

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>ELECTRONIC APPLICATION OF</b>	)	
<b>MOUNTAIN WATER DISTRICT PURSUANT</b>	)	
<b>TO 807 KAR 5:071, SECTION 7(4) FOR</b>	)	<b>CASE NO. 2018-00147</b>
<b>APPROVAL OF PROPOSED INSPECTION</b>	)	
<b>PROCEDURE</b>	)	

**APPLICATION**

Pursuant to 807 KAR 5:071, Section 7(4), Mountain Water District (“Mountain District”) applies to the Public Service Commission for an Order approving its proposed procedure for the inspection of its mechanical grinder/pump stations that will require Mountain District to perform inspections of such facilities no more than once every five years.

In support of its Application, Mountain District states:

**Introduction**

1. The full name and post office address of Mountain District is: Mountain Water District, 6332 Zebulon Highway, P. O. Box 3157, Pikeville, Kentucky 41502-3157. Its e-mail address is rsawyers@mtwater.org.
2. Mountain District is not a corporation, limited liability company or limited partnership. It has no articles of incorporation or partnership agreements.
3. Mountain District is a water district created under the provisions of KRS Chapter 74.

4. Copies of all orders, pleadings and other communications related to this proceeding should be directed to:<sup>1</sup>

Roy Sawyers  
General Manager  
P. O. Box 3157  
Pikeville, Kentucky 41502-3157  
(606) 631-9162  
rsawyers@mtwater.org

Tammy Olson  
Office/Compliance Manager  
P. O. Box 3157  
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Gerald E. Wuetcher  
Stoll Keenon Ogden PLLC  
2100 West Vine Street, Ste 2100  
Lexington, Kentucky 40507-1801  
(859) 231-3017  
gerald.wuetcher@skofirm.com

5. Mountain District's Board of Commissioners, which manages Mountain District's business and affairs pursuant to KRS 74.070(2), has authorized the filing of this application. A copy of its Resolution authorizing this Application is attached as **Exhibit 1** of this Application.

**Mountain District's Sewer Operations**

6. Mountain District owns and operates facilities that are used in the collection, transmission, or treatment of sewage for the public, for compensation, and that provide sewer service to the public in Pike County, Kentucky. Pursuant to KRS 278.015 and KRS 278.040, these facilities are subject to the Public Service Commission's jurisdiction and regulation.

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<sup>1</sup> On May 1, 2018, Mountain District gave to the Commission notice of its intent to file this Application and filed with the Commission a Notice of Election of Use of Electronic Filing Procedures for this proceeding.

7. As of December 31, 2017, Mountain District provided sewer service to 2,065 residential customers and 178 commercial customers.<sup>2</sup>

8. Mountain District currently operates several sewage collection and treatment facilities in Pike County, Kentucky. It operates a total of nine sewage treatment plants that have a total daily treatment capacity of 483,934 gallons. It also operates 21 lift stations, 76 manholes, approximately eight miles of gravity sewer mains and 50.7 miles of force sewer mains. A list of Mountain District's sewage treatment plants is attached as **Exhibit 2** of this Application. The geographical areas to which Mountain District provides sewer service and the location of its sewage treatment facilities is shown on the map attached as **Exhibit 3** of this Application.

9. Mountain District also operates two sewer collection systems that collect and transport wastewater to treatment facilities in West Virginia. One of these facilities serves approximately 560 customers in the unincorporated area of Pike County known as South Williamson and transports wastewater to treatment facilities operated by the City of Williamson, West Virginia. The other facility serves approximately 95 customers in McCarr, Kentucky and transports wastewater to a treatment facility operated by the Town of Matewan, West Virginia.

10. Because of its territory's topography and low customer density, Mountain District primarily uses a pressurized system rather than a conventional gravity collection system to transport wastewater to its sewage treatment facilities. For most Mountain District customers, sewage from the customer's home or business flows to a storage tank located on the customer's property which is equipped with a grinder/pump. Each storage tank has a capacity of approximately 120 gallons. The grinder/pump grinds the solids into slurry and then discharges

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<sup>2</sup> *Annual Report of Mountain Water District (Sewer Operations) to the Public Service Commission for the Year Ending December 31, 2017* ("2017 Annual Report") at Ref Page 8.

the sewage into a pressurized pipe system. The sewage is then forced to a lift station that pumps the sewage through force mains to the sewage treatment facility. Mountain District currently has 1,903 active grinder/pump stations that pump wastewater from the customer's residence or business to Mountain District's main lift stations.<sup>3</sup> **Exhibit 2** to the Application lists the sewage treatment facilities that receive wastewater from grinder/pump stations.

11. Mountain District currently employs nine persons for its sewer operations. Two employees are certified as wastewater collection system operators and one employee is certified as a wastewater collection system operator in training. Three other employees are certified as wastewater treatment operators. In addition, one employee is certified as a wastewater treatment plant operator and as a wastewater collection system operator.

### **PSC Inspection Requirements and Their Consequences**

12. 807 KAR 5:006, Section 26(8) provides:

Sewage utility inspection. Each sewage utility shall make systematic inspections of its system in the manner established in 807 KAR 5:071 to ensure that the commission's safety requirements are being met. The inspections shall be made as often as necessary but not less frequently than established in 807 KAR 5:071.

13. 807 KAR 5:71, Section 7(4) provides:

Each sewage utility shall adopt procedures for inspection of its sewage treatment facilities to assure safe and adequate operation of its facilities and compliance with commission rules. These procedures shall be filed with the commission. Unless otherwise authorized in writing by the commission, the sewage utility shall

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<sup>3</sup> Most of these grinder/pump stations are simplex grinder/pump stations. Simplex grinder/pump stations have only one pump with a grinding mechanism and controls for one pump. Mountain District has approximately ten duplex grinder/pump stations – stations with two pumps with grinder mechanisms and two sets of controls. A duplex grinder/pump has two advantages over the simplex grinder/pump. First, the redundancy reduces the likelihood of service disruptions. If one pump fails, the other pump can continue to provide service. Second, because the two pumps in the duplex grinder/pump station alternate service, the wear on the pumps is more even and the station is likely to have a longer useful service life. Mountain District has located its duplex grinder/pump stations at schools and large businesses.

make inspections of collecting sewers and manholes on a scheduled basis at intervals not to exceed one (1) year, unless conditions warrant more frequent inspections and **shall make inspections of all mechanical equipment on a daily basis.** The sewage utility shall maintain a record of findings and corrective actions required, and/or taken, by location and date. [Emphasis added.]

14. Mountain District's grinder/pump stations are mechanical equipment. The technical drawings and specifications of these grinder/pump stations are attached to this Application as **Exhibits 4 and 5.**

15. Mountain District does not currently inspect its grinder/pump stations on a daily basis. The Public Service Commission has not authorized Mountain District to inspect its grinder/pump stations on a schedule that differs from that set forth in 807 KAR 5:071, Section 7(4).

16. 807 KAR 5:006, Section 26(8) and 807 KAR 5:071, Section 7(4) require Mountain District to inspect its 1,903 active grinder/pump stations daily. Between October 31, 2017 and November 2, 2017, Public Service Commission Staff inspected Mountain District's sewer facilities and records. In the report of its inspection, Public Service Commission Staff found that Mountain District must perform daily inspections on these grinder/pump stations, was not conducting daily inspections and, therefore, was not in compliance with 807 KAR 5:071, Section 4. A copy of this report is attached as **Exhibit 6** to this Application.

17. Performing daily inspections of its grinder/pump stations is expensive and will place a significant financial burden on Mountain District and its customers. Mountain District estimates that 951.50 man-hours are required to inspect all grinder/pump stations once.<sup>4</sup> On an

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<sup>4</sup> To be consistent with other utilities' requests for a deviation from the daily inspection requirement, Mountain District assumed that the time to perform an inspection and travel to the next station was approximately 30 minutes. Given that Mountain District's grinder/pumping stations are dispersed over a larger geographical area and more challenging terrain, Mountain District believes this assumption is very conservative and that a more realistic (Continued on next page)

annual basis, performing daily inspections will require hiring an additional 119 employees as inspectors at an estimated annual cost of \$6,956,755. It will also require Mountain District to increase its motor vehicle fleet to provide a vehicle for each inspector. The estimated annual cost associated with this fleet expansion is \$1,202,831.<sup>5</sup> The estimated total annual cost to daily inspect the grinder/pump stations is approximately \$8,418,410. In the initial year of compliance, Mountain District estimates that expenditures of \$11,328,916 will be necessary. The calculations for these cost estimates are found in **Exhibit 7** to this Application.

18. The expense to perform daily inspections of grinder/pump stations will significantly burden Mountain District's sewer operations and require very large increases in its rates for sewer service. For the year ending December 31, 2017, Mountain District's sewer operations had total operating revenues of \$1,722,191 and total operating expenses of \$2,093,385.<sup>6</sup> The estimated annual expense to perform daily inspections is equal to 402 percent of Mountain District's 2017 operating expenses and almost five times its total operating revenues in 2017. It would require Mountain District to sextuple its rates for sewer service. For the average Mountain District sewer customer, who uses an average of 4,500 gallons of water monthly, his or her monthly bill would increase from \$78.15 to \$459.52.

19. The sewer rates necessary to support daily inspections will impose significant financial burdens on Mountain District's customers, who are presently ill-equipped to bear such burdens. The medium household income for households in Mountain District's territory is

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estimate of inspection and travel time for its operations is 120 minutes per grinder/pump station. It has used this more realistic estimate in determining the cost of performing annual and triennial inspections of its grinder/pump stations. See Exhibits 12 and 13.

<sup>5</sup> This estimate includes the annual salary and benefits for an automotive mechanic to maintain Mountain District's fleet of 119 vehicles.

<sup>6</sup> *2017 Annual Report* at Ref Page 8.

\$32,816.<sup>7</sup> The required rate to support daily inspections would consume approximately 16.8 percent of their annual income.<sup>8</sup> The required rate increase would constitute a severe economic hardship on an area that is already economically depressed.

### **Proposed Deviation**

20. Mountain District requests a deviation from 807 KAR 5:006, Section 26(8) and 807 KAR 5:071, Section 7(4) to permit it to inspect its grinder/pump stations once every five years.

21. The proposed deviation will enable Mountain District to perform periodic inspections of those stations with its current workforce, eliminate the need to hire additional employees or contractors, and avoid the significant expense associated with daily inspections.

22. 807 KAR 5:071, Section 4, is intended to assure the safe and adequate operation of sewer utility facilities, the prevention of equipment malfunctions and failures, and the detection of “failures or malfunctions within a reasonable period of time.”<sup>9</sup> Mountain District has implemented the following measures to substitute for daily inspections, maintain a high level of service quality and reliability, ensure the rapid detection of any mechanical failure, and ameliorate the consequences of such failure:

a. All grinder/pump stations have been equipped with visual and audio alarms that activate when high water levels are reached in the storage tank. When activated, these alarms can easily be seen and heard by persons a considerable distance away from the grinder/pump station.

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<sup>7</sup> United States Census Bureau, Quick Facts: Pike County, Kentucky, <https://www.census.gov/quickfacts/fact/table/pikecountykentucky/PST045217> (last viewed July 23, 2018).

<sup>8</sup> At Mountain District’s present rates for sewer service, an average customer using 4,500 gallons of water monthly spends approximately 2.86 percent of his or her annual income on sewer service.

<sup>9</sup> *Springcrest Sewer Company, Inc. Request for Deviation from 807 KAR 5:071, Section 7(4)*, Case No. 2014-00277 (Ky. PSC Dec. 16, 2014) at 4.

b. Mountain District provides each customer who is served through a grinder/pump station with detail instructions on responding to a grinder/pump station failure. A copy of these instructions is attached as **Exhibit 8** of this Application.

c. Mountain District requires at least one employee to be on call at all times and has established an emergency number through which the on-call employee can be reached by the public, law enforcement, or other government officers or agents. Mountain District has established a target response time to emergency calls of no greater than 40 minutes and has generally met this target.

d. All grinder/pump stations have been designed to prevent any sewage backup. Each grinder/pump station has a sewer relief valve. If the water level rises within the station's tank, these relief valves will automatically open and allow water to bypass through the valve.

23. Since commencing its sewer operations in 2002, Mountain District has used Environment One Corporation grinder/pump stations. These grinder/pump stations are designed to reduce the need for maintenance and repair calls. They are semi-positive displacement pumps and are better equipped to deal with high viscosity liquids such as wastewater. The stations have a number of unique features. They use non-contact, non-fouling pressure switch level controls rather than float switches that are used on more conventional grinder/pump stations. Rather than an oil filled motor that requires periodic oil changes, they use an air-filled motor that requires no preventive maintenance. The grinder is a low-speed, high-torque grinder that is designed to eliminate jamming and place minimum wear to the grinder mechanism.

24. The grinder/pump station's manufacturer represents that no preventive maintenance on the stations is required and that the average mean time between service calls on a station is ten years. A copy of the manufacturer's brochure regarding the grinder/pump station is



attached as **Exhibit 9** to this application. A statement from the manufacturer's sale representative describing the grinder/pump and explaining why no preventative maintenance is necessary is attached as **Exhibit 10** to this Application. The manufacturer has warranted the operation of its grinder/pumping stations for a period of 65 months. A statement regarding the manufacturer's warranty is attached as **Exhibit 11** to the Application.

25. The Public Service Commission has previously noted that the purpose of 807 KAR 5:071, Section 4, is to assure the safe and adequate operation of sewer utility facilities, the prevention of equipment malfunctions and failures, and the detection of "failures or malfunctions within a reasonable period of time."<sup>10</sup>

26. 807 KAR 5:071 was promulgated in 1982. At that time, virtually all public sewer systems were gravity systems. Few, if any, pressurized systems using a grinder/pump station for each customer were present in Kentucky in 1982. Therefore, this regulation was likely intended to address only gravity systems with mechanical equipment located at a few locations, not pressurized systems having mechanical equipment at each customer location. Nothing in the regulation's language or administrative history suggests that the Public Service Commission, when promulgating the regulation, considered or recognized the financial and resource implications of the daily inspection requirement on pressurized systems.

27. A five-year inspection period is reasonable as no preventive maintenance is required for these stations. The manufacturer does not recommend such maintenance and the manufacturer's records indicate that the stations do not require any service for the first ten years of their operation. The proposed inspection frequency will allow Mountain District to inspect and observe the performance of each grinder/pump station well before any service problems are

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<sup>10</sup> *Springcrest Sewer Company, Inc. Request for Deviation from 807 KAR 5:071, Section 7(4)*, Case No. 2014-00277 (Ky. PSC Dec. 16, 2014) at 4.

expected to occur. Moreover, the proposed inspection period allows Mountain District to conduct inspections within its existing staffing levels and will not require the hiring of additional personnel for the sole purpose of performing inspections. It will reduce the financial pressures on Mountain District to increase its rates for sewer service.

28. While the Public Service Commission has permitted inspection periods for grinder/pump stations that permit the time between inspections of up to one year,<sup>11</sup> Mountain District believes that the cost of annual inspections would be excessive, would significantly increase Mountain District's rates for sewer service, and would provide relative limited benefit in return for this increased cost. Its calculations indicate that inspections performed on a five-year basis would be more cost-effective.

a. Mountain District estimates that the cost of performing annual inspections on each of its grinder/pump stations is \$95,468, or approximately 5.5 percent of its reported annual revenues in 2017. To generate the additional revenues to cover the expense of annual inspections, the monthly bill of an average Mountain District sewer customer, who uses 4,500 gallons of water monthly, would have to increase from \$78.15 to \$82.45. The calculations for these cost estimates are found in **Exhibit 12** to this Application.

b. Mountain District estimates that the cost of performing triennial inspections on each of its grinder/pump stations is \$34,747, or approximately 2.0 percent of its reported annual revenues in 2017. To generate the additional revenues to cover the expense of

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<sup>11</sup> *Application of Grant County Sanitary Sewer District Pursuant to 807 KAR 5:071, Section 7(4) for Deviation from Required Inspection Procedures and Request for Approval of Proposed Inspection Procedures*, Case No. 2018-00097 (Ky. PSC June 12, 2018); *Electronic Application of Wood Creek Water District Pursuant to 807 KAR 5:071, Section 7(4) for Approval of Proposed Inspection Procedures*, Case No. 2017-00307 (Ky. PSC Jan. 31, 2018); *Electronic Application of McCreary County Water District Pursuant to 807 KAR 5:071, Section 7(4) for Approval of Proposed Inspection Procedures*, Case No. 2017-00246 (Ky. PSC Feb. 1, 2018); *Garrison-Quincy-KY-O-Heights Water District Request for a Deviation From the Daily Inspection of Sewer Grinding Pump Stations*, Case No. 2017-00201 (Ky. PSC Jan. 22, 2017).

triennial inspections, the monthly bill of an average Mountain District sewer customer, who uses 4,500 gallons of water monthly, would have to increase from \$78.15 to \$79.79. The calculations for these cost estimates are found in **Exhibit 13** to this Application.

