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March 31, 2022

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

RE: Docket Nos. 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 dockets I submit herewith for filing on behalf of Currituckтuck Water and Sewer, LLC rebuttal testimony of Michael Myers, William Freed, Mark Bissell, Zach Basnight, Paul Beaumont, Robert Hanig, Gary Lickfeld and Tracy Miller.

By copy of this letter I am forwarding copies to all parties record.

Sincerely

Edward S. Finley, Jr.
Attorney for Currituck Water and Sewer LLC
edfinley98@aol.com

State of North Carolina

North Carolina Utilities Commission
Raleigh

Docket No. W-1333, Sub 0
Docket No. W-1130, Sub 11

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)
Application by Currituck Water & Sewer, LLC,	)
4700 Homewood Court, Suite 108, Raleigh, North	)
Carolina 27609, and Sandler Utility, LLC,	)
Virginia Beach, Virginia, for Authority	)
To Transfer the Eagle Creek Wastewater System	)
And Franchise in Currituck County, North	)
Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

TRACY MILLER

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Tracy Miller, and I am the Area Manager for the Outer Banks and Piedmont areas for Envirolink, Inc. My business address is 4700 Homewood Court, Suite 108, Raleigh, North Carolina 27609.

Q. PLEASE STATE YOUR PROFESSION AND EXPERIENCE WITH WATER AND SEWER SYSTEMS.

A. I am a licensed operator in the State(s) of North Carolina and South Carolina, holding the following licenses:

- North Carolina
  - Grade 4 Biological Wastewater Operator Certification
  - Grade 2 Wastewater Collection System Operator Certification
  - Spray Irrigation Operator Certification
  - Land Application Operator Certification
  - C Well Operator Certification
  - A Distribution Operator Certification
- South Carolina
  - Wastewater A Certification

I have over 15 years working as a certified operator in State of North Carolina, having operated various technologies including gravity sewer, low pressure sewer, STEP sewer, in addition to the vacuum sewer serving Eagle Creek. I have also operated treatment technologies, including extended aeration, membrane biological reactors, Sequencing Batch Reactors, lagoons, trickling filters, Integrated Fixed Activated Sludge (IFAS), and other technologies.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND.

A. I have a high school diploma from Central Carolina Community College and have attended a one year certification program at North Carolina State University for turf grass and ornamentals. In addition, I have attended numerous North Carolina operator certifications schools, the American Water Works Associations leadership course, as well as training on vacuum sewer operation and maintenance from Airvac, Flovac, and A3-USA.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide additional information related to the joint application filed by CWS and Sandler Utility for the transfer of the Eagle Creek wastewater system in Currituck County, North Carolina.

Q. CAN YOU DESCRIBE THE TRANSITION FROM ENVIROTECH TO ENVIROLINK STAFF?

A. Yes. Envirolink agreed to acquire Envirotech in or around February/March 2020. It was agreed that Envirotech personnel would stay in place and continue operation of the facilities they were currently operating for two reasons. First, to allow for a smooth transition, and second, to permit Envirolink managers sufficient time to assess the capabilities of the Envirotech staff for potential employment with Envirolink. Between February/March 2020 and September 7, 2020, Envirotech employees continued the operation of Eagle Creek and other facilities, while Envirolink periodically shadowed the Envirotech staff, without offering suggestions or advice. In or around mid-August of 2020, Envirolink began starting to influence operations with the Envirolink managers and staff assuming operational control on September 7.

Q. PLEASE DESCRIBE THE CONDITION OF THE EAGLE CREEK WASTEWATER PLANT PRIOR TO AND AT THE TIME ENVIROLINK STAFF ASSUMED OPERATIONS.

A. The treatment was high in solids, vegetation in the clarifiers and digester. The sand filters could not be operated; the mechanical equipment inside the filters would not operate; there was no electricity to the unit; the unit was full of solids; and the filters were being by passed. The ultraviolet lights had exposed wiring, wiring was not to code, and only two of four light banks were working. The generator would not operate. The staff gauge in the infiltration pond has been damaged and knocked over; there was debris in the pond with trees all the way around the pond, which had less than 1 foot of freeboard. It was apparent that solids had not been removed from the plant in many years, with the off-line aeration basin full of solids, the digester full of solids and the mixed liquor approaching 9,000 ppm. In addition, the aeration basin was experiencing significant foaming, and the basin had debris from the digester distributed throughout. The splitter box had deteriorated to the point that it had been corroded away to the point that significant holes were obvious to even the most causal observer. The grating on the plant in several places had corroded away with much of the grating missing sections. There were no records available, and Envirotech staff indicated that the facility did not maintain records. The building was in a state of uncleanliness and disrepair, with parts and debris scattered all over the building, office and grounds.

The vacuum station had oil stains, quick dry & liter all of the floor; the bottom pit was full of water, there were piping and parts scattered all over the bottom pit, vacuum pumps had exposed wiring;, the control panel did not meet code; pumps had not been

greased. There were approximately 10 rebuilt controllers, five rebuilt valves. There were approximately 20 controller that were out of service and awaiting to be rebuilt, and 10 valves were out of service and awaiting to be rebuilt.

The ditch pump was operational, but it was exposed to the elements. There were no records available to indicate what maintenance activities had been performed.

The irrigation system was being controlled, operated and maintained by golf course personnel, and Envirotech staff had no knowledge of its operation.

Q. PLEASE DESCRIBE YOUR ANALYSIS OF PAST EFFLUENT DATA.

A. With the solids in the filters, with one-half of the UV banks not functioning, with solids being held in the aeration digester, with poor condition of diffusers and based on the overall the condition of other facilities, it is my opinion that it is highly unlikely that the samples collected under Envirotech's operations accurately represented the readings reported for the Eagle Creek wastewater system.

Q. PLEASE DESCRIBE THE COMPLIANCE ISSUES EXPERIENCED AT THE WASTEWATER TREATMENT PLANT DURING THE SPRING AND SUMMER OF 2021.

A. Those compliance issues were caused by the operator's lack of care and oversight. While the operator hired possessed a Grade IV Biological Operator license (the highest level in North Carolina), he lacked the basic skills necessary to be an operator in responsible charge. This operator has been removed as an operator, and we have worked with him to voluntarily turn in his license, such that he is no longer able to function as an operator in responsible charge.

Q. DESCRIBE THE CONDITIONS OF THE PITS THEMSELVES WHEN YOU TOOK OVER THE OPERATION AND MANAGEMENT OF COLLECTION SYSTEM.

A. When we took over, the condition of the vacuum station and pits were in a poor condition. It is very clear to everyone that has operated, inspected or reviewed the collection system that the pits are a significant source of inflow and infiltration. There was no standardization of how pits were assembled, and some pits had debris logged in them. Almost immediately upon taking over, a few customers contacted us concerned because their pit had subsided to the point they feared it was not functional.

When we took over, the facility had an inventory that ranged from 25 to 35 controllers, and 15 valves. It was obvious that the controllers and valves had been rebuilt numerous times.

Q. PLEASE DESCRIBE THE CAUSE OF THE SERVICE OUTAGE IN SEPTEMBER 2020.

A. The initial outage was caused by a pit valve failure. As technicians were locating and repairing the pit that had failed, a vacuum pump ceased. There were no spare pumps in inventory, so I contacted Airvac, who conveyed that the only spare pump in stock in the United States was a rebuilt vacuum pump and that there would be a 9 day delivery time. To expedite delivery, Envirolink sent an employee to Indiana to pick up the vacuum pump and deliver it to the site. However, before the pump could be delivered, the only other vacuum pump failed, leaving the system without any ability to generate vacuum.

Once the rebuilt Airvac pump was installed, technicians began working to restore vacuum to the collection lines. Progress was slow because pits and pipes were full of water and technicians could only progress a few feet at a time. Then, as vacuum was restored to sections, pits began to activate, and water logged controllers failed, causing technicians to retreat and repair previously restored lines.

As technicians worked to restore service, both sewage pumps ceased, causing a high level lock out of the vacuum pumps. A by-pass pump was installed that same day, and technicians continued restoration efforts. While the by-pass pump was installed, within hours, this caused technicians to have to start restorations efforts over from the beginning. While the by-pass functioned, we had to dedicate a technician to operate the by-pass pump 24 hours per day.

In or around October 5, 2020, after I updated the Currituck County Commissioners, Flovac contacted me offering their assistance in locating an additional vacuum pumps and offered two technicians to help with restoration efforts.

While technicians were working to restore service, Airvac's rebuilt vacuum pump failed, further hindering progress because one vacuum pump was unable to move water through the waterlogged lines. The Airvac pump failure was the result of Airvac's failing to install the oil recirculation line Airvac's pump rebuilding process.

With Flovac's assistance, a new vacuum pump was delivered and installed the next day, allowing crews to continue with restoration efforts, but, once again, technicians had to start over.

