

Groundwater Update



SUMMER 2000

A PUBLICATION OF THE ADVISORY COMMITTEE FOR GROUNDWATER MANAGEMENT AND THE SOUTHERN NEVADA WATER AUTHORITY

First annual groundwater billings issued

The Las Vegas Valley Groundwater Management Program recently distributed bills for the first annual groundwater management fee to well owners and groundwater permit holders in the Las Vegas basin.

Revenue from the mandatory annual fee is being used to accomplish the goals of the program, including aquifer protection, artificial recharge and financial assistance for well users who volunteer or are required by the Nevada State Engineer to hook up to a municipal water system.



A typical domestic well

The fee amount is capped by statute at \$30 per year for a non-permit domestic well and \$30 per acre-foot of water allowed under a permanent or temporary groundwater permit. The Southern Nevada Water Authority manages the fee and its collection.

“We’re very encouraged by the response rate so far,” said **Chris Weiss**, SNWA management services manager. “As of mid-April, we’ve fielded more than 1,000 inquiries and received in excess of 2,500 remittances.”

Almost two-thirds of the revenue generated by the fee supports an artificial-recharge program that will permanently “bank” groundwater for the benefit of well users and the aquifer. As well users learn about the program, its value becomes apparent—stabilizing groundwater, aquifer protection and financial help that will dramatically cut the cost of connection for well users, should they ever have to connect to municipal water.

If you have questions or would like more information, please contact the Groundwater Information Line at **258-7288**. [GU](http://www.gwguardian.com)

Nevada State Engineer continues long history of managing groundwater resources

For nearly 100 years, the Office of the State Engineer has sought to improve methods for utilizing Nevada’s valuable water resources and protecting water rights. Since 1903, the State Engineer has administered and enforced Nevada water law, which includes the adjudication and appropriation of groundwater in the state. With the passage of the General Water Law Act of 1913, the State Engineer also was granted jurisdiction over all wells tapping

artesian water or water in definable underground aquifers.

The 1939 Nevada Underground Water Act granted the State Engineer total jurisdiction over all groundwater. The act has been amended a number of times and now is considered one of the most comprehensive groundwater laws in the West. It provides that all underground water within the state belongs to the public and is subject to appropriation for beneficial use under state law.

The Las Vegas hydrographic basin is the most comprehensively managed basin in Nevada—and with good reason. It has been overappropriated for almost 50 years. In 1941, the State Engineer designated a portion of the Las Vegas Valley as an underground artesian water basin under the provisions of the 1939 Underground Water Act. The designated area was extended in 1944 and 1946, and a portion of the basin was

continued on page 4


Program protects groundwater

Established by amendments to the Safe Drinking Water Act in 1986, the Wellhead Protection Program attempts to reduce potential groundwater pollution by alerting well users to keep hazardous or toxic substances away from wellheads.

These same amendments require each state to develop a Comprehensive State Groundwater Protection Program. The program's main focus is to develop and apply land-use controls and other preventative measures to protect groundwater.

"By reducing groundwater pollution, wellhead protection also reduces the need for costly water treatment to meet drinking water standards," said **Judy Laws**, management analyst for the Southern Nevada Water Authority.

The program encourages all well owners to establish a Wellhead Protection Area around existing wells. Private well owners should designate a protection area with a minimum radius of 100 feet around the wellhead. Important aspects of wellhead and groundwater protection include:

- ◆ **Avoid spilling, storing or disposing of animal wastes, fuels, pesticides, fertilizers, paints, etc., within the protection area or within the protection area of adjacent properties.**
- ◆ **Properly seal a well with a 50-foot-deep sanitary seal around the well casing to prevent contaminants from directly entering the aquifer.**
- ◆ **Well owners should test well water yearly for coliform bacteria and at least every three years for the "Routine Domestic Water Analysis."**
- ◆ **Water samples can be taken to the Safe Drinking Water Section of the Clark County Health District for testing. Call 384-1261 for details. Other certified local environmental laboratories may be found in the telephone book.**
- ◆ **Locate wells outside areas of potential contamination. Well sites should not be in corrals, pastures, feedlots, drainage ways or near underground fuel storage tanks.** 

SNWA achieves "Groundwater Guardian" status

In April, the Southern Nevada Water Authority (SNWA) was designated as a Groundwater Guardian by the Groundwater Foundation, a national nonprofit group dedicated to protecting groundwater supplies. Formed in 1985,

the foundation is a leader in promoting improved management and protection of groundwater supplies in the United States. The Las Vegas Valley is now part of a nationwide network of

continued on page 3

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Groundwater Update is published quarterly by the Southern Nevada Water Authority (SNWA). Comments or questions should be directed to:

SNWA Public Information
1001 S. Valley View Blvd.
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The SNWA was established in 1991 to address water issues on a regional, rather than local basis, and to ensure a safe, reliable water supply. The SNWA is committed to managing the region's most precious resource and developing solutions to ensure water quality and adequate future water supplies for Southern Nevada. In addition, the SNWA educates customers to use water more efficiently, promoting conservation to help ensure the long-term viability of our region's water supply. With the help of an active citizen's advisory committee, the SNWA has established an ambitious annual water conservation goal of 25 percent by year 2010.

