony, it is not Sandler's responsibility to

1 operate and maintain (1) the golf course irrigation system and (2) the
2 golf course irrigation system's effluent disposal operations.

3 I allowed plant additions for controller and vacuum valve
4 replacements purchased in 2021. During 2021, Sandler began
5 installing pedestal-mounted controllers and performing additional
6 actions stipulated in the Consent Judgment between Sandler and
7 DWR and the Amended Consent Judgment.

8 In summary, I did not allow \$2,914 in 2016 plant additions because I
9 considered the expenses to be operating and maintenance
10 expenses rather than capital expenses. For 2020, I did not allow
11 \$130,744 in plant additions for replacement of controllers and
12 vacuum valves, \$3,941 for the cost of a temporary sewerage pump,
13 and \$42,702 for labor and equipment expenses associated with the
14 November 2020 wastewater system outage. I also did not allow
15 \$27,333 in 2021 plant additions for repairs to the golf course pump
16 house, irrigation system, and sprinkler heads. As described earlier, I
17 do not consider the majority of these plant additions to be reasonable
18 or prudent.

19 **Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE**
20 **PURCHASE PRICE?**

1 A. On April 14, 2021, Sandler and Currituck entered into a Revised and
2 Restated Asset Purchase Agreement for the Eagle Creek
3 wastewater utility system (APA). Section 4.2.a. of the APA provides
4 that the purchase price for the existing wastewater assets shall be
5 \$250,000 that can be included as original cost rate base. In addition,
6 the APA stipulates that “[i]n addition to the purchase price of
7 \$250,000, the purchase price shall be increased by the amount of
8 any costs incurred and paid by [Sandler] for renewal and
9 replacements, capitalized repairs, and/or upgrades to the
10 wastewater system as approved by the Commission and [Currituck]
11 during the period from the effective date until the closing date.”

12 Furthermore, the APA provides for an additional purchase price of
13 \$88,900 equivalent to \$100 for each of the 889 new connections
14 made to the Eagle Creek wastewater utility system from the adjacent
15 Fost and Flora subdivisions that other developers will build. At this
16 time, those new connections have not been made.

17 The effective date of the APA is April 14, 2021, and the closing date
18 of the APA would occur within 30 days after the date of issuance of
19 a certificate of public convenience and necessity to Currituck.

20 As stated in Public Staff Financial Analyst Iris Morgan’s direct
21 testimony, the original cost net investment of the Eagle Creek
22 wastewater utility system as of December 31, 2021 is \$398,499,

1 which exceeds the \$250,000 purchase price amount. As a result, a
2 purchase price of \$250,000 is reasonable and prudent. However, the
3 original cost net investment is subject to change based on plant asset
4 depreciations and retirements that have occurred between
5 December 31, 2021 and the closing date. Furthermore, the Public
6 Staff would oppose an additional purchase price of \$88,900 for new
7 Fost and Flora connections to the Eagle Creek wastewater utility
8 system since those connections do not directly benefit the Eagle
9 Creek wastewater utility system customers. The final purchase price,
10 including any purchase price additions specified in the APA, other
11 than the Fost and Flora additional purchase price, will be limited by
12 the original cost net investment at the time of closing and subject to
13 reasonableness and prudence.

14 **Q. BRIEFLY DESCRIBE CURRITUCK'S PLANS FOR CAPITAL**
15 **IMPROVEMENTS TO ADDRESS THE EAGLE CREEK**
16 **WASTEWATER COLLECTION SYSTEM PERFORMANCE**
17 **ISSUES.**

18 A. On page 33, lines 4 and 5 of Mr. Myers' direct testimony, Mr. Myers
19 states "Envirolink maintains that the appropriate long term solution is
20 to replace the vacuum system, ostensibly with a gravity system or
21 other suitably reliable system." On page 35, line 4 of his direct
22 testimony, Mr. Myers further states that the wastewater collection

1 system “assets are close to 24 years old and have a stated life of 10-
2 12 years”.

3 In response to Public Staff data requests, Currituck provided
4 preliminary plans of improvements needed to upgrade the vacuum
5 collection system or replace the vacuum collection system with a
6 gravity collection system or low pressure/septic tank effluent
7 pumping (STEP) collection system.

8 For the vacuum collection system, Currituck’s preliminary plans
9 include installing larger capacity valve pits, including installing a 500-
10 gallon tank between each valve pit and home, increasing the number
11 of vacuum pumps in service from two to three, replacing the vacuum
12 tank with two stainless steel tanks, installing a monitoring system on
13 all valve pits, and replacing the vacuum station.