During this event, I was in daily communication with NC DEQ Washington Regional Office personnel, updating them on the situation and restoration efforts.

Service was restored on October 11, allowing crews to initiate cleanup procedures.

Q. PLEASE DESCRIBE THE CAUSE OF THE SERVICE OUTAGE IN OCTOBER 2020.

A. As described, the vacuum station has a hydropnuematic tank that is equipped with vacuum pumps that keep the air space above the water under a negative pressure. Under normal operation, the tank utilizes approximately 4% of the tank volume, with sewage pumps turning on when the tank volume reached 40% and shutting off is when the tank volume reaches 36%. The tank is equipped with a level sensor inside the tank that shuts down the vacuum pumps in the event the water level rises too high. The action of turning on and turning off sewage pumps is controlled by this level sensor. In addition, the level sensor sends an alarm to the monitoring system and alerts the operator to the emergency condition. This level sensor is located inside the tank, and, because of its location, technicians are not able to inspect it.

With respect to the October 2020 service outage, the level sensor inside the tank broke off due to corrosion inside the tank, causing what we refer to as a high level lockout. This happens when the level in the tank reaches the appropriate level shuts down the vacuum pumps.

In order to repair the sensor and restore the vacuum station to operation, we were required to take the vacuum tank off line, making the vacuum station inoperable. The repair was complete, and the vacuum station operation was restored, allowing technicians to begin restoring service to the lines. As was the case for the September 2020 service issue, line restoration could only be completed in short segments because

of the amount of water inside the lines.

During this event, I was in daily communication with the County staff, and, with the County's help, we coordinated the mobilization of showers and porta-poties for the community. In addition, we had our vacuum trucks as well as vacuum trucks from contractors vacuuming out pits within the community.

In addition, I was in daily communication with NC DEQ Washington Regional Office officials updating them on the status.

Q. HAVE YOU REVIEWED MR. MAY AND MR TANKARD'S TESTIMONY REGARDING REPORTING OF SANITARY SEWER OVERFLOWS, AND CAN YOU PROVIDE ANY ADDITIONAL INFORMATION?

A. Yes. I have reviewed their testimony and agree that they Condition II. 11 requires permittees to report Sanitary Sewer Overflows, but Mr. May and Mr. Tankard's testimony did not include the additional guidance related to sanitary sewer overflows contained in the cover letter to the permit. The cover letter defines a "reportable" Sanitary Sewer Overflow as any Sanitary Sewer Overflow greater than 1,000 gallons to the ground or any amount that reaches surface waters. In addition, the cover letter directs permittees to

report the sanitary sewer overflows via phone to the regional office and specifically directs permittees not to submit notification via email, facsimile or voicemail.

Q. PLEASE COMMENT ON MR. MAY AND MR. TANKARD'S TESTIMONY STATING THAT DURING THE SEPTEMBER 2020, OCTOBER 2020 AND NOVEMBER 2020 THAT SANDLER AND ENVIROLINK FAILED TO NOTIFY NC DEQ.

A. As I testified earlier, I was in daily communication with NC DEQ regarding restoration efforts and conditions related to wastewater service at Eagle Creek. While I did not specifically identify each and every overflow, I generally notified NC DEQ during the updates that overflows were occurring. It was my opinion that this constituted a verbal notification.

Further, because of the frustration experienced by residence from over 15 years of service outage issues, several residents report service issues directly to NC DEQ and NCUC Public Staff. In those cases, it was my opinion that since we became aware of the issue from NC DEQ staff, that they were aware and that issuing a notification was not required or necessary.

In addition, it was my opinion that individually each oveflow did not meet the requirement for a 5 day notification, so we did not prepare and file a 5 day report. At that

time, the verbal notification and 5 day written report were the only required reporting requirements.

Subsequently, I believed that NC DEQ concurs with my opinion, because we attempted to file a written 5 day report to meet the notification requirement in the Injunctive Relief Petition filed by NC DEQ and the Attorney General and were informed not to use this report format.

Q. WHAT INFORMATION DO YOU HAVE REGARDING COMMUNICATION BEFORE AND AFTER YOUR INVOLVEMENT AT EAGLE CREEK?

A. While I prefer to meet customers as part of normal operations, I have had numerous interactions with individual customers, the HOA, NC DEQ and others involved with our efforts to help Eagle Creek residents. Based on my discussions with residents, the HOA and NC DEQ, prior to September 2020, the community did not receive any communication regarding the status of the collection system. it is my understanding that prior to September 2020, while sections of the collection system (typically along Greenview Road and Eagleton Circle), would be out of service, the remaining homeowners in the community were largely unaware that these customers were experiencing service outages because no communication was provided to the community.

Based on feedback I have received, prior to September 2020, customers only received information by talking directly to technicians working during service outages.

Beginning in September, largely because of the nature of the service outages, we began issuing periodic updates to the community in an effort to keep them informed on restoration efforts. There is always a time lag inherent in getting field information to the office, preparing the message and then distributing the message to customers. During restoration efforts, conditions can change very rapidly, and individual customers may be experiencing conditions that do not represent the system condition.

In my opinion, customer satisfaction as it related to wastewater service is based on an individual experience at one's residence, so the time lag combined with the fact that system conditions do not necessarily reflect conditions at an individual resident, caused residents to become frustrated with our communication efforts.

To address this frustration, we met with the HOA to discuss communication protocols and efforts. During these meetings, we learned that the community was highly fractured with multiple Facebook pages for different groups within the community. We also learned that no one communication platform would reach all the residents, so we attempted to use two primary platforms: the HOA Facebook Page and Envirolink's reverse 411 email notification system.

The communication efforts proved to be a burden to the HOA, so we eliminated that platform in favor of email notification, and beginning in December 2020, we have gone from periodic email notification to daily email notification. In addition, to notifying residents, these notifications are issued directly to NC DEQ, Sandler Utility, Currituck County, NCUC Public Staff and other stakeholders.

Q. MR. MYERS, MR. TANKARD, AND MR. MAY HAVE TESTIFIED THAT IN OR AROUND AUGUST, ENVIROLINK STAFF TOOK OVER FOR ENVIROTECH EMPLOYEES, CAN YOU CLARIFY THIS DATE?

A. At the time of the inspection in August, Envirotech staff weas still operating and managing the Eagle Creek Wastewater facility; however, Envirolink had started evaluating the facility in anticipation of the switch to Envirolink personnel and management. The actual switch occurred on September 7, 2020. As such, at the time of the first vacuum station failure, Envirolink had been operating the facility for only 23 days.

Q. DURING THE TRANSITION, PLEASE DESCRIBE THE ACTIVITIES YOU OR YOUR STAFF PERFORMED.

A. During the transitional period, we shadowed the Envirotech staff in order to determine

their procedures for operating and maintaining each of the wastewater facilities they operated.

For Eagle Creek, we reviewed approximately 12 months of data from the treatment facility, assessed the condition of the collection system, assessed the condition of the treatment plant, infiltration pond, and irrigation system. In addition, we evaluated their capabilities, procedures and skills as operators.

Q. WHAT MAINTENANCE ACTIVITIES WERE CONDUCTED BETWEEN SEPTEMBER 7TH AND SEPTEMBER 27?

A. As you can see from the photos attached to Mr. Myers' testimony,there was a tremendous amount of deferred maintenance, and our staff immediately began working to get things brought up to an acceptable standard. Specific tasks completed during the first 20 days include:

- Greased sewage pumps and vacuum pumps;
- Removed live trees and vegetation from the treatment plant;
- The treatment plant was cleaned;
- While the sand filter underdrain was not functional and the media had been removed, we pumped out the sand filter and repaired some of the mechanical

and electrical components so that the filter could be put into operation. While the filter was put into service, the underdrain system was not functional and the filter had no media. In addition, the unit did not have any electrical conduit or power to it, so we ran temporary electrical to the facility in order to get the filter in service;

- We repaired the two ultraviolet disinfection banks that were no working when we took over facility operations;
- We started removing debris from the aeration basin and digester;
- We cleaned weirs and UV bulbs;
- We started removing solids from the plant [according to the former operator – no solids had been removed from the plant for two years.]
- We cleaned blower filters;
- We began obtaining quotes for removing material from the infiltration pond, rehabilitation of the filters, replacement of influent bar screen and splitter box;
- We attended Airvac training sessions;
- We review Airvac maintenance recommendations;

Q. WHAT MAINTENANCE ACTIVITIES HAVE YOU AND YOUR STAFF BEEN PERFORMING ON THE COLLECTION SYSTEM, SINCE SEPTEMBER 2020?

A. We are currently maintaining a 24 hour, 365 day presence at Eagle Creek. We categorize maintenance task into daily, weekly, monthly, quarterly, semi-annual and annual tasks. While a complete list would be very exhaustive, some of the specific tasks recommended by Airvac and Flovac include:

- Vacuum Pumps
  - Oil checked daily
  - Oil changed every three months
  - Greased monthly
- Sewage pumps
- Generator tested weekly
- Ditch pump inspected and tested weekly
- Alarm system tested weekly
- Collection System
  - Controllers are timed monthly
  - Pits are inspected monthly
  - Valve operation tested weekly
  - Lines are aired out weekly

Q. ARE YOU AWARE OF THE CUSTOMER SURVEY CONDUCTED WITHIN COMMUNITY AND SUBMITTED DURING THE PUBLIC HEARING?

A. Yes. I am.

Q. PLEASE DESCRIBE THE FEEDBACK YOU HAVE RECEIVED FORM THE HOMEOWNERS WITH WHOM YOU HAVE DISCUSSED THE SURVEY.

A. I have had the opportunity to discuss the survey with approximately 12 – 15 homeowners; however, each homeowner I have spoken to about the survey did not have any knowledge of the survey but did express interest in learning more about gravity, low pressure and STEP technology.

