

THE 2006-07 OVERTURE LINEUP



Wisconsin State Journal

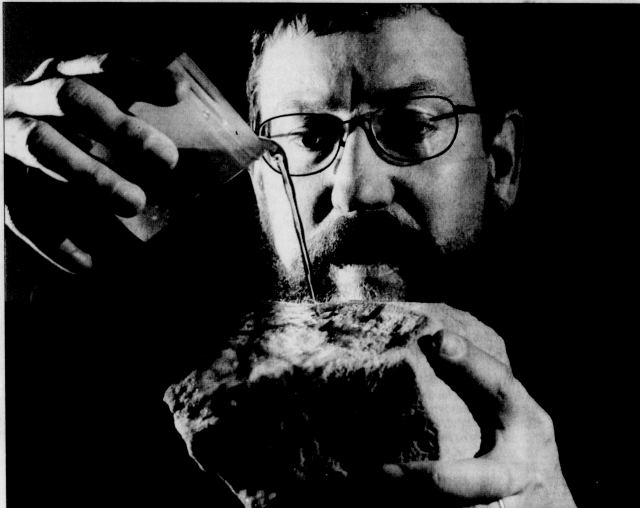
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WEDNESDAY, MAY 3, 2006

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WATER WORRIES | FOURTH OF A FOUR-PART SERIES



Hydrogeologist David Hart demonstrates how a piece of the Mount Simon sandstone aquifer soaks up and stores water.

Pollutants threaten Madison's aquifer

Water utility has protection plans for just 3 of 24 wells

Surface and groundwater closely connected

Madison's Mount Simon aquifer now draws water from the city's lakes instead of feeding them. This means contaminants from the lakes might reach drinking water.

About this series

Sunday: What's in our water?
Monday: Aging infrastructure affects water quality.
Tuesday: Who is watching over our water?
Today: How are we protecting our water?

Picking the right filter

• What home filters work best for Madison's water problems? See Page A7 for the answers.

The troublesome well is emblematic of the perils facing the utility, from the replacement of aged equipment to pumping clean, reliable sources of water from an aquifer that, though very reliable, is beginning to show the early signs of wear from growing urban pressures.

By RON SEELY
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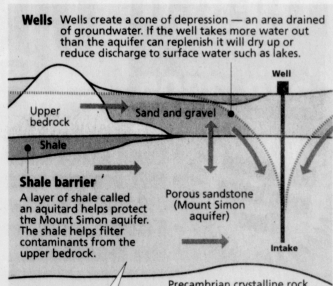
When the Madison Water Utility flipped the switch last year to turn on its newest well, No. 29 on the far East Side, it had been more than 10 years since the utility had drilled a well to serve the growing city.

But last week, after less than a year of operation, No. 29 was shut down and put on standby, felled by high levels of manganese.

Although the well is desperately needed, utility workers and administrators alike have dubbed No. 29 the "well from hell."

Originally budgeted to cost about \$2 million, the well may end up costing the utility \$5 million or more if officials follow through with plans to install a filter to take care of the manganese.

Please see **AQUIFER**, Page A7



Aquitards
Aquitards are not vast underground caverns, but instead are made up of soft and porous rock. Water is able to seep through cracks in the rocks and move many miles through the ground.

SOURCE: Wisconsin Geological and Natural History Survey State Journal

TWO AWAY FROM BABE

Bonds' next stop: Miller Park



JOSE SANCHEZ — Associated Press

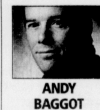
Barry Bonds, who hit his 712th career home run Tuesday, and the San Francisco Giants open a two-game series tonight in Milwaukee — where home run king Hank Aaron played much of his career.

Ticket to see Bonds is well worth the cost

HOME RUN LEADERS



Hank Aaron
755



ANDY BAGGOT

At the very least, what I am about to confess to you may be irresponsible. At the very most, it may be perverse.

But for all the gruesome scenery that surrounds Barry Bonds, I would still pay to see him in uniform, playing tonight and Thursday against the Milwaukee Brewers at Miller Park.