14 Currituck’s preliminary plans for a gravity collection system include
15 installing between 105 and 131 manholes, seven lift stations,
16 approximately 34,000 feet of service lines, 22,500 - 25,000 feet of
17 gravity wastewater lines and 8,600 – 9,550 feet of force mains
18 throughout the Eagle Creek subdivision. Currituck’s preliminary
19 plans for a low pressure/STEP system include installation of one
20 grinder pump at each residence and one shared 720-gallon tank for
21 every two residences. The 720-gallon tank will have two separate
22 compartments of equal size, allowing each residence a volume of

1 360 gallons. Although this was not included in Currituck's response
2 to Public Staff data requests, the Public Staff believes that the low
3 pressure/STEP system will also require the installation of new
4 collection system lines. Currituck has not finalized the costs
5 associated with the gravity and low pressure/ STEP options. It will be
6 incumbent upon Currituck to ensure a reasonable least cost option
7 is selected and expenses are reasonable and prudent, and of benefit
8 to customers.

9 **Q. DO YOU CONSIDER THE EAGLE CREEK WASTEWATER**
10 **VACUUM COLLECTION SYSTEM TO BE AT THE END OF ITS**
11 **USEFUL LIFE?**

12 A. I do not. On page 36, line 1 of Mr. Myers' direct testimony, there is a
13 table from the Water Environment Federation, Manual of Practice –
14 FD-12. The table shows the expected lives in years of various
15 vacuum collection system components, including vacuum pumps
16 and discharge pumps (15-20 years), control panel (20-25 years),
17 vacuum valves (8-12 years) and controllers (4-6 years). Interestingly,
18 on page 16, lines 11 through 13 of Ms. Willis' direct testimony, Ms.
19 Willis states that for the "period of August 2020 through January 24,
20 2022, Sandler has rebuilt or replaced 2,163 vacuum valves and
21 3,081 controllers." Each of the approximately 212 valve pits has one
22 vacuum valve and one controller. Based on Ms. Willis' testimony, that

1 would equate to approximately ten rebuilt or new vacuum valves and
2 14 rebuilt or new controllers for each valve pit. As a result, each
3 controller and vacuum valve currently installed at Eagle Creek has
4 been installed on average for less than 19 months.

5 Regarding the pumps, **Franklin Exhibit 5** includes an email from Ms.
6 Willis stating that sewage and vacuum pumps were replaced in 2020.
7 As indicated in Ms. Willis' email, there was one new sewage pump
8 and motor and one rebuilt pump. For the vacuum pumps, Sandler
9 installed one new vacuum pump, two reconditioned pumps, and one
10 new motor. Additionally, page 19, lines 4 and 5 of Ms. Willis'
11 testimony provides that Sandler is planning to install a control panel
12 replacement. As a result, many of the components that Mr. Myers
13 identified as being at the end of their useful lives have recently been
14 replaced and therefore have considerable remaining lives. The sole
15 exceptions are the valve pits and vacuum mains. The vacuum lines
16 and mains are fabricated from polyvinyl chloride (PVC), which is
17 considered durable and long lasting, with some reports of buried
18 PVC pipe lasting 50-100 years. While vacuum pits will potentially
19 need replacing, pits can be replaced individually as needed or in a
20 phased approach focusing first on pits that are required to be
21 modified to prevent rainwater intrusion or show signs of wear and
22 degradation.

1 Q. WHAT IS YOUR RECOMMENDATION REGARDING THE
2 REQUESTED TRANSFER OF PUBLIC UTILITY FRANCHISE?

3 A. On page 16, line 7 through page 19, line 8 of Ms. Willis' direct
4 testimony, Ms. Willis describes the repairs and upgrades that have
5 been made to the Eagle Creek wastewater utility system between
6 August 2020 and January 24, 2022. On page 15, lines 19 and 20,
7 Ms. Willis also states that Sandler has invested approximately
8 \$673,834 in years 2020 - 2022. Page 19, lines 18 through 20 of Ms.
9 Willis' direct testimony provides that the additional improvements to
10 the vacuum collection system the Consent Judgment require will
11 "provide more assurance of the safe and reliable operation of the
12 Eagle Creek wastewater utility system."

13 Beginning with the system failures that occurred in late summer
14 2020, Sandler began investing resources in the Eagle Creek
15 wastewater utility system. The Amended Consent Judgment, which
16 the Currituck County Superior Court issued precisely because of
17 Sandler's non-compliance with the original Consent Judgment,
18 requires certain improvements and actions to enhance the Eagle
19 Creek wastewater utility system's reliability and reduce sanitary
20 sewer overflows. I recommend the Commission hold the Joint
21 Application in abeyance until Sandler satisfies the terms of the

1 Amended Consent Judgment and Sandler satisfies any related,
2 DWR legal proceedings.

3 Alternatively, I would recommend that the Commission hold the Joint
4 Application in abeyance unless and until Sandler, in accordance with
5 Ordering Paragraph 14 of the Amended Consent Judgment, files a
6 motion joining Currituck as a defendant such that the Amended
7 Consent Judgment is binding upon Currituck and the Currituck
8 County Superior Court issues an order granting such motion. As
9 Ordering Paragraph 14 specifically provides:

10 This Amended Consent Judgment shall be binding
11 upon Defendant's successors and assigns. Defendant
12 shall not transfer any of the assets that are the subject
13 of the Complaint, including the Permit or the Collection
14 System, unless and until Defendant moves to join the
15 transferee as a defendant in this case such that this
16 Amended Consent Judgment shall be binding upon the
17 transferee and the Court issues an order granting such
18 motion.