Q. WERE YOU AWARE OF THE CONSTRUCTION OF THE FORCE MAIN, AND DID YOU HAVE ANY INVOLVEMENT IN THE DISUPTIONS DURING CONSTRUCTION?

A. Yes. My involvement was primarily after the line hits occurred. I inspected the line hits and facilitated restoration efforts. After the second electrical line hit, I required a meeting with the locator, contractor, and engineer. During this meeting, the Dominion Power locator accepted responsibility for not marking electrical lines properly.

I also was involved in the irrigation line hit. While the contractor was in the trench repairing the irrigation line, the irrigation pumps were engaged. I contacted the golf course owner and requested that he shut the irrigation pumps off, but he refused, stating

that they had just seeded and that they needed to irrigate. I explained the repair would only take approximately 30 minutes to repair, but he refused, stating it was our contractor's problem and they could repair it with the irrigation pumps running.

I utilized the authority granted under our easement agreement to enter the pump house and disengage the pumps, but after I left, the golf course owner re-engaged the irrigation pumps. It was at this time, we instructed the contractor to leave the trench open to give us time to contact the sheriff, so we could solicit the Sheriff's assistance in enforcing our easement.

Q. PLEASE DESCRIBE THE RELIABILITY OF THE WASTEWATER TREATMENT AND COLLECTION SYSTEM SERVING EAGLE CREEK WHEN ENVIROLINK TRANSITIONED OPERATIONS.

A. Envirolink requires operators to contingency plan in the event of the failure of various components of a wastewater system. At the time of the first failure, we were still in the process of evaluating the facility, but our initial assessment of the Eagle Creek wastewater system was that, with the exception of controllers and valves, there was no redundancy. There were no spare UV bulbs, no spare mixers, no spare vacuum pumps, no spare sewage pumps, etc.

In addition, while the design had a second aeration basin, the basin could not be operated because it was full of solids.

Q. ARE YOU RESPONSIBLE FOR HIRING AND STAFFING?

A. Yes. It is my responsibility to hire staff and ensure they are qualified and trained.

Q. DESCRIBE ANY CHALLENGES YOU HAVE EXPERIENCED IN HIRING QUALIFIED STAFF.

A. Our challenges on hiring qualified and certified staff are the same as other utilities, the pool of certified operators is declining, and we have found that a certification does not mean the individual is qualified to be an operator in responsible charge.

As described in Mr. May's and Mr. Tankard's testimony, only about 4.2% of the permitted collections systems in the State of North Carolina are vacuum systems. If this analysis is expanded to include permitted and deemed permitted collection system, this figure drops to below 3.6% of the collection systems that the DEQ's Washington Regional Office oversees. Given that all of the permitted vacuum systems that are regulated in the State of North Carolina, the percentage of vacuum systems in the State of North Carolina, it is reasonable to expect that percent to drop well below 1%.

This is important when recruiting talent because the pool of experienced and qualified vacuum system operators is extremely limited. In fact, this limitation extends beyond just operators or technicians, the pool of designers and vendors is also extremely limited. As

such, Envirolink has had to train each new hire that supports the Eagle Creek wastewater facility.

Q. CAN YOU COMMENT ON MR FRANKLIN'S TESTIMONY REGARDING THE OAK ISLAND VACUUM SYSTEM.

A. Yes. Using one vacuum system as the basis for a comparison is not a valid analysis. Mr. Franklin has indicated that he did not conduct an inspection. He describe his visit as a "site visit". Conversely, Envirolink has contacted the contacted the Florida Department of Environmental Quality, solicited the services of a former Airvac engineer, participated in a review of Eagle Creek vacuum system by a NC DEQ approved engineer, conducted an extensive review of literature, had frequent and numerous communication with four different vacuum technology providers, solicited advice and counsel of William Freed (former Envirotech owner) and consulted with vacuum system operators from Virginia Beach and Cape Charles, Virginia. Based on information we have obtained from these various sources, we have a wealth of information regarding the reliability of controllers, pits, older Airvac designs, monitoring systems, etc. While we respect that Mr. Franklin conducted a site visit and concur that the information obtained is valuable, we caution that it must be taken in proper context. Key points of Mr. Franklins testimony and information obtained from discovery responses include:

- the Oak Island is 15 years old but Mr. Franklin did not provide the comparative information to the Commission that the Eagle Creek system is 25 years old;
- Mr. Franklin did not provide a comparison of maintenance history of Oak Island to Eagle Creek (information to Envirolink's maintenance protocols is provided in my testimony);
- Mr. Franklin relied on Ms. Willis' testimony as the basis for evaluating spare parts inventory at Eagle Creek, but Mr. Franklin did not offer sufficient information for the Commission to understand that spare parts inventory referenced in Ms. Willis's testimony was after the service failures experienced in 2020 and were based on the recommendations of Envirolink, Flovac and required by NC DEQ;
- the spare parts inventory of 2 – 3 for each major component at Oak Island, but Mr. Franklin admitted he does not know or refused to provide the level of inventory provided at Eagle Creek prior to September 2020;
- the Oak Island facility reportedly experiences "continuous maintenance" but Mr. franklin does not offer or refuses to provide any narrative or opinion on the maintenance at Eagle Creek prior to September 2020;
- "overflows are rare but occasionally occur due to controller or sensor failures in the pit.", but Mr. Franklin also states that the Oak Island system experiences controller failures of "approximately five times per month." but does not compare that to gravity and offers no opinion on whether five failures per month is

acceptable.

- Oak Island purchased 12 pits at cost of $9,833 per pit (installed cost) but Mr. Franklin does not offer the year these pits were purchased and installed or that extrapolating that data to Eagle Creek would result in over $2 million in pit replacements;
- Oak Island employs five technicians but Mr. Franklin did not provide the Commission with sufficient information to understand why five technicians are required to maintain 4,025 pits.

Mr. Franklin's testimony did not provide the Commission with sufficient information to understand that a vacuum system, including the Oak Island vacuum system:

- a vacuum system will have outages and service failures, even under ideal conditions;
- that a vacuum system relies heavily on technician response times;
- that CWS does not find five service failures per month acceptable for the residents of Eagle Creek;
- that the reason Airvac and Flovac developed monitoring systems is the importance of response times on vacuum system performance;
- that numerous other Airvac systems located around the world have been replaced by competitor technology;
- that the reason the Florida DEQ has such stringent design criteria is to address

service outages experienced from vacuum systems;

- that the storage volume in the pits is woefully inadequate;

Q. CAN YOU OFFER AN OPINION ON WHETHER THE SYSTEM SHOULD BE REPLACED, INCLUDING THE PITS?

A. Yes. Based on my review of three different independent reports, Envirolink's own research and information obtained from Flovac and Quavac, it is my opinion that the system needs to be replaced. Saying that a pipe has remaining life is like saying someone's veins have remaining life but the heart and cells are dead. I cannot understand why both DEQ and NCUC Public Staff refuse to listen to the experts that have repeatedly told them that the system needs to be replaced. Rather they listen to non-experts and vendors to form their opinion. It just does not make logical sense to me.

Q. DO YOU HAVE ANY OPINOIN ON WHY DEQ AND NCUC PUBLIC STAFF HAVE TAKEN THE POSITION THEY HAVE REGARDING THE SUCCESSORS TO SANDLER UTILITY?

A. Yes. While it is understandable that the residents of Eagle Creek are frustrated given the length of time they have lived with service failures and the severity of the outages, neither DEQ nor NCUC Public Staff have acknowledged their role in allowing the system to

degrade to its current condition.

Based on my personal knowledge obtained from various sources, NC DEQ and specifically the Washington Regional Office has a habit of allowing systems to degrade to point that they are not functional and then deflect blame, relying on ambiguous permit language and then reacting only after conditions have degraded to the point that major investment is required. Examples include Kinnakeet Shores in 2021, the Town of Robersonville in 2012 and other facilities of which I have personal knowledge.

