



Status of Groundwater Remediation at NASA's Jet Propulsion Laboratory

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Purpose of the Presentation:

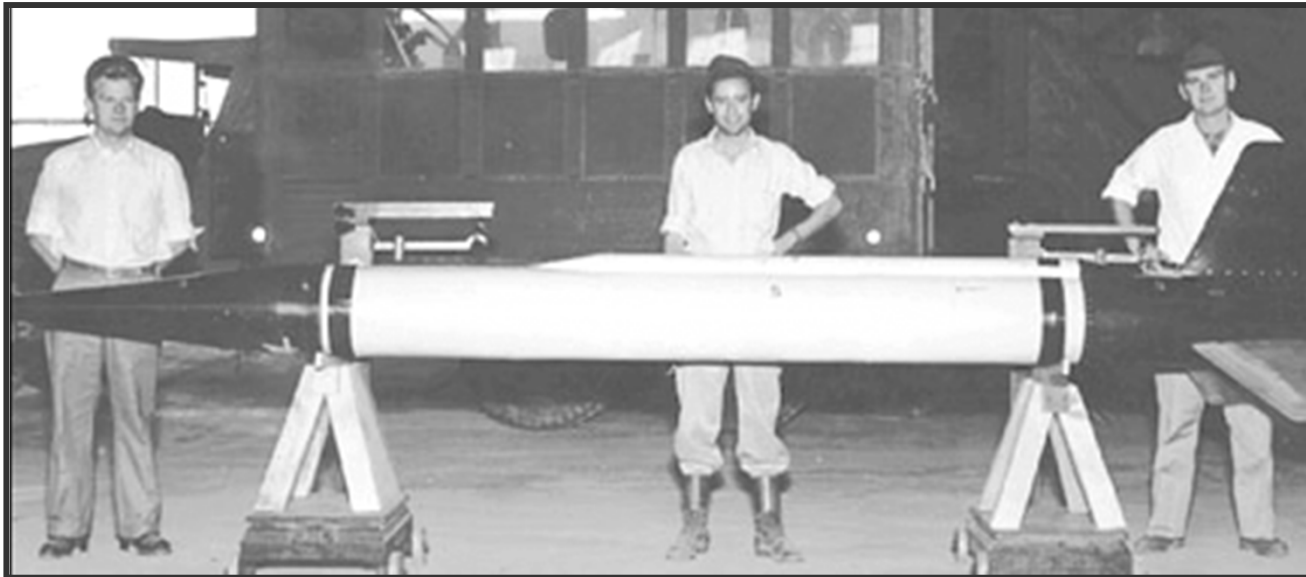
- ❑ Discuss the ongoing success and progress of the groundwater cleanup efforts at JPL
- ❑ Answer questions about the groundwater cleanup efforts at JPL

Presentation Summary

- Background and History
- Site Investigation and Cleanup Activities
- Current Treatment Activities
- Take Home Points

History

- WWII – U.S. Army started what is now JPL to develop and test rockets
- December 1958 – NASA established and JPL transferred to NASA
- 1980s and 1990s – Chemicals discovered in off site groundwater
- October 1992 – JPL placed on the National Priorities List (NPL). All investigation and cleanup activities governed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) with oversight by EPA, DTSC, and RWQCB



