



2010

## YEAR IN REVIEW

### **Dramatic Progress Made in 2010 For NASA's JPL Groundwater Cleanup**

The year 2010 was another year of dramatic progress for groundwater cleanup at and near NASA's Jet Propulsion Laboratory (JPL). By year's end, startup testing was underway at the newly constructed NASA-funded City of Pasadena-operated groundwater treatment plant located at the city-owned Windsor Reservoir. Rehabilitation of four closed water production wells nearby was also almost complete. When the Pasadena facility becomes operational early in 2011, it will allow the city to apply to the state to re-open the four wells.

With the plant's completion, NASA's interim three-plant treatment strategy to remove groundwater chemicals from beneath JPL and from beneath areas adjacent to JPL will be in place. Existing NASA-funded treatment plants have been removing groundwater chemicals from the source area on JPL and from the farthest reaches of the area affected by the chemicals. The new Pasadena plant, to operate at a treatment rate of 7,000 gallons-per-minute (gpm), will provide groundwater cleanup in the middle of the area affected.

#### **Activities Associated with Treatment Plant Construction**

NASA appreciates the patience of nearby neighbors during the busy construction period and worked hard to respond to calls about dust and noise. Proactively, NASA contractors applied dust suppressant at the site as construction progressed and, when possible, modified work schedules to accommodate neighbors.

Anticipating the plant's operational status, NASA worked closely with Pasadena Water & Power (PWP) during 2010 to assist submissions that can result in approvals to re-open the four production wells.

#### **Source Area Treatment System**

NASA's source area treatment system continued in 2010 to address – at its full capacity of 300 gpm – the area with the highest chemical concentrations, helping to stop chemicals from moving off the JPL facility. Since commencement of the project, about 1,512 pounds of perchlorate have been removed from groundwater beneath JPL, using a fully contained fluidized bed reactor system with naturally occurring microorganisms that break down the chemical compound. Approximately 37.2 pounds of volatile organic compounds (VOCs) in the groundwater beneath the source area have also been removed, using the same liquid-phase granular activated carbon (LGAC) technology that will be used in the new Pasadena treatment plant. LGAC uses activated carbon beads to attract particles of VOCs that are subsequently disposed of at licensed off-site facilities.

#### **Lincoln Avenue Water Company (LAWC) System**

The LAWC system, operating near two LAWC production wells at a rate of 2,000 gpm, continued removing chemicals from the leading edge of the plume. This system also allows LAWC to continue to provide clean drinking water to its customers. Using ion exchange technology, more than 637 pounds of perchlorate had been removed from groundwater by the end of 2010. The ion exchange process, which will also be used at the Pasadena plant, runs groundwater through tanks filled with resin beads. When perchlorate contacts the beads, perchlorate is exchanged with chloride and the beads to which the perchlorate adheres are extracted from the water and disposed of or recycled according to safety requirements.

**continued on other side**

The LAWC system has also removed close to 170 pounds of VOCs from LAWC groundwater since system startup in 2004, using LGAC technology.

#### **Community Outreach and Involvement**

During 2010, NASA continued to focus on community outreach and public involvement responding to community questions, particularly those from nearby neighbors, regarding construction activities. More recently, NASA has begun coordination with PWP to host community members at a 2011 ribbon-cutting ceremony to dedicate the new treatment plant.

#### **Cleanup Website Updates**

NASA continued during the year to update its groundwater cleanup Website (<http://jplwater.nasa.gov>), including providing Pasadena plant construction updates and photos of the ongoing construction and a newly designed “media room.” Also updated was a separate Spanish-language section of the Website.

#### **NASA’s Work with Federal and State Regulatory Agencies**

Throughout the year, NASA worked closely with federal and state regulatory agencies that supervise the cleanup. Those agencies include: the U.S. Environmental Protection Agency, the Regional Water Quality Control Board, Los Angeles Region, and the California Department of Toxic Substances Control. In addition, NASA worked with the City of Pasadena and its Water & Power department, as well as with representatives from LAWC, Rubio Cañon Land and Water Association, Las Flores Water Company, Foothill Municipal Water District, the Raymond Basin Management Board, and other stakeholders.

#### **For information, contact**

##### **Merrilee Fellows**

NASA Manager for Community Involvement

##### **NASA Management Office/JPL**

4800 Oak Grove Drive

Pasadena, California 91109

(818) 393-0754

Email [mfellows@nasa.gov](mailto:mfellows@nasa.gov)

Web <http://jplwater.nasa.gov>