I'd get my money's worth, too, because this is so much more than seeing a legend in disgrace. This is a circus, an anti-war rally and a supermodel sighting at the mall — all rolled into one.

Bonds, who hit his 712th home run Tuesday, is simultaneously chasing the major league home run record, starting in his own TV series and running from the specter of alleged performance-enhancing drug use, tax evasion and perjury.

Bonds could be indicted on felony charges more easily than he could be inducted into the Baseball Hall of Fame.

Those extremes, and everything in between, are why Bonds will be the biggest

Babe Ruth
714

Barry Bonds
712

Giants at Brewers

When: 7:05 tonight, 12:05 p.m. Thursday.
TV: FSNN tonight
In Sports: Sheets roughed up in 8-5 loss to Astros. C1

Please see **BONDS**, Page A9

Experts question if FEMA is prepared

The federal agency scrambles as hurricane season looms.

By FRANK DAVIES
The Orlando Sentinel

WASHINGTON — With hurricane season one month away, a debate is raging about whether FEMA, the much-maligned federal agency, will be ready when a major storm looms.

Security experts and former officials who have handled disasters see signs of progress, but are divided on whether FEMA

and Homeland Security have improved much since the failed response to Hurricane Katrina eight months ago.

They say major questions remain about leadership, management, expertise and funding.

"We're seeing tremendous pressure at all levels to get ready for an imminent hurricane season, but on the federal level it seems frantic, not thoughtful," said Irwin Red-Heine.

Please see **FEMA**, Page A9

• New Orleans Mayor Ray Nagin unveils evacuation plan. A3

Federal health insurance bill draws wide opposition

Opponents say the measure will erode coverage by eliminating state mandates.

By DOUG ERICKSON
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The cancerous tumor in Nancy Restivo's breast was no bigger than a grain of salt when a routine mammogram discovered it in 1994.

She credits the mammogram — paid for by her insurance company — with saving her life.

"I'd want that kind of coverage for as many people as possible," said Restivo, 59, a retired Janesville teacher.

Restivo and others worry that a proposed federal law intended to

help small businesses afford health coverage would let insurance companies drop benefits such as cancer screenings, mental health services, diabetes supplies and smoking cessation services.

Tuesday, the Wisconsin affiliates of the American Cancer So-

ciety and AARP came out hard against the legislation. The American Diabetes Association also opposes it, as do 41 state attorneys general, including Wisconsin's Peg Lautenschlager.

Senate Bill 1955 would let small businesses and trade associations band together and offer

group health coverage on a national or regional basis. No law precludes them from doing that now, but a patchwork of state insurance mandates makes it cost-prohibitive and logistically impractical, said Craig Orfield.

Please see **INSURANCE**, Page A9

5 ON THE FLY

1 Universal Pictures, the studio that released "United 93," says it will donate \$1.15 million this week toward a memorial to the passengers and crew who died aboard United Flight 93 on Sept. 11, 2001.

2 Songs at Apple Computer's iTunes Music Store will remain 99 cents per download after the company extended its distribution deals with major recording labels.

3 TV Land announced it will start "1 Pity the Fool," a series where Mr. T, star of "The A-Team," travels across the country dispensing inspiration and advice.

4 Two actors portraying fringe characters on "The Sopranos" John Ventimiglia and Louis Gossett Jr. — have been charged in unrelated criminal cases.

5 The Daytime Emmy awards show was seen by only 6.1 million people, according to Nielsen Media Research. That ranked it No. 70 among prime-time shows last week.

Chance of thunderstorms
DETAILS, BACK OF LOCAL

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On the Web
What do you think?
www.madison.com/post/forum

Aquifer

Continued from Page A1

Few protection plans

Despite threats to the aquifer, the utility has protection plans for just three of its 24 wells, utility officials said.

Without those plans, which the utility says cost about \$20,000 each to prepare, the city is limited in how it regulates potential polluters near municipal wells.

As the city develops, these wellhead protection plans are becoming more important. Recently, the U-Pump gas station at the corner of University and Franklin avenues changed hands.

