

# Internal Monitoring Report

Policy #: O-2E Sustainability

Monitoring Frequency: Twice a year

Date: May 22, 2012

I certify that the following information is true.

Signed  \_\_\_\_\_, General Manager

## Policy Language:

Madison residents will benefit from a sustainably managed ground water supply to ensure that water is available to protect public health, and to maintain and improve the economy and environment in Madison, now and in the future.

Accordingly,

1. Aquifers and wells will be monitored and the data evaluated to identify trends in water levels and potential contaminants.
2. Appropriate city, county, state and federal agencies will be called upon to enforce all pollution control and prevention measures within their authority, in order to protect water quality in the well head protection area of each unit well.
3. The adopted Conservation Plan shall be monitored and evaluated regarding progress to fulfill the goal of a reduction per capita residential use of water by 20% by 2020, which is 58 gallons/capita/day. (Residential is defined as single family and duplex dwellings.)
4. The water supply system shall be expanded so that the pumpage from individual unit wells shall not exceed 50% of the annual rated capacity of the unit well.
5. Water rates will complement economic growth in Madison (as stated in O-2D).

## General Manager's interpretation and its justification:

This policy prescribes certain activities intended to ensure the long term environmental, public health, and economic sustainability of Madison's water supply. Our actions relating to these objectives are detailed below.

## **Data directly addressing the General Manager's interpretation:**

*1. Aquifers and wells will be monitored and the data evaluated to identify trends in water levels and potential contaminants.*

A review of the static water levels in the supply wells indicates no significant changes from last year. Water levels continue to fluctuate seasonally and are greatly influenced by precipitation events.

Shallow monitoring wells were installed at University Crossing to observe groundwater quality during site re-development. Sampling in April did not show the presence of any volatile organic compound, however, chloride levels were in the 300-500 mg/L range at two of the three wells. Public Health staff is investigating the possibility of a sanitary sewer leak along University Avenue.

Groundwater monitoring at the Madison Kipp Corporation facility shows the presence of a plume of tetrachloroethylene[PCE]-contaminated groundwater. Neither PCE nor its immediate breakdown product trichloroethylene [TCE] has been detected at Well 8, which is located less than 2000 feet to the southeast. Trace amounts (<0.3 ug/L) of a further metabolite cis-1,2 dichloroethylene have been detected at the municipal well for nearly two decades. It is not known whether this derivative contaminant originated from the Madison Kipp facility.

Public Health staff is collaborating with DNR investigators to examine locations of former dry cleaning facilities for groundwater contamination or possible vapor intrusion. Active investigations are on-going at four locations and information is being shared with Water Utility staff. One site located on Monona Drive is found within the 50-year time of travel capture zone for Well 9. The other three sites are not nearby any municipal well.

Semi-annual monitoring of both inorganic and volatile organic compounds is conducted at the sentinel well near Well 29. There have been some minor detects, but most can be attributed to the coating on the well liner. Benzene has been detected in the shallow ports at levels ranging between 0.1-0.3 ppb (MCL 5). Trichlorofluoromethane has also been detected in the shallow ports at levels ranging from 0.5-1.4 ppb (no MCL). Sampling indicates that the migration of contaminants from the Sycamore landfill is not a significant threat to water quality at Unit Well 29 at this time.

GE Healthcare continues to sample, on a quarterly basis, the monitoring well located on Water Utility property at 5802 Femrite Drive. Trichloroethylene is consistently found at the 10 ug/L level – twice the enforcement standard for groundwater quality. No volatile or synthetic organic compounds have been detected at the Tradewinds Parkway test well in the samples collected in November, December, and May. The Tradewinds test well is located about a mile southwest of the Femrite well and over 6000 feet from the source of TCE contamination.

*2. Appropriate city, county, state and federal agencies will be called upon to enforce all pollution control and prevention measures within their authority...*

Working with the Mayor's office, we have called on DNR in a letter to require Madison Kipp to remediate their PCE contamination. DNR's response was shared with the Board.

The Unit Well #15 PCE Source and Casing Assessment study is underway. If we are successful in identifying the source, we will call upon the DNR to take appropriate enforcement action. AECOM has completed the first and initiated the fourth of 4 different elements which include:

1. List/Map of potential PCE area users
2. Soil vapor Investigation
3. Groundwater investigation
4. Casing extension assessment

Sites for Element 2 are being determined and the probes should be going in shortly. It is expected that all the elements of the study will be complete in August of this year.

*3. The adopted Conservation Plan shall be monitored and evaluated regarding progress to fulfill the goal of a reduction per capita residential use of water by 20% by 2020...*

Residential consumption in gallons per capita by year:

2002-2007	73.0
2008	69.8
2009	67.8
2010	65.0
2011	65.2
Goal: 2020	58.0

*4. The water supply system shall be expanded so that the pumpage from individual unit wells shall not exceed 50% of the annual rated capacity of the unit well.*

Our service level for capacity planning is 50% utilization, and system expansion is being planned to accomplish this level. Actual utilization for 2011 is shown in the attached table.

*5. Water rates will complement economic growth in Madison (as stated in O-2D).*

Please refer to the Monitoring report for the Affordability Outcomes Policy (O2-D).

**I report compliance.**

**Attachment:**

2011 Unit Well Capacity Table