It is obvious from the documentation provided, that over the past 25 years, NC DEQ failed in providing proper oversight of the Eagle Creek wastewater system and Sandler Utility. As NC DEQ's approved third party engineer stated, the Eagle Creek wastewater system was a ticking time bomb. Unfortunately for me and Envirolink, we just happened to be here when the bomb went off.

NC DEQ, the Attorney General and NCUC Public Staff's position are based on public perception and the past failures of the agencies, so they are trying to deflect attention away from the root cause because of their participation in how the system got into such poor condition.

I also offer that it is clear to me based on my review of the requirements contained in the Injunctive Relief Petition, that they are rudimentary and incomplete requirements. My

view is that NCDEQ's motive is not to solve the problem but to give the perception that NCDEQ is trying to do something. If they truly wanted to solve the issues, they would realize that sometimes the right thing to do is not the easy thing to do. They would listen to the experts and help solution providers implement solutions rather than install barriers to solutions.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

State of North Carolina

North Carolina Utilities Commission
Raleigh

Docket No. W-1333, Sub 0
Docket No. W-1130, Sub 11

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)
Application by Currituck Water & Sewer, LLC,	)
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Carolina 27609, and Sandler Utility, LLC ,	)
Virginia Beach, Virginia, for Authority	)
To Transfer the Eagle Creek Wastewater System	)
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Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

MARK BISSELL, PE

BISSELL PROFESSIONAL GROUP

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION WITH CURRITUCK WATER & SEWER, LLC, AND BUSINESS ADDRESS.

A. My name is Mark Bissell, and I am the President, of Bissell Professional Group. My business address is 3512 N. Croatan Highway, Kitty Hawk, NC 27949

Q. PLEASE STATE YOUR PROFESSION AND EXPERIENCE WITH WATER AND SEWER SYSTEMS.

A. I am a licensed engineer in the North Carolina and other states. Bissell Professional Group works throughout the Eastern North Carolina coastal areas providing professional civil engineering and surveying services in support of public and private land development. Our knowledge of constraints inherent in coastal area development and our ability to work within those constraints provide value to our clients as they develop land. We are known for our ability to develop creative and intelligent solutions based upon a thorough investigation of a project's needs and the available alternatives.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND.

A. I have a bachelor's degree in Civil Engineering from Duke University. I have been active in professional and technical societies, and I have over thirty-five years of experience in the design, permitting, and construction of infrastructure to support land development, including water and sewer utility infrastructure.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide additional information related to the application filed by CWS for the transfer of the Eagle Creek wastewater system in Currituck County, North Carolina from Sandler Utility to CWS.

Q. THERE HAS BEEN PREVIOUS TESTIMONY DESCRIBING THE EAGLE CREEK WASTEWATER SYSTEM. CAN YOU PROVIDE ADDITOINAL INFORMATION ON HOW THE WASTEWATER COLLECTION SYSTEM AND TREATMENT SYSTEM FUNCTION TOGETHER?

A. Yes. At a high level, the Eagle Creek wastewater system has three major functions, each utilizing an engineered system to accomplish these functions. The three major functions are:

1. Transmit wastewater from the homes, institutions and businesses to a treatment facility
2. Clean the water using a treatment plant.

3. Dispose or reintroduce the treated water back into the environment.

The Eagle Creek wastewater system uses four types of technology to accomplish these three functions. The first step is to transmit the water from the homes to the treatment plant. Eagle Creek is currently utilizing vacuum sewer technology.

The second step is to treat the water using a treatment plant. At Eagle Creek, the treatment plant utilizes a combination of mechanical treatment (bar screen, filtration, and UV disinfection) and biological technology (extended aeration). The bar screen separates larger particles from the water, and those are sent to a landfill for disposal. After the bar screen, the water is further treated using a biological process known as extended aeration. Extended aeration utilizes microorganisms to remove smaller compounds that are present in the water, then the microorganisms are separated from the water in devices called clarifiers. After the extended aeration, the water is further treated utilizing a mechanical sand filter to remove any suspended particles not removed in the clarifiers. The final step is disinfecting the water to remove any microorganisms not removed by clarification and filtration. The Eagle Creek wastewater system uses Ultra-violet disinfection to kill any microorganisms not already removed.

The third and final step is to reintroduce the water back into the environment. The Eagle Creek wastewater system uses two different types of technology. The first is a

spray irrigation system. This system includes a storage pond, pump house and spray irrigation system. The spray irrigation system at Eagle Creek is used to irrigate the Eagle Creek Golf Course.

In addition to the spray irrigation system, water at Eagle Creek can be reintroduced back into the environment using an infiltration pond. An infiltration pond allows water to infiltrate into the ground and ultimately be reintroduced into ground water aquifers or evaporates.

Q. CAN YOU DESCRIBE YOUR INVOLVEMENT WITH THE DEVELOPMENT OF THE EAGLE CREEK COMMUNITY AND THE ORIGINAL DESIGN OF THE COLLECTION SYSTEM SERVING THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. My firm was engaged to plan, design, and permit the development, including the wastewater system that serves the Eagle Creek community.

Q. CAN YOU DESCRIBE THE WHAT SEWER COLLECTION TECHNOLOGY ALTERNATIVES WERE EVALUATED FOR EAGLE CREEK DURING THE ORIGINAL PLANNING FOR THE COMMUNITY?

A. Yes. Initially, vacuum sewer was not considered. We initially evaluated low pressure and gravity and designed a gravity sewer system to serve the community. After the gravity sewer had been designed, we were introduced to vacuum sewer and were directed by the developer to change the design from gravity to vacuum.

Q. ARE YOU AWARE OF WHETHER THE EAGLE CREEK WASTEWATER SYSTEM HAS EXPERIENCED OUTAGES AND OVERFLOWS?

A. Yes. I became aware of service issues with the Eagle Creek wastewater system in or around 2010. The Eagle Creek vacuum system has a long history of service outages that become magnified during rainfall events. As seen in Exhibit 2 – Miller Testimony, many of the pits are located in areas where groundwater or rainwater can easily enter system components that are commonly referred to as a "pit". Water can enter the pit directly from the home, through defects in the service line between the home and pit, through the top of the pit, through defects in the pit, or through a seam located about half the way down the pit. At the time the system was designed, this seam was a standard design for Airvac.

Q. CAN YOU DESCRIBE THE CENTRAL VACUUM STATION'S DESIGN?

A. Yes. Airvac directed the design for the Eagle Creek vacuum system according to its then-

current standards. The design included two vacuum pumps, two sewage pumps, a vacuum tank and instrumentation available to monitor the vacuum station. As noted in Myers' Rebuttal Testimony Exhibit 4 and Public Staff response to Currituck Water & Sewer's request for information, the Eagle Creek vacuum system was one of the first vacuum systems in the State of North Carolina, so many of the more modern design practices were not part of the design for the Eagle Creek vacuum system.

Q. CAN YOU DESCRIBE THE MAINTENANCE HISTORY FOR THE EAGLE CREEK WASTEWATER SYSTEM?

A. Over the years, the Eagle Creek wastewater system has struggled with proper maintenance. Prior to September 2020, there have been six inspections, as noted below from the inspection reports provided by DEQ to CWS during discovery. Operational records and poor maintenance were consistently noted by inspectors.

- 2012, September – Non-Compliant [Inspector: Tankard]
- 2013, November – Compliant [Inspector: Tankard]
- 2015, April – Non-Compliant [Inspector: Vincent]
- 2018, January – Non-Compliant [Inspector: Vincent]
- 2018, April – Non-Compliant [Inspector: Vincent]
- 2020, August – Non-Compliant [Inspector: Mays]

- 2020, October – Compliant [Inspector Mays]
- 2021, October – Compliance status not indicated [Inspector: Mays]
- 2021, November – Compliance status not indicated [Inspector: Mays]
- 2021, December – Compliance status not indicated [Inspector: Mays]

Q. ARE YOU AWARE OF WHETHER CURRITUCK COUNTY HAS EVER BEEN APPROACHED TO TAKE OVER THE EAGLE CREEK WASTEWATER SYSTEM AND YOUR KNOWLEDGE OF THAT ARRANGEMENT?

A. Yes. I understand that Currituck County did present a proposal to acquire the Eagle Creek wastewater system, but that the County conditioned its willingness to acquire the system on conversion of the collection system from vacuum to gravity. The County was aware that the Eagle Creek wastewater system experienced significant service outages and that the condition of the vacuum system and treatment plant had deteriorated. Ultimately, the County did not acquire the wastewater system, because the community would not agree to the County's requirement to change the system to gravity.