29. Good cause exists to authorize the proposed inspection schedule. Mountain District's existing equipment and procedures will quickly alert Mountain District's sewer system operator of any mechanical equipment malfunctions or failures arising in its grinder/pump stations. They serve as an adequate substitute for daily inspections of such equipment and render daily inspections unnecessary. Authorization of the proposed inspection schedule will not lessen the quality or reliability of the sewer service that Mountain District provides. Authorization of the proposed inspection schedule, furthermore, prevents unnecessary inspections that do little to enhance the public health or safety and would require a significant increase in Mountain District's rates for sewer service.

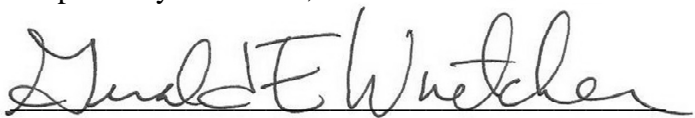
### **Conclusion**

**WHEREFORE**, Mountain Water District requests that the Commission:

1. Authorize Mountain District to deviate 807 KAR 5:071, Section 4, and permit it to perform inspections on its grinder/pumping stations once every five years; and,
2. Grant any and all such other relief to which Mountain District may be entitled.

Dated: August 8, 2018

Respectfully submitted,



Gerald E. Wuetcher  
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Fax: (859) 259-3517  
gerald.wuetcher@skofirm.com

*Counsel for Mountain Water District*

COMMONWEALTH OF KENTUCKY )  
   ) SS  
COUNTY OF PIKE                                    )

The undersigned, Roy Sawyers, being duly sworn, deposes and states that he is the General Manager of Mountain Water District, the Applicant in the above proceedings; that he has read this Application and has noted its contents; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

IN TESTIMONY WHEREOF, witness the signature of the undersigned on this August 8th, 2018.

Roy B. Sawyers  
Roy Sawyers  
General Manager  
Mountain Water District

Subscribed and sworn to before me by Roy Sawyers, General Manager, Mountain Water District, on this August 8th, 2018.

Lanny Olson  
Notary Public  
Notary ID: 548290  
My Commission Expires: January 16, 2020

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, I certify that Mountain District's August 8, 2018 electronic filing of this Application is a true and accurate copy of the same document being filed in paper medium; that the electronic filing was transmitted to the Commission on August 8, 2018; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that a copy of the Application in paper medium will be delivered to the Commission on or before August 10, 2018.

A handwritten signature in blue ink that reads "Gerald E. Wuetcher". The signature is written in a cursive style with a horizontal line underneath the name.

Gerald E. Wuetcher

# **EXHIBITS**

## **TABLE OF EXHIBITS**

<b><u>Tab No.</u></b>	<b><u>Description</u></b>
<b>1</b>	A Resolution of the Board of Commissioners of Mountain Water District Authorizing An Application to the Kentucky Public Service Commission for Approval of An Alternate Inspection Schedule for Sewer Facilities
<b>2</b>	Listing of Mountain Water District Sewer Treatment Facilities and Lift Stations
<b>3</b>	Map of Mountain Water District Sewer Facilities
<b>4</b>	Technical Specifications for Grinder/Pump Station
<b>5</b>	Technical Drawing for Grinder/Pump Station
<b>6</b>	Inspection Report on Mountain Water District (Sewer Operations) - December 26, 2017
<b>7</b>	Calculation of Cost to Perform Daily Inspections of Grinder/Pump Stations
<b>8</b>	Mountain Water District Guidelines for Low Pressure Sewer System
<b>9</b>	E/One Upgrade Brochure
<b>10</b>	Letter from Marvin Springer, Regional Sales Manager, Environment One Corporation, to Jonathan Cummings, WASCON, Inc. (Regional Parts Supplier to Mountain Water District) (Jan. 17, 2018).
<b>11</b>	Letter from Marvin Springer, Regional Sales Manager, Environment One Corporation, to Mountain Water District (July 25, 2018)
<b>12</b>	Calculation of Cost to Perform Annual Inspections of Grinder/Pump Stations
<b>13</b>	Calculation of Cost to Perform Triennial Inspections of Grinder/Pump Stations

# **EXHIBIT 1**



**A RESOLUTION OF THE BOARD OF COMMISSIONERS OF  
MOUNTAIN WATER DISTRICT AUTHORIZING AN APPLICATION  
TO THE KENTUCKY PUBLIC SERVICE COMMISSION FOR  
APPROVAL OF AN ALTERNATE INSPECTION SCHEDULE FOR  
SEWER FACILITIES**

**WHEREAS**, Mountain Water District owns and operates sewage collection and treatment systems that provide sewer service to the residents of Pike County, Kentucky;

**WHEREAS**, Mountain Water District's sewer operations are subject to the jurisdiction and regulation of the Kentucky Public Service Commission;

**WHEREAS**, the Kentucky Public Service Commission has promulgated 807 KAR 5:071, Section 7(4), which requires a sewer utility to inspect all mechanical equipment on a daily basis unless the Kentucky Public Service Commission authorizes in writing a different inspection schedule;

**WHEREAS**, Mountain Water District currently lacks sufficient personnel to perform daily inspections and to comply with the daily inspection requirement of 807 KAR 5:071, Section 7(4) must hire additional employees at a significant expense;

**WHEREAS**, if Mountain Water District is required to comply with the daily inspection of 807 KAR 5:071, Section 7(4), its financial condition will be severely affected and Mountain Water District will be forced to implement large and burdensome increases in its rates for sewer service;

**WHEREAS**, Mountain Water District has determined that, given the operating characteristics of its sewer operations and the features of its equipment, less frequent inspections can be undertaken at a much lower expense without reducing the quality and reliability of sewer service and without weakening any protections to public safety; and

**WHEREAS**, the Kentucky Public Service Commission's regulations permit a sewer utility to apply for authorization to make inspections on a schedule that differs from that provided in 807 KAR 5:071;


**NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE BOARD OF COMMISSIONERS OF MOUNTAIN WATER DISTRICT AS FOLLOWS:**

**Section 1.** The facts, recitals, and statements contained in the foregoing preamble of this Resolution are true and correct and are hereby affirmed and incorporated as a part of this Resolution.

**Section 2.** The General Manager, all appropriate Staff, and Mountain Water District's attorney are hereby further authorized and directed to take any and all other actions to apply to the Kentucky Public Service Commission for authorization to make inspections of Mountain Water District's sewage collection and treatment facilities on a less frequent basis than that required by 807 KAR 5:071, Section 7(4).

**Section 3.** This Resolution shall take effect upon its adoption.

**ADOPTED BY THE BOARD OF COMMISSIONERS OF MOUNTAIN WATER DISTRICT at a meeting held on May 30, 2018 signed by the Chairman, and attested by the Secretary.**

  
\_\_\_\_\_  
Chairman

**ATTEST:**

  
\_\_\_\_\_  
Secretary

# **EXHIBIT 2**

## EXHIBIT 2

### MOUNTAIN WATER DISTRICT SEWAGE TREATMENT FACILITIES\*

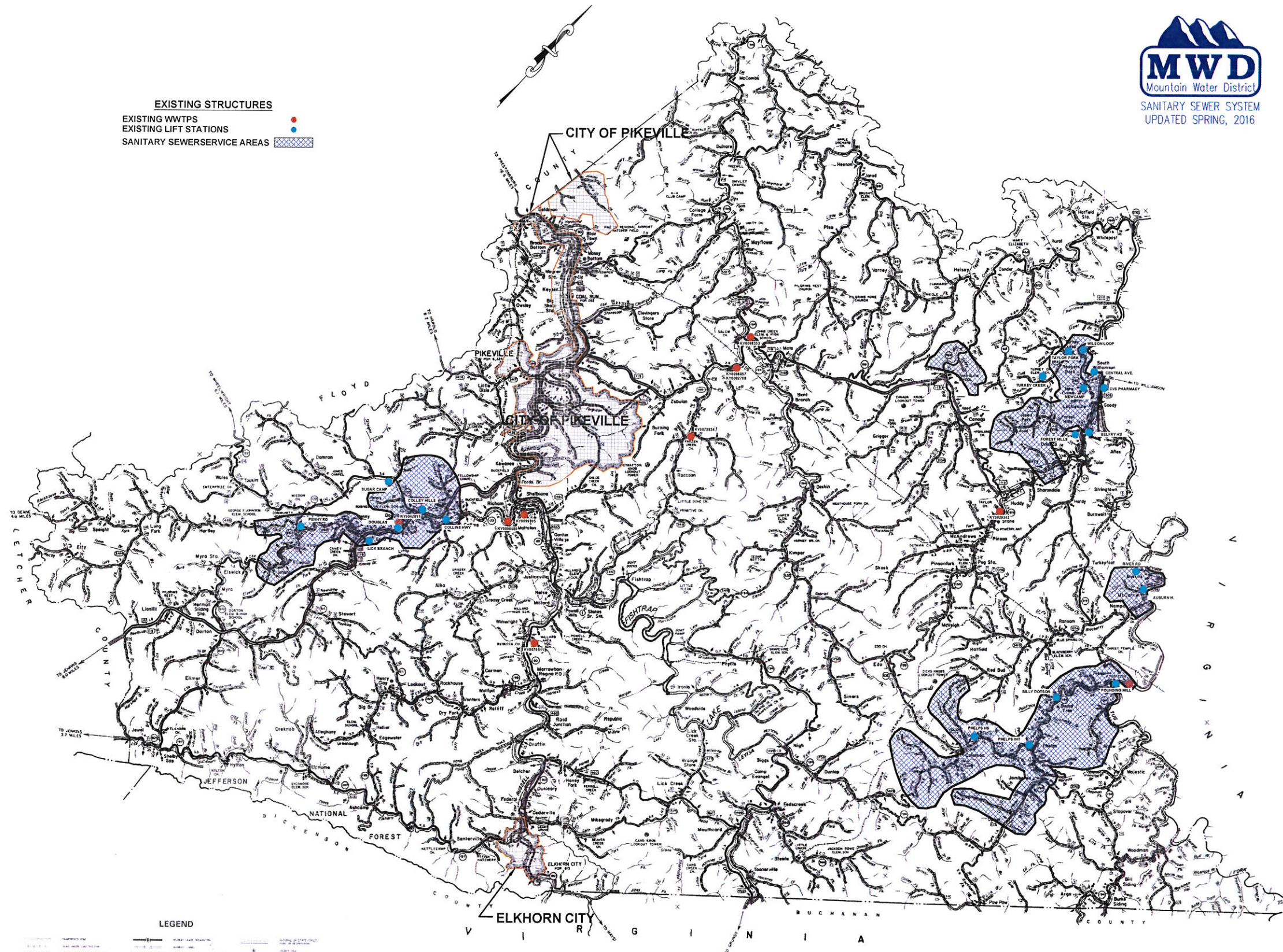
Name of WWTP	Location	Treatment Type	Collection Type	Capacity (GPD)	Customers	Grinder Pump Stations	Lift Stations	Sewer Mains
Belfry** (Not Constructed)	Pegs Branch, Belfry, KY	Membrane Technology	Force Main	300,000	≈250	≈250	1	11.2 miles of various sizes (force main)
Branham Heights	Shelbiana, KY	Extended Aeration	Gravity	10,000	3	0	0	1,500 ft of 4-inch main
Daniels Branch	Millard, KY	Extended Aeration	Gravity	3,000	5	0	0	1,000 ft of 4-inch main
Douglas	Robinson Creek, KY	Extended Aeration	Gravity Force Main	150,000	718	677	6	1 mile of 10-inch (gravity) 14 miles of various sizes (force main)
Keene Village	Raccoon, KY	Extended Aeration	Gravity	15,000	19	0	0	2,500 ft of 4-inch main
Maple Valley	Meta, KY	Extended Aeration	Gravity	2,800	7	0	0	1,000 ft of 6-inch main
Modern Mobile Home Park	Pikeville, KY	Extended Aeration	Gravity	6,000	25	0	0	1,500 ft of 4-inch main
Phelps/Freeburn	Phelps, KY	Sequencing Batch Reactor	Force Main	250,000	841	841	4	25 miles of various sizes (force main)
Shelbiana Mobile Home Park	Shelbiana, KY	Extended Aeration	Gravity	37,134	14	0	0	1,000 ft of 6-inch main
Stone Heights	Stone, KY	Extended Aeration	Gravity	10,000	20	3	1	2,500 ft of 8-inch main

\*In addition to these facilities, Mountain District operates two sewage collection systems that collect and transport wastewater to facilities in West Virginia. Approximately 560 customers are located in the unincorporated area of South Williamson and are served through a collection system whose wastewater is treated in Williamson, West Virginia. Approximately 287 of these customers have a grinder/pump station at his or her location which pumps wastewater to one of three lift stations that in turn pump the wastewater to the Williamson facility. Another 95 customers are located in McCarr, Kentucky, and are served through a collection system whose wastewater is treated at a treatment facility operated by the Town of Matewan, West Virginia. All of these customers have a grinder/pump station at his or her location.

\*\*The Belfry Sewer Project is a shovel ready wastewater project currently in the submittal phase to USDA Rural Development. The project is not constructed at this time but is anticipated to break ground in November 2018. Project information is based upon the Engineer's Cost Estimate for the project.

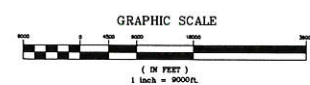
# **EXHIBIT 3**

**EXISTING STRUCTURES**  
 EXISTING WWTPS      ●  
 EXISTING LIFT STATIONS      ●  
 SANITARY SEWER SERVICE AREAS      [Hatched Box]

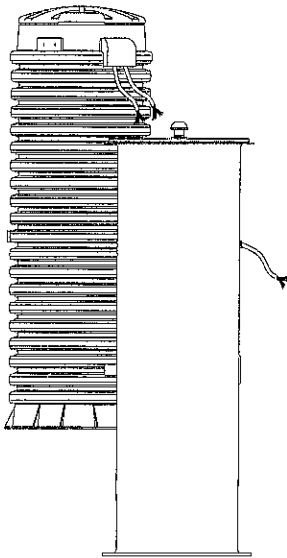


**LEGEND**


**ATTACHMENT B**



# **EXHIBIT 4**



# Grinder Pump Specification

Positive  
Displacement  
Type



## SECTION: GRINDER PUMP STATIONS

### 1.0 General

- 1.01 GENERAL DESCRIPTION:** Complete factory-built and tested grinder pump unit(s), each consisting of a grinder pump core suitably mounted on an integral stand of stainless steel, electrical quick disconnect (NEMA 6P), supply cable electrical quick disconnect housing and electrical insert, pump removal harness, anti-siphon valve/check valve assembly, all necessary internal wiring, and controls. All pump motor/grinder units shall be of like type and horsepower.
- 1.02 OPERATING CONDITIONS:** The pumps shall be capable of delivering 15 GPM against a rated total dynamic head of 0 feet (0 PSIG), 11 GPM against a rated total dynamic head of 92 feet (40 PSIG), and 7.8 GPM against a rated total dynamic head of 185 feet (80 PSIG). The pump(s) must also be capable of operating at negative total dynamic head without overloading the motor(s). Under no conditions shall in-line piping or valving be allowed to create a false apparent head.
- 1.03 WARRANTY:** The grinder pump **MANUFACTURER** shall provide a part(s) and labor warranty on the pumps for a period of 60 months, but no greater than 66 months after receipt of shipment. Any manufacturing defects found during the warranty period will be reported to the **MANUFACTURER** by the **OWNER** and will be corrected by the **MANUFACTURER** at no cost to the **OWNER**.

