



NASA Groundwater Cleanup Progressed Dramatically in 2009

The year 2009 saw dramatic progress for groundwater cleanup at and near the Jet Propulsion Laboratory (JPL). Construction of the City of Pasadena treatment system began in April 2009. This NASA-funded, City of Pasadena-operated 7,000 gallons-per-minute (gpm) groundwater treatment plant located at the City-owned Windsor Reservoir will restore use of four closed water production wells. As the year ended, the plant construction phase was nearly complete. Well rehabilitation and startup testing of the system will occur in early- to mid-2010. When the Pasadena facility becomes operational, it will allow the City to apply to the state to re-open the four closed wells, representing what Pasadena Mayor Bill Bogaard called “a very important contribution to water sufficiency in the Pasadena area.”

With the plant’s completion, NASA’s three-plant treatment strategy to remove groundwater chemicals from beneath the Jet Propulsion Laboratory (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 and from the farthest reaches of the area affected by the chemicals. The new Pasadena plant will provide groundwater cleanup in the middle of the area affected.

Source Area Treatment System

NASA’s source area treatment system continued in 2009 to address – at its full capacity of 300 gpm – the area with the highest chemical concentrations, helping to stop chemicals from moving off of the JPL facility. By year’s end, and dating from commencement of the project, more than 1,285 pounds of perchlorate had been removed from beneath JPL, using a fluidized bed reactor system with naturally occurring microorganisms to break down the chemical compound. More than 33 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 proposed Pasadena treatment plant. LGAC uses activated carbon beads to attract particles of VOCs for subsequent disposal at licensed off-site facilities.

Lincoln Avenue Water Company (LAWC) System

The LAWC system, operating near two LAWC production wells at 2,000 gpm, continued removing chemicals from the leading edge of the plume. It is also allowing the LAWC to continue to provide clean drinking water to its customers. Using ion exchange technology, more than 560 pounds of perchlorate had been removed from groundwater by the end of 2009. The ion exchange process, which would also be used at the Pasadena plant, runs groundwater through tanks filled with resin beads. When perchlorate touches the beads, perchlorate is exchanged with chloride and is extracted from the water. In addition, using LGAC technology, 165 pounds of VOCs have been eliminated from LAWC groundwater since system startup in 2004.

Pasadena Treatment Plant - Community Involvement Efforts

In 2009, NASA continued to focus on community outreach and involvement as part of the cleanup process. As part of its public involvement effort, NASA reached out to community members living near the Windsor Reservoir Pasadena plant site and to other interested individuals and groups. A series of small-group meetings was begun in January 2009 with area residents and other interested parties.

Site neighbors seemed responsive to NASA's outreach efforts. At the March groundbreaking ceremony for the plant, one of the neighbors, Tecumseh Shackelford, expressed residents' appreciation of the public involvement. He told the nearly 150 groundbreaking ceremony guests that "NASA and the City listened to our suggestions regarding the design of and landscaping for the plant and incorporated several of them." He added, "We look forward to continuing that relationship."

Other Outreach and Public Involvement Efforts

During 2009, NASA also updated its groundwater cleanup Website (<http://jplwater.nasa.gov>), providing an improved search function, Pasadena plant construction updates and fact sheets, a "media room" with updated information, and a separate Spanish-language section. Cleanup project staff worked with the Pasadena Public Library on implementing a new digital Information Repository on the project. NASA also provided a number of tours of the "source-area" treatment plant onsite at JPL, the proposed construction area and landscaping plans at the Windsor Reservoir site, and specific areas of the Arroyo Seco watershed. In June, NASA published and distributed to more than 18,650 local residents and other interested parties another edition of its full-color, bilingual groundwater cleanup newsletter.

NASA's Work with Federal and State Regulatory Agencies

Throughout the year, NASA continued to work 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 representatives from LAWC, Rubio Cañon Land and Water Company, Foothill Municipal Water District, the Raymond Basin Management Board and other stakeholders.

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