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PWS_2430001_CO_20141229_PlanLtr

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 29, 2014

Mr. Kerry D. Maroney, P.E.
Biggs & Mathews, Inc.
2500 Brook Avenue
Wichita Falls, TX 76301-6105

Re: City of Wichita Falls - Public Water System ID No. 2430001
Temporary Direct Potable Reuse Water Treatment Plant - TP410791
Proposed Ultraviolet Disinfection System
Engineer Contact Telephone: (940) 766-0156
Plan Review Log No. P-11132014-113
Wichita County, Texas

CN600129316; RN105598759

Dear Mr. Maroney:

On December 8, 2014, the Texas Commission on Environmental Quality (TCEQ) received an email, from David Sloan of Freese and Nichols, which requests an extension of the TCEQ's conditional approval of the City of Wichita Falls' Emergency Temporary DPR Project. We acknowledge the role that this project has played in addressing the City's water supply needs during this period in which the City's reservoirs are drastically impacted by the ongoing drought. The City **may continue operation** of the Emergency Temporary DPR Project under the conditions of the TCEQ letter dated August 5, 2014 **until February 28, 2015** as requested.

On November 13, 2014, the Texas Commission on Environmental Quality (TCEQ) received planning material with your letter dated November 12, 2014 for the proposed ultraviolet (UV) disinfection system. Supplemental information to complete the submittal was received by email on December 12, 2014. Based on our review, the project generally meets the minimum requirements of Title 30 Texas Administrative Code (TAC) Chapter 290 – Rules and Regulations for Public Water Systems and the conditions of the TCEQ validation and exception letters. The project is **conditionally approved for construction** if the project plans and specifications meet the following requirements:

1. The installed unit must comply with the design criteria summarized in TCEQ Letter dated October 14, 2014 (attached). The reactor's validated dose, the reduction equivalent dose, and predicted output of the UV sensor must be determined by the formulas contained in the letter and the dose coefficients A' , B' , C' , D' , E' , and F' must match the approved Validation Report "Trojan Technologies UV Validation of the Trojan UVSwift 8L24-2L", Revision B dated March 2008. **The formulas and dose coefficients must be confirmed for the installed system before any inactivation credit can be granted on the SWMOR-Alt.**

2. The system must comply with all conditions stated in the Technical Review and Oversight Team's exception letter dated November 24, 2014 (enclosed) concerning UV disinfection.
3. The SCADA System shall be programmed to show a continuous value and record the fifteen-minute interval of the following values:
 - a. D_{Val} = Validated UV Dose, in millijoule (mJ)/ square centimeter (cm²);
 - b. UVT = UV water transmittance through 1 cm, measured at 254 nm, expressed as a value between 70 and 98;
 - c. S = UV intensity measured by the sensor output under actual operating conditions, in milliwatts (mW)/cm²;
 - d. Q = The instantaneous Flow rate, in million gallons per day (MGD); and
 - e. P = Lamp power ballast setting, in percentage;
4. The engineer or owner will notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the work has been completed essentially according to the plans and change orders on file with the commission as required in 30TAC §290.39(h)(3). **The notification should request extension of the Direct Potable Reuse project for an additional period of time (not to exceed one year.) The letter shall also describe the efforts towards other solutions for providing drinking water.**
5. Along with the completion notification, documentation such as screenshots and code printouts and fifteen-minute data for one day must be included to substantiate that the formulas including boundary conditions and dose coefficients being used in the installed system match the validation report and approval letter. Specifically include:
 - a. Screen shots of the code showing bounding formulas restricting the input power level, flow rate, UVT, RED and log-inactivation to the validated parameters.
 - b. Screen shot of the S_0 coefficient used at this facility. Also include a copy of the parameters used to calculate S_0 shown in number 8 of the October 14, 2014 TCEQ validation approval letter.
 - c. Screen shots of the formula or look up tables used to produce the log-inactivation numbers for the facility.
 - d. Fifteen-minute data for one day with varying flow and power levels, showing the collected values for flow rate, UVT, measured UV dose, sensor correction factor, the number of lamps in service, and the calculated minimum UV dose for each set of 15-minute data. Please also include a copy of the printout of the SWMOR-Alt spreadsheet's UV-CDA, UV-Sensor Data, and UV-UVT Analyzer worksheets that cover that same day.

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Please submit the completion notification and documents to the Plan & Technical Review Section (MC -159) using the address at the end of this letter.

The submittal consisted of six sheets of engineering drawings and technical specifications. The approved project consists of:

- One (1) TrojanUVSwift™ 8L24-2L UV disinfection system consisting of two (2) light reactor vessels each equipped with two (2) medium-pressure lamps capable of 70-98% UV transmittance. The UV disinfection system is rated to operate at flow rate between 1.0 and 10.0 MGD with one reactor vessel on standby in a parallel configuration. The two units are installed after the two existing Reverse Osmosis Permeate Tanks. The system includes an on-line UVT sensor and monitor.; and
- All necessary valves, fittings, yard piping, and appurtenances including 120-inches of straight pipe upstream from each unit with no valves or no appurtenances that will alter the hydraulic flow characteristics in the reactor.

This approval is for the construction of the above listed items only. Any wastewater components contained in this design were not considered.

The project is located at the Cypress Surface Water Treatment Plant at the northwest corner of the intersection of Big Ed Neal Drive and Johnson Road in Wichita County, Texas.

The City of Wichita Falls public water supply system provides water treatment.

An appointed engineer must notify the TCEQ's Region 3 Office in Abilene at (915) 698-9674 when construction will start. Please keep in mind that upon completion of the water works project, the engineer or owner will notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the work has been completed essentially according to the plans and change orders on file with the commission as required in 30 TAC §290.39(h)(3).

Please refer to the Utilities Technical Review Team's Log No. P-11132014-113 in all correspondence for this project. This will help complete our review and prevent it from being considered a new project.

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittal to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on our website at the address shown below.

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

For future reference, you can review part of the Utilities Technical Review Team's database to see if we have received your project. This is available on the TCEQ's homepage on the Internet at the following address:

<https://www.tceq.texas.gov/drinkingwater/planrev.html/#status>

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You can download most of the well construction checklists and the latest revision of 30 TAC Chapter 290 – Rules and Regulations for Public Water Systems from this site.

If you have any questions concerning this letter or need further assistance, please contact Mr. Craig A. Stowell at (512) 239-4633 or by email at craig.stowell@tceq.texas.gov or by correspondence at the following address:

Utilities Technical Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,



Craig A. Stowell, P.E.
Utilities Technical Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality



Vera Poe, P.E., Team Leader
Utilities Technical Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

Enclosures: TCEQ Letter Dated October 12, 2014
TCEQ Letter Dated November 24, 2014

JPK/CAS/agl/an

cc: City of Wichita Falls, Attn: Mr. Glenn Barham, P.O. Box 1431, Wichita Falls, TX
76307-1431
David W. Sloan, P.E., BCEE, 4055 International Plaza, Suite 200, Fort Worth, TX, 76109

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bcc: TCEQ Central Records PWS File 2430001 (City of Wichita Falls)
TCEQ Region No. 3 Office - Abilene (with approved materials)
TCEQ PWSINV, MC-155
TCEQ Gary Chauvin, MC-155, Public Drinking Water Section