

BEFORE THE TENNESSEE REGULATORY AUTHORITY

NASHVILLE, TENNESSEE

April 9, 2018

**IN RE: PETITION OF AQUA GREEN UTILITY INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE
AND NECESSITY**

DOCKET NO: 18-00019

Petition of Aqua Green Utility Inc. to amend its Certificate of Convenience and Necessity

Aqua Green Utility Inc. would like to add the following information. Additionally we would like to add our final SOP permit.

1. Aqua Green Utilities physical Office address:

Aqua Green Utility Inc
3350 Galts Rd
Acworth, GA 30102

- 2 We have included the final SOP permit SOP-17024 and a map of the site
3. Magazine article included
4. The system will be built at one time not in phases
5. The design capacity of the system (GPD) .0204 MGD
6. The depreciation rates that you intend to use for each plant account that will be on the wastewater utility's books. Include the estimated useful life of each account. Explain the basis for the rates.

This information is from my CPA

It would be considered nonresidential real estate, which is depreciated over 39 years. The first year the rate depends on what month it goes into service, but after the first year it's 2.564% (ie \$10,174). See this table for year 1 and year 40 rate (from pub 946):

**Table A-7a. Nonresidential Real Property
Mid-Month Convention
Straight Line—39 Years**

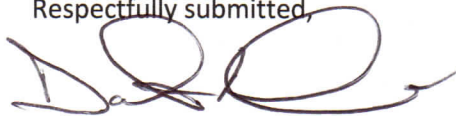
Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	2.461%	2.247%	2.033%	1.819%	1.605%	1.391%	1.177%	0.963%	0.749%	0.535%	0.321%	0.107%
2-39	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564
40	0.107	0.321	0.535	0.749	0.963	1.177	1.391	1.605	1.819	2.033	2.247	2.461

7. The total cost of construction of the wastewater system is the amount listed in the confidential contract previously sent.
8. Provide a detailed breakdown of the estimated amount of contributed capital that will be recorded on the applicant's financial books.

The amount of contributed capital will be \$396,800.00

9. I have included a signed copy UD-20 signature page for the document sent previously

Respectfully submitted,



Dart Kendall
Aqua Green Utility Inc.



FORM UD-20
(Excel Format)

TENNESSEE REGULATORY AUTHORITY
STATEMENT OF GROSS EARNINGS AND COMPUTATION OF INSPECTION FEE
DUE DATE: April 1, 2016

COMPANY ID #: 128065
COMPANY NAME: Aqua Green Utility, Inc.

State the gross receipts from all sources of the utility for the calendar year 2015 per T.C.A. § 65-4-303:

Energy & Water Gross Receipts IN TENNESSEE:

Gas Revenues	_____
Electric Revenues	_____
Water Revenues	_____
Miscellaneous	_____
	\$ 22,316

<u>TOTAL TENNESSEE INTRASTATE GROSS RECEIPTS</u>	\$ 22,316
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COMPUTATION OF FEE

1. Tennessee Intrastate Gross Receipts	\$ 22,316
2. Less Exemption	\$ (5,000)
3. Net Tennessee Gross Receipts (Line 1 minus Line 2)	\$ 17,316
4. Computed Fee (Line 3 x 0.425%)	\$ 74
5. <u>TOTAL INSPECTION FEE</u> (THE GREATER OF LINE 4 OR \$100)	\$ 100

NOTE: A PENALTY OF 10% PER MONTH OR FRACTION THEREOF, PURSUANT TO T.C.A. § 65-4-308, WILL BE ASSESSED FOR LATE PAYMENT IF NOT PAID ON OR BEFORE APRIL 1st.

I attest that I have the authority to submit this form on behalf of the regulated entity and that the figures above accurately state the gross receipts from all sources of the utility in Tennessee for the Calendar Year 2015.

NAME: _____ (Please Print) SIGNATURE: _____
TITLE: President TELEPHONE: _____
DATE: _____ EMAIL: _____

Google Maps



Higher Levels

A STEP system with trickling biofilter serves a high-end lakefront subdivision on a site with substantial change in elevation

By Scottie Dayton

A developer wanted to build 108 weekend lake homes in an exclusive subdivision in Dandridge, Tenn. Dart Kendall, owner of Advanced Septic in Acworth, Ga., won the bid to design and install the private wastewater treatment plant.

