Water Quality Technical Advisory Committee

Meeting Notes
Olin Avenue Conference Room
January 7, 2019 – 5:00 p.m.

Attending: Jocelyn Hemming; Sharon Long; Greg Harrington; Henry Anderson; Gene McLinn; Amy Barrilleaux; Al Larson; Joseph Grande

Absent: Janet Battista; Gary Krinke; Tom Heikkinen; Joe DeMorett

Guests: Three members of the public

1. Agenda Repair/Announcements

- Committee meetings will be held on Monday evening from 5 to 6:30 p.m.
- Future 2019 meetings include April 15, July 15 and October 14.

2. Review of Meeting Notes

- The October 9, 2018 meeting notes were approved as presented.

3. Water Quality Monitoring & Treatment Policy Discussion

A. Testing Requirements

Recommendation #1, #2, #3 and #4

Recommended approval by the Water Utility Board.

Recommendation #3 (PFAS monitoring): monthly monitoring to continue indefinitely at Well 15; transition to triennial monitoring at Well 16, in line with policy recommendations for unregulated contaminants - the next monitoring will be in 2021. The group suggested possible monitoring wells that may be located near the landfill near Well 16 (Janet confirmed their presence in April).

B. Iron and Manganese Standards for Treatment

Recommendation #5 – Uniform Iron and Manganese Standards

1. Suggested adding: "Target date for completion will be re-evaluated every three years".

2. Include potential parameters to define how the order of importance will be determined for which well or wells are filtered first. Water quality may be the primary parameter but other asset management parameters may also be beneficial to include.

3. Include benefit analysis for operational savings that may be realized by implementing filtration:

- Reduced flushing
- Reduced biofilms
- Unrestricted use of all wells within the system

Note: It is important to retain flexibility to prioritize future emerging contaminants and/or concerns with greater health risks (i.e. radium) relative to iron and manganese.

C. Water Quality Treatment Goals

Recommendation #6 – Water Quality Treatment Targets

The group suggested the following modifications:

1. Remove Bullet #1 since Bullet #4 captures the same information.

2. Rephrase Bullet #4 to include the definition of cVOC. "Tune up" and add language that the removal of cVOC should be down to the detection limit if the MCLG is not zero. Current Bullet #4 will become new Bullet #1.

3. Retain Bullets #2, #3, #5 and #6.

The group discussed retaining flexibility in balancing complete removal versus partial removal for hard to treat compounds. For example, complete removal of radium significantly increases the investment, operational and disposal costs versus partial removal. An additional challenge is many compounds, including chlorinated VOCs, may co-occur but should not necessarily be treated equally in terms of importance.

The group also discussed which standard(s) might be used as the reference level – EPA? IARC? Independent Investigations? The committee encouraged the continued use of EPA standards (at a minimum) with possible augmentation of IARC recommendations.

4. PFAS Monitoring Plans

Well 15 will continue to be monitored monthly in 2019. Well 16 will transition to triennial monitoring, in line with policy recommendations; the next monitoring will be in 2021.

Handout 1: Requests for cost and breadth of PFAS testing was extended to nine national labs. Five labs submitted information, including one lab offering two different PFAS analysis profiles. The six profile options all contain the six compounds included in UCMR3 along with variations of additional PFAS compounds. One lab is able to achieve a reporting threshold below 1 nanogram/L. The cost for the basic analysis ranges between $190 and $250 per sample.

Jocelyn mentioned staff at the WSLH have been working on the ISO extraction method for 34 PFAS compounds. No pricing information is available currently but the method should be ready in March 2019.

The group discussed the parallel PFAS fish study being conducted by Beth Murphy, DNR Region 5. Depending upon the level of PFCs detected in fish, public health advisories for consumption of local fish may be issued.

Handout 2: Three of the labs also provided options to analyze a broader list (30 – 40) of PFAS compounds. The cost for analysis ranges between $325 and $750 per sample.

The group is supportive of additional testing but encouraged more background of the broader list of compounds be completed before undertaking testing.

Joe will send the 2 - 3 page summary of updated state websites with links to PFOS information to the committee.

5. 2018 Water Quality Monitoring Results Review

Item deferred to the April meeting. The data will be updated to include December 2018 results.

6. Future Agenda Items

- MWU Master Plan & Capital Improvement Plan
- Annexations – Town of Madison; Town of Blooming Grove
- Private Well Program Policies

Before adjourning, the group was asked to look at ATP and monthly iron & manganese monitoring prior to the next meeting for input on increasing, decreasing or retaining the current monitoring schedule.

7. Adjournment

The next meeting will be on Monday, April 15 from 5 to 6:30 p.m. at the Water Utility, 119 E. Olin Avenue.

