

**Metropolitan Domestic Water Improvement District
Board of Directors Meeting**

June 9, 2014

**Approval of Analytical Laboratory Services Contract
For VOCs, TTHMs and HAA5**

Synopsis

The Board of Directors is requested to approve the Analytical Laboratory Services Contract for Volatile Organic Chemical, Total Trihalomethane and Haloacetic Acid Analyses with Turner Laboratories, Inc. This contract is necessary to ensure that the District complies with the Arizona Department of Environmental Quality's Drinking Water Rules.

Background

According to the Arizona Department of Environmental Quality (ADEQ) Drinking Water Rules, the District must annually monitor for Volatile Organic Chemicals. Volatile Organic Chemicals (VOCs) are chemicals consisting of industrial solvents such as Benzene and Toluene. If a VOC is detected at greater than or equal to 0.0005 mg/L, the District must monitor until a minimum of two consecutive quarters result in detections below the Maximum Contaminant Level (MCL) value. The MCL is the maximum allowable level for a contaminant in drinking water that is delivered to any person who is served by a public water system. After a minimum of two quarters of monitoring with no detection, monitoring can be reduced to annual monitoring for each sampling point. After at least three years of annual monitoring with no detection, annual monitoring can be reduced to once every three years at ADEQs discretion.

ADEQ also requires that the District monitor quarterly for Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5) at representative points within the distribution system. Trihalomethanes are disinfection treatment by-products that are a result of the addition of chlorine into the District's distribution system. Total Trihalomethanes can consist of Bromodichloromethane, Bromoform, Chlorodibromomethane and Chloroform. Currently, the District collects TTHMs on a quarterly basis at two distribution system sample station locations that represent all of the Metro-Main service area; on an annual basis at six distribution sample station locations in the Metro-Southwest service area; and on a once every three years basis at five distribution sample station locations for the Metro-Hub service area.

The current MCL for TTHMs is 0.080 mg/L and 0.060 mg/L for HAA5 and the laboratory detection limit for both is 0.0005 mg/L. After four quarters of results \leq half of the MCL, ADEQ can grant reduced monitoring from quarterly to annual for both TTHMs and HAA5. Results on detections for

regulated VOCs such as cis-1,2-Dichloroethylene, Haloacetic Acids, Total Xylenes, and Total Trihalomethanes are reported in the District's Annual Consumer Confidence Reports.

Issues

The District published a request for proposals from laboratories for the VOC, TTHM, and HAA5 analyses in the Daily Territorial on April 21-24, 2014. Seven laboratories were sent the proposal package (see attached), and the District received three proposals. Proposals were received from Eurofins Eaton Analytical, Inc. (EEA Labs), with an office and laboratory in Scottsdale, AZ and its main laboratory and office in Monrovia, CA; Turner Laboratories, Inc. (Turner Labs), with a Tucson, AZ based office and laboratory; Legend Technical Services Laboratories (Legend Labs), with an office and small lab in Tucson and an office and laboratory in Phoenix, AZ. The selection of a laboratory is made by scoring each laboratory according to details such as price per analyses, RUSH costs, turnaround time for analytical reports, method detection limits, quality assurance/quality control (QA/QC) plan, references, licensure and laboratories professional expertise.

Issues arose mainly with the costs, turn-around time and method detection limits (MDLs). Regarding VOCs, samples are taken at a given Entry Point into the Distribution System (EPDS). An EPDS is the point at which water is discharged into the distribution system from a well, storage tank, reservoir or pressure tank. The number of samples is subject to monitoring waivers, detections or if the District decides to increase the number of samples taken. It should be noted that one well and one reservoir undergo monthly monitoring, and six wells and one reservoir undergo quarterly to annual monitoring in the southwest portion of Metro-Main due to the past detection of TCE and PCE in the South Shannon well in this area. There are also two weekly treatment system performance samples taken for VOCs at the South Shannon Treatment System per ADEQ requirements.

