

## Pasadena Progresses In Cleaning Up Perchlorate

**A** GWA member the Raymond Basin Management Board (RBMB) and Pasadena Water and Power (PWP) are steps closer to restoring the operations of four City of Pasadena wells that were shut down in 2002 due to high levels of perchlorate.

The four wells extract groundwater from the Monk Hill Sub-basin of the Raymond Basin and are located in the Arroyo Seco, adjacent to the 176-acre Jet Propulsion Laboratory (JPL) site in Pasadena. Decades-old chemical disposal practices at JPL resulted in perchlorate and volatile organic compound (VOC) contamination in the wells.

In December 2005, the city reached an agreement with NASA—which now has jurisdiction over the site—for the organization to fund the design, construction and operation of a proposed water treatment plant near the impacted wells. Once operational, the new system will remove chemicals from the Raymond Basin groundwater, allowing the city to re-activate its wells and provide its customers with clean drinking water that once again meets the State of California Department of Health Service's potable water requirements.

Pasadena Water and Power expects the construction of the treatment plant to be completed in the summer of 2007, with the delivery of drinking water to its customers by fall 2007.

In a related effort, members of the RBMB have proposed the Raymond Basin Conjunctive Use Project (RBCUP), which would

make available 75,000 acre-feet of additional water in storage received during wet years for use during periods of drought. The RBCUP would require Pasadena to increase its groundwater production capacity; therefore, additional wells will be needed to maximize the benefits of the program.

Cleaning up Pasadena groundwater, however, goes beyond the JPL region. Predictive simulations from the Raymond Basin Ground Water Flow Model show that VOCs and perchlorate from JPL and the Arroyo Seco region will continue to migrate southeast, affecting other city wells in the Pasadena Sub-basin of the Raymond Basin. For the RBCUP to be successful, it is essential that PWP wells are free from not only existing—but also from potential—contamination.

Addressing that concern, Senator Dianne Feinstein helped PWP secure a \$375,000 grant from the Environmental Protection Agency (EPA) for perchlorate treatment research that could one day benefit Pasadena's wells. PWP is proactive in preventing any potential contamination and continues to seek funding to ensure that all PWP wells are free from contamination.

The Army developed and operated JPL between 1945 and 1957. In 1958, jurisdiction was transferred to NASA. The California Institute of Technology conducts research and development at JPL under a NASA contract in the areas of aeronautics, space technology, and space transportation.

Sources of contamination at the site include approximately 35 seepage pits where liquid and solid wastes were reportedly disposed of, a settling chamber in the JPL storm drain system; contaminated soil excavated from part of that system, and an area where waste solvents were dumped into three separate holes. Hazardous substances located at JPL include waste solvents, solid rocket fuel propellants, cooling tower chemicals, sulfuric acid, freon, mercury, and chemical laboratory wastes.

In 1990, JPL detected significantly elevated levels of contaminants in the groundwater underneath and down-gradient of the site. Due to volatile organic compound (VOC) contamination in the groundwater, four municipal wells were shut down between 1989 and 1990 and two Lincoln Avenue Water Company wells were shut down in 1987. NASA installed treatment systems, and municipal wells began operating again in October of 1990.

The Pasadena wells were shut down again in 2001 because of perchlorate contamination. The perchlorate plume reached the Lincoln Avenue wells at levels above the State of California standards in 2004, and NASA paid for the installation of an ion-exchange/ carbon filter treatment system.

For more information about the JPL site and the well cleanup issue, please visit:

<http://www.ci.pasadena.ca.us/waterandpower>

<http://epa.gov>

<http://www.arroyoseco.org> 