



BLUEGRASS WATER

Utility Operating Company

A CSWR Managed Utility

Attn: Wes Dement
Energy and Environment Cabinet
Department for Environmental Protection
Division of Enforcement
300 Sower Blvd 3rd floor
Frankfort, KY 40601

Mr. Wes Dement,

Bluegrass Water Utility Operating Company seeks to operate with the utmost transparency in our efforts to bring the systems that we have purchased into compliance with EEC rules and regulations, and therefore submits the following update concerning the Corrective Action Plans submitted for Brocklyn WWTF (KY0081299), Fox Run WWTF (KY0086967), Golden Acres WWTF (KY0044164), Great Oaks WWTF (KY0080845), and Lake Columbia WWTF (KY0077674). The following table shows items scheduled to be completed by 3/31/2020 and their current statuses.

Compliance Date	Site	Source of Compliance Item	Compliance Item	Status	Date Closed
3/31/2020	Brocklyn	KY EEC CAP dated 12/13/19	Replace aeration drop pipes and inspect diffusers	Complete	3/17/2020
3/31/2020	Fox Run	KY EEC CAP dated 12/23/2019	Repair wastewater facility influent pump station	Complete	2/26/2020
3/31/2020	Golden Acres	KY EEC CAP dated 12/26/2019	Blower, aeration piping and diffuser replacement	Complete	3/30/2020
3/31/2020	Golden Acres	KY EEC CAP dated 12/26/2019	Sludge return piping repairs/replacement	Complete	3/30/2020
3/31/2020	Great Oaks	KY EEC CAP dated 12/26/2019	Install new blower and repair/replace aeration piping and diffusers	Complete	3/30/2020
3/31/2020	Great Oaks	KY EEC CAP dated 12/26/2019	Repair existing lift station pump after new redundant pump is installed	Complete	3/6/2020
3/31/2020	Lake Columbia	KY EEC CAP dated 12/20/19	Rebuild influent bar screen	In Process	*see note
3/31/2020	Lake Columbia	KY EEC CAP dated 12/20/19	Install tablet feeders for chlorination and dechlorination	In Process	*see note
3/31/2020	Lake Columbia	KY EEC CAP dated 12/20/19	Install new magnetic flow meters and Mission monitoring system	In Process	*see note

All items for Brocklyn WWTF, Fox Run WWTF, Golden Acres WWTF, and Great Oaks WWTF were completed inside of the projected schedule. The items for Lake Columbia, however, are behind schedule currently due to late delivery on prefabricated concrete tanks. The delivery of the prefabricated tanks has been impacted by the current COVID-19 pandemic and the effected work items are now expected to be completed by 4/4/2020. Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations as our country goes through this difficult time. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current crisis. Please offer consideration concerning the late status of these items at Lake Columbia and let us know if the department requires any further action on the COVID-19 impacted items.

Thanks,

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Due Date	Facility	Source	Item	Update	Date Closed
4/30/2020	Brocklyn	KY EEC CAP dated 12/13/19	Install new magnetic flow meters and mission alarms	Complete*	4/29/2020
4/30/2020	Fox Run	KY EEC CAP dated 12/23/2019	Install new magnetic flow meters and mission alarms	Complete*	4/29/2020
4/30/2020	Golden Acres	KY EEC CAP dated 12/26/2019	Install new magnetic flow meter and mission alarms	Complete	4/26/2020
4/30/2020	Great Oaks	KY EEC CAP dated 12/26/2019	Return sludge holding tank to operational service	Complete**	4/20/2020
4/30/2020	Kingswood	KY EEC CAP dated 12/12/2019	Replace valving on clarifier returns and skimmers	Complete	4/29/2020
4/30/2020	Kingswood	KY EEC CAP dated 12/12/2019	Repair existing skimmer and install a new skimmer	Complete	4/29/2020
4/30/2020	Kingswood	KY EEC CAP dated 12/12/2019	Replace UV system ballast and sensor	Complete***	4/30/2020
4/30/2020	Kingswood	KY EEC CAP dated 12/12/2019	Install new magnetic flow meter and Mission monitoring systems	Complete	4/26/2020
4/30/2020	Persimmon Ridge	KY EEC CAP dated 12/13/2019	Install scales for both chlorine and dechlorination chemicals in use	Complete	4/30/2020
*Mission system and wiring has been installed but still requires some final programming, the programmer has been experiencing COVID related delays					
**Tank has undergone some repairs and is in service, the structure will continue to be monitored to determine if additional repairs are necessary					
***UV Unit is old and light intensity sensor is no longer available, sensor has been bypassed and bulb replacement plan implemented exceeding manufacturers recommended replacement schedule					

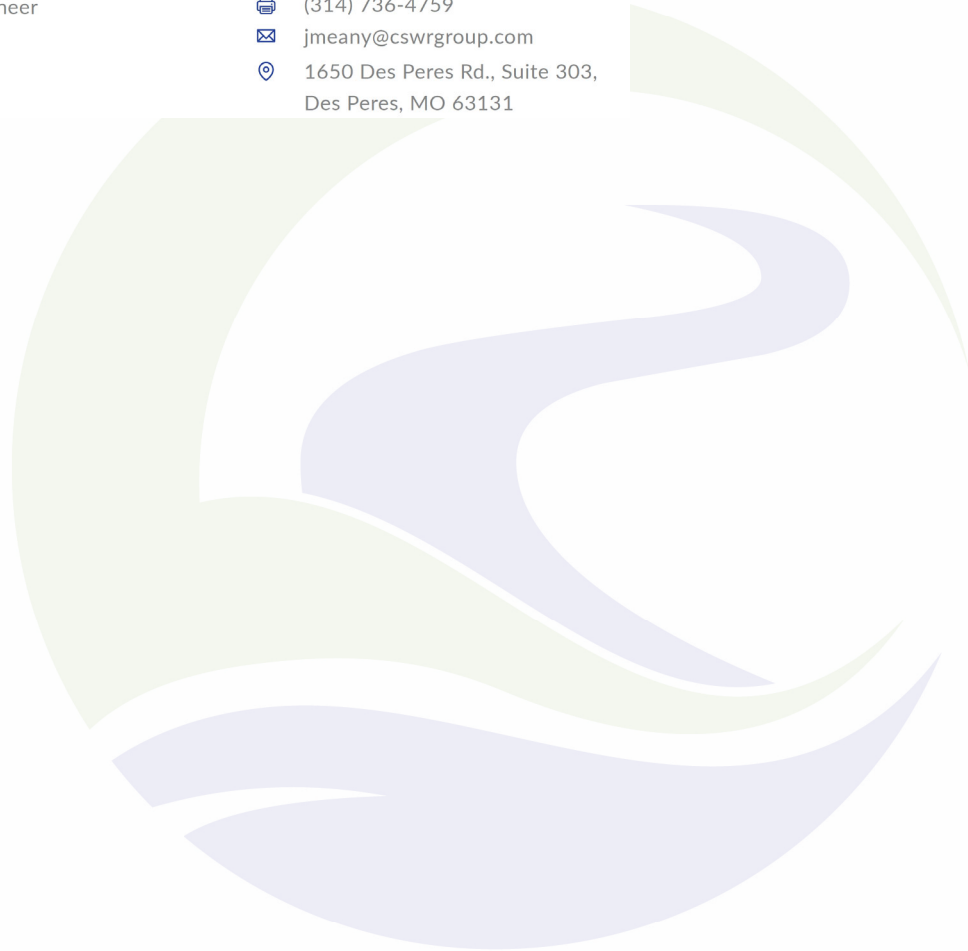
All items for planned to be completed by 4/30/2020 have been completed. Several items will require some additional work over time even while the scheduled event was completed. The mission monitoring systems at Brocklyn and Fox Run were installed successfully but will require additional programming. The programmer has experienced delays due to the COVID outbreak and will complete the programming in early May. The sludge holding tank, and the other structural components of the Great Oaks plant have undergone some repairs and the sludge holding tank is back in service, meeting the scheduled task. The structure of the plant is however in poor condition and additional repairs will be considered throughout the monitoring period laid out in the CAP. The UV system at Kingswood has been repaired and brought into service, but because of the age of the system, the sensor referenced in the CAP is not actually available for purchase anymore. The system was evaluated and it was determined that the purpose of the sensor is monitoring the intensity of the UV bulbs to alert the operator when the bulbs must be replaced. Currently, the sensor has therefore bypassed and instead we have implemented a replacement schedule for the UV bulbs that will have them replaced earlier than the manufacturers recommendation to assure the bulbs are replaced before becoming ineffective. If it continues to have issues we will consider replacing the whole UV system.

Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations as our country goes through this difficult time. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current crisis. Let us know if the department would like any additional information concerning the CAP items.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for LH WWTF submitted to the EEC on 12/20/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP plan documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in generally good condition and adequate to meet the permitted limits, and that exceedances of permitted limits in the past (Ammonia, CBOD, TSS, DO, and E.Coli) were the result of operational shortcoming under the previous ownership. We stated that we believed under our operations, the facility would begin to consistently meet limits. Even at the time the CAP was submitted the plant had begun to meet limits it had consistently violated under BWUOC operations.


The only additional improvement to the plant that was laid out in the CAP was the installation of a magnetic flow meter and Mission remote monitoring to improve the operations of the facility. This was installed and programed ahead of the projected date in the CAP of 3/31/2020.

In monitoring the performance of the facility as it pertains to compliance with permitted limits throughout the CAP period, there was only one exceedance. In March, the facility testing showed a DO level of 4 mg/l, below the required level of 7 mg/l. This was caused by an operational decision to shut off the blowers during a major rain event, in order to allow the aeration tank to settle and prevent sludge and solids from washing out of the facility during the excessive flow. This was an isolated event and steps are being taken to reduce I&I during rain events by making targeted repairs to the collection system. This will reduce excessive flows during major rain events and hopefully eliminate the need to shut off blowers in the future. In all other areas, effluent limits have been met consistently well below permitted limits, including for the pollutants that had violated in the past.

At this time, BWUOC does not believe any additional improvements will be necessary for the LH WWTF to continue to meet permitted limits and comply with EEC regulations.

Thanks,

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Mr. Wes Dement,

Bluegrass Water Utility Operating Company seeks to operate with the utmost transparency in our efforts to bring the systems that we have purchased into compliance with EEC rules and regulations, and therefore submits the following update concerning the Corrective Action Plans submitted for Airview WWTF (KY0045390), Brocklyn WWTF (KY0081299), Fox Run WWTF (KY0086967), Golden Acres WWTF (KY0044164), Great Oaks WWTF (KY0080845), and LH WWTF (KY0081591). The following table shows items scheduled to be completed by 5/31/2020 and their current statuses.

CAP Date	Site	Compliance Item	Status	Notes	Date Closed
5/31/2020	Airview	Install new magnetic flowmeter and Mission monitoring system	Complete		5/27/2020
5/31/2020	Brocklyn	Repair Aeration tank by spot welding corroded areas	In Progress	Because of the additional welding at Fox Run, while this welding is mostly done, the final repairs will be completed by the end of the day on 6/2/2020	5/30/2020
5/31/2020	Brocklyn	Replace existing chlorine contact chamber and both tablet feeders	Complete		5/30/2020
5/31/2020	Fox Run	Repair Aeration tank by spot welding corroded areas	Complete	Initial scope of welding was completed, however additional welding is being added to further improve the tank integrity. This additional welding will be completed today (6/1/2020).	5/28/2020
5/31/2020	Fox Run	Evaluate disinfection system	Complete	Disinfection appears to be functioning properly, will continue to monitor	5/27/2020
5/31/2020	Golden Acres	Repair Aeration tank by spot welding corroded areas	Complete	Aeration tank was repaired, Weir plate in clarifier was also replaced.	5/27/2020
5/31/2020	Golden Acres	Evaluate disinfection system	Complete	Following thorough cleanout of contact chamber, disinfection appears to be functioning properly, will continue to monitor upcoming test results to verify	5/27/2020
5/31/2020	Golden Acres	Repair collection system lift station	Complete		5/27/2020
5/31/2020	Great Oaks	Install new magnetic flow meter and Mission monitoring systems	Complete		5/29/2020
5/31/2020	LH	Continue monitoring performance of facility	Complete	Facility is functioning properly and meeting limits	5/27/2020
5/31/2020	LH	Submit status report detailing improvements and whether process changes are required	Complete	Submitted 5/29/2020	5/29/2020

With the exception of the final spot welding on the aeration tank at Brocklyn WWTF which will be completed tomorrow (6/2/2020) all work projected to be completed by 5/31/2020 was completed. Also noteworthy, while completing welding repairs, several plants received or are receiving additional repairs beyond the originally projected scope of welding repairs.

Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations as our country goes through this difficult time. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current crisis. Let us know if the department would like any additional information concerning the CAP items.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Airview WWTF (KY0045390) submitted to the EEC on 12/17/2019 and approved by the Department on 1/28/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP plan documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in decent condition and adequate to meet the permitted limits, and that exceedances of permitted limits in the past (pH, TSS, E.Coli, TRC, and DO) were the result of operational shortcomings under the previous ownership. We stated that we believed under our operations, the facility would begin to consistently meet limits. At the time the CAP was submitted the plant had begun to meet limits more consistently. The CAP also laid out basic repairs that would be completed at the facility, with anticipated dates of completion for pump repairs for the lift station, installation of remote monitoring and flow monitoring equipment, and spot welding repairs to the aeration tank. All improvements were completed by the anticipated schedule laid out in the CAP.

Throughout the CAP period, testing has been completed at an increased frequency in order to gain more data on the function of the facility. In the last several months the facility has been meeting all limits, with one exception for an E.Coli test which exceeded the weekly average limit, but came into compliance in resampling during the same week and therefore did not result in a violation. Other exceedances during the CAP period were found to be related to cleanout of the plant causing an E.Coli exceedance in March which did not result in a violation after retesting, and an exceedance of the monthly average limit for TSS resulting from the plant being shut off to complete the welding repairs May which did not result in a violation of limits after retesting. Now the general cleanup and operational improvements have been implemented and the plant appears to be capable of consistently meeting limits.

At this time, BWUOC does not believe any process changes will be necessary for the Airview WWTF to continue to meet permitted limits and comply with EEC regulations. However, BWUOC is considering the addition of Flow EQ, and repairs to the lagoon to make the plant more operationally reliable. The department will be informed when and if this work proceeds.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Bluegrass Water Utility Operating Company seeks to operate with the utmost transparency in our efforts to bring the systems that we have purchased into compliance with EEC rules and regulations, and therefore submits the following update concerning the Corrective Action Plans submitted for Airview WWTF (KY0045390), Great Oaks WWTF (KY0080845), and Lake Columbia WWTF (KY0077674). The following table shows items scheduled to be completed by 6/30/2020 and their current statuses.

Date of Compliance Deadline	Site	Compliance Item	Status
6/30/2020	Airview	Continue monitoring performance of facility	Complete
6/30/2020	Airview	Repair Aeration tank by spot welding corroded areas	Complete
6/30/2020	Airview	Submit status report detailing improvements and whether process changes are required	Complete
6/30/2020	Great Oaks	Continue monitoring performance of facility	Complete
6/30/2020	Great Oaks	Repair Aeration tank by spot welding corroded areas	Complete
6/30/2020	Great Oaks	Submit status report detailing improvements and whether process changes are required	Complete
6/30/2020	Lake Columbia	Continue monitoring performance of facility	Complete
6/30/2020	Lake Columbia	Repair Aeration tank by spot welding corroded areas	Complete
6/30/2020	Lake Columbia	Submit status report detailing improvements and whether process changes are required	Complete

All work projected to be completed by 6/30/2020 was completed. It is notable that in the status reports for Great Oaks and Lake Columbia additional areas needing repairs have been identified. We have laid out a projected timeline to repair or replace the digester at Great Oaks and to

replace the sludge returns at Lake Columbia by 7/31/2020 followed by a period of operational observation and an additional status report for each facility to determine if process changes are needed to be submitted by 8/31/2020.

Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current health crisis. Let us know if the department would like any additional information concerning these CAP items.

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Great Oaks WWTF (KY0080845) submitted to the EEC on 12/26/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP plan documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in decent condition and adequate to meet the permitted limits following operational improvements and basic repairs. Exceedances of permitted limits in the past (TSS, CBOD, Ammonia, E.Coli, TRC, and DO) appear to be the result of operational shortcomings and lack of reinvestment/maintenance under the previous ownership. We stated that we believed under our operations and with repairs, the facility would begin to consistently meet limits. Even at the time the CAP was submitted, our preliminary repairs and operational improvements had caused the plant to begin to more consistently meet limits, and it had become clear a significant issue for the plant meeting limits appeared to be failed aeration headers and an undersized blower for the facility. The CAP also laid out basic repairs that would be completed at the facility, with anticipated dates of completion for replacement of existing underperforming blower and repairs to the aeration piping and diffusers, repairs to the lift station and replacement of the redundant pump at the lift station, returning the sludge holding tank to operational service, installation of a flow meter and remote monitoring, and spot welding repairs to corroded areas on the plant. All of these improvements were completed by the anticipated schedule laid out in the CAP.

Throughout the CAP period, there have been several continued exceedances of permitted limits, however we believe that this does not indicate the need for a process change or additional improvements at the facility and instead were the result of the repair work and changes made to the facility and a necessary step in bringing the facility into compliance. In March and April of this year we observed tests exceeding limits for CBOD, TSS, and DO. These occurred at the time the aeration system was repaired, and the deficient blower was replaced. It was determined that the previous blower and diffusers were essentially underpowered and damaged enough that the air was dead-heading in the system and not properly aerating the bottom of the aeration basin. Upon repairing this system, replacing the deficient blower, and repairing the, excessive pin-floc formed and a breaking up of what had been a stagnant layer of sludge in the bottom of the plant. This has since stabilized. Since then, in May, exceedances of TRC and CBOD led to the identification of two additional issues with the plant that are currently being addressed. First, it was identified that flow through the clarifier was not operating as expected. Further investigation showed that the previous operator at some point had dumped a large amount of debris into the clarifier which was interrupting the designed flow pattern of the clarifier. The

clarifier has since been pumped down and the layer of debris removed. This consisted of over 10 pipes of varying lengths, several cell phones, and other miscellaneous debris. There was enough debris in the bottom of the clarifier to seriously compromise the hydraulics of the return and sludge flow in the bottom of the clarifier.


Secondly, evidence of the digester leaking into the contact chamber was identified. We planned to clean out the digester, patch the leak(s) and ensure no additional leaking occurs. In a preliminary partial pump down, it became clear that there is more than one leak coming from the digester. The digester will need to be completely pumped down to make these repairs or replaced all together to eliminate this leaking. The repairs should be completed with either approach by 7/31/2020 followed by an additional period of operational observation to ensure no other deficiencies are contributing to the plant's issues. We would request to extend the CAP and send an additional update by 8/31/2020 concerning any further necessary repairs at the plant. Please let us know if this course of action is acceptable.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Utility Engineer



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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Lake Columbia WWTF (KY0077674) submitted to the EEC on 12/20/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP plan documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be functionally capable of meeting limits, and had fallen short in the past due to a failure to properly maintain the plant and poor operations by previous ownership. Prior to acquisition the facility had a history of exceedances including CBOD, TRC, E.Coli, Ammonia and TSS. At takeover, the initial tests showed exceedances of TSS and E.Coli. We stated that we believed under our operations and with repairs, the facility would begin to consistently meet limits.

Even at the time the CAP was submitted, our preliminary repairs and operational improvements had caused the plant to begin to meet limits more consistently. For example, the pattern of continuous Ammonia violations essentially ended when we took over with only one exceedance in October of 2019 after exceedances for the previous 12 testing periods. Improvements were made at the plant in accordance with the predicted schedule in the CAP. These improvements included rebuilding the influent bar screen, replace mechanism for feeding chlorine and dechlorination tablets into contact chamber, installation magnetic flow meter and mission remote monitoring, and spot-welding repairs to the aeration tank.

Throughout the CAP period, there have been a few exceedances related to work being performed at the plant. The issues seem to be tied to repairing the aeration system at the plant leading to the breakdown of sludge in the plant. This led to pin flock passing through to the contact chamber causing sludge bulking in the contact chamber. This resulted in several issues with TSS and E.Coli. In the most recent month of testing, the facility complied with all permit limits, however, we believe replacing the sludge returns from the clarifier is needed to prevent future issues with sludge in the contact chamber. This replacement should prevent future issues with TSS and E.Coli.

We believe that the replacement of the sludge returns should be complete by 7/31/2020 followed by additional operational observation to ensure that additional improvements are not necessary. We would request to extend the CAP and send an additional update by 8/31/2020 concerning any further necessary repairs at the plant. Please let us know if this course of action is acceptable.

Please feel free to reach out for any additional information or with any questions.

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Date of Compliance Projection	Site	Compliance Item	Status
7/29/2020	Timberland	Submit to KY EEC for review a CAP to include all requirements as listed in AO within 90 days of closing	Complete
7/30/2020	River Bluffs	Submit to KY EEC for review a CAP to include all requirements as listed in AO within 90 days of closing	Complete
7/31/2020	Great Oaks	Repair or replace digester which has been leaking into contact chamber	Delayed for construction permit approval
7/31/2020	Kingswood	Clean and jet the collection system	Complete
7/31/2020	Kingswood	Submit status report detailing improvements and whether process changes are required	Complete
7/31/2020	Lake Columbia	Complete Improvements to sludge returns	Complete
7/31/2020	Persimmon Ridge	Repair existing lagoon baffle in second cell	Complete, some adjustments continue
7/31/2020	Persimmon Ridge	Install mission alarms	Complete
7/31/2020	Persimmon Ridge	Clean and jet the collection system	Complete

All work projected to be completed by 7/31/2020 was completed, except for the replacement of the digester at Great Oaks. The EEF/DEP was consulted concerning the digester replacement, and it was determined that a minor-mod construction permit would be required to complete the work. The application has been submitted and a contractor is available to complete the installation as soon as the permit is approved. The cleaning and jetting activities at Persimmon Ridge and Kingswood have been completed as much as possible currently, there are a few locations at Kingswood where the manholes have been covered with asphalt and the Home owners association has yet to cooperate with us to chip off the pavement for jetting and install new risers to account for the extra layers of paving material installed by the association. There are a few locations at Persimmon Ridge where cleanouts are located in customers backyards and in the last 6 months there has not been a long enough dry time (without rain) to allow the ground to dry enough to access these without causing significant damage to the customers property. We still plan to clean these sections, but only when property damage can be minimized.

Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current health crisis. Let us know if the department would like any additional information concerning these CAP items.

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Kingswood WWTF submitted to the EEC on 12/12/2019 and approved by the Department on 1/28/2020 I hereby submit this status report concerning improvements made to the facility and next steps.


In the original CAP plan documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in generally good condition and adequate to meet the permitted limits, and that exceedances of permitted limits in the past (Ammonia, TSS, and E.Coli) were the result of operational shortcoming under the previous ownership, and failure to properly maintain the clarifier and UV system. We stated that we believed under our operations, the facility would begin to consistently meet limits. Even at the time the CAP was submitted the plant had begun to meet limits it had preciously violated.