### 2.0 PRODUCT

- 2.01 PUMP:** The pump shall be a custom designed, integral, vertical rotor, motor driven, solids handling pump of the **progressing cavity type** with a single mechanical seal. Double radial O-ring seals are required at all casting joints to minimize corrosion and create a protective barrier. All pump castings shall be cast iron, fully epoxy coated to 8-10 mil Nominal dry thickness, wet applied. The rotor shall be through-hardened, highly polished, precipitation hardened stainless steel. The stator shall be of a specifically compounded ethylene propylene synthetic elastomer. This material shall be suitable for domestic wastewater service. Its physical properties shall include high tear and abrasion resistance, grease resistance, water and detergent resistance, temperature stability, excellent aging properties, and outstanding wear resistance. Buna-N is not acceptable as a stator material because it does not exhibit the properties as outlined above and required for wastewater service.
- 2.02 GRINDER:** The grinder shall be placed immediately below the pumping elements and shall be direct-driven by a single, one-piece motor shaft. The grinder impeller (cutter wheel) assembly shall be securely fastened to the pump motor shaft by means of a threaded connection attaching the grinder impeller to the motor shaft. Attachment by means of pins or keys will not be acceptable. The grinder impeller shall be a one-piece, 4140 cutter wheel of the rotating type with inductively hardened cutter teeth. The cutter teeth shall be inductively hardened to Rockwell 50 – 60c for abrasion resistance. The shredder ring shall be of the stationary type and the material shall be white cast iron. The teeth shall be ground into the material to achieve effective grinding. The shredder ring shall have a staggered tooth pattern with only one edge engaged at a time, maximizing the cutting torque. These materials have been chosen for their capacity to perform in the intended environment as they are materials with wear and corrosive resistant properties.

This assembly shall be dynamically balanced and operate without objectionable noise or vibration over the entire range of recommended operating pressures. The grinder shall be constructed so as to minimize clogging and jamming under all normal operating conditions including starting. Sufficient vortex action shall be created to scour the tank free of deposits or sludge banks which would impair the operation of the pump. These requirements shall be accomplished by the following, in conjunction with the pump:

1. The grinder shall be positioned in such a way that solids are fed in an upward flow direction.

2. The maximum flow rate through the cutting mechanism must not exceed 4 feet per second. This is a critical design element to minimize jamming and as such must be adhered to.
3. The inlet shroud shall have a diameter of no less than 5 inches. Inlet shrouds that are less than 5 inches in diameter will not be accepted due to their inability to maintain the specified 4 feet per second maximum inlet velocity which by design prevents unnecessary jamming of the cutter mechanism and minimizes blinding of the pump by large objects that block the inlet shroud.
4. The impeller mechanism must rotate at a nominal speed of no greater than 1800 rpm.

The grinder shall be capable of reducing all components in normal domestic sewage, including a reasonable amount of "foreign objects," such as paper, wood, plastic, glass, wipes, rubber and the like, to finely-divided particles which will pass freely through the passages of the pump and the 1-1/4" diameter stainless steel discharge piping.

- 2.03 ELECTRIC MOTOR:** As a maximum, the motor shall be a 1 HP, 1725 RPM, 240 Volt 60 Hertz, 1 Phase, capacitor start, ball bearing, air-cooled induction type with Class F installation, low starting current not to exceed 30 amperes and high starting torque of 8.4 foot pounds. The motor shall be press-fit into the casting for better heat transfer and longer winding life. Inherent protection against running overloads or locked rotor conditions for the pump motor shall be provided by the use of an automatic-reset, integral thermal overload protector incorporated into the motor. This motor protector combination shall have been specifically investigated and listed by Underwriters Laboratories, Inc., for the application. Non-capacitor start motors or permanent split capacitor motors will not be accepted because of their reduced starting torque and consequent diminished grinding capability. The wet portion of the motor armature must be 300 Series stainless. To reduce the potential of environmental concerns, the expense of handling and disposing of oil, and the associated maintenance costs, oil-filled motors will not be accepted.
- 2.04 MECHANICAL SEAL:** The pump/core shall be provided with a mechanical shaft seal to prevent leakage between the motor and pump. The seal shall have a stationary ceramic seat and carbon rotating surface with faces precision lapped and held in position by a stainless steel spring.
- 2.05 ELECTRICAL QUICK DISCONNECT:** The grinder pump core shall include a factory-installed NEMA 6P electrical quick disconnect (EQD) for all power and control functions. The EQD shall require no tools for assembly, seal against water before the electrical connection is made, and include radial seals to assure a watertight seal regardless of tightening torque. Plug-type connections of the power cable onto the pump housing will not be acceptable due to the potential for leaks and electrical shorts. Junction boxes are not acceptable due to the large number of potential leak points. The EQD shall be so designed to be conducive to field wiring as required.
- 2.06 CHECK VALVE:** The pump discharge shall be equipped with a factory installed, gravity operated, flapper-type integral check valve built into the discharge piping. The check valve will provide a full-ported passageway when open, and shall introduce a friction loss of less than 6 inches of water at maximum rated flow. Moving parts will be made of a 300 Series stainless steel and fabric reinforced synthetic elastomer to ensure corrosion resistance, dimensional stability, and fatigue strength. A nonmetallic hinge shall be an integral part of the flapper assembly providing a maximum degree of freedom to assure seating even at a very low back-pressure. The valve body shall be an injection molded part made of an engineered thermoplastic resin. The valve shall be rated for continuous operating pressure of 235 psi. Ball-type check valves are unacceptable due to their limited sealing capacity in slurry applications.
- 2.07 ANTI-SIPHON VALVE:** The pump discharge shall be equipped with a factory-installed, gravity-operated, flapper-type integral anti-siphon valve built into the discharge piping. Moving parts will be made of 300 Series stainless steel and fabric-reinforced synthetic elastomer to ensure corrosion resistance, dimensional stability, and fatigue strength. A nonmetallic hinge shall be an integral part of the flapper assembly, providing a maximum degree of freedom to ensure proper operation even at a very low pressure. The valve body shall be injection-molded from an engineered thermoplastic resin.

Holes or ports in the discharge piping are not acceptable anti-siphon devices due to their tendency to clog from the solids in the slurry being pumped. The anti-siphon port diameter shall be no less than 60% of the inside diameter of the pump discharge piping.

**2.08 CORE UNIT:** The grinder pump shall have an easily removable core assembly containing pump, motor, grinder, all motor controls, check valve, anti-siphon valve, electrical quick disconnect and supply cable electrical quick disconnect housing with supply cable electrical insert. The watertight integrity of the core unit shall be established by a 100% factory test at a minimum of 5 PSIG.

**2.09 CONTROLS:** All necessary motor starting controls shall be located in the cast iron enclosure of the core unit secured by stainless steel fasteners. Locating motor starting controls in a plastic enclosure is not acceptable. Wastewater level sensing controls shall be housed in a separate enclosure from motor starting controls. Level sensor housing must be sealed via a radial type seal; solvents or glues are not acceptable. Level sensing control housing must be integrally attached to pump assembly so that it may be removed from the station with the pump and in such a way as to minimize the potential for the accumulation of grease and debris accumulation, etc. Level sensing housing must be a high-impact thermoplastic copolymer over-molded with a thermo plastic elastomer. The use of PVC for the level sensing housing is not acceptable.

Non-fouling wastewater level controls for controlling pump operation shall be accomplished by monitoring the pressure changes in an integral air column connected to a pressure switch. The air column shall be integrally molded from a thermoplastic elastomer suitable for use in wastewater and with excellent impact resistance. The air column shall have only a single connection between the water level being monitored and the pressure switch. Any connections are to be radial sealed with redundant O-rings. The level detection device shall have no moving parts in direct contact with the wastewater and shall be integral to the pump core assembly in a single, readily-exchanged unit. Depressing the push to run button must operate the pump even with the level sensor housing removed from the pump.

All fasteners throughout the assembly shall be 300 Series stainless steel. High-level sensing will be accomplished in the manner detailed above by a separate air column sensor and pressure switch of the same type. Closure of the high-level sensing device will energize an alarm circuit as well as a redundant pump-on circuit. For increased reliability, pump ON/OFF and high-level alarm functions shall not be controlled by the same switch. Float switches of any kind, including float trees, will not be accepted due to the periodic need to maintain (rinsing, cleaning) such devices and their tendency to malfunction because of incorrect wiring, tangling, grease buildup, and mechanical cord fatigue. To assure reliable operation of the pressure switches, each core shall be equipped with a factory installed equalizer diaphragm that compensates for any atmospheric pressure or temperature changes. Tube or piping runs outside of the station tank or into tank-mounted junction boxes providing pressure switch equalization will not be permitted due to their susceptibility to condensation, kinking, pinching, and insect infestation. The grinder pump will be furnished with a 6 conductor 14 gauge, type SJOW cable, pre-wired and watertight to meet UL requirements with a **FACTORY INSTALLED NEMA 6P EQD** half attached to it.

**2.10 SERVICEABILITY:** The grinder pump core, including level sensor assembly, shall have two lifting hooks complete with lift-out harness connected to its top housing to facilitate easy core removal when necessary. The level sensor assembly must be easily removed from the pump assembly for service or replacement. All mechanical and electrical connections must provide easy disconnect capability for core unit removal and installation. The pump push-to-run feature will provide for field trouble shooting. The push-to-run feature must operate the pump even if the level sensor assembly has been removed from the pump assembly. All motor control components shall be mounted on a readily replaceable bracket for ease of field service.

**2.11 OSHA CONFINED SPACE:** All maintenance tasks for the grinder pump station must be possible without entry into the grinder pump station (as per OSHA 1910.146 Permit-required confined spaces). *"Entry means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space."*

**2.12 SAFETY:** The grinder pump shall be free from electrical and fire hazards as required in a residential environment. As evidence of compliance with this requirement, the completely assembled and wired grinder pump station shall be listed by Underwriters Laboratories, Inc., to be safe and appropriate for the intended use. UL listing of components of the station, or third-party testing to UL standard are not acceptable.

The grinder pump shall meet accepted standards for plumbing equipment for use in or near residences, shall be free from noise, odor, or health hazards, and shall have been tested by an independent laboratory to certify its capability to perform as specified in either individual or low pressure sewer system applications. As evidence of compliance with this requirement, the grinder pump shall bear the seal of NSF International. Third-party testing to NSF standard is not acceptable.

### 3.0 EXECUTION

**3.01 FACTORY TEST:** Each grinder pump shall be submerged and operated for 1.5 minutes (minimum). Included in this procedure will be the testing of all ancillary components such as, the anti-siphon valve, check valve, discharge assembly and each unit's dedicated level controls and motor controls. All factory tests shall incorporate each of the above listed items. Actual appurtenances and controls which will be installed in the field shall be particular to the tested pump only. A common set of appurtenances and controls for all pumps is not acceptable. Certified test results shall be available upon request showing the operation of each grinder pump at two different points on its curve. Additional validation tests include: integral level control performance, continuity to ground and acoustic tests of the rotating components.

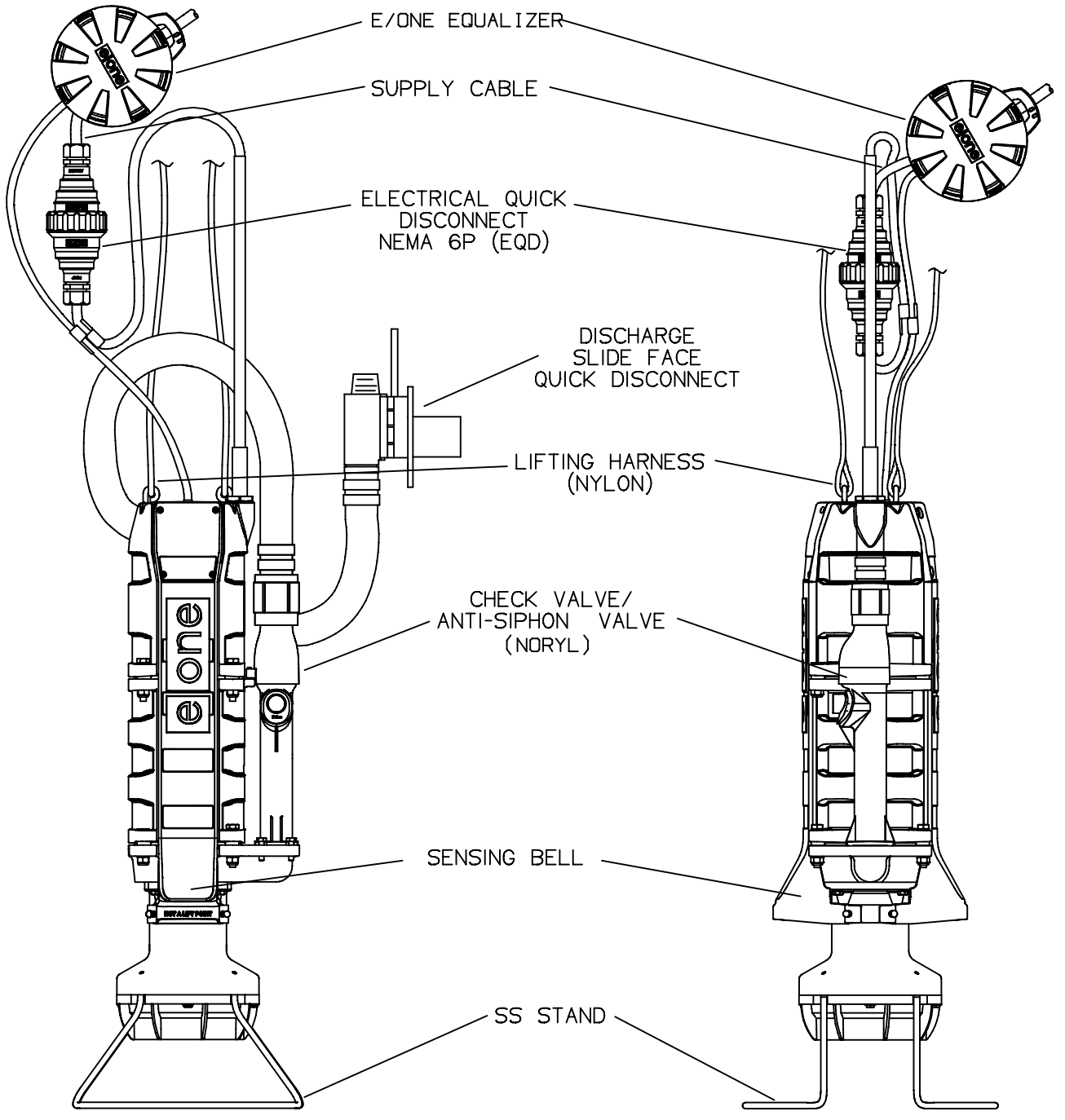
**3.02 CERTIFIED SERVICE PROGRAM:** The grinder pump **MANUFACTURER** shall provide a program implemented by the **MANUFACTURER'S** personnel as described in this specification to certify the service company as an authorized serviced center. As evidence of this, the **MANUFACTURER** shall provide, when requested, sufficient evidence that they have maintained their own service department for a minimum of 30 years and currently employ a minimum of five employees specifically in the service department.