Despite the presence of municipal well No. 6 directly across Franklin Avenue, the city had little leverage in dealing with the new owners who pulled the old buried gas tanks and installed new ones, said Al Larson, principal engineer for the utility.

"We had no legal recourse," Larson said, "because we didn't have a wellhead protection plan in place."

Gas stations and other industrial properties often have chemicals that can leak through the soil and eventually contaminate the groundwater.

In this case, Sid Kabir, the new owner of the station, now called University Gas and Food, was cooperative. He said he replaced the old underground storage tanks at the station with state-of-the-art fiberglass tanks and also installed a tank monitoring and leak detection system.

Tom Stunkard, the state Department of Natural Resources water quality engineer who oversees regulation of the Madison Water Utility, said the wellhead protection plans are important because they allow a city to plan with an eye toward protecting its wells and its aquifer.

"It seems like a planning tool Madison is missing out on," Stunkard added.

Vast and deep

Madison is blessed with a vast, deep aquifer that's shielded from contaminants by a layer of shale, hydrogeologists say.

But the tremendous growth in southern Wisconsin plus the development of industries, which use harmful chemicals, can threaten the aquifer.

Dane County residents are even changing the water cycle here, said Ken Bradbury, a hydrogeologist with the Wisconsin Geological and Natural History Survey who has extensively studied the city's aquifer.

Studies have shown the water level in the aquifer has dropped nearly 60 feet from historic, predevelopment levels, he said. While it's unlikely that residents will ever have to worry about a shortage of water, the heavier use has implications for water quality, according to Bradbury and other hydrogeologists.

It used to be that the Madison lakes were replenished by groundwater. Now that cycle has been reversed with municipal wells near the lakes deriving significant quantities of water — roughly 25 percent of the water they draw — from downward leakage from the lakes themselves.

This phenomenon, Bradbury said, basically means that the pollutants put in the lakes, such as pesticides, are likely to also eventually show up in drinking water.

"What we do now," Bradbury said, "may come back to haunt us in years or in decades."

Pollutants reach aquifer

How we choose to live can have a significant effect on the quality of the water we drink.

Even when pollutants from factories and other sources in the city of Madison have to leach through layers of soil and stone, they eventually reach the aquifer.

Using sophisticated computer models and a technique called backward particle tracking, hydrogeologists have been able to figure the distance from which wells draw water and the amount of time it takes re-charge water — and any pollutants — to reach wells. Such areas are called "zones of contribution" by hydrogeologists.

Bradbury said one of the most important things to notice about the zones is that for almost all of the county's municipal wells, the groundwater used in Dane County originates within the political boundaries of the county.

Meaning, it's our own pollutants we have to worry about.

Sales of filters and bottled water rise

Expert says different filters take care of different water problems.

By RON SEELY
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Lisa Lehnertz, 51, battles liver illness. So, in 1994, when the water in her Isthmus-area apartment started appearing discolored and speckled with the small, black flakes that are the tell-tale signs of manganese, she took notice.

Lehnertz bought a pitcher with a filter on it for drinking water. Mostly, though, she drinks bottled water.

Lehnertz is not alone. Many people in Madison, especially on the East Side where water has been discolored for some time, now either drink bottled water or use water filters in their homes.

But Lehnertz would rather be drinking tap water.

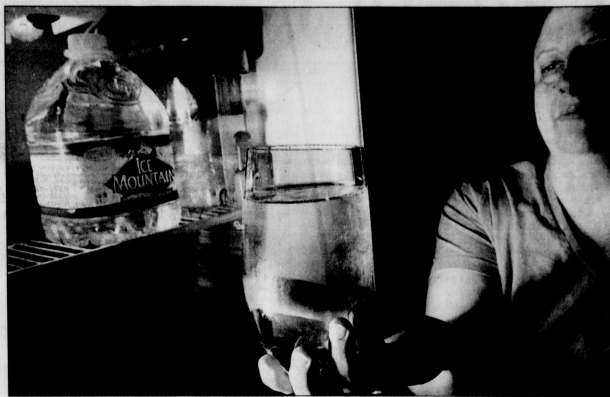
"I really think it's sad you have to go to this extent," Lehnertz said. "I've been here all my life and I've never seen anything like this."