Q. CAN YOU DESCRIBE FORCE MAIN PROJECT TO SERVE THE FOST COMMUNITY?

A. Yes. A lift station and force main have been constructed to serve the Fost and Flora

developments. In addition, the force main was constructed to permit the planned expansion of the school and additional customers to connect to the force main. The force main was constructed to convey the water directly to the treatment plant without any connection to the existing collection system serving the Eagle Creek community.

Additionally, the force main was sized to accommodate flow from portions of the Eagle Creek community, with the understanding that replacing the vacuum system with gravity sewer was one of the potential solutions to replacing the existing Eagle Creek collection system.

Q. PLEASE DESCRIBE THE DISRUPTIONS DURING CONSTRUCTION.

A. Basnight Construction was the selected as the contractor for the installation of the force main. Prior to the start of construction, we held meetings with the contractor and the golf course owner, and requested locates for the underground utilities. The golf course owner provided maps of the irrigation system, and the utility facilities were located prior to construction.

Construction started at the wastewater plant, and shortly after construction started, the contractor hit a mismarked electrical line. Dominion Power was immediately notified and responded to repair the line. As construction proceeded, another mismarked electrical

line to the golf course parking lot was hit. Dominion Power was again contacted to repair the electrical line. Dominion Power did not consider this a priority repair, because the impact of the disruption was limited to the lighting of the golf course parking lot, so Dominion's repair took several days to complete.

In addition to these two disruptions, there was one additional electrical line hit, and an irrigation line was hit during construction.

As a result of the second electrical line hit, a meeting was held to address the disruption, and I understand that Dominion Power's locator accepted responsibility for mismarking the power lines.

The irrigation line hit was the result of inaccurate mapping. According to the maps provided by the golf course owner (which were consistent with the maps provided by the original developer of the golf course), the closest line was approximately 65 feet away from where the line was hit. The contractor had repair parts on hand and immediately initiated the repair. However, restoration efforts were inhibited because the golf course owner engaged the irrigation pumps and refused to turn the irrigation pumps off to permit the contractor to timely finish the repair.

Efforts were made to turn the irrigation pumps off, but the golf course owner objected

and turned the irrigation pumps on, delaying efforts to repair the line until the next day.

While CWS was very concerned about the disruptions and conducted investigations into each one, ultimately neither the contractor nor CWS was at fault.

Q. CAN YOU DESCRIBE THE SUITABILITY OF THE EAGLE CREEK COMMUNITY FOR INSTALLATION OF GRAVTY SEWER?

A. As with any construction project there are challenges that need to be addressed in the design stage. These challenges are heightened in a developed community such as Eagle Creek because of the proximity to residential homes. We conducted Townhall style meetings in order to educate the community on the different options and to gather information about concerns in order to address those concerns during design. As a result of community feedback, we identified four primary concerns: disruption during construction (work from home residents), impacts of dewatering, unstable soils (specifically peat), and impact of construction cost on user rates. My testimony is not intended to address user rates as that will be part of future proceedings, but we have made provisions for each of the other concerns in the design.

Specifically, regarding disruptions. At the direction of CWS, we have explored implementation of contingencies in the event of a conflict. Some specific measures that

will be included in the design are:

- CWS to provide hotspots during construction for any residents that work from home;
- Electrical standby crew in the case of electrical disruption;
- Equip the contractor with repair parts to permit repair of water lines and vacuum sewer lines in case of a disruption;
- Minimize construction in existing roadways;
- Minimize construction on individuals' personal property;
- Utilize horizontal directional drilling construction methods in sensitive areas (e.g. across home owner property and roads);
- Widen and stabilize trenches for piping in unstable soils using different trench design standards;
- Utilize temporary dewatering in areas where construction activities are on-going;
-

Q. BASED ON YOUR ANALYSIS IS GRAVITY SEWER TECHNICALLY FEASIBLE AS AN ALTERNATIVE FOR REPLACEMENT OF THE EAGLE CREEK VACUUM SYSTEM?

A. Yes. There are going to be design and construction challenges regardless of the option selected. Gravity sewer, while offering significant operational benefits, is not immune to design and construction challenges. However, based on our evaluation, the challenges

presented by Eagle Creek can be addressed with a combination of design standards and construction methods. Ultimately, there will be disruptions, so implementation of the contingencies noted above are also prudent.

Q. HAVE YOU REVIEWED THE REPORT BY CENTURY ENGINEERING AND CAN YOU COMMENT ON THE CONCLUSIONS?

A. Yes. I reviewed Century Engineering's recommendations and have categorized them as applying to the building, the vacuum station, the vacuum lines or vacuum pits. While I may not fully understand how each recommendation impacts the service and reliability of the Eagle Creek Wastewater system, I agree with the main conclusions, which is that the Eagle Creek Wastewater Collection needs to be replaced.

It appeared to me that Century Engineering may not be aware that a sale is pending and that the purchaser's capital plan addresses virtually all of the reviewer's recommendations. For convenience, I have provided information on Currituck Water & Sewer's capital plan and how it addresses each recommendation [bolded text is how CWS or Envirolink intends to address the recommendation].

- Vacuum Station [General note: **While: Currituck Water & Sewer prefers replacement to alternative technology; Currituck Water & Sewer has included replacement of the vacuum station in its cost estimates if the system remains a vacuum system**]

- Purchase or lease a portable vacuum pump.
- Clean and repair the vacuum tank.
- Upgrade vacuum tank controls.
- Upgrade and replace the vacuum station electrical controls.
- Purchase a spare vacuum pump.
- Two new vacuum stations (LT).
- Replace vacuum tank (LT).

- Vacuum Lines [General note: **Currituck Water & Sewer maintains that the system should be converted to a different technology and included conversion as part of its capital plan**]
  - Inspect the vacuum collection lines.
  - Install shut-off valves on the main collection lines at strategic points and install valve riser pipes.
  - Convert to grinder pump/low pressure system (LT)
- Vacuum Pits [General note **While: Currituck Water & Sewer prefers replacement to alternative technology, CWS also recommended replacement of all pits if system remained vacuum**]
  - If system remains a vacuum system, replace all pits to eliminate SSOs (LT)
- Building [Note: **Currituck Water & Sewer included major upgrades to the building that included each of these recommendations**]

- Make the building OHSA compliant.
- Secure and label chemicals.
- Provide sound enclosures around blowers.
- Install building heating and ventilation.
- Install security fence and gate with locks.
- Repair gravel road.
- Fix the toilet.
- Clean and repair cabinets.
- Discard broken and unused parts and supplies.

- Other
  - Start a daily log book
    - **In checking with the operator, Century did not contact the operator. The operator and Envirolink maintain both a daily log and electronic CMMS system.**
  - Provide fall and eye protection around UV system.
    - **In checking with the operator, each technician is provided eye protection, and fall protection is located at their office, if needed.**
  - Obtain new manuals and plans
    - **Agree that if the system remains a vacuum system that updated plans and manuals are prudent.**

- Housekeeping
  - **Agree that the housekeeping at the plant could be improved.**
- Convert Eagle Creek to PUD (LT)
  - **This comment seemed out of place and outside the scope of the report. I am not sure why this recommendation was included. My only conclusion is that this was included because of a personal bias but not science or fact.**
- Perform detailed hydraulic analysis (LT) [**Agree that a hydraulic model is required regardless of the solution**]
-

Q. CAN YOU COMMENT ON THE PROBABLE COST OF THE UPGRADES RECOMMENDED?

A. Based on the recommendations, it appears that if vacuum technology is to remain, Century is recommending the following:

1. Replacement of pits
   a. Century is recommending replacement of the pits – *While providing a cost estimate was outside the scope of Century, based on Mike Franklin's testimony, a minimum budget in excess of $2MM would be required to replace the pits with a like unit.*
2. Upgrading the building – *See CWS's budget filed with the application*.
3. Replacing the vacuum station

a. Century is recommending installing two vacuum stations one for each line -- *CWS has indicated that installation of two vacuum stations would likely be greater than $1.2 MM*

In my opinion, these cost compare favorably to conversion to gravity, but does not offer the same level of reliability as gravity. In addition, continued research on STEP has resulted in a significant reduction in cost estimates since the first analysis, making replacement with STEP more economically feasible that initial estimates indicated.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA

NORTH CAROLINA UTILITIES COMMISSION
RALEIGH

Docket No. W-1333, Sub 0
Docket No. W-1130, Sub 11

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)
Application by Currituck Water & Sewer, LLC,	)
4700 Homewood Court, Suite 108, Raleigh, North	)
Carolina 27609, and Sandler Utility, LLC,	)
Virginia Beach, Virginia, for Authority	)
To Transfer the Eagle Creek Wastewater System	)
And Franchise in Currituck County, North	)
Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

WILLIAM FREED

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is William Freed, and I the owner of Envirotech Unlimited Construction Services LLC. and Envirotech of North Carolina Inc.. My business address is 300 East Driftwood Street , Nags Head, North Carolina.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide the Commission with additional information related to service issues at Eagle Creek, the condition of the wastewater system prior to September 2020, Sandler Utility's willingness to fund ongoing operation and maintenance activities during my involvement and offer an opinion on the best option for replacement of the vacuum system.

