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Lee A. Norman, M.D., Secretary

Laura Kelly, Governor

November 25, 2020

Alan King  
Director of Public Works  
City of Wichita

RE: Proposed Pilot Effort to Optimize Nutrient Reduction at Plant #1&2

Dear ~~Mr. King~~: Alan:

KDHE staff has been in discussions with City wastewater utility staff and Burns and McDonnell over the prospect of piloting an effort at WWTP #1&2 to make incremental improvements, additions and adjustments in the existing treatment trains to further optimize biological processes to reduce nitrogen and phosphorus output in the effluent. Wichita staff have attended KDHE seminars on treatment optimization, featuring Grant Weaver over the past two years. Mr. Weaver has visited the Wichita facility and has been in ongoing communication with City staff over possible adjustments that would yield lower nutrient concentrations in discharged wastewater. City staff have conceived some ideas in utilizing the assets within the WWTP #1&2 footprint to facilitate biological nutrient removal. Subsequently, a Draft Pilot Study Plan has been drafted by HDR in October that describes a proposed experiment utilizing certain treatment trains that will not unduly affect routine treatment processes.

I am writing you to assure you KDHE enthusiastically endorses implementation of this pilot project. We project quite a bit of time before the necessary large-scale capital improvements at WWTP #1&2 necessary to meet upcoming and future wasteload allocations and permit limits for nitrogen and phosphorus loading into the Arkansas River are put in motion. The city is heavily invested in its development of the new Northwest Water Treatment Plant and upgrades at WWTP #1&2 will approach similar costs. In the interim, any efforts to reduce current nutrient loads to the river are encouraged. KDHE has promoted a spirit of adaptive management for state POTWs to attempt optimization improvements that reduce wastewater nutrients, essentially permission to experiment within existing facilities to find improved processes. Because nutrients are not toxic by nature, there is little risk of acute impacts from experimental failures. The exception is keeping ammonia levels below acute and chronic levels that would degrade aquatic resources. The city's proposal provides safeguards against those risks by enhanced monitoring and isolating the experimental treatment trains from the main operating trains treating most of the municipal influent.

The benefits from attempting this pilot are threefold: 1) interim reduction of nutrient loadings from current levels at marginal cost; 2) knowledge gained in operations and processes that will inform the design of the WWTP #1&2 upgrades late in the decade; and, 3) potential cost savings to the City by utilizing existing assets and infrastructure in designing the future upgraded WWTP. I want to assure you that KDHE recognizes the nature of these efforts sometimes leads to upsets. Provided those incidents are recognized quickly and ameliorated, the environmental impact will remain small and the City need not worry about compliance jeopardy. Ongoing communication with KDHE staff and sharing of data and results will create a partnership between the City and KDHE that will place any incidents in the proper context

without repercussion to the City. Finally, I want to commend your wastewater staff on their professionalism, knowledge of the city's infrastructure and processes and their skill in suggesting innovations for improved performance at the WWTP. The City is in good hands in managing its wastewater and you should have high confidence to utilize and consult with your staff as you begin to develop plans for upgrading the WWTP, utilizing the findings from this proposed pilot project.

I wish you and your staff good luck in implementing the pilot. KDHE awaits the results with high hopes.

Best wishes,

Tom

Thomas C. Stiles  
Director, Bureau of Water  
Kansas Department of Health and Environment

Cc: Don Henry, City of Wichita  
Brian Meier, Burns and McDonnell  
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