19 Sandler and Currituck should be required to submit a filing with the
20 Commission when the terms and requirements of the Amended
21 Consent Judgment have been satisfied in full, or when the Superior
22 Court issues an order joining Currituck as a defendant to the
23 Amended Consent Judgment. Once that filing has been submitted,
24 the Commission could order further proceedings to determine
25 whether the transfer is still in the public interest and should be
26 approved.

1 I believe this recommendation provides the most prudent and
2 reasonable solution, because it preserves the value of the
3 investment and recent improvements made to the Eagle Creek
4 vacuum collection system. It also supports the required actions DWR
5 has identified in the Amended Consent Judgment.

6 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

7 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

D. MICHAEL FRANKLIN

I graduated from the University of South Carolina, earning a Bachelor of Science Degree in Engineering. I worked in the electric utility industry for 33 years prior to joining the Public Staff in June 2019. While employed by the Public Staff, I have worked on utility rate case proceedings, new franchise and transfer applications, customer complaints, and other aspects of utility regulation.

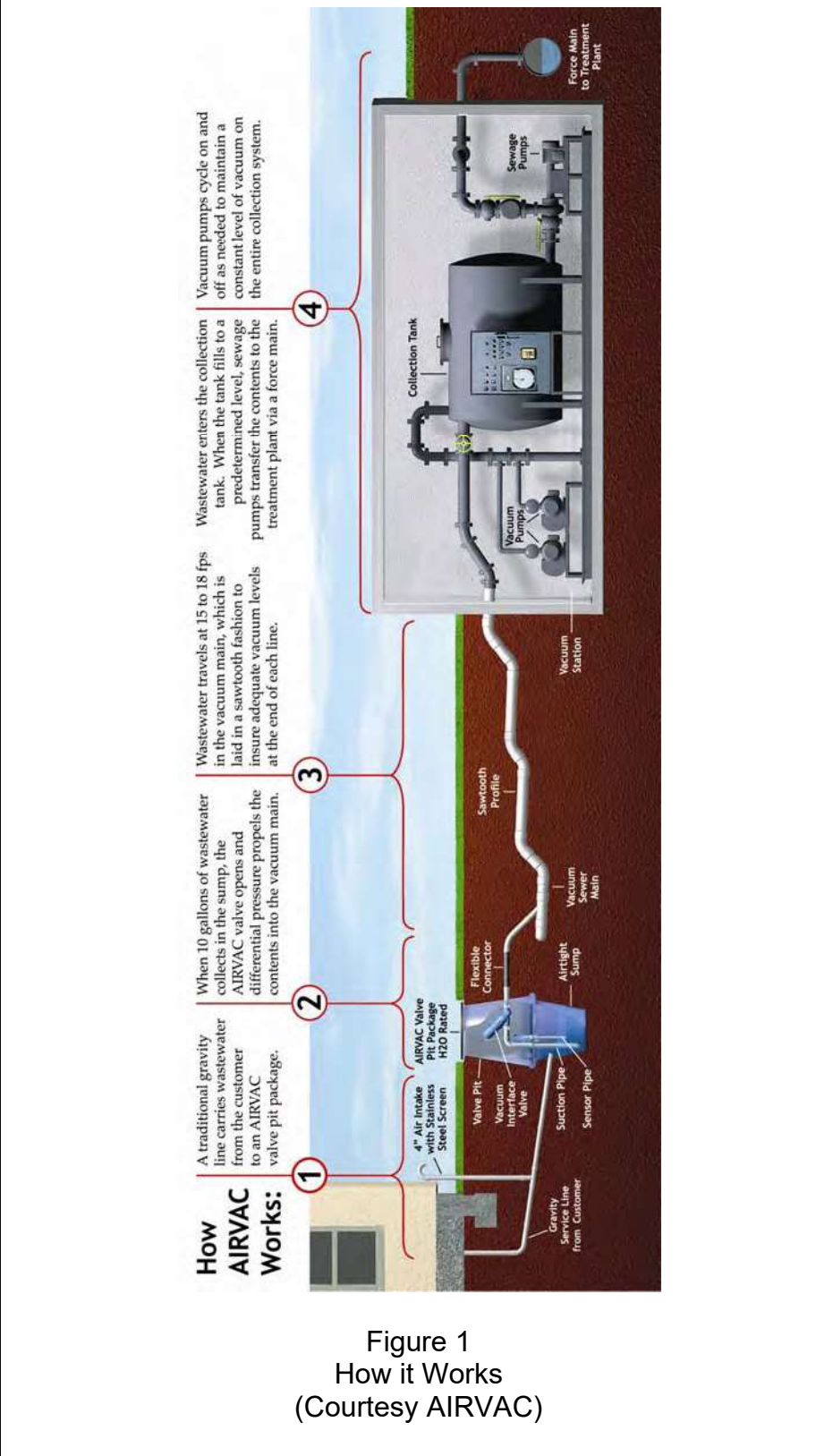


Figure 1
How it Works
(Courtesy AIRVAC)