Q. ARE YOU AWARE OF CUSTOMER CONCERNS RELATED TO WASTEWATER SERVICE IN THE EAGLE CREEK COMMUNITY?

A. Yes. I am aware of customer concerns regarding wastewater service outages at Eagle Creek.

Q. ARE YOU AWARE OF THE REQUIREMENTS REFERENCED IN MR FRANKLIN'S TESTIMONY REGARDING THE IMPROVEMENTS REQUIRED AS PART OF THE RATE INCREASE PROCEEDINGS?

A. Yes. I am aware of that in part the rate increase granted in the last rate case, was for upgrades to the Eagle Creek wastewater system.

Q. WHEN DID ENVIROTECH BEGIN OPERATION OF THE EAGLE CREEK WASTEWATER SYSTEM?

A. Enviro-Tech was employed as a subcontractor to assist final stages of plant construction as well as some collection system work. We transitioned from construction subcontractor to operator in the late 90s

Q. CAN YOU DESCRIBE REQUESTS FOR FUNDING FROM SANDLER AND WHETHER SANDLER WAS WILLING TO FUND IMPROVEMENTS TO THE WASTEWATER SYSTEM IN ORDER TO ADDRESS ONGOING OPERATION AND MAINTENANCE REQUIREMENTS?

A. Sandler was no more or less willing to invest in their sewer system than my experiences with other utility owners, including many towns and counties who underfund operation and maintenance. They were typically willing to paying for what was the least expensive option; they always questioned expenditures to make sure no other options were available. It was never easy to get them to invest in the utility, but with persistent pestering I could typically get them to spend money kicking and screaming.

Q. CAN YOU DESCRIBE WHETHER SANDLER AGREED TO FUND THE REQUIREMENTS STIPULATED AS PART OF THE RATE INCREASES GRANTED BY THE NCUC?

A. They did. Just because an outside observer of an issue has the authority to dictate their opinion as a mandated solution to a problem, this does not make that person of authority competent.

If you say "raise those 50 valve pits" it sounds like a simple solution. First of all, raising those pits would have required raising the sewer lines for the individual houses, and in most cases the line would have to have been brought above grade at the house to have enough fall to drain to the pit. Secondly, the controller failures were not limited only to rain events. While rain events did exacerbate the problem of valve failures, controller and valve failures happened on a regular basis. Anyone who is familiar with a valve pit would

know if a pit were extended a foot taller, it would be very difficult to access the valve, too deep to reach anything from the top and too small to climb into.

Airvac, shortly after the order for the rate increase, released a water resistant controller. We tested that controller and during our testing it did work while flooded or underwater. The new controller appeared to be the answer. We asked Sandler to purchase either 50 or 100 of the controllers (they did), and we installed them, and they worked reducing controller failures until my departure.

Q. DURING YOUR INVOLVMENT WITH THE EAGLE CREEK WASTEWATER SYSTEM, DID THE COLLECTION SYSTEM EXPERIENCE SERVICE OUTAGES AND APPROXIMATELY WHEN DID THEY BEGIN?

A. We learned early on that every minor problem was the first step to major failure. In other words, even the most minor problem would not "wait til tomorrow". While there are two vacuum pumps and two sewage pumps, there was no redundancy of the 240 pits in the community. One valve failure out of 240 would compromise the entire system and would begin a self-perpetuating system failure, which was a probability every minute of every day. Any time a small problem could not be resolved in less than a couple of hours, we would flood Eagle Creek with people to "find the sucking sound" or the pit that had failed. At times we would have as many as 8 people on site for as long as it took to find and fix

every leaking valve. For one incident following a hurricane, we were there for over 36 hours, and no one left until the system was working properly.

Q. DURING YOUR INVOLVEMENT WITH THE EAGLE CREEK WASTEWATER SYSTEM, WHAT REQUEST FOR UPGRADES WERE REQUESTED AND WERE THEY APPROVED BY SANDLER?

A. As stated before, Sandler was never eager to spend money. They would ask to delay spending money, but they typically would agree if I continued to badger them.

Q. IT HAS BEEN CLAIMED THAT THE ONLY TIME CUSTOMERS EXPERIENCED SERVICE OUTAGES WAS DURING MAJOR RAINFALL EVENTS. ARE YOU AWARE OF WHETHER CUSTOMER PITS REQUIRED REPAIR DURING OTHER PERIODS OF TIME?

A. Outages and pit failures are not the same thing. Pit failures happen often, certainly on at least a weekly basis and, if not addressed quickly, can lead to a system outage. Multiple pit failures or a term pit failure lasting more than a few minutes cause a service outage, which are most prevalent during any rain event.

Q. PRIOR TO 2020, DESCRIBE THE CONDITION OF THE EAGLE CREEK WASTEWATER SYSTEM?

A. Not great, Sandler was aware of the plant problems via several reports over the years. The collection system was functional, although it was aging and required constant attention.

Q. BASED ON YOUR KNOWLEDGE DO YOU BELIEVE THE VACUUM SYSTEM SHOULD BE REPLACED AND CAN YOU OFFER AN OPINION ON WHAT OPTION WOULD PROVIDE THE GREATEST BENEFIT TO THE RESIDENTS?

A. The vacuum system was a foolish mistake from the start. I stated that at the initial meeting with the developer, and time has only confirmed my opinion. When you must provide a critical service every minute of every day and provide that service on the budget a sewer bill affords, simplicity and basic physics need to be what you rely on, not complex theories of air/liquid balance and vacuum balance ratios to control 240 individual valves over a multi-mile network of pipes under vacuum, connected to a complex control system of two vacuum pumps, two sewage pumps and a steel tank. If any **one** of the components on that list fails or is compromised, the whole system is jeopardized.

The idea that gravity sewer couldn't be installed in Moyock was a marketing ploy that Airvac sold the system owner on. That idea was a false lie perpetuated by slick marketing and great sales people. If a gravity system were installed in Eagle Creek, there would never be the problems that the community faces now. If you want to dispute my prior

statement, go looking for similar news stories and cases of failures for the 100s of thousands of other homes nearby on gravity sewer, not many out there.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA

NORTH CAROLINA UTILITIES COMMISSION
RALEIGH

Docket No. W-1333, Sub 0
Docket No. W-1130, Sub 11

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In the Matter of	)
Application by Currituck Water & Sewer, LLC,	)
4700 Homewood Court, Suite 108, Raleigh, North	)
Carolina 27609, and Sandler Utility, LLC,	)
Virginia Beach, Virginia, for Authority	)
To Transfer the Eagle Creek Wastewater System	)
And Franchise in Currituck County, North	)
Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

ZACH BASNIGHT

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Zach Basnight, and I am a Project Manager for the Basnight Construction My business address is 317. Agona St., Manteo, North Carolina 27954.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide as rebuttal additional information related to construction of the force main connecting the Fost development to the Eagle Creek wastewater treatment facility.

Q. CAN YOU DESCRIBE THE FOST FORCE MAIN PROJECT?

A. Yes. We were hired by Currituck Water & Sewer to construct a sewer force main from the Fost Development to the Eagle Creek Wastewater Treatment facility. The force main project started at the property line to the Fost Development and was constructed along Survey Road, and Eagle Creek Rd. to a point just past the St. Andrews Rd. At that

point, the force main goes behind the houses and along the golf course, crossing under Green View Rd. and is connected into the headworks of the wastewater treatment plant.

Q. DOES THE FORCEMAIN CONNECT INTO THE EXISTING EAGLE CREEK COLLECTION SYSTEM?

A. No. The force main does not connect to the vacuum system serving Eagle Creek residents at any point.

Q. CAN YOU PROVIDE INFORMATION ON NC LAW REGARDING CONSTRUCTION OF UNDERGROUND UTILITES AND LOCATION REQUIREMENTS?

A. Yes. In North Carolina utilities are required to locate underground utilities upon request. When marking underground utilities, utility locators are required to locate underground utilities under their responsibility to within 18 inches. In the event of damage to underground utilities from construction activities, fault is determined based on the accuracy of these locates.

Q. DESCRIBE THE DAMAGE EXPERIENCE TO THE ELECTRICAL LINES DURING CONSTRUCTION?

A. Construction of the force main started at the wastewater treatment plant site and shortly after construction started, the crew hit a underground electrical line. The damage impacted the golf clubhouse, Eagle Creek wastewater treatment plant and significant portions of the Eagle Creek community. Dominion Power was notified, and they mobilized their crew for repair of electrical line within 4 hours.