The CAP laid out plans to replace the valving on the clarifier returns and skimmers, replace the existing skimmer, replace the UV ballast and sensor, installation of a magnetic flow meter and Mission remote monitoring system, and cleaning and jetting of the collection system. All of these improvements were completed within the schedule as planned with the exception of the replacement of the UV sensor. The currently installed UV system is no longer in production and the sensor is no longer available. The sensor's function is to alert the operator when a UV bulb is no longer producing enough light. As a result, the system was evaluated to establish a predictive maintenance routine of replacing the bulbs on an aggressive schedule to ensure proper disinfection is not interrupted even with the sensor not functioning.

In monitoring the performance of the facility as it pertains to compliance with permitted limits throughout the CAP period, there have been no exceedances of limits since November of last year.

At this time, BWUOC does not believe any additional improvements will be necessary for the Kingswood WWTF to continue to meet permitted limits and comply with EEC regulations. We are however considering replacing the UV system in the near future with a newer system with available parts. Additionally, while they haven't dropped below NPDES limits, the DO levels are dropping at the facility and we are concerned that the existing air header may need to be resized, we are currently evaluating the air header and the sizing of the current blower to determine if replacement is warranted.

Thanks,
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BLUEGRASS WATER

Utility Operating Company

A CSWR Managed Utility

Attn: Wes Dement
Energy and Environment Cabinet,
Department for Environmental Protection
Division of Enforcement
300 Sower Blvd 3rd floor
Frankfort, KY 40601

Mr. Wes Dement,

In accordance with the Corrective Action Plan for Brocklyn WWTF (KY0081299) submitted to the EEC on 12/13/2019 and approved by the Department on 1/28/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in extremely poor condition and reaching the end of the useful life of the plant. It was believed that with operational improvements and repairs, the facility may be capable of meeting limits, however the poor condition of various components may fore replacement beyond basic repairs to prevent total failure of the plant. The CAP plan details the poor condition of the site including stormwater washing in-between plant components, washing gravel into the contact chamber, deteriorating tankage of the plant itself, aeration and drop pipes in poor condition, the contact chamber in poor condition, the polishing lagoon cell being full of sludge, and the need of flow monitoring and remote monitoring to properly evaluate I&I issues at the facility.

The CAP laid out milestones for repairs, evaluation, and basic improvements at the facilities. The milestones included replacement and repair of aeration drop pipes, diffusers, the contact chamber, the tablet feeders for chlorination and dechlorination, cleaning and jetting of the collection system, installation of a remote monitoring system and flow meter, and attempted repair of the tankage. The projected milestones were completed in the schedule laid out by the CAP plan. Following the period of repairs and operational improvement, it has been determined that the tankage condition is too poor to be adequately repaired. Some portions of the tank are so rusted that the wastewater is in contact with soil surrounding the tank. Repairs would require extensive excavation and likely result in the total collapse of the tank. Therefore, to ensure the facility will be able to function, a complete overhaul and replacement is necessary.

Bluegrass Water has submitted plans and construction permits for review by the EEC/DEP and KYPSC. The facility design includes installation of an influent lift station, MBBR activated sludge system, clarifier, and a new contact chamber for peroxyacetic acid disinfection system and post aeration. The new plant is designed reliably meet limits.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Utility Engineer

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Mr. Wes Dement,

Bluegrass Water Utility Operating Company seeks to operate with the utmost transparency in our efforts to bring the systems that we have purchased into compliance with EEC rules and regulations, and therefore submits the following update concerning the Corrective Action Plans submitted for Brocklyn WWTF (KY0081299), Fox Run WWTF (KY0086967), Golden Acres WWTF (KY0044164), Great Oaks WWTF (KY0080845), Lake Columbia WWTF (KY0077674), and Persimmon Ridge WWTF (KY0090956). The following table shows items scheduled to be completed by 8/31/2020 and their current statuses.

Date of Compliance Deadline	Site	Compliance Item	Status
8/31/2020	Brocklyn	Clean and jet the collection system	Complete
8/31/2020	Brocklyn	Submit status report detailing improvements and whether process changes are required	Complete
8/31/2020	Fox Run	Clean and jet the collection system	Complete
8/31/2020	Fox Run	Submit status report detailing improvements and whether process changes are required	Complete
8/31/2020	Golden Acres	Clean and jet the collection system	Complete
8/31/2020	Golden Acres	Submit status report detailing improvements and whether process changes are required	Complete
8/31/2020	Great Oaks	Submit updated status report detailing improvements and whether process changes are required	Complete
8/31/2020	Lake Columbia	Submit updated status report detailing improvements and whether process changes are required	Complete
8/31/2020	Persimmon Ridge	Submit status report detailing improvements and whether process changes are required	Complete

All work projected to be completed by 8/31/2020 was completed. It is notable as mentioned in the update letter submitted last month that the replacement of the digester/sludge holding at Great Oaks has not been completed as it will require a minor-mod permit from DEP. Our engineers are working on finalizing the design for the digester. The cleaning and jetting activities at Brocklyn, Fox Run, and Golden Acre have been completed as much as possible currently, there are a few locations in each system that will receive more cleaning in the upcoming months, and there are plans to camera inspect the lines at Golden Acres and potential make repairs by lining

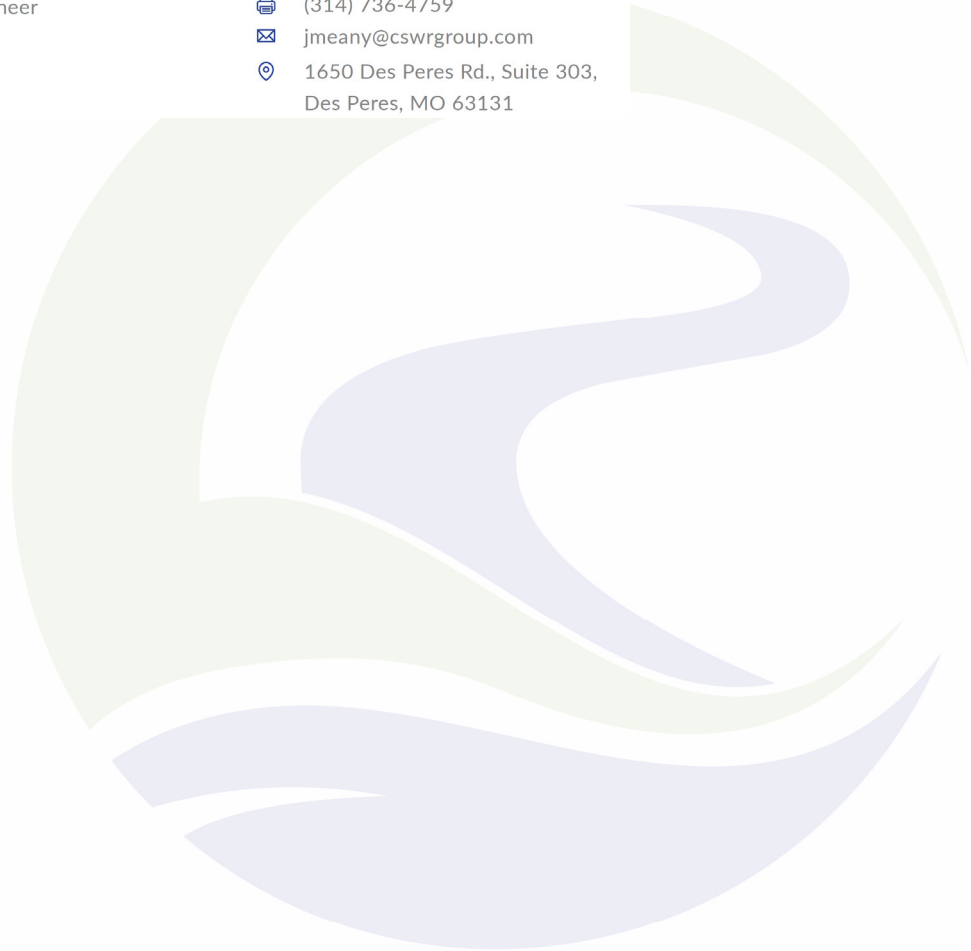
collection pipes to reduce I&I in the system. Several of the systems with status reports submitted this month detail additional improvements that BWUOC will pursue or are considering pursuing. Most of these additional improvements will require construction permit submittal and are detailed in each status report.