As part of this program, the **MANUFACTURER** shall evaluate the service technicians as well as the service organization annually. The service company will be authorized by the **MANUFACTURER** to make independent warranty judgments. The areas covered by the program shall include, as a minimum:

1. Pump Population Information — The service company will maintain a detailed database for the grinder pumps in the territory that tracks serial numbers by address.
2. Inventory Management — The service company must maintain an appropriate level of inventory (pumps, tanks, panels, service parts, etc.) including regular inventory review and proper inventory labeling. Service technicians will also maintain appropriate parts inventory and spare core(s) on service vehicles.
3. Service Personnel Certification — Service technicians will maintain their level-specific certification annually. The certifications are given in field troubleshooting, repair, and training.
4. Service Documentation and Records — Start up sheets, service call records, and customer feedback will be recorded by the service company.
5. Shop Organization — The service company will keep its service shop organized and pumps will be tagged with site information at all times. The shop will have all required equipment, a test tank, and cleaning tools necessary to service pumps properly.

**3.03 DELIVERY:** All grinder pump core units, including level controls, will be delivered to the job site 100 percent completely assembled, including testing, ready for installation. Grinder pump cores must be boxed for ease of handling.

# **EXHIBIT 5**



# UPGRADE GRINDER PUMP



LNT	GAE	04/24/07	-	
DR BY	CHK'D	DATE	ISSUE	SCALE



UPGRADE FEATURES

NA0055P01

# **EXHIBIT 6**



Matthew G. Bevin  
Governor

Charles G. Snavely  
Secretary  
Energy and Environment Cabinet

Commonwealth of Kentucky  
**Public Service Commission**  
211 Sower Blvd.  
P.O. Box 615  
Frankfort, Kentucky 40602-0615  
Telephone: (502) 564-3940  
Fax: (502) 564-3460  
psc.ky.gov

Michael J. Schmitt  
Chairman

Robert Cicero  
Vice Chairman

Talina R. Mathews  
Commissioner

December 26, 2017

Roy Sawyers  
District Manager  
P.O. Box 3157  
Pikeville, KY 41502

Re: Periodic Waste Water Inspection  
Mountain Water District Waste Water System  
Pike County, KY

Dear Mr. Sawyers:

Public Service Commission staff performed a periodic inspection of the Mountain Water District's waste water system on October 31 thru November 2, 2017, reviewing utility operations and management practices pursuant to Commission regulations. The report of this inspection is enclosed with this letter.

Based on the inspector's observations, the following deficiencies were identified:

1. Mountain Water District is not conducting daily inspections on approximately 1500 residential grinder stations as per 807 KAR 5:071, Section 7(4).

For the one deficiency listed above, an explanation of why this deficiency occurred and how this deficiency will be remedied and prevented in the future needs to be provided. A letter addressing the organization's actions regarding the deficiency needs to be submitted by January 26, 2018.

No deficiencies were cited on the last inspection.

Please review the enclosed inspection report in its entirety as you will find further information noted in regard to the inspection. If you have any questions regarding this inspection, feel free to contact me at 502-33-5986 or via email at [Brian.Rice@ky.gov](mailto:Brian.Rice@ky.gov).

Sincerely,

A handwritten signature in blue ink that reads "Brian L. Rice".

Brian L. Rice  
Utility Regulatory & Safety Investigator  
Public Service Commission

Enclosure(s)

Copy: Michael Blackburn, Chairperson, PO Box 3157 Pikeville, KY 41502, Jaime Keathley, WW Manager, PO Box 3157, Pikeville, KY 41502



## Kentucky Public Service Commission

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### Periodic Compliance Inspection

**Utility:** Mountain Water District

**Utility's Principal office location:** 6332 Zebulon Hwy. Pikeville, KY 41501  
P.O. Box 3157, Pikeville, KY 41502

**Utility representative during inspection:** Tammy Olson/Office Manager, Jamey Keathley/WW Manager, Chris Dempsey/WW operator

**Counties served:** Pike County and a small section of Mingo County, West Virginia

**Customers:** 2,252

**Investigator:** Brian L. Rice

**Date(s) of inspection:** October 31 – November 2, 2017

**Date(s) of last inspection:** November 30, 2015 and December 1, 2015

**Deficiencies noted during the last inspection:** No deficiencies noted

**Have deficiencies been corrected since last inspection?**

Yes  No  N/A

**If no, provide a response as to why these deficiencies have not been addressed.**

**Person(s) who should receive this inspection report:**

Name: Roy Sawyers  
Title: District Manager  
Address: P.O. Box 3157, Pikeville, KY 41502

Name: Jamey Keathley  
Title: Wastewater Manager  
Address: P.O. Box 3157, Pikeville, KY 41502

## Kentucky Public Service Commission

### Periodic Compliance Inspection

#### General Questions

Treatment Facility: Yes  No  N/A

Please provide the following information: [See Attachment A](#)

1. Number of treatment plants – 9 separate wastewater treatment plants
2. Name of treatment facility(s)
3. Address
4. Type of treatment (ex. Extended aeration, SBR, MBR, etc.)
5. Capacity
6. Age
7. AI and/or KPDES permit #
8. Permit expiration
9. Customer per treatment plant.

Has the utility performed an engineering study regarding the wastewater treatment plant(s) structural integrity to assure that a catastrophic failure will not occur? Yes  No  N/A

Does the utility have a collection system: Yes  No  N/A

Please break down your collection system for each wwtp. [See Attachment A](#)

1. Name of plant
2. Type of collection system (gravity, low pressure, etc.)
3. Amount of line (ft., miles)
4. Size of line (2-inch, 4-inch, etc.)

Total amount of force main in the utility system (ft. or miles): 50.76 miles

Total No. of Lift/Pump Stations: 21 lift stations

Are both the pumping equipment and electrical wiring protected from exposure to the elements? Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

Does utility have any residential grinder stations in their system?

Yes  No  N/A

If so, please provide the following information:

No. of Grinder Stations: Approximately 1500

Type: E-One

Who owns these grinder stations?

Utility  Residents  Other  N/A

Who is responsible for the operation and maintenance of these individual grinder stations?

Utility  Residents  Other  N/A

#### Utility Information

Number of field Employees: 9

Number of Office Employees: 7 customer service and 3 administrative

Number of Certified Wastewater Treatment Employees: 2

Number of Certified wastewater collection system Employees: 5

Does the utility have its own maintenance staff? Yes  No  N/A

If not, give the name the person(s) doing the work: N/A

**807 KAR 5:006  
(General Rules)**

**Section 2: General Provisions. Reference to standards or codes in 807 KAR Chapter 5 shall not prohibit a utility from continuing or initiating experimental**

## Kentucky Public Service Commission

### Periodic Compliance Inspection

work and installations to improve, decrease the cost of, or increase the safety of its service.

#### Section 4: Reports

Has the utility filed its gross annual operating revenue report?

Yes  No  N/A

#### Section 7: Billings, Meter Readings, and Information.

Billing and Collection is done by: Mountain Water District

Does each bill for utility service issued periodically by a utility clearly show the following?

The date the bill was issued: Yes  No  N/A

Class of service: Yes  No  N/A

Present and last preceding meter readings: Yes  No  N/A

Date of the present reading: Yes  No  N/A

Number of units consumed: Yes  No  N/A

Net amount for service rendered: Yes  No  N/A

All taxes: Yes  No  N/A

Adjustments, if applicable: Yes  No  N/A

The gross amount of the bill: Yes  No  N/A

The date after which a penalty may apply to the gross amount:

Yes  No  N/A

If the bill is estimated or calculated: Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

Is the rate schedule under which the bill is computed posted on the utility's Web site (if it maintains a Web site)?

Yes  No  N/A

Also furnished by one (1) of the following methods, by:

Printing it on the bill: Yes  No  N/A

Publishing it in a newspaper of general circulation once each year:

Yes  No  N/A

Mailing it to each customer once each year; or:

Yes  No  N/A

Provide a place on each bill for a customer to indicate the customer's desire for a copy of the applicable rates:

Yes  No  N/A

Does the utility maintain the information required by this subsection, and is it available to the commission and any customer requesting this information?

Yes  No  N/A

### Section 8. Deposits.

Is the utility requiring a minimum cash deposit or other guarantee from customers to secure payment of bills? Yes  No  N/A

### Section 10: Customer Complaints to the Utility

Upon complaint to a utility by a customer at the utility's office, by telephone or in writing, does the utility make a prompt and complete investigation and advise the customer of the utility's findings? Yes  No  N/A

Does the utility keep a record of all written complaints concerning the utility's service? Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

Does the record include the following?

The customer's name and address:      Yes       No       N/A

The date and nature of the complaint:      Yes       No       N/A

The disposition of the complaint:      Yes       No       N/A

Does the utility maintain these records for two (2) years from the date of resolution of the complaint?      Yes       No       N/A

If a written complaint or a complaint made in person at the utility's office is not resolved, does the utility provide written notice to the customer of his or her right to file a complaint with the commission?

Yes       No       N/A

Does the utility provide the customer with the mailing address, Web site address, and telephone number of the commission?

Yes       No       N/A

If a telephonic complaint is not resolved, does the utility provide at least oral notice to the customer of his or her right to file a complaint with the commission?

Yes       No       N/A

#### Section 14: Utility Customer Relations

Does the utility post and maintain regular business hours and provide representatives available to assist its customers and to respond to inquiries from the commission regarding customer complaints?

Yes       No       N/A

Does the utility designate at least one (1) representative to be available to answer customer questions, resolve disputes, and negotiate partial payment plans at the utility's office?

Yes       No       N/A

If the utility has an annual operating revenue of \$250,000 or more, does the utility have a designated representative available during the utility's established

## Kentucky Public Service Commission

### Periodic Compliance Inspection

working hours not fewer than seven (7) hours per day, five (5) days per week excluding legal holidays? Yes  No  N/A

If the utility has an annual operating revenue of less than \$250,000, does the utility have a designated representative available during the utility's established working hours not fewer than seven (7) hours per day, one (1) days per week? Yes  No  N/A

Does the utility provide the following?

Maintain a telephone: Yes  No  N/A

Publish the telephone number in all service areas: Yes  No  N/A

Permit all customers to contact the utility's designated representative without charge: Yes  No  N/A

Does the utility prominently display in each office open to the public for customer service (and shall post on its Web site, if it maintains a Web site) a summary, prepared and provided by the commission, of the customer's rights pursuant to this section and Section 16 of this administrative regulation? Yes  No  N/A

### Section 20: Access to Property

Do employees of the utility (whose duties require him to enter the customer's premises) wear a distinguishing uniform or other insignia, identifying them as an employee of the utility, and show a badge or other identification that shall identify them as an employee of the utility? Yes  No  N/A

### Section 23: System Maps and Records

Does the utility have on file at its principal office located within the state and shall file upon request with the commission a map or maps of suitable scale of the general territory it serves or holds itself ready to serve? Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

Is the map or maps available in electronic format as a PDF file or as a digital geographic database?      Yes       No       N/A

Note: Some are but not all.

Is the following data available on the map or maps?

Operating districts	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Rate districts:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Communities served:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

#### Section 24: Location of Records.

All records required by 807 KAR Chapter 5 shall be kept in the office of the utility and shall be made available to representatives, agents, or staff of the commission upon reasonable notice at all reasonable hours.

Are all records required by 807 KAR Chapter 5 kept in the office of the utility and shall be made available to representatives, agents, or staff of the commission upon reasonable notice at all reasonable hours?

Yes       No       N/A

#### Section 25: Safety Program:

Each utility shall adopt and execute a safety program, appropriate to the size and type of its operations. At a minimum, the safety program shall:

- (1) Establish a safety manual with written guidelines for safe working practices and procedures to be followed by utility employees;
- (2) Instruct employees in safe methods of performing their work.
- (3) Instruct employees who, in the course of their work, are subject to the hazard of electrical shock, asphyxiation, or drowning, in accepted methods of artificial respiration.

Has the utility adopted and executed a safety program, appropriate to the size and type of its operations?      Yes       No       N/A



## Kentucky Public Service Commission

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### Periodic Compliance Inspection

At a minimum, does the safety program include the following?

A safety manual with written guidelines for safe working practices and procedures to be followed by utility employees:

Yes  No  N/A

Instruct employees in safe methods of performing their work.

Yes  No  N/A

Instruct employees who, in the course of their work, are subject to the hazard of electrical shock, asphyxiation, or drowning, in accepted methods of artificial respiration:

Yes  No  N/A

### Section 26: Inspection of Systems:

(1) A utility shall adopt inspection procedures to assure safe and adequate operation of the utility's facilities and compliance with KRS Chapter 278 and 807 KAR Chapter 5 and shall file these procedures with the commission for review.

(2) Upon receipt of a report of a potentially hazardous condition at a utility facility, the utility shall inspect all portions of the system that are the subject of the report.

(3) Appropriate records shall be kept by a utility to identify the inspection made, the date and time of inspection, the person conducting the inspection, deficiencies found, and action taken to correct the deficiencies.

Has the utility adopted inspection procedures to assure safe and adequate operation of the utility's facilities and compliance with KRS Chapter 278 and 807 KAR Chapter 5?

Yes  No  N/A

Have these inspection procedures been filed with the commission for review?

Yes  No  N/A

## Kentucky Public Service Commission

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### Periodic Compliance Inspection

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**Note:** Revised in 2016 – Copy provided during inspection

Upon receipt of a report of a potentially hazardous condition at a utility facility, does the utility inspect all portions of the system that are the subject of the report? Yes  No  N/A

Are appropriate records kept by a utility to identify the inspection made, the date and time of inspection, the person conducting the inspection, deficiencies found, and action taken to correct the deficiencies?

Yes  No  N/A

(8) Sewage utility inspection. Each sewage utility shall make systematic inspections of its system in the manner established in 807 KAR 5:071 to ensure that the commission's safety requirements are being met. These inspections shall be made as often as necessary but not less frequently than as established in 807 KAR 5:071.

### Section 27: Reporting of Accidents, Property Damage, or Loss of Service.

(1) Within two (2) hours following discovery each utility, other than a natural gas utility, shall notify the commission by telephone or electronic mail of a utility related accident that results in:

(a) Death or shock or burn requiring medical treatment at a hospital or similar medical facility, or any accident requiring inpatient overnight hospitalization;

(b) Actual or potential property damage of \$25,000 or more; or

(c) Loss of service for four (4) or more hours to ten (10) percent or 500 or more of the utility's customers, whichever is less.

(2) A summary written report shall be submitted by the utility to the commission within seven (7) calendar days of the utility related accident. For good cause

## Kentucky Public Service Commission

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### Periodic Compliance Inspection

shown, the executive director of the commission, shall, upon application in writing, allow a reasonable extension of time for submission of this report.

Within two (2) hours following discovery does the utility notify the commission by telephone or electronic mail of a utility related accident that results in the following:

Death or shock or burn requiring medical treatment at a hospital or similar medical facility, or any accident requiring inpatient overnight hospitalization:

Yes  No  N/A

Actual or potential property damage of \$25,000 or more:

Yes  No  N/A

Loss of service for four (4) or more hours to ten (10) percent or 500 or more of the utility's customers, whichever is less:

Yes  No  N/A

Are summary written reports submitted by the utility to the commission within seven (7) calendar days of the utility related accident?

Yes  No  N/A

**Section 28: Deviations from Administrative Regulation:** In special cases, for good cause shown, the commission shall permit deviations from this administrative regulation.

Has the utility been permitted by the commission to deviate from these administrative regulations?

Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

#### 807 KAR 5:011 (Tariffs)

#### Section 12: Posting tariffs, Administrative Regulations, and Statutes

Does the utility display a suitable placard, in large type, that states that the utility's tariff and statutes are available for public inspection?

Yes  No  N/A

Does the utility provide a suitable table or desk in its office or place of business on which the public may view all effective tariffs?

Yes  No  N/A

#### Section 13: Special Contracts

Does the utility have any special contracts that establish rates, charges, or conditions of service not contained in its tariff?

Yes  No  N/A

If yes, has the utility filed the special contracts with the PSC?