District staff had Turner Labs with the highest total score as noted in Table 1. Although EEA Labs had the best regular costs as noted in Table 2, the majority of the District's samples will be VOC samples, of which a quicker turnaround time (TAT) will be needed. Including the RUSH turnaround time cost results into the regular cost of the VOC samples, causes the EEA Labs cost for VOCs to be similar to the Turner Labs cost. In addition, District Staff will need to pack and ship the VOC, TTHM and HAA5 samples to EEA Labs in Scottsdale, AZ. Although this will not incur any extra analytical costs, it will increase the time and labor cost of staff for the sampling process. Turner Labs also ranked best in the QA/QC, which is important due to the method detection limits, and they ranked the best in the Professional Expertise category in Table 1 below. EEA Labs had the second best score for QA/QC and ranked the best for Lab Team categories of Table 1, but they ranked last for the Professional Expertise score. Legend Labs ranked well in the RFP, ADEQ Forms and License category, but was second for Professional Expertise and Lab Team Score; and last for QA/QC and Costs. (Tables are attached).

As noted above, Turner Labs had the best ranking for MDLs on Table 3. Method Detection Limits or MDLs are important should EPA decide to lower a detection level due to health risks, or have a very low MDL for any new VOCs that may be regulated in the future.

In the event that a QA/QC laboratory problem error occurs that requires a resample, the District's contract requires the laboratory to pay for both the original sample and resample analyses if more than three resamples are necessary.

Staff Recommendation

Staff recommends that the Board of Directors approve the Analytical Laboratory Services Contract for Volatile Organic Chemicals, Total Trihalomethanes and Haloacetic Acids Analyses to Turner Laboratories, Inc. for a not to exceed cost of \$50,000, and would expire on June 30, 2015, with the option to extend the contract for an additional two years with the Board of Directors annual approval. These costs account for compliance sampling; contingency sampling; and elective monitoring for VOC, TTHM and HAA5 within all five of the District's Service areas. Funding is included in the Fiscal Year 2015 budget. In the event that Turner Laboratories, Inc. cannot perform the VOC, TTHM or HAA5 analyses due to equipment failure, turn-around time, necessary detection levels or other, it is recommended that Eurofins Eaton Analytical, Inc. be the back-up laboratory for the VOC, TTHM and HAA5 Analyses due to their scores and costs noted above.

Suggested Motion

I move to approve the Analytical Laboratory Services Contract for Volatile Organic Chemicals, Total Trihalomethanes and Haloacetic Acids Analyses to Turner Laboratories, Inc. for a not to exceed amount of \$50,000, and would expire on June 30, 2015, with the option to extend the contract for two additional years pending the Board of Directors annual approval. In the event that Turner Laboratories, Inc. cannot perform these necessary analyses, Eurofins Eaton Analytical, Inc. shall be the back-up Laboratory.

Respectfully submitted,

Charlie A. Maish, P.E., R.L.S.
District Engineer

I concur with the above-noted recommendation

Respectfully submitted,

Joseph Olsen, P.E.
General Manager

Table 1 – Total Proposal Review Criteria – VOCs/DBPs

Criteria	Turner Labs	EEA Labs	Legend Labs
QA/QC Score (QA/QC Plan, Back-up Plan, Method Detection Limits)	25	21	17
Cost Score (VOC,TTHM/ HAA5 and RUSH Costs)	26	32	13
Professional Expertise Score (References/Expertise, Lab and Equipment Certifications, Turn-Around Times (TAT), Lab/Office Locations)	19	14	18
Lab Team Score (Resumes/Organization Chart and Subcontractors)	4	5	4
RFP, ADEQ Forms and License Score	15	15	15
Total Score	89	87	67

Table 2 – Regular Costs

Parameter	EEA Labs	Turner Labs	Legend Labs
VOC Costs	\$70	\$89	\$120
TTHM Costs	\$45	\$89	\$60
HAA5 Costs	\$75	\$123	\$160
Total Costs	\$190 for all three years	\$301 for all three years	\$340 for all three years
Cost Ranking	1	2	3

Table 3 – RUSH Turn-around Time (TAT) Costs

Criteria	Turner Labs	EEA Labs	Legend Labs
24 hour TAT Cost	2x	1.75x	2x
48 hour TAT Cost	1.5x	1.5x	2x-4x
72 hour TAT Cost	No Additional Fee	1.4x	1.75x-2x
Five Day TAT Cost	No Additional Fee	1.25x	1.5x-1.75x
TOTAL RUSH Cost Ranking	1	2	3