Bluegrass Water is striving to maintain the highest levels of excellence in both providing service to our customers and complying with environmental regulations. We will continue to do everything possible to meet the projected schedules on this project and will update the EEC as we meet deadlines and provide information concerning any items that are impacted by the current health crisis. Let us know if the department would like any additional information concerning these CAP items.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Fox Run WWTF (KY0086967) submitted to the EEC on 12/23/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility needed repairs and operational improvement to properly function. It was believed however, that with operational improvements and repairs, the facility may be capable of meeting limits.



The CAP laid out milestones for repairs, evaluation, and basic improvements at the facilities. The milestones included replacement and repair of the influent lift station, installation of a flow meter and remote monitoring system, spot welding of corroded portions of the aeration tank, evaluation of the disinfection system, and cleaning and jetting of the collection system. These activities were all completed within the timeline outlined in the CAP. The facility has consistently met limits since April, demonstrating the effectiveness of the operational improvements and repairs.

At this time, the facility is operating effectively and meeting limits, however there are several improvements being considered to potentially allow the plant to operate more effectively and efficiently. Specifically, we are evaluating the addition of flow EQ to help the facility to perform effectively during periods with high I&I, and we are evaluating switching from chlorine and dechlorination to peroxyacetic acid and post aeration for disinfection. Should these projects go forward BWUOC will submit construction permits for review by EEC/DEP and KYPSC.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Golden Acres WWTF (KY0086967) submitted to the EEC on 12/26/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility needed repairs and operational improvement to properly function. It was indicated that with operational improvements and repairs, the facility may be capable of meeting limits, but it was not clear if further improvements would be needed.

The CAP laid out milestones for repairs, evaluation, and basic improvements at the facilities. The milestones included repair and replacement of blowers, aeration piping, and diffusers, repair of sludge return piping, installation of a flow meter and remote monitoring system, spot welding of corroded portions of the aeration tank, evaluation of the disinfection system, and cleaning and jetting of the collection system. These activities were all completed within the timeline outlined in the CAP. The facility has continued to struggle to meet limits.

The primary issue with this plant appears to be an overwhelming amount of I&I causing flow through the facility that exceeds its treatment capacity. To further complicate matters, there is very little space for expanding the plant or for flow EQ. Additionally, the current effluent pipe is struggling to handle the high flow and needs to be reworked to handle the flow. Easement negotiations are underway with the neighboring property owner and the results of the negotiation will determine the best course of action for the improved effluent pipe. To address the excessive I&I, BWUOC will be installing as much flow EQ as we have room for at the plant site and improving/repairing the collection system. Lines will be camera inspected to determine where the most significant sources of I&I are, and pipes and structures will be repaired with liners. This should eliminate a bulk of the I&I and allow the facility to meet limits. Additionally, we are evaluating switching from chlorine and dechlorination to peroxyacetic acid and post aeration for disinfection at some point in the future to reduce operational costs.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Great Oaks WWTF (KY0080845) submitted to the EEC on 12/26/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.






In the original CAP documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be in decent condition and adequate to meet the permitted limits following operational improvements and basic repairs. Exceedances of permitted limits in the past (TSS, CBOD, Ammonia, E.Coli, TRC, and DO) appear to be the result of operational shortcomings and lack of reinvestment/maintenance under the previous ownership. We stated that we believed under our operations and with repairs, the facility would begin to consistently meet limits. At the time the CAP was submitted, our preliminary repairs and operational improvements had already caused the plant to more consistently meet limits, and it was clear failed aeration headers and an undersized blower for the facility were a large part of the problem. The CAP also laid out basic repairs that would be completed at the facility, with anticipated dates of completion for replacement of existing underperforming blower and repairs to the aeration piping and diffusers, repairs to the lift station and replacement of the redundant pump at the lift station, returning the sludge holding tank to operational service, installation of a flow meter and remote monitoring, and spot welding repairs to corroded areas on the plant. All these improvements were completed by the anticipated schedule laid out in the CAP.

In the status report submitted 6/30/2020 BWUOC notified that two additional issues had been identified, relating to flow through the clarifier and to the sludge holding/digester leaking into the contact chamber. The clarifier was drained and cleared and is now functioning properly. It was determined that the digester could not be repaired and would need to be replaced. BWUOC is currently preparing a construction permit application to install two stand alone tanks to replace the damaged digester and prevent further leaking of partially treated wastes into the contact chamber. Following this improvement, the facility should consistently meet limits. Additionally, we are evaluating switching from chlorine and dechlorination to peroxyacetic acid and post aeration for disinfection at some point in the future to reduce operational costs.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Lake Columbia WWTF (KY0077674) submitted to the EEC on 12/20/2019 and approved by the Department on 2/17/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP documents, it was conveyed that an analysis of the system implied that the wastewater treatment facility appeared to be functionally capable of meeting limits, but had fallen short in the past due to a failure to properly maintain the plant and poor operations by previous ownership. Prior to acquisition the facility had a history of exceedances including CBOD, TRC, E.Coli, Ammonia and TSS. At takeover, the initial tests showed exceedances of TSS and E.Coli.



Our preliminary repairs and operational improvements had caused the plant to begin to meet limits more consistently. Improvements were made at the plant in accordance with the predicted schedule in the CAP. These improvements included rebuilding the influent bar screen, replace mechanism for feeding chlorine and dechlorination tablets into contact chamber, installation magnetic flow meter and mission remote monitoring, and spot-welding repairs and painting the aeration tank. While the improvement was significant, it was determined that the sludge returns also needed to be replaced for the facility to consistently meet limits per the status report submitted 6/30/2020. These returns were replaced by 7/31/2020.

We feel that the facility is now capable of consistently meeting the permitted limits, however, to ensure the facility will function optimally we are considering two additional improvements. First, we are considering the addition of a sludge holding tank to help the facility better cycle sludge. Additionally, we are evaluating switching from chlorine and dechlorination to peroxyacetic acid and post aeration for disinfection at some point in the future to reduce operational costs. Should these improvements be pursued, BWUOC will submit construction permit applications for review by EEC/DEP and KYPSC

Please feel free to reach out for any additional information or with any questions.

Thanks,

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Mr. Wes Dement,

In accordance with the Corrective Action Plan for Persimmon Ridge WWTF (KY0090956) submitted to the EEC on 12/13/2019 and approved by the Department on 1/29/2020 I hereby submit this status report concerning improvements made to the facility and next steps.

In the original CAP plan documents, it was conveyed that an analysis of the system implied that following the operational and physical repairs and improvements detailed in the CAP the wastewater treatment facility may be capable of meeting limits.

The CAP laid out milestones for repairs, evaluation, and basic improvements at the facility. The milestones included repair of the baffle in the second lagoon cell, installation of scales for the chlorination and dechlorination chemicals, installation of a flow meter and remote monitoring system, and cleaning and jetting of the collection system.

Additionally, an improved aeration system was installed in the first cell of the lagoon as part of a pilot study. All improvements were completed inside of the timelines projected and the facility has met limits since May of this year. The new aeration system has improved the performance of the treatment plant and will be cycled on and off as part of the pilot study to determine the effectiveness of the equipment. Pending the results of the study, additional units may be added in the next few years, however the single unit in the pilot may be adequate to allow the facility to consistently meet limits.

Additionally, we are evaluating switching from chlorine and dechlorination to peroxyacetic acid and post aeration for disinfection at some point in the future to reduce operational costs. Should these additional improvements be pursued, BWUOC will submit construction permits for review by EEC/DEP and KYPSC.