Madison and Dane County public health officials recommend against anyone with liver problems drinking water contaminated with manganese. A health advisory warns that people with liver disease may have trouble flushing the mineral from their bodies and too much manganese can cause neurological problems.

Madison's water problems have been a boon to businesses that market and sell water filters and bottled water.

Carl Nummi, a territory manager in Madison for Culligan, said sales of both water and filters started taking off five or six years ago.

"People want to see clean water," Nummi said. "They don't want to see



Lisa Lehnertz, who lives on Madison's Isthmus, is concerned enough about the quality of her water that she drinks bottled water and also keeps a filtered pitcher of water in her refrigerator.

Filter help

For more information about home water filters, contact Glen Schlueter, an environmental engineer for the Division of Safety and Buildings in the state Department of Commerce.

Schlueter can be reached by e-mail at glen.schlueter@wis.gov or by phone at 267-1401.

brown water. They don't want to see black flecks."

To get rid of manganese — perhaps the most pressing water problem facing Madison residents — it's best to buy an oxidizing filter, said Glen Schlueter, an environmental engineer with the state Department of Commerce Safety and Buildings Division.

Oxidizing filters use chlorine or bromine to turn the manganese into a solid. A filter then catches the manganese particles, removing them from the home's water supply.

Such filters are generally installed near where water enters the home, said Schlueter, whose job is to provide consumers with information about water filters.

The filters are expensive, Schlueter said, with the least expensive probably selling for about \$800. But Schlueter suggested also talking to filter retailers about the possibility of leasing.

If you are concerned about volatile organic compounds, or industrial chemicals such as cleaners and solvents, Schlueter said granular activated carbon filters are the way to go.

They are similar in price to oxidizing filters, said Schlueter, starting at around \$800.

Unfortunately, Schlueter added, the filters such as the one used by Lehnertz on her pitcher do little to get rid of manganese. Pitcher filters do work for reducing the taste and odor of chlorine and for removing lead and copper.

The pitcher filters, such as those manufactured by Brita, are available at most large retail stores and are priced from around \$20, according to Schlueter.

Homeowners have to purchase filters for the particular problem they are trying to solve. No filter works for everything, Schlueter said. It's important to comparison shop, Schlueter said, adding that prices for filters can vary greatly and a homeowner

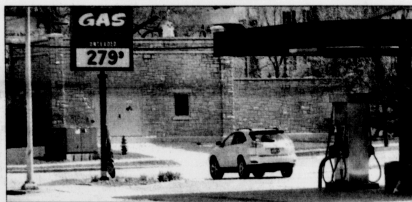
could end up spending as much as \$3,000 or more for a top-of-the-line system.

Shoppers for home filters can go to either a larger retailer such as Home Depot or a more specialized plumbing business, such as Hellenbrand or Culligan, Schlueter said. If you have specific questions, a store that specializes in treatment systems and is a member of the Water Quality Association, a trade group, is best, he added.

As for bottled water, a report by Consumer Reports in August 2000 pointed out that it isn't necessarily safer than tap water because it is frequently tap water that has been processed and repackaged.

But an analysis of major bottled water brands by the consumer watchdog organization revealed few worrisome results.

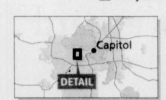
Tests showed bottled water meets EPA standards for contaminants such as arsenic and industrial chemicals. Bottled water is regulated by the Food and Drug Administration, whose standards for contaminants take into account the EPA's tap water standards. Boiling water will kill bacteria but won't remove manganese or chemicals.



Slow, but steady

Researchers have mapped wellhead protection zones for each of Madison's 24 public wells. The zones show how long it would take pollutants to reach each well. This is the protection zone for well No. 6, which is directly across the street from a gas station.