Kendall worked with Bob Faulhaber, P.E., of Faulhaber Engineering and Sustainability in Cookeville, Tenn., to resolve site challenges. "The elevation rose 200 feet from one end of the subdivision to the drip fields, and some homes were a mile away from them," says Kendall.

The autonomous-redundant solution involved septic tank effluent pumping (STEP) systems, a trickling biofilter, high-pressure drip dosing, and programmable logic controllers (PLCs). The installation took four months.

Site conditions

Soils are moderate angular blocky structure with 0.24 gallons per square foot per day loading rate. The steep and rocky site borders Douglas Lake at the foot of Great Smoky Mountains National Park.

System components

Kendall and Faulhaber designed the system to handle 26,460 gpd. Major components are:

- 1,000-gallon dual-compartment one-piece precast septic tank with Polylok effluent filter and two Polylok risers. Concrete tanks from Hommel Concrete, Newport, Tenn.
- 1,000-gallon single-compartment one-piece precast pump tank with 1/2 hp Myers high-head effluent pump
- 240 CF-1900 AccuPac Cross Flow trickling filter blocks from Brentwood Industries
- 35,000-gallon concrete dosing tank with duplex 1.5 hp Goulds sewage pumps, duplex Myers 1/2 hp high-head effluent pumps, and duplex 1.5 hp Myers filtered effluent (drip) pumps
- 1.5 hp high-pressure Goulds booster pump
- Three 2-inch disc filters from Arkal Filtration Systems

(continued)



At the left, the 35,000-gallon poured-in-place circular dosing tank; at the right, the treatment tank with shrubs planted around it. (Photos courtesy of Dart Kendall)

SYSTEM PROFILE

Location:	Dandridge, Tenn.
Facility served:	108-home exclusive subdivision
System designers:	Dart Kendall, Advanced Septic, Acworth, Ga.; Bob Faulhaber, P.E., Faulhaber Engineering and Sustainability, Cookeville, Tenn.
Installer:	Dart Kendall, Advanced Septic
Site conditions:	Moderate angular blocky structure with 0.24 gallons per square foot per day loading rate
Type of system:	High-pressure dosed
Hydraulic capacity:	26,460 gpd



ABOVE: Dart Kendall stacks the media blocks (Brentwood Industries) four high in the treatment tank, leaving 12 inches of clearance at the top. RIGHT: Cliff Kendall buries drip tubing 9 inches deep using a Caterpillar 226 skid-steer loader with Bradco trencher (Paladin Construction Group).

- Three elevated tanks from ChemTank holding a combined 20,000 gallons
- 40,000 feet of Geoflow drip tubing with 10 Rain Bird 2-inch solenoid valves
- Flowmeter from SeaMetrics
- DirectLOGIC 205 PLC system from Koyo Electronics Industries Co. (AutomationDirect)

"The elevation rose 200 feet from one end of the subdivision to the drip fields, and some homes were a mile away from them."

Dart Kendall

System operation

Effluent from the STEP pump tanks enters a 1.25- to 4-inch PVC Schedule 40 force main discharging to the dosing tank. At 10,000 gallons, the alternating high-head effluent pumps send 2,000 gallons to the elevated tanks 70 feet higher than the treatment plant. Hydrostatic pressure then feeds water through disc filters in the control room to eight mister sprayers totaling 3 gpm in eight risers on the treatment tank.

"Running the misters continually feeds the microorganisms and produces much cleaner effluent for less energy," says Kendall. "Digestion is so thorough that there is very little biomass, which sloughs off, drains to the dosing tank, and is pumped out eventually. Our BOD levels are less than 2 mg/L."

The spray system also has 16 mid-size sprayers totaling 30 gpm that activate as needed, and eight sprayers delivering a combined 300 gpm to dispense shock loads. The latter run only with the plant at capacity.

The 2- by 2- by 4-foot media blocks, stacked four deep inside the treatment tank and surrounding a hollow center column, sit on adjustable bases with cut-to-length stanchions that make sure the blocks clear the ceiling by 12 inches. Two 1/3 hp fans in the tank pull 30,000 cfm of air down through the blocks and exhaust it out the column. Intake and exhaust pipes have carbon scrubbers to prevent odors during power failures.