Yes  No  N/A

**Note:** Utility stated Big Creek area is not under PSC jurisdiction. Case #2009-00405

#### 807 KAR 5:071 (Sewage):

**Section 1: General.** The purpose of this administrative regulation is to provide standard rules administrative regulations governing the service of sewage utilities operating under the Jurisdiction of the Public Service Commission.

#### Section 4: Information Available to Customers.

(1) System maps or records. Each utility shall maintain up-to-date maps, plans, or records of its entire force main and collection systems, with such other information

## Kentucky Public Service Commission

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### Periodic Compliance Inspection

as may be necessary to enable the utility to advise prospective customers, and others entitled to the information, as to the facilities available for serving any locality.

(2) Rates, rules, and regulations. A schedule of approved rates for sewage service applicable for each class of customers and the approved rules and regulations of the sewage utility shall be available to any customer or prospective customer upon request.

Does the Utility have a current map and/or plans for its system?

Yes  No  N/A

### Section 5. Quality of Service.

(1) General. Each utility shall maintain and operate sewage treatment facilities of adequate size and properly equipped to collect, transport, and treat sewage, and discharge the effluent at the degree of purity required by the health laws of the State of Kentucky, and all other regulatory agencies, federal, state, and local, having jurisdiction over such matters.

(2) Limitations of service. No sewage disposal company shall be obliged to receive for treatment or disposal any material except sewage as defined by Section 2(7) of this administrative regulation. In compliance with the administrative regulation, the utility shall make all reasonable efforts to eliminate or prevent the entry of surface or ground water, or any corrosive or toxic industrial liquid waste into its sanitary sewer system. A utility may request assistance from the appropriate state, county, or municipal authorities in its efforts, but such a request does not relieve the utility of its aforementioned responsibilities.

Is the utility in compliance with the Division of Water?

Yes  No  N/A

## Kentucky Public Service Commission

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### Periodic Compliance Inspection

Is the utility making every reasonable effort to eliminate or prevent the entry of surface or ground water, or any corrosive or toxic industrial liquid waste into its sanitary sewer system?

Yes  No  N/A

### Section 6: Continuity of Service.

(1) Emergency interruptions. Each utility shall make all reasonable efforts to prevent interruptions of service and when such interruptions occur shall endeavor to reestablish service with the shortest possible delay consistent with the safety of its customers and the general public.

(2) Scheduled interruptions. Whenever any utility finds it necessary to schedule an interruption of its service, it shall notify all customers to be affected by the interruption stating the time and anticipated duration of the interruption. Whenever possible, scheduled interruptions shall be made at such hours as will provide least inconvenience to the customers.

(3) Record of interruptions. Each utility shall keep a complete record of all interruptions on its system. This record shall show the cause of interruption, date, time, duration, remedy, and steps taken to prevent recurrence.

Is the utility making all reasonable efforts to prevent interruptions of service and when such interruptions occur shall endeavor to reestablish service with the shortest possible delay consistent with the safety of its customers and the general public?

Yes  No  N/A

If the utility schedules an interruption of service are all customers notified that are affected by the interruption?

Yes  No  N/A

## Kentucky Public Service Commission

### Periodic Compliance Inspection

Does the utility make all reasonable efforts to schedule interruptions at such hours as will provide least inconvenience to the customers?

Yes       No       N/A

Does the utility maintain a record of all interruptions of service with regard to the following items?

Cause of interruption	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Date	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Time	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Duration	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Remedy	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
# of customers affected	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
steps taken to prevent recurrence	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Is standby pumping equipment provided in the event of failure of the primary pumping equipment?

Yes       No       N/A

### Section 7. Design, Construction, and Operation.

(1) **General.** The sewage treatment facilities of the sewage utility shall be constructed, installed, maintained and operated in accordance with accepted good engineering practice to assure, as far as reasonably possible, continuity of service, uniformity in the quality of service furnished, and the safety of persons and property.

(2) **Design and construction requirements.** The design and construction of the sewage utility's collecting sewers, treatment plant and facilities, and all additions thereto and modifications thereof, shall conform to the requirements of the Kentucky Department for Natural Resources and Environmental Protection, Bureau of Environmental Quality, Division of Water Quality.

(3) **Adequacy of facilities.** The capacity of the sewage utility's sewage treatment facilities for the collection, treatment and disposal of sewage and sewage effluent

## Kentucky Public Service Commission

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### Periodic Compliance Inspection

must be sufficiently sized to meet all normal demands for service and provide a reasonable reserve for emergencies.

(4) Inspection of facilities. Each sewage utility shall adopt procedures for inspection of its sewage treatment facilities to assure safe and adequate operation of its facilities and compliance with commission rules. These procedures shall be filed with the commission. Unless otherwise authorized in writing by the commission, the sewage utility shall make inspections of collecting sewers and manholes on a scheduled basis at intervals not to exceed one (1) year, unless conditions warrant more frequent inspections and shall make inspections of all mechanical equipment on a daily basis. The sewage utility shall maintain a record of findings and corrective actions required, and/or taken, by location and date.

Is the utility operating and maintaining their facility in accordance with accepted good engineering practice to assure, as far as reasonably possible, continuity of service, uniformity in the quality of service furnished, and the safety of persons and property?

Yes  No  N/A

Is the utility adhering to their inspection procedures to assure safe and adequate operation of its facilities and compliance with the Commission rules?

Yes  No  N/A

Unless otherwise authorized in writing by the commission, does the sewage utility make inspections of their collecting sewers and manholes on a scheduled basis at intervals not to exceed one (1) year, unless conditions warrant more frequent inspections?

Yes  No  N/A

Does the utility make inspections of all mechanical equipment on a daily basis?

Yes  No  N/A



## Kentucky Public Service Commission

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### Periodic Compliance Inspection

**Note:**

1. Mountain Water District is not conducting daily inspections on approximately 1500 residential grinder stations as per 807 KAR 5:071, Section 7(4).

Does the utility maintain a record of findings and corrective actions required, and/or taken, by location and date?

Yes  No  N/A

### Deficiency(s)

1. Mountain Water District is not conducting daily inspections on approximately 1500 residential grinder stations as per 807 KAR 5:071, Section 7(4).

### Additional Inspector Comments

Please see Attachment B for Mountain Water District's wastewater projects.

The small package treatment plants, which include Stone Heights, Keene Village, Daniels Branch, Maple Valley, Modern MHP, Branham Heights and Shelbiana MHP have minimal grating and/or hand rails to prevent accidental falls into the treatment areas. Mountain Water District should look into ways to protect employees, inside the fenced areas, where access for maintenance is required. It is also recommended the utility place signs designed to discourage the entrance of unauthorized persons around each plants security fence.

These small package plants are 30-40 plus years of age and are showing signs of rust and deterioration. The Phelps/Free burn wastewater treatment plant is approximately 13 years of age. The Douglas plant is being replaced with a new Membrane Bioreactor (MBR) wastewater treatment system.

**Comment: During this periodic regulatory compliance inspection, it was not possible to review/discuss every record relating to all Commission requirements. Therefore, in some instances the results contained in this report are indicative of those items inspected and reviewed on a sample basis.**

# Kentucky Public Service Commission

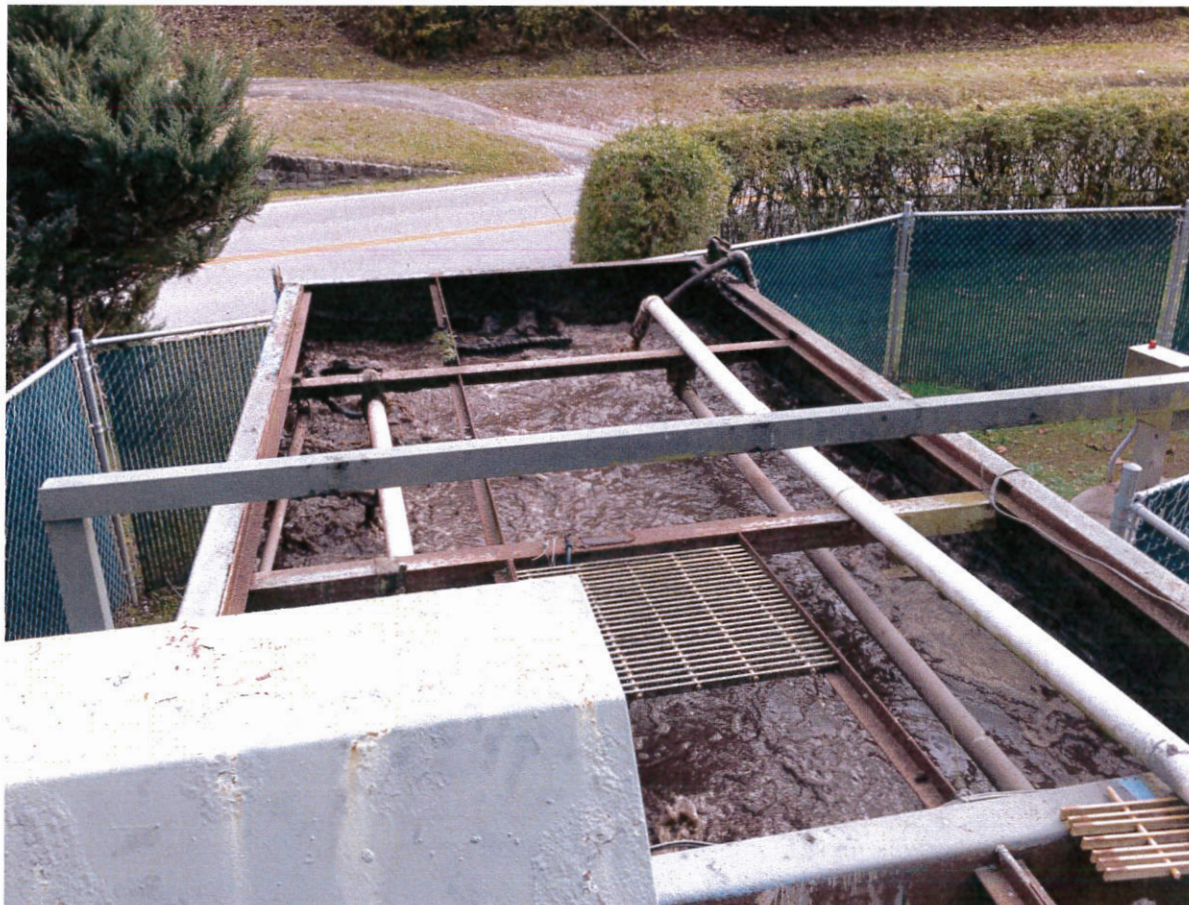
## Periodic Compliance Inspection



**Phelps Freeburn WWTP – Sequencing Batch Reactor (SBR)**

# Kentucky Public Service Commission

## Periodic Compliance Inspection



Stone Heights WWTP

# Kentucky Public Service Commission

## Periodic Compliance Inspection

---



**Douglas WWTP – Plant # 1 is still operational.**

## Kentucky Public Service Commission

### Periodic Compliance Inspection

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**Douglas WWTP – Plant #2 has been taken out of service.**

# Kentucky Public Service Commission

## Periodic Compliance Inspection

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**Douglas WWTP Upgrade Project – Douglas wwtp being converted to a membrane technology plant called a Membrane Bioreactor (MBR)**

# Kentucky Public Service Commission

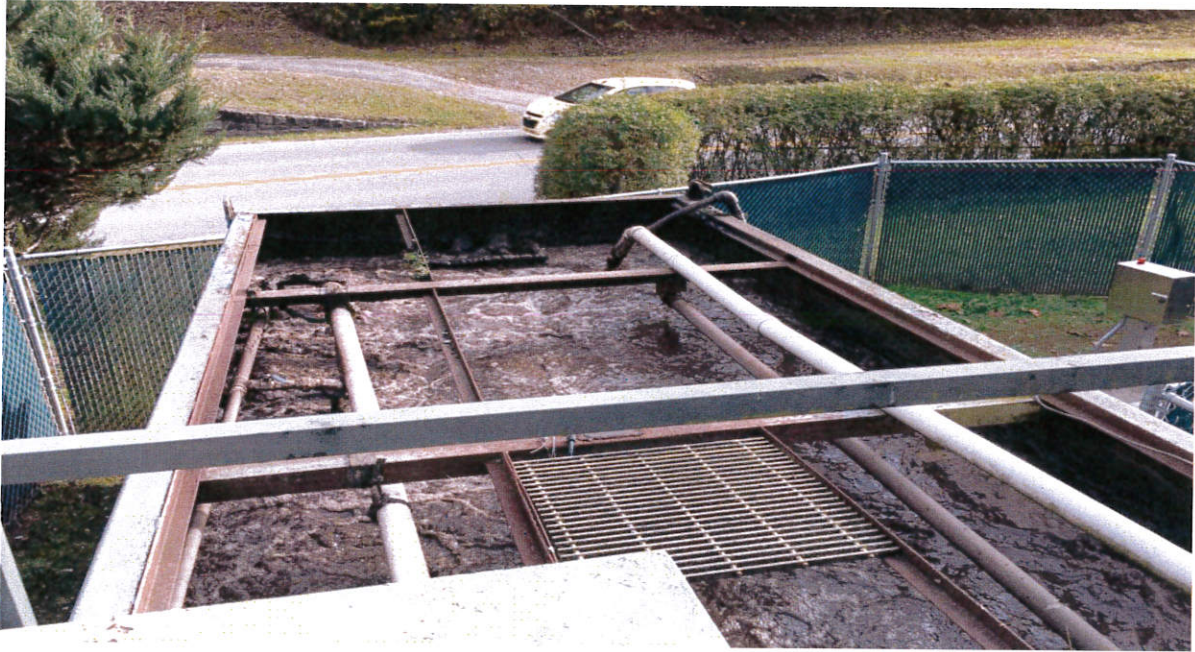
## Periodic Compliance Inspection



**Daniels Branch WWTP**

# Kentucky Public Service Commission

## Periodic Compliance Inspection



**Stone Heights WWTP**



**Maple Valley WWTP – Aeration Basin**



# Kentucky Public Service Commission

## Periodic Compliance Inspection



**Modern MHP - Aeration Basin**



**Modern MHP - Chlorine Contact Chamber**

# Kentucky Public Service Commission

## Periodic Compliance Inspection

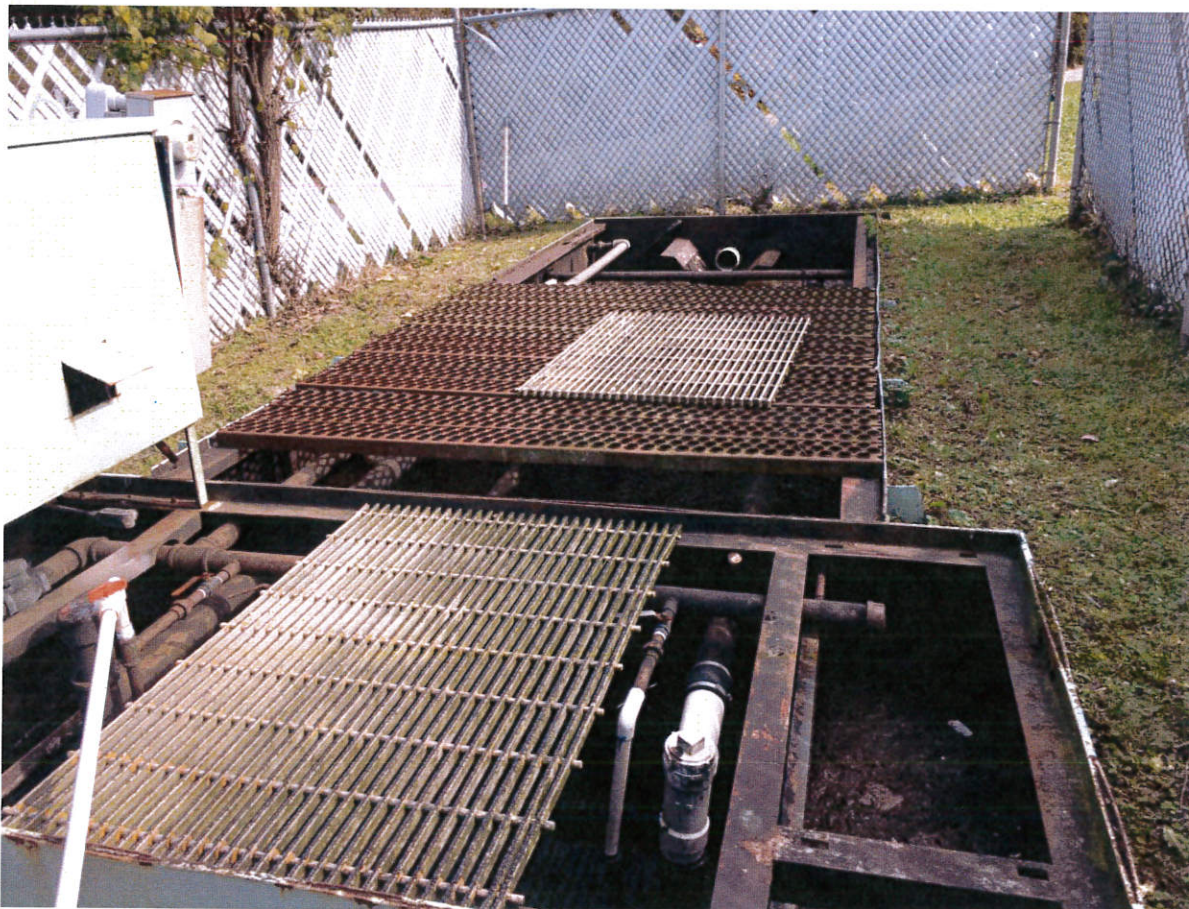


Keene Village WWTP - Clarifier and Aeration basin

# Kentucky Public Service Commission

## Periodic Compliance Inspection

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Shelbiana MHP WWTP - Clarifier and Aeration basin