A second electrical line was hit as the crew constructed the force main that damaged the line providing power to the golf club parking lot but did not impact power to golf club building or the Eagle Creek community. Dominion Power was notified but determined that this was a non-critical repair, so they scheduled the repair for completion with 10-14 days.

Our crew hit the electrical line again near the front entrance to the community. Dominion Power crews were located near the site and were able to restore power within a short period of time.

Q. PLEASE DESCRIBE THE DAMAGE EXPERIENCED TO THE IRRIGATION LINES DURING CONSTRUCTION?

A. During construction of the force main across the golf course, our crew damaged an unmarked or located irrigation line. Our crew had the repair parts on hand and

immediately began repairing the line. During our repair, the irrigation pumps were turned on causing the trench we were working in to fill with water. We attempted to get the irrigation pumps shut down by informing the golf course owner we only needed 15 minutes to complete the repair, but the golf course owner refused to shut the pumps down.

We contacted CWS who sent someone to the irrigation pump house and shut the pumps down, but shortly after the pumps were shut down, the pumps were turned back on by the golf course owner. At this point, CWS instructed us to cease work for the day until they could resolve the issue with the golf course owner.

Q. WHERE THERE OTHER LINE HITS?

A. No.

Q. DESCRIBE THE CAUSE OF THE ELECTRICAL LINE HITS.

A. After hitting the electrical line a second time, CWS, the engineer, Dominion Power, and I attended a meeting to discuss the cause for the damage and address measures to prevent further instances. During the meeting, the locator for Dominion Power immediately took responsibility for the electrical lines hits, stating that he had not accurately located the

electrical lines.

Construction crews rely heavily on accurate locating of underground utilities, in order to avoid these types of issues, and when they are not marked properly (which happens when records are not accurate), the potential for damage occurs.

Q. PLEASE DESCRIBE THE CAUSE OF THE IRRIGATION LINE HITS.

A. Prior to construction, a meeting was held with the golf course owner to discuss the routing, irrigation line locations and seeding requirements after construction. At this meeting, we requested that the golf course locate their underground irrigation lines.

The golf course owner provided us with a map of the irrigation lines, stating that the map accurately identified the location of the underground irrigation lines. During construction our crew hit an irrigation line that was not identified as being in the area where crews were working. The map showed the irrigation line in question approximately 65 feet away from there the line was actually located.

Based on the map inaccuracies, it was incumbent on the golf course to inform us that the map was not accurate and that the irrigation was located in this area.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA

NORTH CAROLINA UTILITIES COMMISSION
RALEIGH

Docket No. W-1333, Sub 0
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Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

COMMISSIONER BEAUMONT

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Paul Beaumont, and I am Vice Chairman of the Currituck County Board of Commissioners. My address is 153 Courthouse Rd. Suite 206, Currituck, NC. 27929.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide the Commission with additional information related to the history of complaints from the Eagle Creek community and general information about Currituck County's attempt to acquire the Eagle Creek wastewater facility.

Q. ARE YOU AWARE OF CUSTOMER CONCERNS RELATED TO WASTEWATER SERVICE IN THE EAGLE CREEK COMMUNITY?

A. Yes. The County has been aware of customer concerns regarding wastewater service outages for over 12 years.

Additionally, as a County Commissioner, I have received numerous complaints over the years regarding the condition of the wastewater system, including complaints regarding the system failures in 2020, and have attended a meeting where Envirolink updated County Commissioners with a report as crews worked to restore service. In addition, I am aware that County staff worked with Envirolink to provide temporary showers and facilities during that emergency situation.

Q. ARE YOU AWARE IF THE COUNTY WAS EVER INTERESTED IN ACQUIRING THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. I am aware that the County was concerned about the repeated complaints from Eagle Creek residents regarding service outage issues and explored the possibility of the County acquiring the Eagle Creek wastewater system.

Upon inspection of the facility, I am aware that the County had significant concerns over the condition of the wastewater system and specifically the vacuum collection system. I am aware that the County proposed significant maintenance and upgrades to the existing system and that the cost would be borne by the Eagle Creek users prior to the County's purchase of the system.

Q. CAN YOU PROVIDE INFORMATION ON WHY CURRITUCK COUNTY DID NOT ACQUIRE THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. As a Currituck County Commissioner, I am aware that the County's proposal was presented to Eagle Creek Community representatives, and that the Community representatives did not display continued interest by the County. The County was not willing to move forward with acquiring the Eagle Creek wastewater system given its deteriorated state without significant upgrades and conversion to gravity.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA

NORTH CAROLINA UTILITIES COMMISSION
RALEIGH

Docket No. W-1333, Sub 0
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REBUTTAL TESTIMONY

OF

NORTH CAROLINA STATE REPRESENTATIVE ROBERT HANIG

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Robert Hanig, and I am a North Carolina State Representative representing the Northeastern District including Currituck County and former Currituck County Commissioner Chairman. My address is 300 N. Salisbury St., Rm.638, Raleigh, NC 27603-5925

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide the Commission with additional information related to the history of complaints from the Eagle Creek community and general information about Currituck County's attempt to acquire the Eagle Creek wastewater facility.

Q. ARE YOU AWARE OF CUSTOMER CONCERNS RELATED TO WASTEWATER SERVICE IN THE EAGLE CREEK COMMUNITY?

A. Yes. The County has been aware of customer concerns regarding wastewater service outages for over 12 years.

Additionally, in my current role, I have had several residents contact my office with concerns regarding sewer service at Eagle Creek. In response to these complaints, I attempted to contact Sandler Utility, the owner of the Eagle Creek wastewater system, and Envirolink. Envirolink has kept me informed of progress and investigated each issue that has come to my attention.

Q. DESCRIBE THE MEETING HELD IN RALEIGH DURING THE SUMMER OF 2020.

A. Senator Steinburg and I contacted Envirolink regarding the situation at Eagle Creek and how we could help the residents of Eagle Creek obtain reliable uninterrupted sewer service. Envirolink provided us with information that CWS had filed an application for transfer with the NCUC and that it was their opinion that the most prudent solution was replacement of the vacuum system with gravity. They also indicated that they were prepared start replacement of the vacuum system as soon as the necessary approvals were issued, but that the Public Staff were largely non-responsive and that NC DEQ was levying onerous conditions on it to obtain the necessary permits.

Recognizing the critical nature of the situation for Eagle Creek residents, Senator Steinburg and I requested an all hands meeting in Raleigh to make sure that state agencies were being solution minded versus being part of the problem. During the

meeting, the Public Staff representatives stated that they were mainly concerned about some inconsistencies with construction cost estimates but committed to engage in processing the application as expeditiously as possible, so CWS could be replacing the system.

NC DEQ provided information regarding concerns related to a setback waiver for a pond that had been in operation for over 20 years, stating that while the facility met current setback requirements, it did not meet the setback requirements when the permit was originally issued.

Upon leaving that meeting, it was my understanding that all parties (HOA, NC DEQ, Public Staff, Currituck County, CWS, Sandler Utility and the Developer of the Fost Development) were all in agreement that the most prudent course of action was to transfer the Eagle Creek wastewater system to CWS, conditioned upon CWS making the upgrades Sandler had failed to perform during their 24 years of ownership.

Q. ARE YOU AWARE IF THE COUNTY EVER TRIED TO ACQUIRE THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. As Chairman of the Currituck County Commissioners, I was aware that the Eagle Creek community reached out to the County to discuss whether the County would acquire the Eagle Creek wastewater system. At that time, I was Chairman of the

Currituck County Commissioners, and the County had preliminary discussions regarding the County's willingness to acquire the wastewater system due to our concern over repeated complaints from Eagle Creek residence regarding service outage issues.

Upon inspection of the facility, the County had significant concerns over the condition of the wastewater system and specifically the vacuum collection system. The County proposed significant upgrades to the wastewater system including conversion of the vacuum system to gravity sewer collection. After the County made that proposal to the Eagle Creek HOA, the County did not hear from the Eagle Creek HOA ever again.

Q. CAN YOU PROVIDE INFORMATION ON WHY CURRITUCK COUNTY DID NOT ACQUIRE THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. As the Chairman of the Currituck County Commissioners, I am aware that the County's proposal to convert the vacuum system to gravity was presented to Eagle Creek community representatives. After presenting the County's proposal to the Eagle Creek representatives, the County did not hear from the community representatives ever again and discussions were terminated. The County was not willing to move forward with acquiring the Eagle Creek wastewater system given its deteriorated state without significant upgrades and conversion to gravity.

Q. DO YOU HAVE AN OPINION ON WHAT ACTION THE COMMISSION SHOULD TAKE REGARDING CWS'S APPLICATION FOR TRANSFER OF THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. I have been openly critical of Envirolink's communication with the residents of Eagle Creek and have worked closely with Envirolink to improve communication within the community. Based on my experience with CWS and Envirolink, they have performed every commitment made to my office and have been responsive to every request from my office.