SANDLER UTILITIES AT MILL RUN, LLC

April 1, 2021

Mr. William Grantmyre
Staff Attorney
North Carolina Public Staff Utilities Commission
4326 Mail Service Center
Raleigh, NC 27699-4300

Re: Docket No. W-1130, Sub 8
Eagle Creek Subdivision

Dear Mr. Grantmyre:

Sandler Utilities at Mill Run, LLC ("Sandler Utilities") sincerely regrets the recent wastewater system backups into the homes of customers caused by controller and valve failures due to water intrusion into the valve pit packages of the Eagle Creek Vacuum System ("Vacuum System"). As discussed in our January 22, 2021 letter, Sandler Utilities performed substantial capital improvements to the Vacuum System since the Commission's Recommended Order Granting Rate Increase, Requiring Refund, and Customer Notice was issued on December 11, 2015. As discussed in detail on our January 22, 2012 letter, more recently, Sandler Utilities (i) retained the services of FloVac to provide expert recommendations about how to address and correct the problems with the Vacuum System; (ii) enlisted FloVac's assistance in training the operator of the system, Envirolink, Inc. ("Envirolink"), as to how to prevent water ingestion in the system; (iii) installed 120 new controllers from October 12, 2020 through November 23, 2020 that are capable of processing small amounts of water and being submerged up to five feet with no impact to performance; (iv) performed proper installation of in-sump breather hoses on several valve pits; and (v) installed one new valve pit in December 2020. Also, Sandler Utilities has requested recommendations from FloVac about whether to install a monitoring system at each valve pit so that the operator of the system can timely respond to any issues with the system.

In addition to those actions and capital improvements, Sandler has performed, or will be performing, further remedial actions and improvements to the system to reduce rainwater intrusion and minimize flooding of the valve pits. Below is a list of the actions items and completion date for the additional improvements to reduce rainwater intrusion and minimize flooding of the valve pits.

Action Item	Recommended Response	Completion Schedule for Remedial Action
<u>Rainwater intrusion.</u> Reduce rainwater intrusion and minimize flooding in valve pits. Most rainwater intrusion is believed to be caused by I&I from the homeowners' laterals causing vacuum systems to struggle with inundation during heavy rain.	Install a monitoring system to detect in real time issues, such as missing clean out caps that the homeowners may have removed to relieve wastewater system back-ups. It will also alleviate time spent searching for leaks in the system, and response time is critical to keep problems from escalating.	FloVac has submitted proposals for the monitoring system to both Sandler Utilities and Envirolink, the potential purchaser of the Vacuum System. Sandler Utilities and Envirolink are reviewing FloVac's proposal, and determining the most effective method of addressing the problems with the system.

448 Viking Drive, Suite 220, Virginia Beach, Virginia 23452
Mailing Address: Post Office Box 8790, Virginia Beach, Virginia 23450
Telephone 757-463-5000 / Telefax 757-463-3358

<p><u>Continuous operation of vacuum pump.</u> The vacuum pump frequently operates continuously during periods of high water levels within the vacuum holding tank, and the continuous operation of the vacuum pump creates the potential for motor failure.</p>	<p>Repair high-level lock-out valve.</p>	<p>This repair was completed in December 2020.</p>
<p><u>System monitoring.</u> Appropriate and effective system monitoring during off-hours has been accomplished.</p>	<p>Sandler Utilities is committed to ensuring that Envirolink is appropriately staffed so that any required service to the system will be performed timely. Sandler Utilities has instructed Envirolink to have a 24/7 presence at the plant. Envirolink's 24/7 presence at the plant will address previous issues of response time, such as when issues occurred during weekends when Envirolink was not physically on-site.</p>	<p>At the instruction of Sandler Utilities, effective on 3/19/2021, Envirolink has a physical presence at the site for 7-day, 20-hour shifts. Also, Envirolink will have at least two technicians on call during the remaining 4 hours of the day in which the plant is not physically staffed by an operator. During projected wet weather events, Sandler Utilities will be proactive and request that Envirolink ensure that 24-7 physical coverage is maintained until the wet weather event has subsided.</p>
<p><u>Outsource controllers.</u> Outsource controllers and valves to be rebuilt so fully functional ones are available when needed.</p>	<p>37 controllers that had been waiting for technician repair were delivered to FloVac for repair and rebuilding by their expert technicians. FloVac repaired the controllers and delivered them to the Eagle Creek plant.</p>	<p>The repairs to the controllers were completed in December 2021. In the event that Envirolink has a back-log for repair of the controllers in the future, Sandler Utilities has informed Envirolink to deliver the controllers to FloVac for repair.</p>
<p><u>Controller failure.</u> Controller failure from water ingestion was the result of new controllers being properly fitted to the valves within the collection network.</p>	<p>Envirolink technicians were trained about the proper procedure for removing water from the valve upper before fitting a new controller to prevent water ingestion.</p>	<p>FloVac provided training to Envirolink during the week beginning November 20, 2020.</p>
<p><u>Operator's technical experience.</u></p>	<p>Envirolink has been gaining experience and expertise in operating a vacuum wastewater system since the EnviroTech team who had previously operated the system left in</p>	<p>In November 2002, Sandler Utilities hired a former EnviroTech employee with experience in operating vacuum systems. This former EnviroTech employees is leading operations at the facility, and he has been</p>