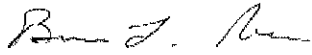
# Kentucky Public Service Commission

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## Periodic Compliance Inspection

Report by:

Date: December 19, 2017



**Brian L. Rice**  
**Utility Regulatory & Safety Investigator**  
**Kentucky Public Service Commission**

# Kentucky Public Service Commission

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## Periodic Compliance Inspection

### Attachment A

MOUNTAIN WATER DISTRICT  
WWTP INFORMATION  
10/31/17

**BELFRY WWTP**

**KY0108260**

**Pegs Branch Road**

**Not Yet Constructed**

**Exp: 7/31/18**

**BRANHAM HEIGHTS WWTP**

**KY0096580 – Permit Exp: 7/30/2022**

**Ky Hwy 122**

**Shelbiana, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed System**

**Capacity: 10,000**

**1,500 ft. of 4"**

**4 Customers / 0 Lift Stations**

**DANIELS BRANCH WWTP**

**KY0076511 – Permit Exp: 7/31/2022**

**168 Daniels Branch Road**

**Millard, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed System**

**Capacity: 3,000**

**1,000 ft. of 4"**

**6 Customers / 0 Lift Stations**

**DOUGLAS WWTP**

**KY0042811 – Permit Exp: 8/31/2022**

**37 Wildcat Drive**

**Robinson Creek, Kentucky**

**Type: Ext. Aeration (Currently Being Upgraded to MBR System)**

**Gravity Fed and Force Main System**

**Capacity: 150,000 (Currently being upgraded to 300,000)**

**1 Mile of 10" Gravity / 14 Miles of 2", 3", 4" & 6" Force Main**

**685 Customers / 6 Lift Stations**

**KEENE VILLAGE WWTP**

**KY0072834 – Permit Exp: 6/30/2022**

**Kentucky 1441 N**

**Raccoon, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed**

**Capacity: 15,000**

**2,500 ft. of 4"**

**18 Customers / 0 Lift stations**

**MAPLE VALLEY WWTP**

**KY0098353 – Permit Exp: 6/30/2022**

**US 119 Maple Valley Road**

**Meta, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed**

**Capacity: 2,800**

**1,000 ft. of 6"**

**7 Customers / 0 Lift Stations**

**MODERN MOBILE HOME PARK WWTP**

**KY0096857 – Permit Exp: 6/30/2022**

**6451 Zebulon Highway**

**Pikeville, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed**

**Capacity: 6,000**

**1,500 ft. of 4"**

**20 Customers / 0 Lift Stations**

**PHELPS/FREEBURN WWTP**

**KY0104442 – Permit Exp: 7/31/2018 (Renewal Submitted October, 2017)**

**River Mill Road**

**Phelps, Kentucky**

**Type: SBR**

**Force Main System**

**Capacity: 250,000**

**25 Miles of 2", 3", 4" & 6" Force Main**

**785 Customers / 4 Lift Stations**

**SHELBIANA MOBILE HOME PARK WWTP**

**KY0099805 – Permit Exp: 6/30/2022**

**45 Shelby Dry Fork**

**Shelbiana, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed**

**Capacity: 37,134**

**1,000 ft. of 6"**

**16 Customers / 0 Lift Stations**



**STONE HEIGHTS WWTP**

**KY0029343 – Permit Exp: 7/31/2022**

**KY 199 @ about mile point 10.4**

**Stone, Kentucky**

**Type: Ext. Aeration**

**Gravity Fed**

**Capacity: 10,000**

**2,500 ft. of 8"**

**18 Customers / 1 Lift Station**

MOUNTAIN WATER DISTRICT  
LIFT STATIONS LISTING  
AS OF 10/17

LIFT STATION	LOCATION	NO PER AREA
MCCARR		2
SOUTH WILLIAMSON		9
SHELBY		6
PHELPS		4
TOTAL		21

AREA	CAPACITY / RATING
<b>MCCARR</b>	
1 RIVER ROAD*	1/2 mile down River Road on the left 5 HP X 2 215gpm @ 39ft. Head
2 AUBURN HOLLOW	Mouth of Auburn Hollow 1.5 HP X 2 55gpm @ 40ft. Head
<b>SOUTH WILLIAMSON</b>	
1 TAYLOR FORK	Intersection of Rogers Park on the left 10 HP X 2 250gpm @ 54ft. Head
2 TURKEY CREEK	1/2 mile up Turkey Creek Rd on the left 10 HP X 2 200gpm @ 62ft. Head
3 WILSON LOOP	Lower corner of Wilson Loop 10 HP X 2 181gpm @ 86ft. Head
4 CVS PHARMACY*	Behind store on the right before crossing bridge 7.5 HP X 2 350gpm @ 67ft. Head
5 NEWCAMP	1/4 mile up New Camp on the left 5 HP X 2 118gpm @ 35ft. Head
6 CENTRAL AVENUE	At the flood wall near Army COE pumping station 5 HP X 2 450gpm @ 67ft. Head
7 BELFRY HIGH SCHOOL	Left side of entrance to school 5 HP X 2 110gpm
8 FOREST HILLS*	Mouth of Forest Hills on the left 15 HP X 2 260gpm
9 STONE HTS	Stone Hts - Corner of Property 2 HP X 2 50gpm @ 56ft. Head
<b>SHELBY VALLEY</b>	
1 DOUGLAS	37 Wildcat Drive on left side 7.5 HP X 2 400gpm @ 32ft. Head
2 LICK BRANCH	Mouth of Lick Branch beside Hwy 23 on the left 40 HP X 2 219gpm @ 68ft. Head
3 PENNY ROAD	Virgie side of Penny Road on the right 7.5 HP X 2 172gpm @ 67ft. Head
4 SUGAR CAMP	1/4 mile past Sugar Camp on the left on Robinson Crk 10 HP X 2 178gpm @ 57ft. Head
5 COLLEY HILLS	1/4 of the way up Colley Hills Road on the left 5 HP X 2 85gpm @ 42ft Head
6 COLLINS HIGHWAY	On vacant lot just after passing Hwy 460 overpass 18.2 HP X 2 274gpm @ 137ft Head
<b>PHELPS</b>	
1 PHELPS INTERSECTION	Intersection of Hwy 632 & 194 on left of 632 10HP X 2 120gpm @ 140 TDH
2 BILLY DOTSON BRANCH	500' past the railroad crossing on the right side 20 HP X 2 280gpm @ 96TDH
3 POUNDING MILL ROAD	1/2 mile up Pounding Mill on the right side 10 HP X 2 325 gpm @ 52.5TDH
4 PHELPS HIGH SCHOOL	On the right side inside the school gate 5 HP X 2 45gpm

\* DENOTES TELEMETRY CONTROLS

MOUNTAIN WATER DISTRICT  
WASTEWATER SYSTEM INFORMATION REQUESTED  
10/31/2017

WWTP	CONNECTION COUNT	RATES/USER FEES *
DOUGLAS WWTP	685	First 2,000 gallons = \$37.73 Minimum Bill
STONE HEIGHTS WWTP	18	Over 2,000 gallons = \$16.17/1,000 gal
KEENE VILLAG WWTP	18	
DANIELS BRANCH WWTP	6	Sewer Cust. Without Water Meter = \$78.15 Flat Rate
MAPLE VALLEY WWTP	7	
MODERN MOBILE HOME PARK WWTP	20	
BRANHAM HEIGHTS WWTP	4	
SHELBIANA MHP WWTP	16	
APPALACHIAN PLAZA LIFT STATION	257	
CENTRAL AVENUE LIFT STATION	227	
WILSON LOOP LIFT STATION	69	
MINGO PSC - MATEWAN	100	
BIG CREEK	37	
PHELPS FREEBURN WWTP	785	
<b>TOTAL</b>	<b>2,249</b>	

\* MWD is currently in Phase 3 of a 3 phased rate increase. Rates listed above are as of 10/31/17.

# Kentucky Public Service Commission

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## Periodic Compliance Inspection

### Attachment B

MOUNTAIN WATER DISTRICT  
CONSTRUCTION REPORT  
UPDATE FOR BIG SANDY ADD MANAGEMENT COUNCIL MEETING  
10/16/17

<b>SEWER</b>	
<b>SEWER PROJECTS</b>	
<p>*Douglas WWTP Upgrade Project (SX21195699) *Project consists of upgrades to the Douglas WWTP and converting it to a membrane technology plant *KIA/SRF Loan Funds, Coal Severance Funds</p>	<p>This project is in progress and the contractor has begun leak testing the basins and plans on backfilling around basins as they pass testing. The pouring of the walkways is also in progress. Ovivo equipment has been ordered and the motor control center is in production.</p>
<p>*Belfry/Pond Sewer Project (SX21195692) *Project is to provide sewer service to the Belfry area from Murphy Bottom to the mouth of Forest Hills. *Coal Severance Funds; USDA Rural Development Loan Funds</p>	<p>Plans have been submitted to the Division of Water for review. Engineer is currently working on a redesign to move proposed line away from Norfolk and Southern right of way due to cost of the easement. The Division of Water has requested a Facilities Plan update in order to proceed with the project review and the engineer anticipates submitting the updated 201 Facilities Plan this week.</p>
<p>*Phelps Hydrology Study Project *Project is to study the impact of current line size and facilities of the sewer system in the Phelps area as well as upgrades to the system based upon study results *Coal Severance Funds</p>	<p>Project is scheduled to be advertised for bid on September 28, 2017. The bid opening is scheduled for November 3rd, 2017 and a pre-bid conference will be held on October 5th, 2017.</p>

# **EXHIBIT 7**

# MOUNTAIN WATER DISTRICT COST ESTIMATE FOR DAILY INSPECTION OF GRINDER/PUMP UNITS

## Assumptions:

- Time to perform inspection and travel to next Grinder/Pump Station: 30 minutes
- Hourly Wage for Inspector: \$11.00
- Fringe/Overhead for Inspector: \$4.40\*
- Total Hourly Employee Cost: \$15.40
- Employee Work Day: 8 Hours
- Employee Work Year: 2,080 hours (40 hours X 52 weeks)
- Employee Weekend Hours: 832 (16 hours X 52 weeks)
- Employee Paid Holiday Hours: 88 (11 days X 8 hours)
- Each employee performing inspection requires a vehicle
- Purchase cost of each vehicle: \$24,000
- Useful life of each vehicle: 5 Years
- Annual Depreciation Expense per vehicle: \$4,800
- Same Employees work 365 days per year with no additional rotating staff, vehicles or equipment

\*Fringe/Overhead includes FICA taxes, accrued time liability and employer's contribution for health insurance, life insurance, long term disability insurance, and vision and dental insurance but excludes payments to County Employees Retirement System

## Work Hours to Perform Daily Inspection:

1,903 Active Grinder Pump Units X 30 minutes per grinder/pump station = 57,090 minutes  
57,090 minutes ÷ 60 min/hour = 951.50 hours

## Number of Employees Required to Perform Daily Inspection:

951.50 hours ÷ 8 hours per work day ≈ 119 employees

## Labor Cost for Daily Grinder Inspections:

\$15.40/ hour (Hourly Employee Cost) X 8 hours X 119 = \$14,660.80 per week day  
\$14,660.80 X 5 days = \$73,304 per 40-hour work week

(\$11 + \$5.50 + \$4.40) X 119 X 16 hours = \$39,793.60 per weekend  
(Note: Employees must be paid time and one-half for weekend work.)

\$73,304/per work week + \$39,793.60/per weekend = \$113,097.60 (total for 7-day week)  
\$113,097.60 X 52 weeks = **\$5,881,075.20/Year**

Additional expense related to inspections performed on federal and state holidays (11 days) when employees are paid double time: \$11.00 X 119 X 88 hours = **\$115,192.00**

Cost of Labor without Fringe: \$11.00 X 2080 X 119 = \$2,722,720 (weekdays)  
(For Retirement Calculation) \$16.50 X 832 X 119 = \$1,633,632 (week ends)  
\$11.00 X 88 X 119 = \$ 115,192 (Extra for holidays)  
\$4,471,544

Retirement Expense: \$4,471,544 X 21.48% = **\$960,487.65**

**TOTAL ANNUAL LABOR COST FOR DAILY GRINDER INSPECTIONS: \$6,956,754.85**

**MOUNTAIN WATER DISTRICT  
COST ESTIMATE FOR DAILY INSPECTION OF  
GRINDER/PUMP UNITS**

**Vehicle Expense for Daily Grinder Inspections:**

119 vehicles X \$24,000= \$2,856,000 (initial purchase)

Annual Depreciation Expense = \$2,856,000 ÷ 5 years = \$571,200/year

Insurance: \$383.16/Year X 119 = \$45,596.04/year

Annual Fuel Cost: Estimate of \$300.00 per month based on current vehicle consumption

\$300.00/Mo. X 119 X 12 = \$428,400/year

Vehicle Service - Oil Change & Filters - 1 per quarter @ \$76.49/ea. X 4 = \$305.96 X 119 = \$36,409.24/year

Tires - 1 set per year w/alignment - \$708.23 per vehicle per year X 119 = \$84,279.37/year

Additional Employee - Mechanic: \$15.40 X 2,080 hours = \$32,032.00/year

Employee Retirement Expense: \$11 X 2080 hours X 21.48% = \$4,914.63

Total Additional Mechanic Expense: \$32,032.00 + \$4,914.63 = \$36,946.63

**Additional Employee Expenses:**

Uniforms:

Shirts and Pants: Avg. Rental per Week per Employee=\$4.51 X 119 + 1 new mechanic X 52 = \$28,142.40/year

Winter Jacket \$45.00 X 119 = \$5,355.00 (initial purchase and replace as needed)

Boots: \$150 boot allowance per employee per year - \$150 X 119= \$17,850.00 per year

PPE: Hard Hat \$12.09

Vest \$16.31

Safety Glasses \$ 5.48

\$33.88 X 119 = \$4,031.72 (initial purchase and replace as needed)