Please feel free to reach out for any additional information or with any questions.

Thanks,

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July 29, 2020

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Division of Enforcement
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Frankfort, KY 40601

Bluegrass Water Utility Operating Company, Inc.
Airview Subdivision WWTF
KYPDES Permit No. KY0045390
Agency Interest No. 1643

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Airview WWTF approved by EEC/DEP on 1/28/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the main aeration plant is in much better shape than it was at acquisition. Vegetation has been cleared, handrails installed, and walkways repaired, the bar screen has been repaired, aeration system improvements have been implemented, the effluent line has been repaired, and tanks have been patched and painted. Plant performance has improved significantly and DMR data shows reduced pollutant loading since acquisition.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. A construction permit application was submitted in September of 2020 for these additional improvements. The permit application includes conversion of the abandoned lagoon into wet weather storage, including pumping equipment and clearing and repairing the lagoon berms, as well as removal of the deteriorated concrete tank in the creek. The construction permit has been issued and we have begun to order parts and materials. We believe that work will proceed fairly quickly expect to complete the improvements at Airview by February 18, 2022. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits.

Sincerely,

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BLUEGRASS WATER

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July 29, 2020

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Kentucky Department for Environmental Protection
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Frankfort, KY 40601

Bluegrass Water Utility Operating Company, Inc.
Brocklyn WWTF
KYPDES Permit No. KY0081299
Agency Interest No. 2809

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Brocklyn WWTF approved by EEC/DEP on 1/28/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the plant is in better shape than it was at acquisition. Basic cleanup of the site, repairs to the contact chamber (including extending the walls to prevent continued overflows, installation of riprap in the drainage ditch to prevent further erosion, and a full cleanout of the lagoon cell have been completed since acquisition. As discussed previously, the tankage of the Brocklyn extended aeration plant is severely deteriorated with wastewater coming in direct contact with soils in the basin where walls are deteriorating. It has been determined that attempting to excavate around the outside and repair the tank or draining the tanks to make repairs would result in the tank collapsing completely and therefore the plant needs to be replaced. Construction permits for a MBBR extended aeration plant have been submitted and are in the permit approval process, KYDEP is currently having Bluegrass explore the possibility of connecting to a nearby POTW. As part of this process, we recently conducted flow monitoring and submitted actively monitored flow data to the POTW to evaluate feasibility of connecting. Until it is determined if the plant will be replaced or a connection made to the POTW the plant will continue to operate as is. It is currently consistently meeting limits, but the deteriorating condition of the plant still requires action.

Whether the solution is replacing the plant, or connecting to the POTW, Bluegrass hopes to proceed quickly with improvements following permit approval. We believe that work will proceed quickly following approval of the permit and expect to complete the improvements at Brocklyn by July 18, 2022, assuming the permit is issued in the near future. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits

Sincerely,

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July 29, 2020

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Bluegrass Water Utility Operating Company, Inc.
Fox Run WWTF
KYPDES Permit No. KY0086967
Agency Interest No. 1388

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Fox Run WWTF approved by EEC/DEP on 2/17/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the main aeration plant is in much better shape than it was at acquisition. The access road and gates were replaced, the tanks have been patched and painted, inappropriately sourced and installed influent pumps were replaced, damaged piping has been repaired and replaced, and aeration system components have been repaired and replaced. While the system is currently meeting limits, it continues to struggle to handle the amount of sludge solids coming through the facility, requiring frequent sludge hauling, and it struggles to keep up during wet weather events.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. A construction permit application was submitted in September of 2020 for these additional improvements. The permit application includes changes to aid in the facility's ability to handle sludge and wet weather surge events. The permit application calls for installation of a wet weather storage basin and sludge digester to the plant. The construction permit has been issued and we have begun to order parts and materials. We believe that work will proceed fairly quickly expect to complete the improvements at Fox Run by February 18, 2022. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits.

Sincerely,

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July 29, 2020

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Bluegrass Water Utility Operating Company, Inc.
Golden Acres WWTF
KYPDES Permit No. KY0044164
Agency Interest No. 2935

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Golden Acres WWTF approved by EEC/DEP on 2/17/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the main aeration plant is in better shape than it was at acquisition. Many improvements have been made to the Golden Acres system including repairs and replacement to damaged components, removal of accumulated solids from the plant and effluent line, improvements to control systems, etc.

The primary issue this facility continues to face is a poorly designed and improperly sized effluent line leading to regular backups at the plant. The original plant was designed for a 4" effluent line which goes from the plant, makes about a 30° turn and eventually makes another turn of about 120°. These turns in the line cause accumulation of solids in the effluent pipe and backup into the plant during high flow periods, leading to flooding and improper flow through the plant. This improper flow leads to additional wash-through of solids, compounding the problem. At acquisition this had resulted in the effluent pipe being nearly completely blocked with rags, toilet paper and debris, with these items visibly discoloring effluent and the receiving waters. In clearing the pipe and investigating the problem it was discovered that while the design had called for 4" effluent pipe, the pipe actually only started and ended at 4", but in fact had been installed with smaller pipe in the underground sections presumably to save money during installation, further exaggerating the problems caused by the pipe.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. A construction permit has been submitted to replace the effluent chamber and effluent line. The replaced line will move the discharge point a short distance downstream from the original discharge, eliminating the turns in the line. The line will also be upsized to 10". It seems that all the plant's issues result from the backups disrupting proper operation of the plant.

The permit will also facilitate conversion to peroxyacetic acid disinfection with post aeration to replace the current disinfection system. We believe that work will proceed quickly following approval of the permit and expect to complete the improvements at Golden Acres Run by February 18, 2022, assuming the permit is issued in the near future. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits

Sincerely,

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July 29, 2020

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Frankfort, KY 40601

Bluegrass Water Utility Operating Company, Inc.
Great Oaks WWTF
KYPDES Permit No. KY0080845
Agency Interest No. 3041

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Great Oaks WWTF approved by EEC/DEP on 2/17/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the main aeration plant is in better shape than it was at acquisition. The aeration system has had many parts repaired and/or replaced where they had been allowed to fall not disrepair by previous ownership. The influent line had been damaged and abandoned in favor of flex pipes. The influent lift station was repaired, and the proper influent line repaired and brought back into use. Steel walkways, handrails, and tanks have been sanded, patched, and painted to halt deterioration. Solids have been removed from the plant and it was discovered that the previous ownership had made a practice of dumping sections of piping and other materials into the clarifier. Many pipes, several cell phones and radios, and other debris were removed from the clarifier, restoring proper function. It was found that the damaged steel tank was allowing the digester to leak into the contact chamber, resulting in increased BOD, TSS, and ineffective disinfection. The digester has been removed from service as a result. Effluent quality has improved significantly with occasional exceedances of BOD and TRC; performance is being optimized. At acquisition, the effluent was an opaque grey color, and since our improvements the effluent is now very clear. The facility still struggles during rain events, and with the leak in the existing digester and having had to remove it from service, the facility struggles to handle solids without regular solids removal.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. A construction permit has been submitted to install a new digester and wet weather storage basin. The construction permit has been issued and we have begun to order parts and materials. We believe that work will proceed fairly quickly expect to complete the improvements at Great Oaks by February 18, 2022. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits.