MADISON WATER UTILITY
WATER QUALITY WATCH LIST

Organics - Regulated

Contaminant	Maximum*	Units	MCLG	PAL	MCL	Detects Below PAL%	Watch List	Action Plan	Reference
Atrazine	0.03	µg/L	3	0.3	3	#29	none		NR 809.20
1,2-Dichloroethane	0.1	µg/L	zero	0.5	5	#17	none		NR 809.24
1,2-Dichloroethylene (cis)	0.6	µg/L	70	7	70	#8, #9, #11, #27	none		NR 809.24
Ethylbenzene	0.7	µg/L	700	140	700	#9	none		NR 809.24
Tetrachloroethylene [PCE]	3.5	µg/L	zero	0.5	5	#27	#6, #9, #11, #14, #18	Quarterly Monitoring	NR 809.24
Toluene	0.2	µg/L	1000	160	1000	#9, #31	none		NR 809.24
1,1,1-Trichloroethane	0.3	µg/L	200	40	200	#9, #18	none		NR 809.24
Trichloroethylene [TCE]	0.4	µg/L	zero	0.5	5	#11, #14, #18	none		NR 809.24
Xylene, Total	4.5	µg/L	10000	400	10000	#9, #31	none		NR 809.24

* Maximum detection observed at any Madison well from 2015 through 2019 % Detected in at least one sample collected from 2015 through 2019

Organics - Unregulated

Contaminant	Maximum*	Units	HAL	PAL	ES	Detects Below PAL%	Watch List	Action Plan	Reference
1,1-Dichloroethane	0.08	µg/L	n/a	85	850	#9	none		NR 140.10
1,4-Dioxane	0.43	µg/L	0.35~	0.3	3	#9, #14, #15, #17, #18	#11	Semi-Annual Monitoring	NR 140.10
Metolachlor	0.01	µg/L	n/a	10	100	#14	none		NR 140.10
PFAS: PFOA, PFOS, PFHxS, PFHxA, PFBS, PFBA, PFHpA, PFHpS, PFPeA, PFPeS	0.06	µg/L	0.07^	n/a	n/a	#6, #9, #11, #14, #16	#15	Monthly Monitoring	US EPA
Trichlorofluoromethane	1.1	µg/L	n/a	698	3490	#11	none		NR 140.10

* Maximum detection observed at any Madison well from 2015 through 2019 % Detected in at least one sample collected from 2015 through 2019 ~ 10^{-6} Cancer Risk Level ^ PFOA + PFOS

Radionuclides (2018)

Contaminant	Maximum	Units	MCLG	Watch	MCL	Wells with Detects	Watch List	Action Plan	Reference
Gross alpha	12	pCi/L	zero	5	15	All Except Well #14	#7, #8, #19, #24 #27, #28, #30, #31	Annual or Quarterly Monitoring	NR 809.50
Gross beta	13	pCi/L	zero	10	50	All Except Well #14	#19, #28		NR 809.50
Combined Radium	4.9	pCi/L	zero	2.5	5	All Wells	#7, #8, #19, #24 #27, #28, #30, #31	Annual or Quarterly Monitoring	NR 809.50

ES - Enforcement Standard (NR 140 - Groundwater Quality) **HAL** - Health Advisory Level **MCL** - Maximum Contaminant Level Legal Limit **MCLG** - MCL Goal (Public Health Goal) **PAL** - Preventive Action Limit (NR 140 - Groundwater Quality)

MADISON WATER UTILITY
WATER QUALITY WATCH LIST

Inorganics - Regulated

Substance	Maximum*	Units	MCLG	PAL	MCL	Detects Below PAL	Watch List	Action Plan	Reference
Antimony	1.1	µg/l	6	1.2	6	#6, #13, #24	none		NR 140.10
Barium	61	µg/l	2000	400	2000	All Wells	none		NR 809.11
Chromium, Total	4.3	µg/l	100	10	100	All Except Well #31	none		NR 809.11
Nickel	2.7	µg/l	100	20	100	All Except Well #31	none		NR 809.11
Nitrogen-Nitrate	4.0	mg/l	10	2	10	#9, #12, #16, #18, #20, #25, #27, #29	#6, #11, #13, #14, #15, #26	Annual Monitoring	NR 809.11
Selenium	2.0	µg/l	50	10	50	#9, #11, #13, #14 #15, #16, #25, #29	none		NR 809.11
Thallium	0.3	µg/l	0.5	0.4	2	#11, #15, #16, #17, #19, #27, #28	none		NR 809.11

* Based on 2018 annual test data

Inorganics - Unregulated

Substance	Maximum*	Units	MCLG	Watch	SMCL	Wells with Detects	Watch List	Action Plan	Reference
Aluminum	6.5	µg/l	n/a	50	200	#6, #14, #20, #25, #26	none		NR 809.70
Chloride	140	mg/l	n/a	125	250	#6, #9, #11, #13, #15, #16, #17, #26, #27	#14	GW Investigation; Mitigation (2028)	NR 809.70
Chromium, Hexavalent	1.8	µg/l	n/a	1	n/a	#11, #12, #15, #18, #20, #25, #26, #29	#6, #9, #13, #14, #16	Annual Monitoring	n/a
Iron	0.54	mg/l	n/a	0.15	0.3	All Except Wells #9, #14, #16, #20, #31	#8, #19, #24, #28 #30	Install Filtration: Well #8 (2032) Well #19 (2025) Well #24 (2030) Well #28 (2026) Well #30 (2027)	NR 809.70
Manganese	45	µg/l	n/a	25	50	All Wells	#8, #17, #19, #24, #27		NR 809.70
Sodium	51	mg/l	n/a	20	n/a	All Wells	#6, #9, #11, #14, #15, #16	Annual Monitoring	EPA DWEL
Sulfate	114	mg/l	n/a	125	250	All Wells	none		NR 809.70
Zinc	12	µg/l	n/a	2500	5000	All Except #31	none		NR 809.70

* Based on 2018 annual test data

DWEL - Drinking Water Equivalency Level **MCL** - Maximum Contaminant Level (Legal Limit) **MCLG** - MCL Goal Public Health Goal **PAL** - Preventive Action Limit (NR 140 - Groundwater Quality) **SMCL** - Secondary MCL (Aesthetic Guideline)