Tools: Cordless Impact - \$228.00

T Handle - \$ 25.00

Socket Set - \$ 30.00

Volt Meter - \$ 80.00

\$363.00 X 119 = \$43,197.00 (initial purchase and replace as needed)

Winter Gloves: \$16.15 X 119 = \$1,921.85 (initial purchase and replace as needed)

Disposable Gloves: \$4.90 per box

1 box per day per employee = 119 boxes X \$4.90 X 365 days = \$212,831.50/year



**MOUNTAIN WATER DISTRICT  
COST ESTIMATE FOR DAILY INSPECTION OF  
GRINDER/PUMP UNITS**

**COST SUMMARY:**

ANNUAL EMPLOYEE EXPENSE:   \$ 6,956,754.85 (119 Inspectors)  
  \$ 36,946.63 (Additional Mechanic)  
  \$ 6,993,701.48

ANNUAL VEHICLE EXPENSE:   \$ 571,200.00 (Annual Depreciation)  
  \$ 45,596.04 (Insurance)  
  \$ 428,400.00 (Fuel)  
  \$ 36,409.24 (Vehicle Maintenance)  
  \$ 84,279.37 (Tires)  
  \$ 1,165,884.65

ADDITIONAL EXPENSES:

  \$ 28,142.40 (Uniform Rental)  
  \$ 5,355.00 (Winter Coat)  
  \$ 17,850.00 (Boot Allowance)  
  \$ 4,031.72 (PPE)  
  \$ 43,197.00 (Tools)  
  \$ 1,921.85 (Winter Gloves)  
  \$ 212,831.50 (Disposable Gloves)  
  \$ 313,329.47

**TOTAL INITIAL EXPENDITURE (1<sup>ST</sup> YEAR):**

  \$ 6,993,701.48 (Labor)  
  \$ 2,856,000.00 (Vehicle Purchase)  
  \$ 1,165,884.65 (Vehicle Expense)  
  \$ 313,329.47 (Uniforms, Tools, etc.)  
  **\$11,328,915.60**

**TOTAL ANNUAL COST:**

  \$ 6,993,701.48 (Labor)  
  \$ 1,165,884.65 (Vehicle Expense)  
  \$ 28,142.40 (Uniform Rental)  
  \$ 17,850.00 (Boot Allowance)  
  \$ 212,831.50 (Disposable Gloves)  
  **\$ 8,418,410.03**

Not included in annual cost calculation: (1) Replacement of tools, PPE and other items due to wear and tear; (2) Merit or cost-of-living wage increases; and (3) Any additional personnel to process the volume of work orders necessary for daily inspection of grinder/pump units, if accounting of inspector's time, vehicle expense, and parts are to be tracked through the Alliance work order system for reporting purposes to the Board of Commissioners.

# **EXHIBIT 8**

**MOUNTAIN WATER DISTRICT  
WASTEWATER DIVISION  
GUIDELINE FOR LOW  
PRESSURE SEWER SYSTEM**

Please keep this letter in your telephone book or other readily available place for future use. By referring to it, you may save yourself some problems later and you will be able to make a call for service and/or repairs.

Mountain Water District has put together Rules & Regulations governing the use and maintenance of the sewer system. Please make note of the following guidelines and inform all guests about the sewer system.

Basically speaking, **if it isn't toilet paper or hasn't passed through your mouth, it should not be flushed.** There are several items, which cause problems if introduced into the grinder pump:

- **Large amounts of grease.**
- **Large amounts of sand or grit.**
- **Panty hose or elastic bands.**
- **Disposable sanitary items (pads, tampons, diapers, etc.)**
- **Toys (metal or plastic)**
- **Wipes (Baby wipes – including those that claim to be “flushable”, cleaning wipes of any kind)**
- **Q-Tips.**
- **Prophylactics.**
- **Petroleum products (includes paint thinner, kerosene, gasoline, etc.)**
- **Paint.**
- **Any other inappropriate item that is not waste or toilet paper**

Each homeowner should be aware of where his/her sewer control box is and familiarize themselves with the alarm silence button. It is a small rubber covered button on the bottom left hand side of the box. To silence the alarm, push up on button. After you silence the alarm, call the phone number below for service.

If the pump should in some way malfunction, the red warning light will light up and the alarm buzzer will sound. At such time, stop **ALL** water usage, silence the alarm on the control box and call **631-9162**, after hours, holidays, weekends call **754-4218**, give a brief description of the problem and be sure to tell the plant operator your name, address, and phone number. The pump repair personnel may need to call you back. Do not use any water until the service personnel have informed you that it is all right to do so. **DO NOT ATTEMPT TO FIX THE PUMP YOURSELF:** The District must authorize their maintenance personnel to do all repairs.

If there is a power outage, the pump has a limited holding capacity of waste. Since the power is off, many appliances will not work (washer, dishwasher, etc.) and only basic living needs will be met. Any extensive use of water may cause sewage to back up into the house.

We hope you will keep these things in mind as they are intended to help your grinder pump last longer and better serve you. If a household abuses the system by introducing the above referenced banned items or other inappropriate items into the grinder unit which results in a service call, the cost of repairs will be billed to the customer.

Roy Sawyers, Manager  
Mountain Water District

# **EXHIBIT 9**

A F T E R M A R K E T G R I N D E R P U M P

# E/One Upgrade

If you're tired of constant service calls resulting from grease-fouled floats, jammed grinders, burned-out motors, and other grinder pump problems, it's time to call E/One.

When you're having too many problems with your system's centrifugal grinder pumps, it can wear you down. And wear out your budgets. Those inferior grinder pumps aren't worth fixing. And fixing. And fixing. The solution is to upgrade. To Environment One's Upgrade, the aftermarket grinder pump that works and goes on working without any preventive maintenance. It's the original grinder pump design, the one others have tried to copy but they just haven't gotten it right. We have it down to a science. A simple science – design a pump for the application. So replace that troublesome pump. **With E/One's Upgrade.**



# Why is the E/One Upgrade Better?

## 10 REASONS TO SWITCH TO THE E/ONE UPGRADE

### Our Upgrade

vs.

### Their Grinder Pumps

1. Semi-positive displacement pump – provides virtually the same flow regardless of pressure. Scouring velocities are maintained without stressing the pump.
2. Non-jamming grinder – low-speed, high-torque, with large-diameter inlet.
3. Non-contact, non-fouling pressure switch level controls. Proven reliable and maintenance-free.
4. Air-filled motor requires zero preventive maintenance.
5. Built-in check valve and anti-siphon valve.
6. Longest mean time between service calls – 10 years.
7. Lowest operation and maintenance costs.
8. All pump, level and motor controls in one compact assembly, making service simple and convenient.
9. Near-constant flow regardless of pressure – prevents build-up of solids in piping.
10. Zero preventive maintenance.

1. Centrifugal pumps – flows vary dramatically, causing high flows and dangerously short run times to no flow and continuous operation. The result: burned-out motors.
2. Jamming common – high-speed, low-torque, with small-diameter inlet.
3. Float switches – require preventive maintenance to remove grease and oil. Constant source of problems. Mercury float switches difficult to dispose of are an environmental issue.
4. Oil-filled motor requires periodic oil changes.
5. No anti-siphon valve.
6. Constant service calls.
7. Routine preventive maintenance and service calls.
8. Separate pump, level and motor controls, making troubleshooting and repairs more difficult and time consuming.
9. Widely varying flow, reduced as pressure increases, allowing build-up of solids in pipe. Solids build-up causes increased pressure and reduced flow, compounding the problem.
10. Jammed grinders, grease-fouled floats require periodic maintenance.

The E/One Upgrade is the reliable, cost-efficient solution to your grinder pump problems.



# Have you taken control of the maintenance problems with your centrifugal grinder pumps? But at what cost?

**MAINTAINING A WASTEWATER COLLECTION SYSTEM IS BUSY ENOUGH** when the equipment is working properly. Additional stress and strain on resources from unreliable centrifugal

design doesn't work. They create an ever-changing system curve. They use a small grinder. They use high-speed, low-torque motors. They use floats. And when the design doesn't work,

So if you're dealing with nuisance pumps that are maintenance-intensive and costly to fix, replace them with the Upgrade, the pump with the lowest operation and maintenance costs and



Too many centrifugal pumps end up in the graveyard. E/One pumps keep working reliably year after year with the lowest operation and maintenance costs in the industry.

pumps is unacceptable. Rinsing down floats, unjamming cutter wheels and replacing pumps regularly in problem locations? All of that preventive maintenance is unnecessary with the Upgrade from Environment One.

Centrifugal pumps were never intended to be connected parallel in large numbers. The problem with centrifugal grinder pump systems is that the

the system doesn't work. The result? Ongoing maintenance headaches and high costs. And unreliable performance.

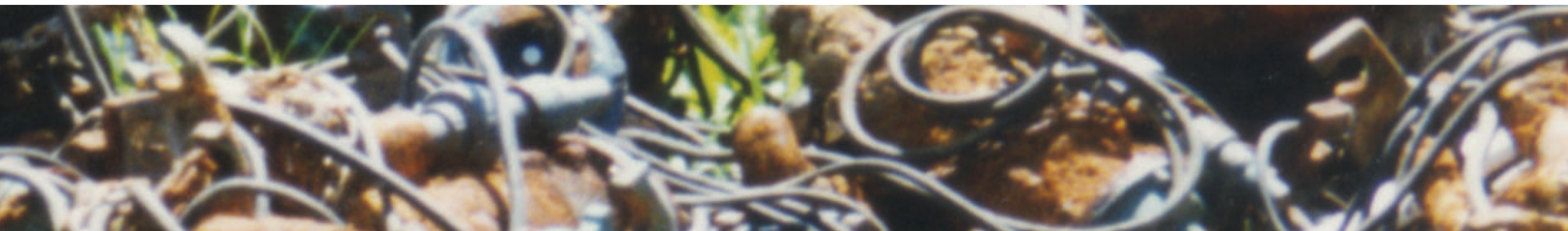
Fortunately, there is a simple solution. A reliable solution. From Environment One, the company that's been making the industry's most reliable pump for more than 40 years. With more than one million end users daily, E/One is the leader in grinder pump technology.

the longest mean time between service calls – 10 years.

The Upgrade is engineered to fit virtually any other grinder pump well. Its universal design allows ready to connect, easy drop-in changeover. So don't put up with one more maintenance disaster from your centrifugal pump. Call E/One today and start making your life easier and your system costs lower.



Top view showing Upgrade retrofit.





# SPECIFICATIONS

## Installation

The Upgrade is engineered to fit into virtually any other grinder pump wet well. Universal design allows easy drop-in changeover.

## Features and Benefits

- The 1 ¼-inch slide face discharge connection can be adapted to any existing discharge piping without changing piping on the outside of the basin.
- Grinder is designed to eliminate jamming and for minimum wear to grinder mechanism.
- The Upgrade's self-contained level control system eliminates troublesome float switches. E/One's pressure switch level control system is the most effective in the industry.
- The internal check valve assembly is designed for non-clog, trouble-free operation.

## Operational Information

### MOTOR

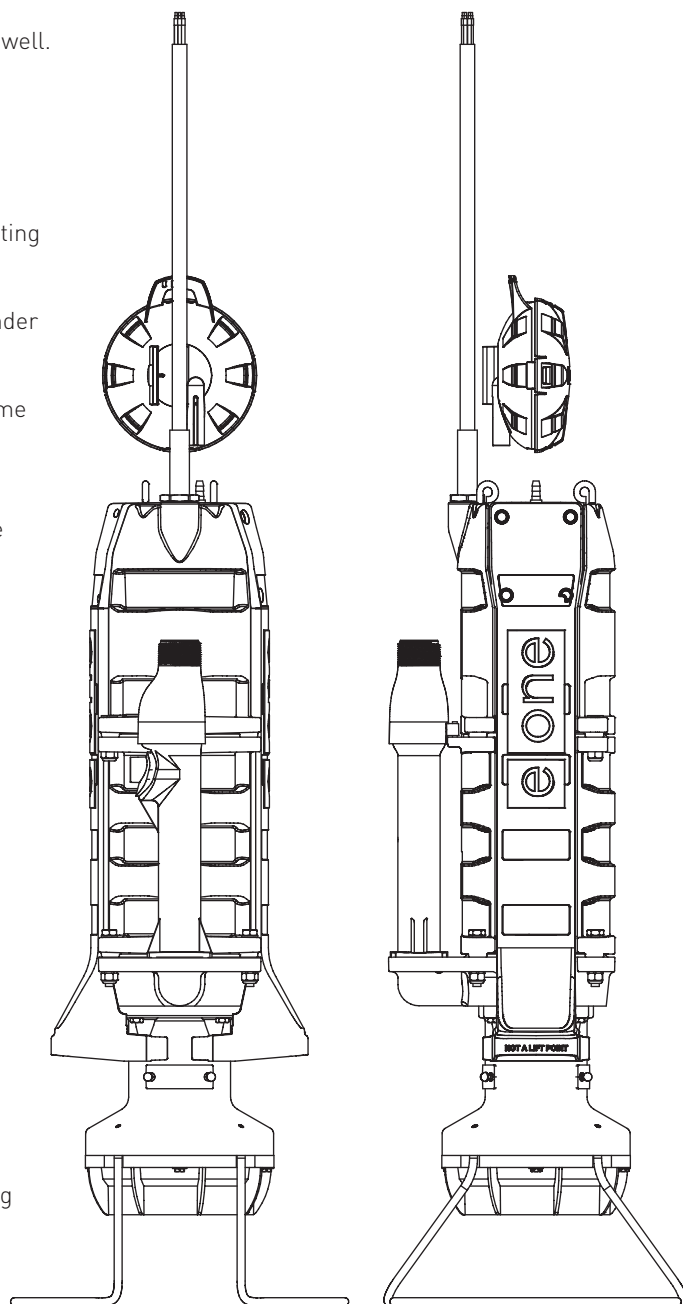
1 hp, 1,725 rpm, high torque, capacitor start, thermally protected 240 volt, 60 Hz, 1 phase; 120 volt motors are also available

### ALARM PANEL

For new installations, a NEMA 4X, UL-listed or CSA-approved alarm panel includes power and signal circuit breakers, audible and visual alarms, push-to-silence button, push-to-run button, and terminal strips. For centrifugal replacements, an Upgrade power board is available that consists of DIN RAIL mountable components designed to be installed inside the existing panel.

### DISCHARGE

15 gpm at 0 psig / 11 gpm at 40 psig / 9 gpm at 60 psig / 8 gpm at 80 psig



**Environment One Corporation**  
A Precision Castparts Company  
2773 Balltown Road, Niskayuna, NY USA 12309-1090  
Voice (01) 518.346.6161 Fax 518.346.6188 www.eone.com





# **EXHIBIT 10**



Jonathan Cummings  
WASCON Inc.  
910 East Main Street  
Livingston, TN 38570

January 17, 2018

Jonathan,

As discussed, Environment One Corporation (E/One) was originally founded in 1969 by a group of former General Electric (GE) Engineers in the Environmental Systems Branch of General Electric's Research and Development Center. With this in mind GE- E/One specifically and deliberately designed the E/One grinder pump to operate more like an appliance than a municipal pump station. For example, when a dishwasher or dryer have problems and stop working, the repair technician is contacted, the unit is repaired and the owner is back in service. This same GE mentality and design criteria applied to the very first grinder pump (E/One) and the same philosophy applies today. E/One grinder pumps have been designed for long-term robust service and do not require preventive maintenance.

The E/One system has been designed and steps put in place for the homeowner to call for service when the alarm sounds. The alarm panel features a corrosion proof NEMA 4X rated, thermoplastic enclosure. A padlock is provided to prevent unauthorized entry. There is a red alarm light on top of the panel and a button on the bottom of the panel to silence the audible alarm. When a failure occurs, an alarm both sounds and illuminates.

The alarm panels are approved by UL, CSA, CE and NSF to ensure high quality and safety. The alarm panel requires no preventive maintenance.