Each block has 48 square feet of surface area per cubic foot. After trickling through the media, effluent drips out the bottom of the stacks to the



floor drain and gravity flows to the dosing tank. When the system is at capacity, the sewage recirculating pumps will run every five minutes. An effluent pump sends water to the 3.5-acre drip field via a 3-inch PVC pipe sized to reduce friction loss.

Because the field is 100 feet of head above the plant, the booster pump in the control room cycles with the effluent pump to supply enough pressure. All the pumps run daily for a minute to prevent corrosion. Solid-state relays switch them on and off.

The drip field has 10 zones with 20 lines of tubing 200 feet long and 2.5 feet apart. Each emitter delivers one gallon per hour. Solenoid valves with pressure-regulators control the zones. Pressures average 20 psi, but reach 180 psi going to the highest points.

Dose sizes vary depending on soil absorption rates. The computer reads the flowmeter to check for blown tubes or leaks. When they occur, the computer turns off the zone, bypasses it, and sends Kendall a text message.

Two 12-volt backup batteries run the plant during power outages, ensuring that the elevated tanks feed the sprayers. If the power is out for more than a day, Kendall brings a generator.

Installation

Subcontractors installing STEP systems as homes are built follow a specification booklet written by Kendall. Another subcontractor installed the force main.

Kendall's crew cleared trees before digging 50-foot-diameter, 11-foot-deep holes for the 35,000-gallon circular underground tanks and control room. A Caterpillar excavator with rock teeth on the bucket enabled the operator to flake out shale, which he struck at 3 feet below the surface.

"We made the circular tank forms," says Kendall. "They're a little more difficult to pour, but the structure is much stronger than square tanks. We needed that strength with all the rock in the soil." The 40-foot-diameter, 9-foot-deep tanks have 8-inch-thick walls of 4,000 psi fiber mesh concrete with steel rebar.

(continued)

Kendall hauled each media block through a hatch in the treatment tank lid and down a ladder. Beginning at the center column and working out, he placed the bottom layer cantilevered across and at right angles to the 8-inch-wide AccuPier supports on 24-inch centers. He set additional layers at 90 degrees to the one below. "The pattern maximizes mixing and distribution, while increasing strength and stability," he says.

After workers laid piping for the sprayers on top of the tank and hung the spray heads in the risers, they covered the structure with 18 inches of insulating wood chips made from the cleared trees. A second team cleared a place in a wooded hollow and set the three elevated tanks.

The crew targeted softwoods when clearing some trees from the drip field. "We prefer installing drip fields in woods because hardwood trees uptake 22 mg/L of total nitrogen, and the highest we've seen from this system is 3 mg/L," says Kendall.

Workers used a custom-built 16-inch disc-cutting saw that fit between tightly spaced trees to install drip tubing 9 inches deep on slopes with up to 60 percent grade. A 6.5 hp chain saw engine powered the saw. They buried pressure mains from the plant to the drip field using a tracked Caterpillar 226 skid-steer loader with Bradco trencher (Paladin Construction Group).

For additional stability, Kendall's son, Cliff, mounting dual wheels on the downhill side of the LM42 Vermeer walk-beside vibratory plow with 50 hp turbo diesel. "Even then, we still occasionally chained the skid-steer or backhoe to the plow to prevent it from rolling down the hill," says Kendall. Installing a zone took four to five days.

Workers fenced the drip field and posted warning signs. They also landscaped the area around the underground complex.

Maintenance

Kendall's Aqua Green Utility, a Tennessee wastewater utility, owns and



Cliff Kendall (right) and Barry Little install Geoflow drip tubing using a modified LM42 Vermeer walk-beside vibratory plow with 50 hp turbo diesel. The plow has dual wheels on the downhill side.

operates the system. To eliminate human error and reduce maintenance calls, he built PLC control panels and had software written for them. The autonomous system notifies Kendall via text messages if mechanical devices fail, enabling him to send a replacement with the technician on weekly visits. "From an operational standpoint, this saves a tremendous amount of money," says Kendall.