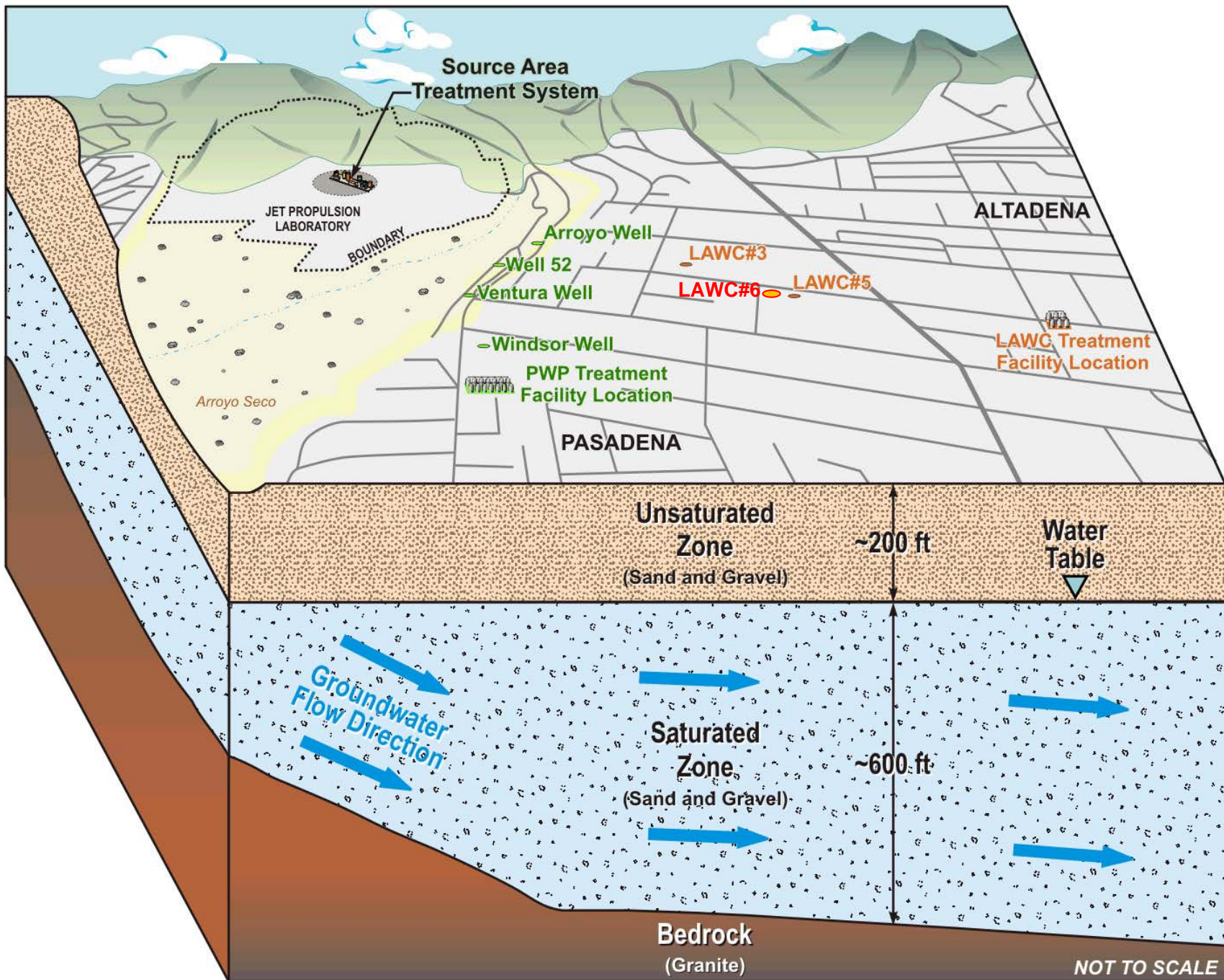
In the 1930s and during the years of World War II, the area that is now JPL was a site for testing some of the first rockets.

What Have We Done?

Site Investigation and Cleanup Activities

- 1990 – NASA funds water treatment plant to remove VOCs from four City of Pasadena production wells (Arroyo Well, Well 52, Ventura Well, and Windsor Well)
- 1992 – NASA funds water treatment plant to remove VOCs from two Lincoln Avenue Water Company (LAWC) production wells (LAWC#3 and LAWC#5)
- **1994 to Present – Extensive investigation and sampling**
 - » Drilled more than 40 soil borings and installed 35 soil vapor wells with 200 discreet sampling locations, resulting in a database of more than 1,500 samples
 - » Installed 26 wells with 82 discreet sampling locations (both on-facility and off-facility) and conducted 76 quarterly groundwater sampling events since 1996, providing a database of *more than 30,000 samples*