Years to reach well 6
5 years
10 years
100 years



SOURCE: Wisconsin Geological and Natural History Survey

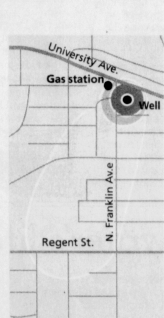
Difficult problems

Many municipal water utilities are facing tough issues related to growth, Stunkard said. Looming problems range from aging infrastructure that is going to require major investment and higher water rates to increasing levels of pollutants that make it harder and harder to sink wells. Madison is no different.

The utility's struggle with its newest well, No. 29, shows how those problems are likely to surface. Well No. 29 was shut down at least temporarily last week because of problems with high levels of manganese, a naturally occurring mineral that discolors water and may cause health problems at high levels.

It's an example of how difficult it is becoming to adequately serve a growing population, said David Denig-Chakroff, general manager of the utility.

Denig-Chakroff said the utility will be hard-pressed, for example, when it comes time to



SOURCE: Wisconsin Geological and Natural History Survey

replace old wells on the Isthmus, such as well No. 3.

On the east side of the Isthmus, well No. 3 has high levels of iron and manganese and also has tested high for chemicals such as carbon tetrachloride.

Because there are generally more industrial pollutants beneath the ground in the Downtown area, finding a clean source of water is likely to be more difficult.

Instead, the utility may be forced to sink wells toward the city's outer boundaries and pipe water Downtown, a costly prospect that will mean more money for more pumps and storage facilities.

"Then you've got a huge problem," Denig-Chakroff said. "We don't have the infrastructure to do that."

Prone to pollution
More than most people, Pat McCutcheon has seen how susceptible the water we drink is to contamination.

He's a detective. But he doesn't track criminals, he

tracks pollution.

A hydrogeologist with the DNR, McCutcheon is a remediation specialist whose job involves finding and getting rid of pollutants that threaten groundwater in south central Wisconsin, including the city of Madison.

Though the aquifer from which we draw our drinking water is deep and protected, McCutcheon searches for and finds pollutants that show up in Madison's municipal wells, some of which pump water from as deep as 1,130 feet.

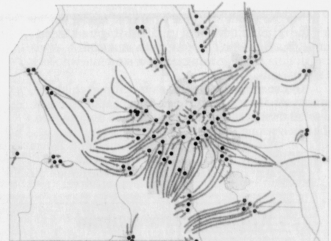
He knows from his sleuthing that our drinking water is prone to pollution by chemicals from our factories and dry cleaning stores, gasoline from our service stations, even drugs from our medicine cabinets.

"Our past sins are catching up to us," McCutcheon said. "The price of not protecting the source of our water is high."

"What those pollutants show us," Bradbury said, "is that we have a connection between surface water and our groundwater. It's vulnerable."

Surface and groundwater closely connected

Hydrogeologists have used computer modeling to map so-called zones of contribution for all of Dane County's public wells. Each zone, represented by the blue lines on the map, shows the path followed by water and contaminants on their way to the well. It's significant, the scientists say, that for nearly all of the wells, the zones originate within the county's political boundaries.



SOURCE: Wisconsin Geological and Natural History Survey

Worried about your water? Here is what to do

To find out what's in your water, visit the state Department of Natural Resources Web site at www.dnr.state.wi.us/org/water/dwg/.

If you live in Madison and have a question about your water, you can contact the Madison Water Utility at 266-4654 or go to the utility's Web site at <http://www.madisonwater.org/index.html>.

10 ways to protect and conserve our groundwater

- Dispose of household chemicals properly — not down the drain.
 - Take used motor oil to a recycling center.
 - Limit the amount of fertilizer used on plants and try organic gardening and natural fertilizers and pesticides.
 - Take shorter showers.
 - Shut off water while brushing teeth.
 - Run full loads of dishes and laundry.
 - Check for leaky faucets and have them fixed.
 - Water plants only when necessary.
 - Keep a pitcher of drinking water in the refrigerator.
 - Get involved in water education.
- SOURCE: American Water Works Association

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