Until the replacement arrives, the computer turns on the redundant component. If technicians forget to turn on the pumps after servicing them, the computer activates them in eight hours. When pressure differential switches on the disc filters indicate they are clogging, the computer turns on the drip pump to backflush them. "We put excessive time into designing efficiency," says Kendall. □

MORE INFO:

Arkal Filtration Systems PEP Filters
704/662-3133
www.arkal-filters.com

AutomationDirect
800/633-0405
www.automationdirect.com

Brentwood Industries
610/236-1100
www.brentwoodprocess.com

Geoflow, Inc.
800/828-3388
www.geoflow.com

Goulds Water Technology
866/325-4210
www.completewatersystems.com/brands/goulds

Myers
262/728-5551
www.femyers.com

Polylok/Zabel Environmental
877/765-9565
www.polylok.com
(See ad page 44)

Rain Bird
877/727-8772
www.rainbird.com

SeaMetrics Inc
800/975-8153
www.seametrics.com

CONFIDENTIAL

LOC



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

April 7, 2018

Mr. Dart Kendall, President
Aqua Green Utility, Inc.
e-copy: dart@aquagreenutility.com
3350 Galts Road
Acworth, GA 30102

Re: State Operating Permit No. SOP-17024
Aqua Green Utility, Inc. - Cedar Brooke Subdivision
Cedar Brooke Subdivision
Spring Hill, Maury County, Tennessee

Dear Mr. Kendall:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.), Sections 69-3-101 through 69-3-120, the Division of Water Resources hereby issues the enclosed State Operating Permit. The continuance and/or reissuance of this Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that a petition for permit appeal may be filed, pursuant to T.C.A. Section 69-3-105, subsection (i), by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application. Additionally, for those permits for which the department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment. Any petition for permit appeal under this subsection (i) shall be filed with the technical secretary of the Water Resources Board within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel.

If you have questions, please contact the Columbia Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Mr. Allen Rather at (615) 532-5819 or by E-mail at Allen.Rather@tn.gov.

Sincerely,

Brad Harris, P.E.
Manager, Land-Based Systems

Enclosure

cc/ec: Water-based Systems File
Columbia Environmental Field Office
Ms. Patsy Fulton, Utility Rate Specialist, Tennessee Regulatory Authority, Patsy.Fulton@tn.gov
Ms. Michelle Ramsey, Utilities Division, Tennessee Regulatory Authority, michelle.ramsey@tn.gov

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Permit No. SOP-17024

PERMIT

For the operation of Wastewater Treatment Facilities

In accordance with the provision of Tennessee Code Annotated section 69-3-108 and Regulations promulgated pursuant thereto:

PERMISSION IS HEREBY GRANTED TO

Aqua Green Utility, Inc.- Cedar Brooke Subdivision
Spring Hill, Maury County, Tennessee

FOR THE OPERATION OF

The system consists of a STEP collection system with recirculating media filter and fenced drip dispersal area located at latitude 35.699475 and longitude -86.836264 in Maury County, Tennessee to serve approximately 68 homes in the Cedar Brooke Subdivision. The design capacity of the system is .0204 MGD.

This permit is issued as a result of the application filed on November 20, 2017, in the office of the Tennessee Division of Water Resources. This permit is contingent on the submission and department approval of construction plans, specifications and other data in accordance with rules of the department. Updated plans and specifications must be approved before any further construction activity.

This permit shall become effective on: April 30, 2018

This permit shall expire on: April 30, 2023

Issuance date: April 16, 2018

for Tisha Calabrese Benton
Director

A. GENERAL REQUIREMENTS

The treatment system shall be monitored by the permittee as specified below:

<u>Parameter</u>	<u>Sample Type</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Measurement Frequency</u>
Flow *	Totalizer			Daily
BOD ₅	Grab	45 mg/l	N/A	Once/Year
Ammonia as N	Grab	Report	N/A	Once /Quarter

* Report average daily flow for each calendar month.

Sampling requirements in the table above apply to effluent being discharged to the drip irrigation plots.