	September 2020. Training in vacuum systems for all technicians who work at or will potentially work at this plant is critical.	instrumental in leading his team to detect and address potential issues. Also, Sandler Utilities has requested that Envirolink continue a training regimen with its operators to ensure that the operators will be proficient with the vacuum system. Mike Myers with Envirolink has that training has occurred and that additional training by a technician who leads training efforts with both AirVac and FloVac will be scheduled.
<u>Extended outages.</u> A delay in receipt of the initial vacuum pump replacement caused an extended outage that resulted serious problems to the system. The ongoing disassembly and reassembly of the valve pit by pump truck operators to clear the pits left the valve pits vulnerable to failures.	Once the system was stabilized, technicians analyzed each valve pit, and tested, repaired, reconnected, and replaced items as necessary. During this analysis, a technician discovered that a valve pit had collapsed. Therefore, a new valve pit was ordered and installed to replace the failed valve pit.	The analysis of each valve pit was conducted and completed during December 2020. As a result of the analysis, most of the valve pits that had sustained damage during the September and October outages were repaired. For example, each valve was fired multiple times by hand and then analyzed for hose orientation and correct hose connection and timing.
<u>Problem identification.</u> Identify problems early that cannot be readily observed.	Envirolink operators are required to record daily run times during their daily station "walk-through."	An example of a log and recording document was provided to Envirolink in November 2020 to use as an example. This document is now utilized as part of Envirolink's daily protocol.
<u>Pump station alarm.</u> The excessive pump run alarm is the most effective warning to keep the system from collapsing and causing a complete failure. Therefore, the pump alarm must be operating properly at all times.	Envirolink is required to check the pump alarm on a weekly basis, and check the control panel and sensors associated with all alarm systems at the plant on a weekly basis.	Since January 2021, Envirolink has been inspecting these systems to make sure they are operating properly. By the end of 2021, Sandler Utilities plans to provide and overhaul the control panel.
<u>Couplings wearing prematurely to the motor of the sewer pumps.</u>	Alignment of the motor on the pumps has been checked.	Pearson pumps completed this work during their repair and replacement efforts in November 2020.
<u>Nonoperational check valves on the vacuum main.</u>	Replace or repair as needed.	Valves are exercised weekly and are all currently in working order.

<u>Inadequate stock levels.</u>	Ensure multiple spare parts are available at all times.	From October 2020 through January 2021, numerous controllers, valves, pumps, motors, and valve pits have been ordered and kept on-site for Envirolink to use when needed.
<u>Excessive activations caused by inflow and infiltration from the homeowners' gravity laterals.</u>	Install a monitoring system to identify locations of excessive activations.	In December 2020, FloVac submitted proposals for a monitoring system to Sandler Utilities and Envirolink. Sandler Utilities and Envirolink are considering the proposals.
<u>The length of time it takes Envirolink to identify the location of a valve that is stuck open.</u>	Install a monitoring system to eliminate the need for this search.	In December 2020, FloVac submitted proposals for a monitoring system to Sandler Utilities and Envirolink. Sandler Utilities and Envirolink are considering the proposals.
<u>Short cycling of sewage pumps likely caused by debris in the vacuum collection tanks.</u>	Clean and inspect the collection tank thoroughly.	The vacuum tank was cleaned and thoroughly inspected in October 2020.

Sandler Utilities is committed to ensuring that the wastewater system for the Eagle Creek Subdivision is both safe and reliable. We are continuing our efforts to ensuring that the problems with the Vacuum System are satisfactorily addressed.

If you have any question about our plan to address the problems with the system, please let me know.