The SNWA is governed by a Board of Directors comprised of one representative from each of the seven SNWA member agencies: the cities of Boulder City, Henderson, Las Vegas and North Las Vegas; the Big Bend Water District; Clark County Sanitation District and Las Vegas Valley Water District.

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Artificial recharge benefits groundwater resources

Artificial recharge is a vital water resource management tool employed by the Southern Nevada Water Authority (SNWA). The groundwater replenishing technique helps the Las Vegas Valley by: (1) maximizing Nevada's annual Colorado River allocation; (2) helping to meet summer peak demands; (3) providing an interim future water supply; (4) increasing or stabilizing groundwater levels and reducing land subsidence; and (5) reducing electrical energy costs by pumping Colorado River water into the valley during off-peak winter months.

Through artificial recharge, treated Colorado River water is injected into the valley's principal aquifer through wells located primarily in the northwest valley. Starting with two wells in 1988, the program has expanded to more than 50 artificial recharge wells.

Twelve years of artificial recharge locally have been a resounding success. Our valley now has the largest successful artificial recharge program by means of deep well injection in the country and possibly the world.

To serve the growing population, treatment and distribution facilities soon will be broadened, allowing area purveyors to increase the rate that water can be brought into the Las

Vegas Valley, thereby increasing the amount available for artificial recharge. According to SNWA Hydrologist **Mike Goff**, the



Technicians monitor a recharge well in the northwest valley.

artificial recharge program is undergoing expansion.

"Construction of two new artificial recharge wells for the Las Vegas Valley Groundwater Management Program is well underway in the northwest part of the valley, and we expect them to be fully operational by next fall," said Goff. "To initiate the permanent artificial recharge for the program, 2,000 acre-feet of water is scheduled for recharge."


Artificial recharge is conducted between October and May under permits issued to SNWA member agencies by the Nevada Division of Water Resources.

Since the program's inception, the net withdrawal of groundwater

has been reduced significantly, stabilizing groundwater levels in most areas of the valley. Both domestic and quasi-municipal wells located in areas

where groundwater levels continue to decline have benefited from recharge efforts conducted upgradient of these areas.


Before the program was initiated, detailed tests were conducted to indicate whether the water would be accepted by the aquifer in most areas of the valley and whether the chemistry of Lake Mead's water was compatible with the native groundwater. Water chemistry was important not only to assure the quality of the groundwater, but also to be sure that certain chemical reactions would not occur.

The legal aspects of recharge also were investigated. No existing Nevada statute allowed for aquifer recharge, storage and recovery. Through enactment of legislation in 1987, Nevada's groundwater law was amended to account for water injected and withdrawn and to protect water purveyors' investments and efforts in storing and withdrawing recharged water. SNWA member entities had together artificially recharged more than 210,000 acre-feet of potable drinking water into the Las Vegas basin through the end of 1999. 

from page 2

communities committed to groundwater management and aquifer protection.

The Groundwater Guardian Program was initiated in 1994 and includes hundreds of communities throughout the United States. The

SNWA, on behalf of its Las Vegas Valley Groundwater Management Program, was the first organization in Nevada to be accepted into the program. For more information, visit the Groundwater Foundation's Web site at www.groundwater.org. 



from page 1

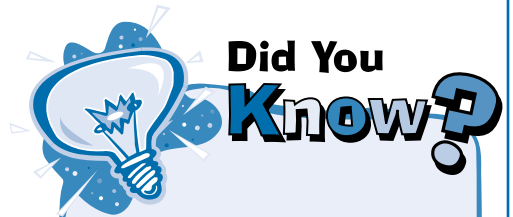
closed to new irrigation rights in 1949, effectively halting growth.

However, legislation passed in 1955 enabled the Office of the State Engineer to issue temporary permits. Subsequently, all permits within the designated portion of the Las Vegas Valley and with a priority date after March 24, 1955, were issued as temporary rights subject to revocation—commonly known as revocable water rights. The logic was even though the demand for water was greater than the supply of groundwater, the valley eventually would have access to surface water from the Colorado River and Lake Mead. Temporary permits are valid just until the property can be served with water from Lake Mead or the Colorado River.

In the years since, the Office of the State Engineer has issued a series

of orders to systematically restrict the issuance of revocable water rights within the Las Vegas Valley. These orders culminated in April 1992 with the issuance of Amended Order 1054. Under this order, with rare exception, all applications to appropriate water filed after March 23, 1992, will be denied.

The Las Vegas of the past 50 years was made possible by this complex, but useful and innovative permitting system. It has worked exceptionally well, and the Office of the State Engineer is committed to managing in a manner that best protects water resources in the Las Vegas Basin. [G](#)



In the U.S, approximately 65 billion gallons of groundwater are used on a daily basis.

The valley's principal aquifer is located between 100 and 1,000 feet below land surface. The bottom of the shallow aquifer is located 50 feet or less below land surface.

Artificial recharge permits are issued by the Nevada Department of Environmental Protection and the Nevada Division of Water Resources.



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