Sincerely,

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BLUEGRASS WATER

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July 29, 2020

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Kentucky Department for Environmental Protection
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Frankfort, KY 40601

Bluegrass Water Utility Operating Company, Inc.
Kingswood WWTF
KYPDES Permit No. KY0101419
Agency Interest No. 455

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Kingswood WWTF approved by EEC/DEP on 1/2/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the main aeration plant is in better shape than it was at acquisition. The damaged components of the aeration system have been repaired or replaced as needed and the plant was cleaned up and solids were removed from tankage. The plant is currently meeting all limits. The most significant remaining issue at the facility relates to the disinfection system. The UV unit is very old and parts are no longer available for it. The system is oversized so while it is now operating at 2/3 capacity it is still adequate for disinfection currently. Additionally, the sensor that alerts operators to underperforming bulbs is no longer available, so bulbs are being replaced on an aggressive preventative maintenance schedule instead of based on the sensor system.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. We are in the process of applying for a permit to replace this UV system with a newer one with available parts. We believe that the replacement will proceed quickly following approval of the permit and expect to complete the improvements at Kingswood by February 18, 2022, assuming the permit is issued in the near future. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits

Sincerely,

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Bluegrass Water Utility Operating Company, Inc.
Lake Columbia WWTF
KYPDES Permit No. KY0077674
Agency Interest No. 458

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the Lake Columbia WWTF approved by EEC/DEP on 1/28/2020. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the aeration plant is in better shape than it was at acquisition. At acquisition, the plant headworks was completely deteriorated, the aeration basin had large holes rusted through in many places, the sludge returns and aeration piping were damaged and not functioning properly, the blower housing was falling apart and the blower was damaged, walkways and handrails were missing or damaged, the contact chamber was falling apart and had holes rusted in it, and there was evidence of overflows from different parts of the plant. The contact chamber and headworks/barscreen tanks were determined to be in need of complete overhaul due to poor condition. Yard piping was replaced to route wastewater from the headworks to the plant and from the plant to the contact chamber. The aeration tankage was sanded, welded and patched, and painted to extend the life of the tanks. The damaged portions of the aeration system were repaired and/or replaced as needed to restore proper function and treatment to the plant. New walkways and handrails were installed. With these upgrades the plant is currently meeting limits, however the plant still struggles during rain events and has very little capacity for handling solids, requiring regular solids removal to prevent a reduced treatment capacity.

Per the original CAP, our evaluation following triage improvements has determined that the facility does require a construction permit to complete improvements. To improve the facility's ability to handle solids and to prevent the plant from being overwhelmed during rain events, a construction permit application has been submitted for the installation of wet weather storage basin and a new sludge digester. The construction permit has been issued and we have begun to order parts and materials. We believe that work will proceed fairly quickly expect to complete the improvements at Lake Columbia by February 18, 2022. Following the improvements included in the construction permit the facility should be able to consistently comply with permitted limits.

Sincerely,

JON MEANY


Utility Engineer

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BLUEGRASS WATER

Utility Operating Company

A CSWR Managed Utility

July 29, 2020

Michael Kroeger (CC. Wesley Dement)
Kentucky Department for Environmental Protection
Division of Enforcement
300 Sower Blvd., 3rd Floor
Frankfort, KY 40601

Bluegrass Water Utility Operating Company, Inc.
LH Treatment WWTF
KYPDES Permit No. KY0081591
Agency Interest No. 8083

Corrective Action Plan Revision:

I am pleased to submit this update to the Corrective Action Plan for the LH Treatment WWTF approved by EEC/DEP on 12/20/2019. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the aeration plant is in better shape than it was at acquisition.

Significant improvements have been made to the LH Treatment facility. Handrails have been installed around the treatment basins to ensure safe operation. Damaged components of the aeration and clarification system have been repaired or replaced to ensure proper treatment can occur. The collapsing chlorine shack has been replaced to ensure proper disinfection can continue and proper containment for the chlorine solution to prevent spills. The facility is mostly meeting limits, but has had some issues with pin floc formation leading to E.Coli exceedances. Adjustments are being made that should eliminate this issue. There are some significant I&I issues in one part of the collection system that will be repaired over the next several years, however the plant is in good condition now and doesn't immediately require further improvements.

Sincerely,

JON MEANY

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BLUEGRASS WATER

Utility Operating Company

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July 29, 2020

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Bluegrass Water Utility Operating Company, Inc.
Persimmon Ridge WWTF
KYPDES Permit No. KY0077674
Agency Interest No. 458

Corrective Action Plan Revision:


I am pleased to submit this update to the Corrective Action Plan for the Persimmon Ridge WWTF approved by EEC/DEP on 12/13/2019. The scope of the original CAP was completed within the projected schedule of the CAP. Triage and repair work has been completed and the plant is in better shape than it was at acquisition. Additional aeration has been installed aimed at lowering the ammonia levels in effluent and improving BOD removal. Basic cleanup and repairs have been made at the facility as well. The facility is consistently meeting limits; however it has historically struggled with BOD and Ammonia in the January to April winter months and continued observation will be required to determine if additional aeration is needed based on its performance in the upcoming months.

Should the facility struggle to comply with BOD and Ammonia limits in these cold months, Bluegrass will apply for a construction permit to either install additional aeration or install a small MBBR to knock ammonia levels down. It will be possible to determine if this additional improvement is necessary by the end of April of 2021, at which point we will send a status update to confirm one way or the other.

Sincerely,

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Jonathan Meany

From: Jonathan Meany
Sent: Wednesday, January 20, 2021 3:12 PM
To: Dement, Wesley T (EEC)
Subject: RE: Kentucky Systems Status Updates

Wes,

Just noticed I attached the old version of the table, only change is that our Ops team agreed to contribute some of their Capital maintenance budget to go ahead and replace the Kingswood UV system now where previously we had planned on delaying that till a year or two from now, so we meant to change the permit box to yes and recommend extending the AOC coverage till the permit was approved and new UV unit installed. This was already reflected in the text below.

Thanks,
Jon

From: Jonathan Meany
Sent: Wednesday, January 20, 2021 3:09 PM
To: 'Dement, Wesley T (EEC)' <wesley.dement@ky.gov>
Cc: Jake Freeman <jfreeman@cswrgroup.com>; Enrique Chavez Jr. (echavez@cswrgroup.com) <echavez@cswrgroup.com>; 'Benjamin Kuenzel' <ben@21designgroup.net>
Subject: Kentucky Systems Status Updates

Wes,

Sorry this took a bit longer to get together than I thought it would with a bunch of extra work popping up the last couple weeks. Attached is a spreadsheet showing the general status of each system acquired by bluegrass and our opinions on next steps and whether they are ready to come off of AOC coverage. I worked on this in coordination with the engineering contractor we have used in Kentucky. The other sheets are the recent testing data for each facility for a closer look at facility performance to date. Below is a quick summary for each system. Mission remote monitoring has been installed at all facilities in addition to the improvements described to provide instant notice of abnormal operating conditions and allow immediate response by operators to prevent treatment issues. This has significantly improved facility performance by stopping issues as or before they start effecting effluent.

Airview- A lot of triage and repair work has occurred and the main aeration plant is in much better shape than it was at acquisition. Vegetation has been cleared, handrails installed, and walkways repaired, the bar screen has been repaired, aeration system improvements have been implemented, the effluent line has been repaired, tanks have been patched and painted. The facility does require a construction permit to complete improvements; this permit application has been submitted. The permit will include conversion of the abandoned lagoon into wet weather storage, including pumping equipment and clearing and repairing the lagoon berms, as well as removal of the deteriorated concrete tank in the creek. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

Brocklyn- Basic cleanup of the site, repairs to the contact chamber (including extending the walls to prevent continued overflows, installation of riprap in the drainage ditch to prevent further erosion, and a full cleanout of the lagoon cell have been completed since acquisition. As discussed previously, the tankage of the Brocklyn extended aeration plant are severely deteriorated with wastewater coming in direct contact with soils in the basin where walls are deteriorating. It has been determined that attempting to excavate around the outside and repair the tank or draining the tanks to make repairs would result in the tank collapsing completely and therefore the plant needs to be replaced. Construction permits for a MBBR extended aeration plant have been submitted and in the permit approval process KYDEP has us currently conducting flow monitoring and exploring the possibility of connecting to a nearby POTW before proceeding with plant replacement. Until it is determined if the plant will be replaced or a connection made to the POTW the plant will continue to operate as is. It is currently consistently meeting limits, but the deteriorating condition of the plant still requires action. We believe till this is resolved the AOC coverage should continue.