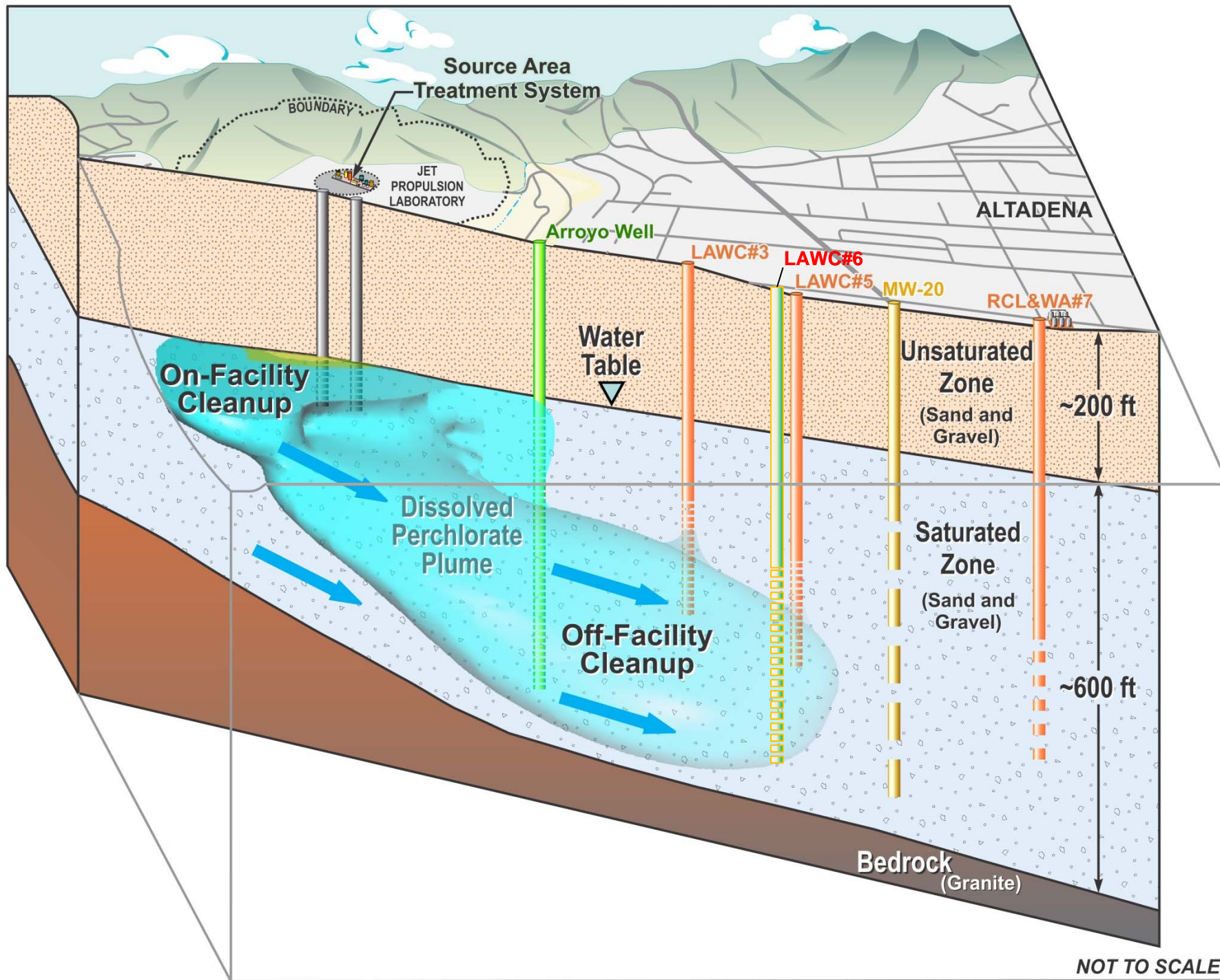


What Have We Done (Cont.)?

Site Investigation and Cleanup Activities

- 1998 to 2007 – On-site soil cleanup completed
- 2004 – NASA funded 2,000 gpm ion exchange system at LAWC to remove perchlorate
- 2005 – NASA completed construction of an onsite (i.e., source area or OU-1) treatment system to address the perchlorate and VOCs at the JPL Site
- 2007 – Source area treatment system began operating at full capacity
- 2007 – Final Interim Record of Decisions completed for OU-1 (on-site) and OU-3 (off-site) Groundwater
- July 2011 – Completed construction of the City of Pasadena Monk Hill Treatment System (MHTS), operation begins
- **Water treatment systems remove all chemicals, achieving all drinking water treatment standards**