This permit allows the operation of a wastewater collection, treatment, and storage system with disposal of treated wastewater through approved land application areas. There shall be no discharge of wastewater to any surface waters or to any location where it is likely to enter surface waters. There shall be no discharge of wastewater to any open throat sinkhole. In addition, the drip irrigation system shall be operated in a manner preventing the creation of a health hazard or a nuisance.

The land application component shall be operated and maintained to ensure complete hydraulic infiltration within the soil profile, transmission of the effluent away from the point of application, and full utilization of the soil profile as a portion of the treatment system.

Instances of surface saturation, ponding or pooling within the land application area as a result of system operation are prohibited. Instances of surface saturation, ponding or pooling shall be promptly investigated and noted on the Monthly Operations Report. The report shall include details regarding location(s), determined cause(s), the actions taken to eliminate the issue, and the date the corrective actions were made. Any instances of surface saturation, ponding or pooling not associated with a major precipitation event not corrected within three days of discovery shall be reported to the local Environmental Field Office at that time for investigation. Surface saturation, ponding or pooling resulting in the discharge of treated wastewater into Waters of the State or to locations where it is likely to move to Waters of the State shall be immediately reported to the local Environmental Field Office, unless the discharge is separately authorized by a NPDES permit.”

All drip fields shall be fenced sufficiently to prevent or impede unauthorized entry as well as to protect the facility from vandalism. Fencing shall be a minimum of four feet in height. Fencing shall be constructed of durable materials.

Gates shall be designed and constructed in a manner to prevent or impede unauthorized entry. All designs are subject to division approval. Fence shall be installed prior to beginning of operation.

All drip lines shall be buried and maintained 6 to 10 inches below the ground surface.

The site shall be inspected by the certified operator or his/her designee, at a minimum, once per fourteen days (default) OR in accordance with an operating and maintenance inspection schedule in the permit administrative file record. The default inspection frequency will apply if an operating and maintenance inspection schedule is not submitted to be a part of the permit administrative file record. The operating and maintenance inspection schedule shall at a minimum evaluate the following via onsite visits or telemetry monitoring or a combination of the two:

- the condition of the treatment facility security controls (doors, fencing, gates, etc.),
- the condition of the drip area security controls (doors, fencing, gates, etc.),
- the condition of the site signage,
- the operational status of the mechanical parts of the treatment system (pumps, filters, telemetry equipment, etc.)
- the condition of the UV bulbs (if applicable)
- the condition of the land application area including the location of any ponding
- the name of the inspector
- the description of any corrective actions

Submission of the schedule, or revisions to the schedule, may be submitted to the division electronically. The schedule shall be submitted on or before the effective date of the permit. The permittee is responsible for maintaining evidence that the schedule, or revisions, have been submitted to the division.

B. MONITORING PROCEDURES

1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge, and shall be taken at the following location(s):

Effluent to drip irrigation plots.

2. Test Procedures

Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR, Part 136.

C. DEFINITIONS

The "daily maximum concentration" is a limitation on the average concentration, in milligrams per liter, of the discharge during any calendar day.

The "*monthly average concentration*", other than for *E. coli* bacteria, is the arithmetic mean of all the composite or grab samples collected in a one-calendar month period.

A "grab sample" is a single influent or effluent sample collected at a particular time.

For the purpose of this permit, "*continuous monitoring*" means collection of samples using a probe and a recorder with at least one data point per dosing cycle.

A "quarter" is defined as any one of the following three-month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, and/or October 1 through December 31.

"Wastewater" for the purpose of this permit means "sewage" as defined in TCA 69-3-103

D. REPORTING

1. Monitoring Results

Monitoring results shall be recorded consistent with the general requirements imposed in Part A above OR in accordance with the operating and maintenance inspection schedule in the permit administrative file record and submitted quarterly.

Submittals shall be postmarked no later than 15 days after the completion of the reporting period. A copy should be retained for the permittee's files. Monitoring results shall be reported in a format approved by the division. Operation reports and any communication regarding compliance with the conditions of this permit must be sent to:

Division of Water Resources
Columbia Environmental Field Office
1421 Hampshire Pike
Columbia, TN 38401

The first operation report is due on the 15th of the month following the quarter containing the permit effective date. Until the construction of the treatment system is complete and the treatment system is placed into operation, operational reports shall report "monitoring not required".

2. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in Rule 0400-40-05-.07(2)(h)2, the results of such monitoring shall be included in the calculation and reporting of the values required in the Quarterly Operation Report. Such increased frequency shall also be indicated.

3. Falsifying Reports

Knowingly making any false statement on any report required by this permit may result in the imposition of criminal penalties as provided for in Section 69-3-115 of the Tennessee Water Quality Control Act.

4. Signatory Requirement

All reports or information submitted to the commissioner shall be signed and certified by the persons identified in Rules 0400-40-05-.05(6)(a-c).

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

The permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Resources (the "Director") no later than 180 days prior to the expiration date.

2. Right of Entry

The permittee shall allow the Director, or authorized representatives, upon the notification of permittee and presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;

b. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and

c. To sample at reasonable times any discharge of pollutants.

3. Availability of Reports

All reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Resources.

4. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.

The monitoring frequency stated in this permit shall not be construed as specifying a minimum level of operator attention to the facility. It is anticipated that visits to the treatment facility by the operator will occur at intervals frequent enough to assure proper operation and maintenance, but in no case less than one visit every fourteen days OR in accordance with an operating and maintenance inspection schedule in the permit administrative file record. If monitoring reports, division's inspection reports, or other information indicates a problem with the facility, the permittee may be subject to enforcement action and/or the permit may be modified to include increased parameter monitoring, increased monitoring frequency or other requirements as deemed necessary by the division to correct the problem. The permittee shall ensure that the certified operator is in charge of the facility and observes the operation of the system frequently enough to ensure its proper operation and maintenance regardless of the monitoring frequency stated in the permit

Dilution water shall not be added to comply with effluent requirements.

5. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

6. Severability

The provisions of this permit are severable. If any provision of this permit due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this permit shall not be affected thereby.

7. Other Information

If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he shall promptly submit such facts or information.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

2. Permit Modification, Revocation, or Termination

a. This permit may be modified, revoked and reissued, or terminated for cause as described in Section 69-3-108 (h) of the Tennessee Water Quality Control Act as amended.

b. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

3. Change of Ownership

This permit may be transferred to another person by the permittee if:

a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and

c. The Director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

4. Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

C. NONCOMPLIANCE

1. Effect of Noncompliance

Any permit noncompliance constitutes a violation of applicable State laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the appropriate Division environmental field office within 24 hours from the time the permittee becomes aware of the circumstances. (The environmental field office should be contacted for names and phone numbers of emergency response personnel.)

A written submission must be provided within five days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

- i. A description of the discharge and cause of noncompliance;
- ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
- iii. The steps being taken to reduce, eliminate, and prevent recurrence of the non complying discharge.

b. Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph 2.a. above, the permittee shall report the noncompliance on the Quarterly Operation Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Overflow

- a. "**Overflow**" means the discharge of wastewater from any portion of the collection, transmission, or treatment system other than through permitted outfalls.
- b. Overflows are prohibited.
- c. The permittee shall operate the collection system so as to avoid overflows.

d. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic overflows (greater than 5 events per year) or would otherwise overload any portion of the system. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic overflow point are less than or proportional to the amount of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to a Monthly Operating Report submitted to the local TDEC Environmental Field Office on a quarterly basis. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

e. In the event that more than 5 overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion of the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Resources EFO staff to petition for a waiver based on mitigating evidence.

4. Upset

a. "**Upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- i. An upset occurred and that the permittee can identify the cause(s) of the upset;
- ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
- iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and
- iv. The permittee complied with any remedial measures required under "Adverse Impact."

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Bypass

- a. **"Bypass"** is the intentional diversion of wastewater away from any portion of a treatment facility.
- b. Bypasses are prohibited, unless:
 - i. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - iii. For anticipated bypass, the permittee submits prior notice, if possible at least ten days before the date of the bypass; or
 - iv. For unanticipated bypass, the permittee submits notice of an unanticipated bypass within 24 hours from the time that the permittee becomes aware of the bypass.
- c. A bypass that does not cause effluent limitations to be exceeded may be allowed only if the bypass is necessary for essential maintenance to assure efficient operation.
- d. "Severe property damage" when used to consider the allowance of a bypass means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

D. LIABILITIES

1. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

PART III OTHER REQUIREMENTS

A. CERTIFIED OPERATOR

The waste treatment facilities shall be operated under the supervision of a Biological Natural System certified wastewater treatment operator and collection system shall be operated under the supervision of a the grade I certified collection system operator in accordance with the Water Environmental Health Act of 1984.