Sincerely,



Brittney M. Willis – Project Manager
Sandler Utilities at Mill Run, LLC

448 Viking Drive, Suite 220, Virginia Beach, Virginia 23452
Mailing Address: Post Office Box 8790, Virginia Beach, Virginia 23450
Telephone 757-463-5000 / Telefax 757-463-3358

Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

**EAGLE CREEK RESIDENT COMPLAINTS TO DWR (BY ADDRESS)
JANUARY 26, 2021 TO NOVEMBER 5, 2021**

Street

No	Street	Date	Complaint
103	Eagleton Circle	10/4/2021	System down - can't use water
105	Eagleton Circle	6/13/2021	Unable to flush toilet
105	Eagleton Circle	6/29/2021	Sewer service not working
105	Eagleton Circle	10/4/2021	Trouble flushing. Pits in neighborhood overflowing
105	Eagleton Circle	11/1/2021	Water on bathroom floor
108	Eagleton Circle	6/28/2021	Unable to flush toilet
110	Eagleton Circle	6/13/2021	Unable to flush toilet
111	Green View Road	6/13/2021	Sewage backup to back flow preventer and pit is full
113	Eagleton Circle	2/1/2021	Candy cane spews & neighbor @111 (connected to same pit), has backed up sewage in their house
113	Eagleton Circle	2/11/2021	Sewage backing up into house and coming out candy canes
113	Eagleton Circle	3/15/2021	Candy can spews. Downstairs toilet backing up
115	Eagleton Circle	10/3/2021	Water coming out of candycane. Water in downstairs bathroom
119	Eagleton Circle	10/4/2021	Pit is overflowing; ditch it full of stuff
125	Eagleton Circle	6/23/2021	Pit full
125	Eagleton Circle	7/4/2021	Pit overflowing - included photo
132	Eagleton Circle	3/15/2021	Sewage on walkway, driveway and ditches
134	Green View Road	6/13/2021	Sewage in downstairs bathroom and front yard
152	Green View Road	10/6/2021	Pit is overflowing into yard
162	Green View Road	1/26/2021	Sewage backed up into home. Pit full and pouring into ditch (w/photo)
162	Green View Road	11/3/2021	Raw sewage in yard - photos
162	Green View Road	11/5/2021	Candycane overflowing w/ video
168	St Andrews Road	11/2/2021	First time ever water coming out of candycane
169	Eagleton Circle	11/4/2021	Raw sewage exiting candycane - photos
172	Eagle Creek Road	2/1/2021	Candycane hissing

Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

Street

No	Street	Date	Complaint
176	Green View Road	3/15/2021	Sewage pouring out of pit and filling drainage ditch (Photo)
182	St Andrews Road	6/13/2021	A lot of water on side of house and pit 3/4 full.
186	Green View Road	11/3/2021	Pit is full. No wastewater service
189	Eagle Creek Road	11/3/2021	Overflows at residence. Day 5 without sewer.
189	Eagle Creek Road	11/3/2021	Candycane overflowing. Photos and videos
200	Green View Road	10/4/2021	Pit is full and coming out of candycanes
204	Eagle Creek Road	10/4/2021	Found 6 inches of wastewater in home
204	Eagle Creek Road	11/2/2021	Raw sewage in home
204	Eagle Creek Road	11/4/2021	Routine overflows and damage to home
205	Green View Road	11/3/2021	Candycane overflowing, raw sewage in yard (w/ photos)
206	Eagle Creek Road	6/13/2021	Plumbing issues
206	Eagle Creek Road	10/4/2021	Need pit pumped
206	Eagle Creek Road	10/5/2021	Day 5 without service
220	Green View Road	1/26/2021	Controller failed and valve is water logged {loud hissing noise coming from the pit itself}.
220	Green View Road	1/30/2021	Pit full and candycane overflowing. Some leakage in home.
220	Green View Road	2/8/2021	Water backed up to candy cane
220	Green View Road	3/13/2021	Sewage Backup in home; backflow valve full (w/photos)
222	Green View Road	10/2/2021	Water coming up from toilet, under wall inside pantry
226	Green View Road	11/3/2021	Sewage back up in house.
227	Eagle Creek Road	10/4/2021	System down all weekend
228	Green View Road	11/4/2021	Candycane overflowing w/ video
251	Green View Road	10/8/2021	Neighbors using pool pumps to pump pits - discharge to ditch
256	Green View Road	11/4/2021	Raw sewage in yard - photos
257	Green View Road	10/4/2021	Toilet making violent vacuum noises
257	Green View Road	10/6/2021	Unaware of system outage. Did laundry and flooded neighbor
257	Green View Road	10/26/2021	Water smells like fuel or oil

Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

Street

No	Street	Date	Complaint
259	Green View Road	10/4/2021	Downstairs bathroom backed up three times since yesterday
261	Green View Road	6/13/2021	Pit sinking (Photos)

Total Complaints	52
Total Addresses Reporting Complaints	34
Homes with Multiple Complaints	9

Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

**EAGLE CREEK RESIDENT COMPLAINTS TO DWR (BY DATE)
JANUARY 26, 2021 TO NOVEMBER 5, 2021**

Street

No	Street	Date	Complaint
162	Green View Road	1/26/2021	Sewage backed up into home. Pit full and pouring into ditch (w/photo)
220	Green View Road	1/26/2021	Controller failed and valve is water logged {loud hissing noise coming from the pit itself}.
220	Green View Road	1/30/2021	Pit full and candycane overflowing. Some leakage in home.
113	Eagleton Circle	2/1/2021	Candy cane spews & neighbor @111 (connected to same pit), has backed up sewage in their house
172	Eagle Creek Road	2/1/2021	Candycane hissing
220	Green View Road	2/8/2021	Water backed up to candy cane
113	Eagleton Circle	2/11/2021	Sewage backing up into house and coming out candy canes
220	Green View Road	3/13/2021	Sewage Backup in home; backflow valve full (w/photos)
113	Eagleton Circle	3/15/2021	Candy can spews. Downstairs toilet backing up
132	Eagleton Circle	3/15/2021	Sewage on walkway, driveway and ditches
176	Green View Road	3/15/2021	Sewage pouring out of pit and filling drainage ditch (Photo)
105	Eagleton Circle	6/13/2021	Unable to flush toilet
110	Eagleton Circle	6/13/2021	Unable to flush toilet
111	Green View Road	6/13/2021	Sewage backup to back flow preventer and pit is full
134	Green View Road	6/13/2021	Sewage in downstairs bathroom and front yard
182	St Andrews Road	6/13/2021	A lot of water on side of house and pit 3/4 full.
206	Eagle Creek Road	6/13/2021	Plumbing issues
261	Green View Road	6/13/2021	Pit sinking (Photos)
125	Eagleton Circle	6/23/2021	Pit full
108	Eagleton Circle	6/28/2021	Unable to flush toilet
105	Eagleton Circle	6/29/2021	Sewer service not working
125	Eagleton Circle	7/4/2021	Pit overflowing - included photo

Sandler Utilities at Mill Run, LLC
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Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

Street

No	Street	Date	Complaint
222	Green View Road	10/2/2021	Water coming up from toilet, under wall inside pantry
115	Eagleton Circle	10/3/2021	Water coming out of candycane. Water in downstairs bathroom
103	Eagleton Circle	10/4/2021	System down - can't use water
105	Eagleton Circle	10/4/2021	Trouble flushing. Pits in neighborhood overflowing
119	Eagleton Circle	10/4/2021	Pit is overflowing; ditch it full of stuff
200	Green View Road	10/4/2021	Pit is full and coming out of candycanes
204	Eagle Creek Road	10/4/2021	Found 6 inches of wastewater in home
206	Eagle Creek Road	10/4/2021	Need pit pumped
227	Eagle Creek Road	10/4/2021	System down all weekend
257	Green View Road	10/4/2021	Toilet making violent vacuum noises
259	Green View Road	10/4/2021	Downstairs bathroom backed up three times since yesterday
206	Eagle Creek Road	10/5/2021	Day 5 without service
152	Green View Road	10/6/2021	Pit is overflowing into yard
257	Green View Road	10/6/2021	Unaware of system outage. Did laundry and flooded neighbor
251	Green View Road	10/8/2021	Neighbors using pool pumps to pump pits - discharge to ditch
257	Green View Road	10/26/2021	Water smells like fuel or oil
105	Eagleton Circle	11/1/2021	Water on bathroom floor
168	St Andrews Road	11/2/2021	First time ever water coming out of candycane
204	Eagle Creek Road	11/2/2021	Raw sewage in home
162	Green View Road	11/3/2021	Raw sewage in yard - photos
186	Green View Road	11/3/2021	Pit is full. No wastewater service
189	Eagle Creek Road	11/3/2021	Overflows at residence. Day 5 without sewer.
189	Eagle Creek Road	11/3/2021	Candycane overflowing. Photos and videos
205	Green View Road	11/3/2021	Candycane overflowing, raw sewage in yard (w/ photos)
226	Green View Road	11/3/2021	Sewage back up in house.
169	Eagleton Circle	11/4/2021	Raw sewage exiting candycane - photos

Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

Street

No	Street	Date	Complaint
204	Eagle Creek Road	11/4/2021	Routine overflows and damage to home
228	Green View Road	11/4/2021	Candycane overflowing w/ video
256	Green View Road	11/4/2021	Raw sewage in yard - photos
162	Green View Road	11/5/2021	Candycane overflowing w/ video

Total Complaints	52
Total Addresses Reporting Complaints	34
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Sandler Utilities at Mill Run, LLC
Docket No. W-1130, Sub 11
Currituck Water and Sewer, LLC
Docket No. W-1333, Sub 0

