

MEMORANDUM

To: Erika Mancha, P.E., Innovative Water Technologies, Texas Water Development Board (TWDB)

FROM: Eva Steinle-Darling, Carollo Engineers

SUBJECT: Testing Water Quality in a Municipal Wastewater Effluent Treated to Drinking Water Standards Quarterly Report – March 2014

DATE: April 3, 2014

CONTRACT: 1348321632

Recent Project Activities:

Task 1: Prepare for Sampling

- Attended the project kickoff meeting at CRMWD and performed a site visit on January 22, 2014.
- Submitted meeting minutes and operational data request to CRMWD.
- Executed a subcontract with Hazen & Sawyer, Trussell Technologies, and Nalco (Envirolab). Subcontracts with SNWA and UT are pending. Other subcontracts (Espey, Susan Roth) are on hold until needed for their respective tasks.
- Discussed implementation of test protocol with Marlo Berg at TCEQ on February 19, 2014.
- On February 14, 2014, submitted a pre-proposal to the WateReuse Research Foundation Tailored Collaboration Program for matching funds to support additional sampling efforts at RWPF under this project. Proposal progressed to finalist round, with full proposals due April 8. Requested funds in the total amount of approximately \$99,000. CRMWD permission for the sampling is pending.
- Draft test protocol is under development by Carollo and Trussell.

Task 2: Implement Testing Protocol

- initial practical setup tasks underway (coordination with Nalco)

Task 3: Develop Monitoring Guidance for DPR

- discussed tool development with Marlo Berg at TCEQ on February 18, 2014.

Task 4: Support CRMWD with Additional Sampling

- reviewed sampling data for November 2013 sample

- provided cost and contact information for alternative laboratory (BioVir) that will allow CRMWD to stay within the budget for this additional sampling
- supported sampling and analysis coordination via email and phone

Issues Encountered:

Two concerns associated with the project schedule were noted by Eva Steinle-Darling in an email dated 17 February 2014 to Sanjeev Kalaswad and Erika Mancha at TWBD:

- Due to the uncertainty associated with additional research funding and delays in CRMWD's delivery of operational data, the development of the test protocol has been delayed by approximately one month. The anticipated submission date of the draft protocol is April 15, 2014. This change is not anticipated to affect the contract duration.
- There is a potential that the sampling schedule will need to be delayed due to operational challenges at the RWPF. The probability and extent of this potential delay is currently not known and is dependent both on the results of Carollo's pending review of process operations data and the investigations and actions being currently being undertaken by CRMWD. To conserve project funds, if significant delays are encountered, activity on the project will be reduced to a minimum during such delays. These potential delays may affect contract duration.

Items to be Addressed and Anticipated Project Activities:

The following are anticipated project activities over the next quarter, with the assumption that no delays occur due to operational challenges at RWPF:

- Completion of the draft test protocol and submittal (by April 15) for TWDB, CRMWD, and TCEQ review (review complete by May 27)
- Finalization of the test protocol (by June 6).
- Begin testing phase, with first sampling event anticipated mid- to late- June.