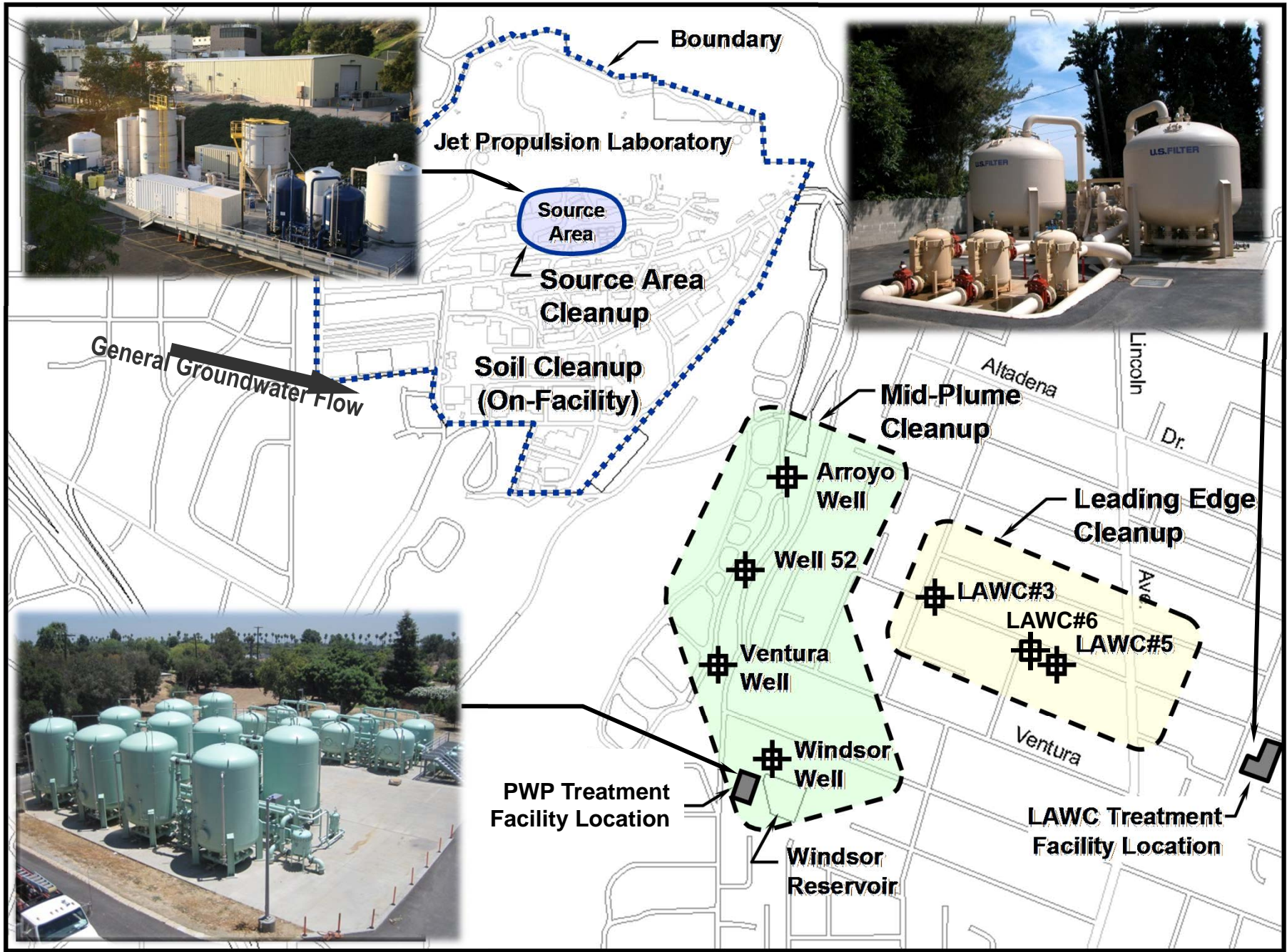


Where Are We Now?

Site Investigation and Cleanup Activities

- February 2012 – Completed the First Five-Year Review for the JPL CERCLA Site, which showed the systems operating effectively
- June 2014 – Completed the Final Focused Feasibility Study for on-site and off-site groundwater (OU-1 and OU-3)
- November 2014 to March 2015 – Proposed Plan for the Final Groundwater Remedy – Public Review and Comment
- March 2015 to Present – Preparing the Final Record of Decision for Groundwater
- Current – New LAWC Deep Water Supply Well





Take Home Points

- NASA has conducted extensive investigation and we understand where our chemicals are located
- Three treatment systems have been installed and have been operating successfully for many years
- Soil has been successfully remediated
- The deep untreated groundwater is getting cleaned up
- Water is pumped and treated and put to beneficial use
- Water treatment systems remove all chemicals, achieving all drinking water treatment standards



<http://jplwater.nasa.gov>



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JPL Open House guests visit the NASA groundwater cleanup booth. Extensive information on the cleanup project is available to the public by contacting Merrilee Fellows, NASA Manager for Community Involvement, by email at mfellows@nasa.gov, by postal mail at the NASA Management Office, 4800 Oak Grove Drive, Pasadena, California 91109, or by telephone at (818) 393-0754.

Welcome to the NASA Groundwater Cleanup Project Website

Welcome to the NASA Groundwater Cleanup Program Web site for the Jet Propulsion Laboratory (JPL), created in conjunction with NASA's cleanup responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), sometimes referred to as "Superfund." This site provides community members and interested parties convenient access to information associated with CERCLA environmental cleanup activities at JPL.



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