Sandler Utility has had 24 years of mismanagement and has largely been unresponsive to the issues.

My opinion is that developer owned utilities frequently result in under capitalization, and underfunding of operation and maintenance.

The residence of Eagle Creek have demanded and deserve better. While Envirolink has been accused of not investing in the Eagle Creek wastewater system and has experienced communications difficulties, Envirolink is the only one that has consistently been willing to engage the residents and provide them with a level of transparency and forthrightness that neither Sandler, NC DEQ or Public Staff have offered to date.

The have a solution and plan to improve the Eagle Creek wastewater system, and it is my opinion that the state agencies need to facilitate implementation of this solution unless they find that the proposed solution would not provide a meaningful benefit to the residents of Eagle Creek. However, based on my knowledge, CWS's plan is a robust plan that will result in reliable worry free service to the residents of Eagle Creek, so I would urge the state agencies to show leadership and work to facilitate this solution as fast as possible.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA

NORTH CAROLINA UTILITIES COMMISSION
RALEIGH

Docket No. W-1333, Sub 0
Docket No. W-1130, Sub 11

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)
Application by Currituck Water & Sewer, LLC,	)
4700 Homewood Court, Suite 108, Raleigh, North	)
Carolina 27609, and Sandler Utility, LLC,	)
Virginia Beach, Virginia, for Authority	)
To Transfer the Eagle Creek Wastewater System	)
And Franchise in Currituck County, North	)
Carolina, and Approval of Rates	)

REBUTTAL TESTIMONY

OF

EAGLE CREEK RESIDENT GARY LICKFIELD

ON BEHALF OF

CURRITUCK WATER & SEWER, LLC

March 31, 2022

Q. PLEASE STATE YOUR NAME, POSITION, AND ADDRESS.

A. My name is Gary Lickfield, and I am a resident of Eagle Creek. My address is 2XX Green View Rd, Moyock-, North Carolina.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes. I testified at the customer hearing held in support of this transfer proceeding and have presented comments to rate proceedings in the past. Subsequent to March 2, 2022, I have reviewed the testimony filed by the Public Staff witnesses that was not available then, and I have first-hand factual knowledge and information that I maintain is necessary to rebut positions those witnesses provide and to place their testimony in appropriate context.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide the Commission information provided in NC DEQ and Public Staff's testimony that seems to insinuate that the Eagle Creek wastewater system was good shape prior to September 2020, to provide further clarity regarding communications prior to September 2020 and to provide the Commission

with my experience regarding the customer survey submitted as part of the proceedings.

Q. ARE YOU AWARE OF WHEN ENVIROLINK PERSONNEL TOOK OVER OPERATION OF THE EAGLE CREEK WASTEWATER SYSTEM?

A. Yes. As I have come to learn from discussions with field staff and information presented during these proceedings, the former Envirotech staff continued operation after Envirolink took over until some time in late August or early September 2020..

Q. AS A CUSTOMER OF EAGLE CREEK CAN YOU PROVIDE ANY INSIGHT INTO THE RELIABILITY OF THE EAGLE CREEK WASTEWATER SYSTEM BEFORE AND AFTER SEPTEMBER 2020?

A. Yes. I think it is important to understand a little bit about the system and community in order to understand how one part of the community could experience frequent service issues while other parts of the community may not be experiencing service issues. As many of the speakers mentioned during the customer hearings, few of them experienced service issues, while others like me have experience frequent service issues.

I have been a resident of the Eagle Creek community since 19__ and have experienced numerous service issues both prior to and since September 2020. I live in the area of the community most prone to flooding, and this area is usually the part of the system that experiences services issues before anyone else in the community. This area is commonly known as the part of the system located on the inch line around Eagleton Circle.

It is absolutely true that service issues are most prevalent during rainfall events, but it would not be accurate to state that service related issues were only isolated to rainfall events. There were frequent service issues even during "dry" times, but the number and frequency of events were significantly fewer than during rain events. The stress placed on the system and technicians during rainfall events is such that many in the community were unaware of service issues because their part of the system rarely was impacted. It is my opinion that both statements can be true, the system does experience service issues during "dry" times, but many customers are not aware of the service issues. It is also true that many customers only experienced service issues during rainfall events because of the significant impact rain events has on the performance of the sewer system.

As you can see from my previous testimony, I am very passionate about this issue and have been very critical of NC DEQ's and the Public Staff's handling of this issue over the

years. From their own report in 2015, DEQ stated that the system was "sub-par at best", but now they want to point fingers, deflect and cause delays. I don't understand why this has been taking so long. Anyone stating that service issues did not occur prior to September 2020 is not reviewing available data. The information is right there for anyone to see from past DEQ reports, to past rate proceedings, to customer testimony, to third party reports, etc. that contradict any statements that the system only started having service issues in September 2020.

As someone living through this day in and day out, I have to ask why is this taking so long. We should be talking about the when construction will be completed and not about what solution is most appropriate.

Regarding service issues since September 2020, It is true that the frequency of issues does seem to have increased since 2020. There are many factors that could be impacting this observation, but I would remind everyone that the outage in the Fall of 2020, while it started as a service pit issue, was prolonged because of a massive cascading failure of the central vacuum station, a lack of spare parts and a lack of available replacement parts.

It started with the vacuum pumps failures and then transitioned to sewage pump failures, and then tank failures. Technicians faced significant challenges because there

were no vacuum pumps available locally and their search for replacement pumps proved fruitless.

The Fall 2020 failures put a tremendous strain on the vacuum system, so I think it is reasonable to assume that given the age and condition of the collection system, it would continue to experience service issues.

Additionally, through my conversations with the many third party entities that have reviewed this system, I have come to learn that even brand new controllers have a pretty high failure rate in many vacuum systems and that the more infiltration a system experiences the worse a vacuum system performs because the frequency of the open/closing action is increased. This increases the probability of controller and/or valve failure.

Q. ARE YOU AWARE OF THE CUSTOMER SURVEY CONDUCTED WITHIN THE COMMUNITY?

A. Yes, I have become aware of the survey.

Q. WHAT IS YOUR PERSPECTIVE REGARDING THE RESULTS OF THE SURVEY?

A. While I do not think the survey was handled or administered properly, I do not think you can ignore the results altogether. I think the survey results reflect a fear in the community related to two issues, disruption during construction and the impact on rates. I think some in the community have used the service failures as a tool to promote an agenda to keep things the same because they fear disruption during construction and impact that the replacement would have on sewer rates..

Q. DO YOU HAVE AN OPINION ON CUSTOMER CONCERNS REGARDING DISRUPTION DURING CONSTRUCTION AND FUTURE SEWER RATES?

A. Yes. I think CWS, Envirolink, the engineers, etc. have all been very clear that there will be disruptions during construction but that the plan is to keep the vacuum system in operation until each home is connected to the new system.

Based on what I heard during the informational sessions, virtually every decision that is being made regarding the design and construction techniques is based on minimizing disruptions during construction. Further, it is my understand that the actual time each home will be without sewer service during the switch over will be only about 3-4 hours. This seems to me like the temporary inconvenience is well worth the outcome of having a more tried and true sewer system.

Regarding rates, CWS has stated on numerous occasions that they are not requesting a rate increase at this time and are willing to agree to a stay out on rates until after construction is complete and the performance of the sewer system can be evaluated. Plus, they have stated they are willing to cap the rate increase associated with the improvements.

I think a lot of the confusion regarding rates came about because of the customer notice issued by the Public Staff, where they stated that the potential rate impacts associated with the project. The problem with that analysis was that it did not account for several factors, most notably the impact that the Fost and Flora communities will have on the capital required to replace the Eagle Creek collection system.

Q. SEVERAL CUSTOMERS HAVE BEEN CRITICAL OF ENVIROLINK'S COMMUNICATION, INCLUDING REPRESENTATIVE HANIG. ENVIROLINK HAS IN ESSENSE ADMITTED THAT THEY HAVE HAD TO ADJUST THEIR COMMUNICATION PROCEDURES. WHAT INFORMATION CAN YOU PROVIDE TO GIVE SOME CONTEXT AROUND THIS ISSUE?

A. Well first and foremost remember that communication started during some of the most challenging conditions possible. I would also offer that prior to September 2020, residents were not receiving any communication regarding service issues or system status.

I think this is part of the problem. Because many in the community have not experienced service issues they have been unaware of the past service issues experienced by others in the community. It seem logical to me that many in the community that were previously unaware of service issues now have full visibility of the service issues experience by others.

I would add that prior to Envirolink's taking over customer service and operation, not only were we not receiving any communication, I personally had the previous Envirotech office personnel hang up on me and could never reach Sandler in order to questions addressed.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.