Notes from January 20, 2022 Site Visit to Oak Island Vacuum Collection System

PS attendees: Bill Grantmyre and Mike Franklin

Oak Island: Wastewater Supt: Mark Moore

1. Pit sizes are larger in size and capacity than those installed at Eagle Creek. Some areas have 4 homes connected to a single pit. Larger homes will have their own individual pit. Similar to Eagle Creek, the pit setpoint is 10 gallons, which causes the valve to open and the pit contents removed by vacuum force.
2. Each vacuum station has 3 vacuum pumps except for one smaller station that has 2. Normally 2 vacuum pumps run and the third pump runs if needed. Each vacuum station has two sewerage pumps.
3. Overflows are rare. Occasionally will have overflow through air intake. Usually due to a controller or sensor failing in the pit.
4. Controller failures are approximately 5 per month out of a system with 90 miles of vacuum mains. Per the Oak Island Annual Wastewater Treatment and Collection Report, July 1, 2020 through June 30, 2021: The Vacuum System consists of 9 Vacuum Stations, 17 Duplex Grinder Pump Stations, 17 Dual Buffer Tanks, 2 Single Buffer Tanks, 4,025 Vacuum Pits, Vacuum Mains sizing from 4" to 10", and Force Mains from 6" to 24".
5. Regular preventive maintenance on vacuum pumps include replacing the exhaust filters annually, changing the oil every 600 hours of operation. Manufacturer recommended oil is used. Every year each pit is inspected and the pit fired to check for proper operation. Airvac evaluates the system annually (sometimes twice a year) and provides system adjustments and feedback to Oak Island Wastewater Superintendent.
6. Internal leaks can be caused by valve bonnet (i.e. plunger) being worn causing valve not to close completely and reducing system vacuum or causing more frequent running of vacuum pumps to maintain vacuum pressure.
7. 2 to 3 spares of every component are maintained. Each controller costs \$275 new whether purchased from Flovac or Airvac. Refurbishment is sometimes performed depending on budget and if there are no time constraints.
8. System was installed in 2007 based on a decision by the town council.
9. Valve pits are not individually remotely monitored. Oak Island did not purchase the Airvac SMART system due to cost. Mark recalled the cost to be \$2K per pit which would be over \$8M.
10. 12 new pits cost \$70K with an additional \$4K to install each one. Total installation cost is \$6K, \$4K for installation and \$2K for service connection.
11. Water table is 2-3'. Town has installed a Wellpoint dewatering system where needed.
12. The monitoring system is a SCADA system that monitors vacuum stations and lift stations. SCADA system was purchased from ProPump & Controls located in Troutman, NC (north of Charlotte). SCADA system updates cost \$6K per year.

13. Leaks still occur. Earlier pits had a thinner bottom of ¼" fiberglass/plastic. Over time the vacuum pulled the bottom out and caused the pits to sink. Newer pit designs have a heavier bottom
14. System works well. Needs continuous maintenance. Check status of the 9 vacuum stations daily. Gravity system lift stations are checked weekly. 5 techs are employed.
15. MC Schroeder Equipment located in Charlotte provides pump parts and performs pump repairs. Other vacuum system parts and components are purchased from Airvac and Flovac.
16. Employee turnover is low. Newest employee started 5 years ago. Initially sent techs to Airvac training. Now new employees are trained on the job by current staff.

Franklin, Mike

From: Brittney Willis <brittney@lmssi.com>
Sent: Thursday, October 7, 2021 3:51 PM
To: Franklin, Mike
Cc: Grantmyre, William
Subject: [External] RE: Docket No. W-1130 Sub 8: Sandler Utilities at Mill Run, LLC - Eagle Creek Subdivision
Attachments: Consent Order Response-revision to DEQ comment 2 - final.pdf; 2021-09-20 2d Ltr to Sandler re CJ submissions.pdf; 2021-08-31 Supplemental Submission re Consent Judgment.pdf; 2021-08-31 Sandler CJ Submissionrev.pdf

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Hi Mike,

We actually received another letter with comments on September 20th from DEQ that was in response to the revised letter we sent on August 31st. I have attached that letter for reference since it is the most recent. The one prior to that is also included since that is what you specifically asked for.

You are correct, we replaced sewage and vacuum pumps last year, one new sewage pump, and one repaired sewage pump.

As far as the sewage pumps, we did one full replacement with new motor and one tear down and rehab. With the vacuum pumps, we did one new vacuum pump, two reconditioned pumps, and one new motor.

Brittney M. Willis, P.E.
Wakefield Development

Office: 757-463-5000 ext 3388 | Direct: 757-463-6026 | Mobile: 757-510-4234

From: Franklin, Mike <Mike.Franklin@psncuc.nc.gov>
Sent: Tuesday, October 5, 2021 9:50 AM
To: Brittney Willis <brittney@lmssi.com>
Cc: Grantmyre, William <william.grantmyre@psncuc.nc.gov>
Subject: Docket No. W-1130 Sub 8: Sandler Utilities at Mill Run, LLC - Eagle Creek Subdivision

Brittney, Good morning. I know you are busy dealing with the current issues at Eagle Creek. When you get a chance could you send me Sandler's response to the Attorney General's August 13, 2021 letter where they stated the July 21, 2021, Engineering Evaluation and the July 23, 2021, Consent Judgement Response provided by Sandler were insufficient.

Also, last Fall when there was the widespread system failure, as I recall Sandler replaced the sewage pumps and vacuum pumps. Can you tell me which pumps were replaced and specify whether it was the pump motor, the pump (i.e. impeller, shaft, etc.) and if the replacement was new or refurbished. Thanks!

Mike Franklin
Water, Sewer & Telephone Division - Public Staff
430 N. Salisbury Street, Suite 2074

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Mar 02 2022