Fox Run- Fox run has had many repairs and part replacements completed since acquisition in addition to the general cleanup of the site. The access road and gates were replaced, the tanks have been patched and painted, inappropriately sourced and

installed influent pumps were replaced, damaged piping has been repaired and replaced, and aeration system components have been repaired and replaced. While the system is currently meeting limits, it currently struggles to handle the amount of solids coming through the facility, requiring frequent sludge hauling, and it struggles to keep up during wet weather events. A construction permit has been submitted to add a wet weather storage basin and sludge digester to the plant. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

Golden Acres- Many improvements have been made to the Golden Acres system including repairs and replacement to damaged components, removal of accumulated solids from the pant and effluent line, improvements to control systems, etc. The primary issue with this facility is a poorly designed and improperly sized effluent line leading to regular backups at the plant. The original plant was designed for a 4" effluent line which goes from the plant, makes about a 30° turn and eventually makes another turn of about 120°. These sorts of turns can cause accumulation of solids in the effluent pipe and backup into the plant, leading to flooding and improper flow through the plant, which leads to additional wash-through of solids, compounding the problem. At acquisition this had resulted in the effluent pipe being nearly completely blocked with rags, toilet paper and debris, with these items visibly discoloring effluent and the receiving waters. Further investigation showed that the effluent pipes started and ended at 4" but in fact had been installed with smaller pipe in the underground sections, further exaggerating the issue. A construction permit has been submitted to replace the effluent chamber and effluent line. The replaced line will move the discharge point a short distance downstream from the original discharge, eliminating the turns in the line. The line will also be upsized to 10". It seems that all of the plants issues result from the backups disrupting proper operation of the plant. The permit will also facilitate conversion to peroxyacetic acid disinfection with post aeration to replace the current disinfection system. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

Great Oaks- Significant improvements have been implemented at the Great Oaks facility. The aeration system has had many parts repaired and/or replaced where they had been allowed to fall not disrepair by previous ownership. The influent line which had been damaged and abandoned in favor of flex pipes. The influent lift station was repaired, and the proper influent line repaired and brought back into use. Steel walkways, handrails, and tanks have been sanded, patched, and painted to halt deterioration. Solids have been removed from the plant and it was discovered that the previous ownership had made a practice of dumping sections of piping and other materials into the clarifier. Many pipes, several cell phones and radios, and other debris were removed from the clarifier, restoring proper function to the clarifier. It was found that the damaged steel tank was allowing the digester to leak into the contact chamber, resulting in increased BOD, TSS, and ineffective disinfection. The digester has been removed from service as a result. Effluent quality has improved significantly with occasional exceedances of BOD and TRC as things are getting dialed in. Per the video I sent the other day you can see that at acquisition, the effluent was an opaque grey color, and since our improvements the effluent is now very clear. Additionally, the facility still struggles during rain events, and with the existing digester leaking the facility struggles to handle solids without regular solids removal. A construction permit has been submitted to install a new digester and wet weather storage basin. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

Kingswood- The Kingswood facility has undergone significant improvements since acquisition. The damaged components of the aeration system have been repaired or replaced as needed and the plant was cleaned up and solids were removed from tankage. The plant is currently meeting all limits. The most significant remaining issue at the facility relates to the disinfection system. The UV unit is very old and parts are no longer available for it. The system is oversized so while it is now operating at 2/3 capacity it is still adequate for disinfection currently. Additionally, the sensor that alerts operators to underperforming bulbs is no longer available, so bulbs are being replaced on an aggressive preventative maintenance schedule instead of based on the sensor system. We are in the process of applying for a permit to replace this UV system with a newer one with available parts. We believe the system should remain under AOC coverage until the replacement is completed.

Lake Columbia- The Lake Columbia system has undergone very significant improvements since acquisition. At acquisition, the plant headworks was completely deteriorated, the aeration basin had large holes rusted through in many places, the sludge returns and aeration piping were damaged and not functioning properly, the blower housing was falling apart and the blower was damaged, walkways and handrails were missing or damaged, the contact chamber was falling apart and had holes rusted in it, and there was evidence of overflows from different parts of the plant. The contact chamber and headworks/barscreen tanks were determined to be in need of complete overhaul due to poor condition. Yard piping was replaced to route wastewater from the headworks to the plant and from the plant to the contact chamber. The aeration tankage was sanded, welded and patched, and painted to extend the life of the tanks. The damaged portions of the aeration system were repaired and/or replaced as needed to restore proper function and treatment to the plant. New walkways and handrails were installed. With these upgrades the plant is currently meeting limits, however the plant still struggles during rain events and has very little capacity for handling solids, requiring regular solids removal to prevent a reduced treatment capacity. As a result, a construction permit has been submitted for the installation of wet weather storage basin and a new sludge digester. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

LH Treatment- Significant improvements have been made to the LH Treatment facility. Handrails have been installed around the treatment basins to ensure safe operation. Damaged components of the aeration and classification system have been repaired or replaced to ensure proper treatment can occur. The collapsing chlorine shack has been replaced to ensure proper disinfection can continue and proper containment for the chlorine solution to prevent spills. The facility is mostly meeting limits,

but we have had some issues with pin floc formation leading to E.Coli exceedances, adjustments are being made that should eliminate this issue. There are some significant I&I issues in one part of the collection system that will be worked on to be repaired over the next several years, however the plant is in good condition now and doesn't require further improvements. We believe this system can be removed from the AOC coverage at this time.

Persimmon Ridge- Improvements have been made to this facility. Additional aeration has been installed aimed at lowering the ammonia levels in effluent and improving BOD removal. Basic cleanup and repairs have been made at the facility as well. The facility is consistently meeting limits, however it has historically struggled with BOD and Ammonia in the January to April winter months and we would like to continue to observe and determine if additional aeration is needed based on its performance in the upcoming months. For this reason, we would like to continue the AOC coverage at least through the end of March to see if the system can adequately meet ammonia limits as is in winter weather conditions. After this winter, we will evaluate the winter performance and determine if the facility will need to stay under an AOC for additional upgrades that would most likely include a construction permit.

River Bluffs- Repairs and replacement of damaged equipment is underway at the facility. At acquisition much of the steel equipment was rusted and deteriorating, aeration equipment was in poor condition, and the influent system was in poor condition with improvised piping replacing the proper piping rather than proper repairs. The influent system has been properly repaired, and aeration system overhaul, patching of tanks, replacement of walkways, and installation of handrails is underway. The system performance has improved, and it is mostly meeting limits, but has occasional exceedances related to the improvement work being performed. We do not believe that the improvements remaining will require a construction permit. We believe it is best to maintain AOC coverage until repairs are completed and the facility is consistently meeting limits.

Timberland/Joanne Estates- Significant work has been done to bring this system into compliance. Massive grading work has been performed to restore the lagoon berms, provide for proper lift station installation and piping, and prevent further damage to tanks. The lift station has been overhauled to prevent further splashing of waste out of the plant and restore full function to the station. Aeration system components have been repaired or replaced as needed. Riprap has been installed on the interior of the berm to prevent further berm damage and deterioration and vegetation has been removed from on and around the berms to allow for proper maintenance moving forward. The facility is primarily still struggling to meet TRC and DO limits. A construction permit has been submitted to convert the lagoon into wet weather storage and to replace the existing disinfection system with a peroxyacetic acid disinfection system with post aeration. This plant struggles to meet ammonia when we have the May 1 to Oct 31 limits. We are upgrading this plant to have an mbbf in the old plant. These improvements should bring the facility into consistent compliance with permitted limits. While we wait on the construction permit approval and upgrades are completed, we believe it is best to maintain AOC coverage for this facility.

Let me know if you need any additional information, and any additional follow up or discussions you'd like to have concerning these.

Thanks,

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