B. PLACEMENT OF SIGNS

The permittee shall place a sign at the entrance to the land application area if fenced or all reasonable approaches to the land application area. The sign should be clearly visible to the public. The minimum sign size should be two feet by two feet (2' x 2') with one inch (1") letters. The sign should be made of durable material

<p>RECLAIMED WASTEWATER DRIP IRRIGATION (PERMITTEE'S NAME) (PERMITTEE'S PHONE NUMBER) TENNESSEE DIVISION OF WATER RESOURCES Columbia Environmental Field Office PHONE NUMBER: 1-888-891-8332</p>

No later than sixty (60) days from the effective date of the permit, the permittee shall have the above sign(s) on display in the location specified. New facilities must have the signs installed upon commencing operation.

C. ADDITION OF WASTE LOADS

The permittee may not add wasteloads to the existing treatment system without the knowledge and approval of the division.

D. SEPTIC (STEP) TANK OPERATION

The proper operation of this treatment system depends, largely, on the efficient use of the septic tank. The solids that accumulate in the tank shall be removed at a frequency that is sufficient to insure that the treatment plant will comply with the discharge requirements of this permit.

E. SEPTAGE MANAGEMENT PRACTICES

The permittee must comply with the provisions of Rule 0400-48-01-.22. If the septage is transported to another POTW for disposal, the permittee shall note the amount of septage wasted in gallons and name of the facility the hauler intends to use for disposal of the septage on the monthly operation report. Sludge or any other material removed by any treatment works must be disposed of in a manner which prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

F. OWNERSHIP OF THE TREATMENT FACILITIES

a. The permittee shall own the treatment facilities (and the land upon which they are constructed) including the land to be utilized for drip or spray irrigation. A perpetual easement (properly recorded) may be accepted in lieu of ownership. Evidence of ownership of the treatment facility land application site(s) and/or a copy of the perpetual easement(s) must be furnished to the division for approval prior to construction of the wastewater collection and treatment system. Signed agreements stating the intent of the existing landowner to transfer ownership may be provided to support permit issuance. Final SOP's will not be issued without establishing ownership/access rights.

b. Where the treatment facility serves private homes, condominiums, apartments, retirement homes, nursing homes, trailer parks, or any other place where the individuals being served have property ownership, rental agreements, or other agreements that would prevent their being displaced in the event of abandonment or noncompliance of the sewerage system, ownership of the treatment facilities must be by a municipality, a public utility, a wastewater authority, or a privately owned public utility (having a Certificate of Convenience and Necessity from the Tennessee Regulatory Authority), or another public agency.

Attachment 1
STATE OF TENNESSEE

**DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES-LAND BASED SYSTEMS UNIT**

William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243

MEMORANDUM

TO: Brad Harris, P.E. Land Based Systems Unit

FROM: Allen Rather, DWR- Land Based Systems Unit

DATE: 12/28/2017

SUBJECT: LCSS/SFDS (Class V Injection) Approval
Aqua Green Utility, Inc. – Cedar Brooke Subdivision
Spring Hill, Maury County, Tennessee
UIC File MAU 0000058 SOP-17024

The Division of Water Resources has reviewed the submittal of an Application for Authorization to Operate a Class V Underground Injection Well (Large Capacity Septic System/Subsurface Fluid Disposal System) utilizing drip dispersal for the waste water at the Cedar Brooke Subdivision located at Spring Hill, Maury County, Tennessee. This Division approves the application dated 11/20/2017.

If at any time the Division learns that a ground water discharge system may be in violation of The Tennessee Water Quality Control Act, the Division shall:

- a. require the injector to apply for an individual permit;
- b. order the injector to take such actions including, where required, closure of the injection well as may be necessary to prevent the violation; or
- c. take enforcement action.

All groundwater discharge activities must operate in such a manner that they do not present a hazard to groundwater.

