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DEPARTMENT OF PUBLIC UTILITIES
WATER SUPPLY AND WATERWORKS
WATER RECLAMATION AND STORMWATER

RALPH BECKER
MAYOR

November 14, 2014

Mr. Walt Baker, P.E.
Utah Division of Water Quality
Utah Department of Environmental Quality, Third Floor
195 North 1950 West
Salt Lake City, Utah 84116

DELIVERED HARD COPY AND VIA EMAIL wbaker@utah.gov

Subject: Salt Lake City comments regarding the 2nd Change in Proposed Rule for Implementing Utah's Nutrient Control Strategy R317-1-3 Requirement for Waste Discharges, Section 3.3 Technology Based Limits for Controlling Nutrient Pollution

Dear Mr. Baker,

Salt Lake City Department of Public Utilities (City) appreciates the opportunity to provide comments regarding the Second Change to the *Draft Rules for Implementing Utah's Nutrient Control Strategy, R317-1-3.3 Technology-based Limits for Controlling Nutrient Pollution*. At the April 2014 Water Quality Board meeting (April 30, 2014), representatives from the City presented an overview of the City's position regarding the Utah Division of Water Quality's (UDWQ) strategy for nutrient control and the Draft Rule. In addition, the City submitted comments regarding the Draft Rule on July 29th, 2014. The City's position has not changed, but in the meantime we have completed further detailed study which affirms the known and potential financial, environmental and social impacts of the TBL rule are far greater than originally estimated by UDWQ. Below is a brief summary of our support for development of a nutrient strategy for the Waters of the State.

UDWQ Nutrient Strategy

As a steward of the environment, Salt Lake City has and will continue to work closely with the UDWQ and other interested stakeholders on workgroups, projects, and initiatives to best protect the water quality of the Waters of the State. The City continues to support the development of a Nutrient Strategy for the Waters of the State that should include a science-based approach to development of nutrient limits that are appropriate and tailored for each water body or water body classification. As an example, there are many unknowns and uncertainties regarding the scientific research and the Great Salt Lake. The *Utah Nutrient Strategy: Technology Limits* prepared by UDWQ in support of the TBL expressly notes "[i]t is likely that years of additional research will be needed before defensible conclusions about appropriately protective Great Salt Lake nutrient limits, if any, can be made. (Page 3)." Therefore, the City requests that further studies and evaluations be performed by the State prior to imposition of TBLs.

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Cost Impacts are Greatly Understated

The Proposed Rule refers to costs associated with implementation of upgrades to treatment facilities and the financial impact to Utah households. The UDWQ costs were adapted from the October 2010 Report "Statewide Nutrient Removal Cost Impact Study," prepared for UDWQ by CH2M-HILL. The City recently (October, 2014) conducted a thorough engineering technical and cost analysis for upgrades and modifications to our reclamation facility to meet the proposed TBLs for phosphorous (1 mg/L, proposed), total inorganic nitrogen (TIN 10 mg/L proposed by UDWQ heretofore for future rule), and ammonia (1.5 mg/L as based on EPA recommendations). The costs presented in a UDWQ 2010 report indicate that to meet the proposed TBL of 1 mg/L for total phosphorous, the City's reclamation facility would require approximately \$2 Million in upgrades. Based on the City's 2014 detailed engineering study, utilizing the existing processes with the addition of chemical phosphorous removal would require approximately \$75.7 Million in capital cost and \$2.7 Million in annual operating costs, with a present value of approximately \$120 Million.

This is a considerable discrepancy from the UDWQ estimate of \$2M to the detailed estimated impact of \$120M, a 60-fold increase. The chemical addition for phosphorous removal creates additional precipitate solids, which require significant expansion of several other processes to remove those solids. The City's total costs necessary to meet the 1 mg/L criteria for phosphorous include: rehabilitation/upgrade of the existing trickling filters and pump station; additional primary and secondary clarifiers; and new chemical feed and storage, ultraviolet disinfection, and solids de-watering facilities.

If subsequent phases of the nutrient strategy (reduction of TIN and/or ammonia) also are implemented, then this \$120 Million chemical addition investment would be largely rendered obsolete and largely a lost cost, as the plant would have to switch processes and construct an entirely new biological nutrient removal process to meet the TIN and ammonia criteria, and meet any further restrictive phosphorous limits (i.e. 0.1 mg/l). A biological treatment process that would effectively reduce total phosphorous, TIN, and ammonia to the proposed levels is estimated to have \$176.9 Million in capital cost and \$3.4 Million in annual operating costs, with a present value of approximately \$235 Million.

Environmental Impacts of TBL Rule

The City's utilized a Triple Bottom Line analysis when assessing our processes and the proposed nutrient reduction criteria. The triple-bottom line analysis includes assessment of the financial, social, and environmental costs/impacts that would result from implementation of only a chemical phosphorous reduction and from implementation of biological processes that would address phosphorous, TIN, and ammonia. The Salt Lake City Reclamation Facility would see an increase of power consumption of 8.5 million kilowatt hours (kWh) and 32.8 million kWh for chemical phosphorous removal and biological nutrient removal, respectively. For each alternative, the facility would see an increase in weekly truck delivery of 8 semi trucks and 4,150 gallons per day usage for chemical phosphorous removal and 3 semi trucks and 1,640 gallons per day for biological nutrient removal. The TBL ignores the known significant greenhouse gas (GHG) footprint impact to an area with known air quality concerns.

Nutrients are essential to support the ecology and economy of the lake, and to date potential impacts of nutrient reduction has not been determined relative to the vast avian population, as well the \$1B annual brine shrimp industry. The significant investment to meet the TBL does not assure improvement in Great Salt Lake water quality or ecosystem, but will assuredly have a social, financial and environmental impact.

In summary, the City recommends that the UDWQ complete further detailed study and understanding of the Great Salt Lake nutrient regime prior to imposition of technology-based limits. The City will incur significant future financial costs to reduce phosphorous alone (\$120 Million in present value) or to reduce phosphorous, TIN, and ammonia (\$235 Million in present value). The known and unknown social and environmental impacts of these TBL regulations could be significant. The city will continue to support the UDWQ to establish the most appropriate science-based nutrient limits for the Waters of the State and looks forward to continued collaboration with UDWQ and other stakeholders.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Jesse Stewart', with a long horizontal line extending to the right.

Jesse Stewart
Water Quality & Treatment Administrator

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Cc: Jeff Niermeyer, Director of Salt Lake City Public Utilities
Tom Ward, Deputy Director of Salt Lake City Public Utilities
Dale Christensen, Manager, Salt Lake City Water Reclamation Facility
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