In the April 1, 2009 issue of the Water Quality update:

- Water Quality Test Results – February 2009
- Unregulated Contaminants Monitoring Update
- Well 29 Filter Update
- Public Participation Process Update
- Subscribe to the Drinking Water Quality Listserv

Water Quality Test Results – February 2009

MICROBIOLOGY – In February, the Water Utility collected 358 water samples from Water Utility facilities and representative sample locations in the distribution system. Samples were tested for coliform bacteria – indicators of potential water contamination. None of the samples collected in February tested positive for coliform bacteria.

IRON & MANGANESE – The utility also collected samples from seven wells and tested the water for manganese and iron. At elevated levels, these minerals can cause yellow, orange, or brown colored water. Monthly water samples are typically collected from operating wells that exceed 0.15 ppm iron or 25 ppb manganese or exhibit variability in the mineral concentrations. The February test results are shown in the table below.

	Mn (ppb)	Iron (ppm)
UW7	27	0.399
UW19	42	0.204
UW23	25	0.072
UW24	25	0.152
UW26	23	0.070
UW27	30	0.165
UW30	14	0.206

RESIDENTIAL IRON & MANGANESE – Residential tap samples were collected from four homes in the Well 8 service area in February. These homes were likely receiving water from Well 11 or Well 24 at the time of sampling because Well 8 is out of service for the winter. Manganese levels ranged from 1-11 parts per billion (ppb) with a median value of 7 ppb. Iron levels ranged from 0.004-0.110 parts per million (ppm) with a median of 0.05 ppm. The Water Utility expects to collect additional samples in April and June.

VOLATILE ORGANIC COMPOUNDS – In February, the Utility collected samples from five wells and three large reservoirs. The samples were tested for 40+ volatile organic compounds – man-made contaminants that may be present in groundwater. Four of these wells are tested quarterly due to previous detections of volatile organic compounds. The table shows only the contaminants detected, the EPA maximum contaminant level (MCL), and the concentration that

was measured at each of the five wells and three reservoirs. ND means that the contaminant was not detected.

VOLATILE ORGANIC COMPOUNDS	MCL	UNITS	9	11	14	15	27	106	229	315
Bromodichloromethane*	--	ppb	[0.41][1]	ND	ND	ND	ND	1.6	0.90	[0.50]
Bromoform*	--	ppb	[0.44]	[0.20]	[0.28]	[0.22]	ND	2	[0.53]	0.76
Chloroform*	--	ppb	ND	ND	ND	ND	ND	0.99	[0.49]	[0.20]
Dibromochloromethane*	--	ppb	[0.78]	ND	ND	ND	ND	2.6	1.3	0.96
Total Trihalomethanes (TTHM)	80	ppb	1.6	0.20	0.28	0.22	ND	7.2	3.2	2.4
Dichlorodifluoromethane	--	ppb	ND	ND	[0.18]	ND	ND	ND	ND	ND
1,2-Dichloroethylene (cis)	70	ppb	ND	[0.34]	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5	ppb	2.0	0.57	0.72	3.6	[0.31]	[0.45]	ND	1.8
Trichloroethylene	5	ppb	ND	[0.27]	[0.32]	[0.37]	ND	[0.22]	ND	[0.21]
Trichlorofluormethane	--	ppb	ND	1.0	ND	ND	ND	ND	ND	ND

* Disinfection By-Product

[1] Bracketed numbers indicate that the contaminant was detected but measured below the Level of Quantification (LOQ)

RADIONUCLIDES – Composite samples were collected at 14 wells and tested for radioactive elements such as radium and uranium and other measures of gross radioactivity. Test results are summarized in the table below. Previously, grab samples were collected from seven wells and tested for the same radionuclides. A composite sample involves collecting a sample during each of four consecutive quarters (each three-month period) and combining the four sub-samples prior to submitting the composite sample for analysis.

Radionuclide	MCL	UNITS	Minimum	Median	Maximum
Gross Alpha	15	pCi/L	1.1	3.3	6.6
Gross Beta	50	pCi/L	1.4	3.1	5.5
Radium-226	5	pCi/L	0.06	0.58	1.6
Radium-228	5	pCi/L	0.25	0.79	3.8
Combined Radium	5	pCi/L	0.37	1.3	4.4
Uranium	30	ug/L	0.41	0.77	1.5

Naturally occurring, radioactive elements are found in rock, soil, water, and air. They derive from the creation of our planet and enter our bodies when we drink water, breathe air, and eat foods that contain them. Everyone is exposed to some level of radiation in everyday life. For example, uranium and thorium are found in rock and soil. In time, they decay to other elements including radium, which later decays to radon gas. Radon is the largest contributor to our daily exposure of radiation from the natural world. More information about radium is available from the Agency for Toxic Substances and Disease Registry (ATSDR).

Unregulated Contaminants Monitoring Update

The Water Utility successfully collected samples from 16 wells and 7 representative distribution sample locations to comply with the Unregulated Contaminants Monitoring Regulation, Cycle 2 (UCMR2). Water samples were collected on February 9. Results will be posted to this listserv when they become available. Seasonal wells including Wells 6, 8, 17, 28, and 29 were not sampled since they are currently out of service for the winter. Well 18, which has been out of service for maintenance since November 1, also was not sampled.

More information on the regulation and the contaminants can be found on the UCMR2 page of the Environmental Protection Agency website,
http://www.epa.gov/safewater/ucmr/ucmr2/index.html

Well 29 Filter Update

Construction on the iron and manganese filter addition at Well 29 is quickly coming to a close and the facility will start pumping high quality water to the system later this month. We expect filtered water to start flowing into the distribution system on Wednesday, April 15 although unanticipated delays may result in a later date. Work will continue on the building and site landscaping through July 1. When in full operation, the facility will produce water with extremely low levels of iron and manganese that will minimize the risk of colored water events in the area. It is expected that the filter will operate 24 hours per day 365 days per year. During the initial weeks of operation, the Utility will be taking samples in the Well 29 service area to monitor water quality and assess the impact of the filter on the water supply system.

Public Participation Process Update

In 2008, the Water Utility Board adopted a formal public participation process that will provide multiple opportunities for public input on proposed projects from inception to construction. The process is currently being used on each of the following capital improvement projects:

- Zone 4 Water Supply Augmentation – additional water supply and enhanced fire flow capacity for southeast Madison
- Arbor Hills Supplemental Fire Flow Supply – enhanced fire flow capacity for south Madison
- Near West Side Water Supply Augmentation – additional water supply for west Madison
- Well 8 Iron and Manganese Mitigation – water quality improvements for the Isthmus and Near East neighborhoods

Complete project descriptions can be found on our website at www.madisonwater.org. In addition, a Citizen Advisory Panel (CAP) is being formed for each project. Citizens are invited and encouraged to participate. Contact the Utility at 266-4651 or water@cityofmadison.com if you would like to get involved.

Subscribe to the Drinking Water Quality Listserv

People who want to receive regular updates on Madison's drinking water quality can subscribe to this Listserv at:

http://lavos.wiscnet.net/mailman/listinfo/drinkingwaterquality

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