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Prepared in cooperation with the Rancho California Water District and Camp Pendleton Marine Corps Base

Installation of multiple-depth monitoring well site

Hydrogeologic investigations of the Temecula area, California

Summary

Multiple-depth monitoring wells provide critically important data to aid in understanding complex hydrogeology, such as that found in the Temecula area. A major element of the present USGS study is to install multiple-depth wells throughout the Temecula-Murrieta groundwater basin in order to map the subsurface geologic layers, to define water-quality differences with depth, and to provide longterm monitoring of groundwater levels. These data will aid local water agencies in optimal management of the basin.

Beginning Tuesday, February 19, 2013, a multiple-depth well will be installed in Temecula Creek Park. The well will be about 1,500 feet deep, and will have five separate two-inch PVC piezometers, installed to selected depths. These piezometers will be monitored for groundwater levels and sampled for groundwater quality. The well site will be a permanent installation and will provide data for decades.

Well Site

The United States Geological Survey (USGS), in cooperation with the Rancho California Water District, will be installing a 1,500-foot-deep monitoring well site in Temecula Creek Park (fig. 1), near Butterfield Stage Road. This site was chosen to determine hydrologic conditions between Temecula Creek and the groundwater system, identify geologic units, integrate data from other wells, ensure long-term data collection, and provide for optimal water management.

Well Drilling and Construction

Drilling will take about four weeks. Hours of operation each day, including weekends, are 7 am to 7 pm. During the first three weeks, noise levels will be typical of those associated with using heavy equipment (fig. 2).

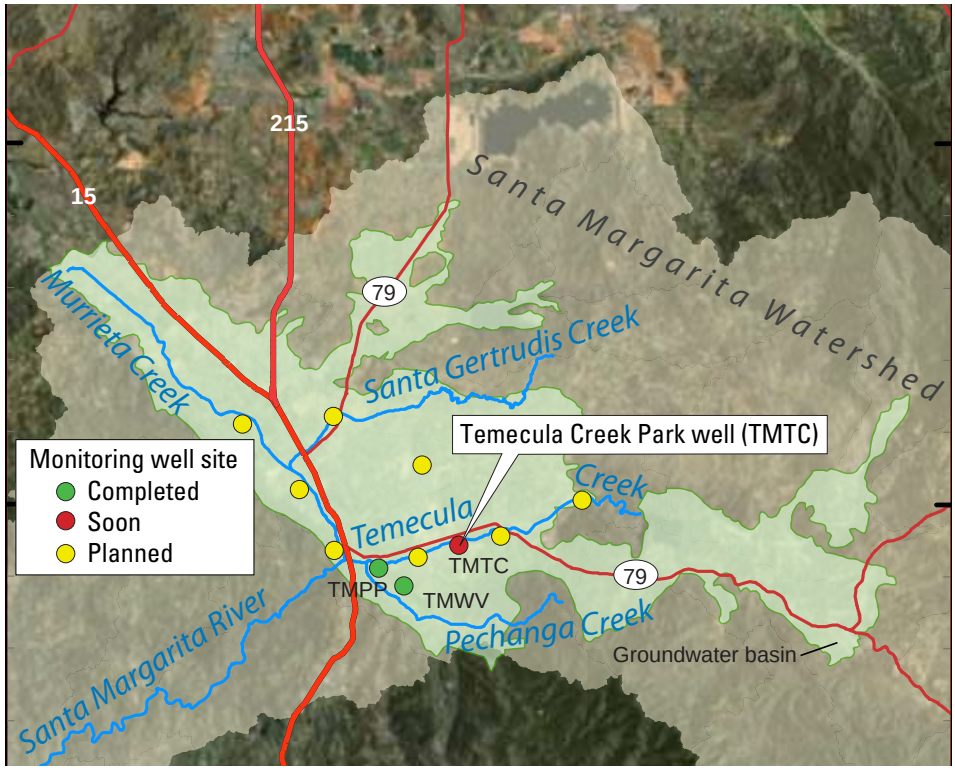

Figure 1. Location of multiple-depth monitoring wells sites in the Temecula area, California.

During the final week, noise will be reduced as the well is constructed and the site is restored to its original condition. Subsequent well development and water-quality sampling will be relatively unobtrusive.

Typical photographs of the drilling process and completed well installation are shown in figure 3. All data will be available on the project website listed below.

Contacts

For questions concerning the USGS hydrogeologic study of the Temecula area, or to visit the drill site, please contact:

USGS Project Chief
Wes Danskin, Research Hydrologist, 858-663-6832, wdanskin@usgs.gov, or

refer to the project website,

http://ca.water.usgs.gov/temecula

For all questions concerning the well site or drilling, please contact:

USGS site supervisor Tony Brown, 619-578-1294, anbrown@usgs.gov, or

Rancho California Water District, Warren Back, 951-692-8437 backw@ranchowater.com.

Figure 2. Typical drill rig used to construct a multiple-depth monitoring well.

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Figure 3A. Educational outreach area with samples, story-board, and shade structure. Drill rig is in background.

Figure 3D. Inside of a typical vault showing piezometers, transducer wires, data logger, and satellite link. Real-time data is provided via the Internet.

Figure 3B. Installation of 2-inch PVC pipe which will allow access to specific depths to measure water levels and sample water quality. Note 3 other piezometers are installed already.

Figure 3E. Typical final installation of 3 by 5 foot, traffic-rated vault. USGS and well ID are welded on top of vault.

Figure 3C. Core samples are taken from selected depths using a wire-line device. Cores help correlate geologic layers.

Figure 3F. Final installation of vault, solar panel, and satellite antenna at El Toyon Park, National City, CA.