The E/One grinder pump station is a complete unit that includes: Semi-positive displacement grinder pump, check valve, tank (poly or fiberglass), and controls. The grinder pump and alarm panel is listed by Underwriters Laboratory (UL) and the station bears the seal of NSF International.

The choice of the semi-positive displacement pump principle was made with input from the American Society of Civil Engineering (ASCE) Staff and Steering Committee based on irrefutable hydraulic fundamentals, tailored in every respect to the specific needs of pressure sewer systems. The progressing cavity pump provides excellent solids handling capability combined with a nearly vertical curve, providing predictable flow over the full range of typical system pressures. Turning at just 1,725 rpm, the one-horsepower motor can pump fluid through more than two miles of small-diameter piping or in hydraulic performance terms they are capable of over 185' Total Discharge Head (TDH). An average mean time of 8-10 years between service calls is typical.

These and other specific engineered design features have been put in place to eliminate the need for preventive maintenance:

**Controls:** E/One grinder pumps utilize non-fouling pressure switch level controls. The control system operates on the diving bell principle, sending an air pressure signal to remote switches. This level control system has no moving parts in contact with grease-laden wastewater, so essentially immune to

grease deposits or mechanical fouling. For increased reliability, pump on/off and high-level alarm functions are not controlled by the same switch.

In contrast, float switches and other pump switch devices are utilized in other type wastewater pump stations. These switches remain in constant contact with grease causing failure. They require periodic maintenance (rinsing, cleaning) and a tendency to malfunction due to tangling, grease buildup, and mechanical cord fatigue.

**Electric Motor:** E/One utilizes a 1 HP motor, 1725 RPM, 240 Volt, capacitor start, air-cooled induction type with Class F installation, high starting torque of 8.4 foot pounds with an automatic-reset, integral thermal overload protector incorporated into the motor.

In contrast, oil filled motors are commonly used in other wastewater pump systems. Motor suppliers recommend and most times require periodic oil changes to maintain warranty eligible.

Non-capacitor start motors and permanent split capacitor motors are often utilized and reduce starting torque and diminish grinding capability.

**Grinder:** The E/One grinder mechanism with paddles combined with the 5" inlet shroud produces a vortex action created to scour a tank free of deposits or sludge banks which would impair the operation of the pump. In addition the 5" inlet shroud minimizes binding of the pump by large objects that block the inlet of the pump.

In contrast, virtually all other small wastewater grinder pumps have inlets of 2.5" or less with no vortex action to scour the tanks. Binding is also common.

**Electrical Quick Disconnect (EQD):** The E/One grinder pump and supply cable is provided with NEMA 6P Electrical Quick Disconnects (EQD's) for all power and control functions, factory installed.

In contrast, most other pump types utilize j-boxes located in the wet well (humid conditions) that have many potential leak paths and require periodic inspections.

Jonathan, please let me know if you need any additional information that relates to preventive maintenance. This is an important topic that we do consider throughout our entire design process.

Sincerely,



Marvin Springer  
Regional Sales Manager  
Environment One Corporation  
mspringer@eone.com  
816-719-2501

# **EXHIBIT 11**

July 25, 2018

Mountain Water District  
6332 Zebulon Hwy  
Pikeville, KY 41501

This letter is to confirm that Environment One Corporation (E/One) provides to Mountain Water District a Manufacturer part(s) and labor warranty that protects against defects in workmanship and material for a period of 60 months, but no greater than 66 months from date of shipment from the factory. This warranty applies to equipment sold and shipped direct to Mountain Water from Environment One Corporation and/or by the Authorized Distributor for Environment One in the state of Kentucky

We would like to thank you for your interest in Environment One Sewer System products and extend our sincerest invitation for you to contact us if we can be of further assistance.

Regards,

Marvin Springer  
Regional Sales Manager  
Environment One Corporation

Direct Telephone: (816) 719-2501  
E-mail: [mspringer@eone.com](mailto:mspringer@eone.com)

# **EXHIBIT 12**

# MOUNTAIN WATER DISTRICT COST ESTIMATE FOR ANNUAL INSPECTION OF GRINDER/PUMP UNITS

## Assumptions:

- Time to perform inspection and travel to next Grinder/Pump Station: 120 minutes
- Hourly Wage for Inspector: \$11.00
- Fringe/Overhead for Inspector: \$4.40\*
- Total Hourly Employee Cost: \$15.40
- Employee Work Day: 8 Hours
- Employee Work Year: 2,080 hours (40 hours X 52 weeks)
- Employee Paid Holiday Hours: 88 (11 days X 8 hours)
- Employee Allowed Sick Leave: 64 (8 days X 8 hours)
- Total available Employee Hours Per Year: 1,928 hours
- Each Employee performing inspection requires a vehicle
- Purchase cost of vehicle: \$24,000
- Useful life of vehicle: 5 Years
- Annual Depreciation Expense per vehicle: \$4,800
- Vehicle Monthly Fuel Consumption Cost: \$300

\*Fringe/Overhead includes FICA taxes, accrued time liability and employer's contribution for health insurance, life insurance, long term disability insurance, and vision and dental insurance but excludes payments to County Employees Retirement System

## Work Hours to Perform Annual Inspection:

1,903 Active Grinder Pump Units X 2 hours/unit = 3,806 hours

Note: Upon completion of Belfry Pond Sewer Project in late 2020, number of active grinder pump units will be approximately 2,100 and required employee hours will be 4,200 (2,100 X 2 hours/unit = 4,200 hours).

## Number of Employees Required to Perform Annual Inspection:

4,200 hours ÷ 1,928 hours per employee = 2.17 ≈ 2 Employees

## Labor Cost for Annual Grinder Inspections:

(\$15.40 X 40 hours) X 52 weeks X 2 employees = \$64,064.00 annual labor cost

Retirement Expense: \$11.00 per hour X 2080 hours X 2 employees X 21.48% = \$9,829.25

## **TOTAL ANNUAL LABOR COST FOR ANNUAL GRINDER INSPECTIONS:**

\$64,064.00 + \$9,829.25 = \$73,893.25

## Vehicle Expense for Daily Grinder Inspections:

2 vehicles X \$24,000 = \$48,000 (initial purchase)

Annual Depreciation Expense = \$48,000 ÷ 5 years = \$9,600/year

Insurance: \$383.16/Year X 2 Vehicles = \$766.32/year

Annual Fuel Cost: \$300.00/month X 2 vehicles X 12 months = \$7,200/year

Vehicle Service - Oil Change & filters — 1 per quarter @ \$76.49/ea. X 4 quarters X 2 vehicles = \$611.92/year

Tires — 1 set per year w/alignment - \$708.23 per vehicle X 2 vehicles = \$1,416.46/year

# MOUNTAIN WATER DISTRICT COST ESTIMATE FOR ANNUAL INSPECTION OF GRINDER/PUMP UNITS

**Additional Employee Expenses:**

Uniforms:      Shirts and Pants: Avg. Rental per Week per Employee-\$4.51 X 2 Employees X 52 weeks = \$469.04/year  
                     Winter Jacket- \$ 45.00 X 2 Employees = \$90.00 (initial purchase and replace as needed)

Boots: \$150 boot allowance per employee per year - \$150 X 2 employees = \$300.00 per year

PPE:    Hard Hat            \$12.09  
           Vest                \$16.31  
           Safety Glasses    \$ 5.48  
                                  \$33.88 X 2 Employees = \$67.76 (initial purchase and replace as needed)

Tools:   Cordless Impact    \$228.00  
           T Handle                \$ 25.00  
           Socket Set              \$ 30.00  
           Volt Meter              \$ 80.00  
                                  \$363.00 X 2 Employees = \$726.00 (initial purchase and replace as needed)

Winter Gloves:            \$16.15 X 2 = \$32.30 (initial purchase and replace as needed)  
 Disposable Gloves:      \$4.90 per box  
                                  .5 box per day per employee = 1 box X \$4.90 X 231 days = \$1,131.90/year

**COST SUMMARY:**

EMPLOYEE EXPENSE:	\$ 73,893.25 (2 Inspectors)
INITIAL VEHICLE EXPENSE:	\$ 48,000.00 (Initial Purchase of 2 Vehicles)
ANNUAL VEHICLE EXPENSE:	\$ 9,600.00 (Annual Depreciation)
	\$ 766.32 (Insurance)
	\$ 7,200.00 (Fuel)
	\$ 611.92 (Vehicle Maintenance)
	<u>\$ 1,416.46 (Tires)</u>
	<b>\$ 141,487.95</b>

ADDITIONAL EXPENSES:

\$ 469.04 (Uniform Rental)
\$ 90.00 (Winter Coat)
\$ 300.00 (Boot Allowance)
\$ 67.76 (PPE)
\$ 726.00 (Tools)
\$ 32.30 (Winter Gloves)
<u>\$ 1,131.90 (Disposable Gloves)</u>
<b>\$ 2,817.00</b>



**MOUNTAIN WATER DISTRICT  
COST ESTIMATE FOR ANNUAL INSPECTION OF  
GRINDER/PUMP UNITS**

**TOTAL INITIAL EXPENDITURE (1<sup>ST</sup> YEAR):**

\$ 73,893.25 (Labor)  
\$ 48,000.00 (Vehicle Purchase)  
\$ 9,994.70 (Vehicle Expense)  
\$ 3,948.90 (Uniforms, Tools, etc.)  
**\$135,836.85**

**TOTAL ANNUAL COST:**

\$ 73,893.25 (Labor)  
\$ 19,594.70 (Vehicle Expense)  
\$ 469.04 (Uniform Rental)  
\$ 300.00 (Boot Allowance)  
\$ 1,131.90 (Disposable Gloves)  
**\$ 95,468.31**

Not included in annual cost calculation: (1) Replacement of tools, PPE and other items due to wear and tear; (2) Merit or cost-of-living wage increases; and (3) Any additional personnel to process the volume of work orders necessary for daily inspection of grinder/pump units, if accounting of inspector's time, vehicle expense, and parts are to be tracked through the Alliance work order system for reporting purposes to the Board of Commissioners.

# **EXHIBIT 13**

# **MOUNTAIN WATER DISTRICT COST ESTIMATE FOR TRIENNIAL INSPECTION OF GRINDER/PUMP UNITS**

## **Assumptions:**

- Time to perform inspection and travel to next Grinder/Pump Station: 120 minutes
- Hourly Wage for Inspector: \$11.00
- Fringe/Overhead for Inspector: \$4.40\*
- Total Hourly Employee Cost: \$15.40
- Employee Work Day: 8 Hours
- Employee Work Year: 2,080 hours (40 hours X 52 weeks)
- Employee Paid Holiday Hours: 88 (11 days X 8 hours)
- Employee Allowed Sick Leave: 64 (8 days X 8 hours)
- Total available Employee Hours Per Year: 1,928 hours
- One employee performs inspections
- Employee performing inspection requires a vehicle
- Purchase cost of vehicle: \$24,000
- Useful life of vehicle: 5 Years
- Annual Depreciation Expense per vehicle: \$4,800
- Vehicle Monthly Fuel Consumption Cost: \$300

\*Fringe/Overhead includes FICA taxes, accrued time liability and employer's contribution for health insurance, life insurance, long term disability insurance, and vision and dental insurance but excludes payments to County Employees Retirement System

## **Work Hours to Inspect System Once:**

1,903 Active Grinder Pump Units X 2 hours/unit = 3,806 hours

Note: Upon completion of Belfry Pond Sewer Project in late 2020, number of active grinder pump units will be approximately 2,100 and required employee hours will be 4,200 (2,100 X 2 hours/unit = 4,200 hours).

## **Number of Years to Inspect System Once:**

4,200 hours ÷ 1,928 hours per year = 2.17 ≈ 3 Years

## **Labor Cost for Grinder Inspections:**

(\$15.40 X 40 hours) X 52 weeks = \$32,032 annual labor cost

Retirement Expense: \$11.00 per hour X 2080 hours X 21.48% = \$4,914.62

## **TOTAL ANNUAL LABOR COST FOR ANNUAL GRINDER INSPECTIONS:**

\$32,032 + \$4,914.62 = \$37,146.62

## **Vehicle Expense for Daily Grinder Inspections:**

1 vehicles @ \$24,000= \$24,000 (initial purchase)

Annual Depreciation Expense = \$24,000 ÷ 5 years = \$4,800/year

Insurance: \$383.16/Year

Annual Fuel Cost: \$300.00/month X 12 months = \$3,600/year

Vehicle Service - Oil Change & filters —1 per quarter @ \$76.49/ea. X 4 quarters = \$305.96/year

Tires —1 set per year w/alignment - \$708.23/year

# MOUNTAIN WATER DISTRICT COST ESTIMATE FOR TRIENNIAL INSPECTION OF GRINDER/PUMP UNITS

**Additional Employee Expenses:**

Uniforms:      Shirts and Pants: Avg. Rental per Week-\$4.51 X 52 weeks = \$234.52/year  
                     Winter Jacket- \$ 45.00 (initial purchase and replace as needed)

Boots: \$150 boot allowance per employee per year - \$150

PPE:    Hard Hat            \$12.09  
           Vest                 \$16.31  
           Safety Glasses    \$ 5.48  
                                   \$33.88 (initial purchase and replace as needed)

Tools: Cordless Impact    \$228.00  
           T Handle                 \$ 25.00  
           Socket Set               \$ 30.00  
           Volt Meter               \$ 80.00  
                                   \$363.00 (initial purchase and replace as needed)

Winter Gloves:            \$16.15 (initial purchase and replace as needed)  
 Disposable Gloves:     \$4.90 per box  
                                   .5 box per day X \$4.90 X 231 days = \$565.95/year

**COST SUMMARY:**

EMPLOYEE EXPENSE:            \$ 37,146.62  
 INITIAL VEHICLE EXPENSE:    \$ 24,000.00 (Initial Purchase of 2 Vehicles)  
 ANNUAL VEHICLE EXPENSE:    \$ 4,800.00 (Annual Depreciation)  
     \$ 383.16 (Insurance)  
     \$ 3,600.00 (Fuel)  
     \$ 305.96 (Vehicle Maintenance)  
     \$ 708.23 (Tires)  
     **\$ 70,943.97**

**ADDITIONAL EXPENSES:**

\$ 234.52 (Uniform Rental)  
 \$ 45.00 (Winter Coat)  
 \$ 150.00 (Boot Allowance)  
 \$ 33.88 (PPE)  
 \$ 363.00 (Tools)  
 \$ 16.15 (Winter Gloves)  
 \$ 565.95 (Disposable Gloves)  
**\$ 1,408.50**

**MOUNTAIN WATER DISTRICT  
COST ESTIMATE FOR TRIENNIAL INSPECTION OF  
GRINDER/PUMP UNITS**

**TOTAL INITIAL EXPENDITURE (1<sup>ST</sup> YEAR):**

\$ 37,146.62 (Labor)  
\$ 24,000.00 (Vehicle Purchase)  
\$ 9,797.35 (Vehicle Expense)  
\$ 3,948.90 (Uniforms, Tools, etc.)  
**\$74,892.87**

**TOTAL ANNUAL COST:**

\$ 37,146.62 (Labor)  
\$ 9,797.35 (Vehicle Expense)  
\$ 234.52 (Uniform Rental)  
\$ 150.00 (Boot Allowance)  
\$ 708.23 (Disposable Gloves)  
**\$ 48,036.72**

As inspections using one employ will not require entire three year period, the employee and vehicle will be available for other functions. Total Annual cost should be adjusted to reflect only actual time for inspections.

**Adjusted Annual Cost:**  $(\$48,036.72 \times 2.17 \text{ years}) \div 3 \text{ years} = \mathbf{\$34,746.56}$

Not included in annual cost calculation: (1) Replacement of tools, PPE and other items due to wear and tear; (2) Merit or cost-of-living wage increases; and (3) Any additional personnel to process the volume of work orders necessary for daily inspection of grinder/pump units, if accounting of inspector's time, vehicle expense, and parts are to be tracked through the Alliance work order system for reporting purposes to the Board of Commissioners.