In accordance with Underground Injection Control (UIC) Rule 0400-45-06-.14 (3) "The owner of a Class V well shall be responsible for notifying the Department of change in ownership." This notification must be made to this Division within thirty (30) days of the change in ownership.

Also note that according to Underground Injection Control (UIC) Rule 0400-45-6-.14 (8)(d) "Upon completion of the well, the owner or operator must certify to the Department that the well has been completed in accordance with the approved construction plan, and must submit any

other additional information required". The certification must be submitted to the UIC Program within thirty (30) days upon the completion/closure of the Class V well.

This Division will require a minimum of seven (7) working days advance notice before the construction on the drip system is to begin to allow for a witness from this Division to be present.

No drip emitters are to discharge directly into an open throat or crevice in the subsurface. All drip lines are to be installed on contour.

Our concurrence with your approach does not imply that this procedure is exempt from future changes or restrictions in the Underground Injection Control (UIC) Regulations, or any additional requirements set forth by the Division in order to protect the groundwater of Tennessee.

A copy of this authorization must be kept on site until the development has been completed and must be made available to inspection personnel.

Should you have any questions or comments please feel free to contact me at (615) 532-5819 or allen.rather@tn.gov.

c: file

RATIONALE

Aqua Green Utility, Inc. - Cedar Brooke Subdivision

STATE OPERATION PERMIT NO. SOP-17024

Spring Hill, Maury County, Tennessee

Permit Writer: Mr. Allen Rather

FACILITY CONTACT INFORMATION:

Mr. Dart Kendall

President

Phone: (865) 908-0432

dart@aquagreenutility.com

Franklin Pike between Joe Peay Rd. and Will Brown Rd.

Acworth, GA 30102

- Activity Description:** Treatment of domestic wastewater via a decentralized waste water system to support construction of 68 residential establishments in a subdivision. Design is based on 3 bedrooms per unit with a system average design flow rate of 20,400 gpd (0.0204 MGD). The applicant is Aqua Green Utility who does business in Tennessee as a privately-owned public utility. Application for a Certificate of Convenience and Necessity (CCN) from the Public Utility Commission is being processed under Docket #1800019 by that agency. The engineering report and construction plans and specifications are being reviewed via plans tracking number WPN 17.0866. The design engineer is FES Consulting.
- Facility location:** Franklin Pike between Joe Peay Rd. and Will Brown Rd.
- Name of the nearest stream:** Little Flat Creek; No discharge allowed.
- Treatment system:** Septic tank effluent pump (STEP) collection system, recirculating media filter and fenced drip dispersal area.
- Permit period:** This permit will be issued for a five year period effective from the issuance date on the title page.
- Terms & Conditions:** BOD₅ is a standard measure of sewage strength. The 45 mg/L daily maximum limit is the required treatment standard for domestic waste water in Tennessee. Ammonia and BOD₅ reporting serve to demonstrate the treatment system is meeting minimum treatment standards. Land application, versus stream discharge, enables reduced monitoring frequency for these parameters. Narrative conditions for drip disposal and septage management are proposed in support of proper system operation to prevent runoff to streams and avoidance of nuisance conditions.

- Financial Security:** Privately-owned public utilities provide financial security to the Public Utility Commission that to comply with TCA 69-3-122.
- Annual Maintenance Fee:** An annual maintenance fee for the permit will apply after permit issue and upon receipt of an invoice. The fee is currently \$350.00 for non-discharging facilities with influent flow less than 0.075 MGD.
- Items Requisite for Issue:** This draft permit proposes terms and conditions for planning purposes and public comment opportunity. Issuance of a final permit is contingent on the following:
- Approval of sewerage system construction plans and specifications per TCA 69-3-108(i),
 - Final construction inspection and submission of O &M manual per Rule 0400-40-02-.09,
 - Receipt of a CCN issued by the Public Utility Commission, and
 - Utility ownership of sewerage system assets consistent with TCA 68-221-414 and Rule 0400-40-16-.02(8). Sewerage system assets broadly consist of those units integral to the collection, treatment and disposal of both the solid and liquid component of sewage (i.e. septic tanks and pumps, collection lines, treatment system and drip irrigation area and related appurtenances).