

## Field Activity Advisory Hydraulic Conductivity Analysis November 21, 2014

The Bureau of Reclamation, as a component to the San Joaquin River Restoration Program (SJRRP), plans to conduct hydraulic conductivity surveys on selected floodplain locations in Reaches 2B and 3 to evaluate groundwater depth and soil infiltration rates. Data collected through these surveys contribute to studies such as channel and structural improvement projects, habitat productivity, and salmonid occupancy of floodplains.

**Who:** Bureau of Reclamation

**What:** Reclamation will perform vertical and horizontal hydraulic conductivity testing just outside of existing levees/canal banks to determine soil infiltration rates. Collected data will be used to populate a model that predicts inundation duration for a given flow rate and groundwater elevation in the floodplain.



Figure 1: Drill rig creating a bore hole for shallow well testing.

Two hydraulic conductivity tests are performed at each site to measure the vertical and horizontal movement of water through the soil. Horizontal tests will be conducted by temporarily installing a shallow well. Depending on the height of groundwater, water is either pumped in or bailed out of the shallow well over a 24-hour period. Vertical tests will be conducted by a double ring permeameter, or infiltration, test. This test features insertion to two steel casings to a depth of three inches. Water is pumped into both rings over a 24-hour period, with the rate of water infiltrating within the central ring providing the test data.

The hydraulic conductivity testing will be performed by a crew of up to five people. Field engineers will access the site by vehicle, drill rig, or on foot. Tests may occupy up to eight square feet. All bore holes will be backfilled.



Figure 2: Shallow well pump-in test (left), and ring permeameter test (right)

**When:** Hydraulic conductivity testing is planned to start December 8, 2014. Surveys are anticipated to be completed in five days, but may be extended depending on weather conditions. Surveys will be conducted between 7 a.m. and 5 p.m.

**Where:** Survey sites are located between the Chowchilla Bifurcation Structure (start of Reach 2B) and to a point approximately 5 river miles upstream of Sack Dam (Reach 3). These sites are identified in the map below (Figure 3).

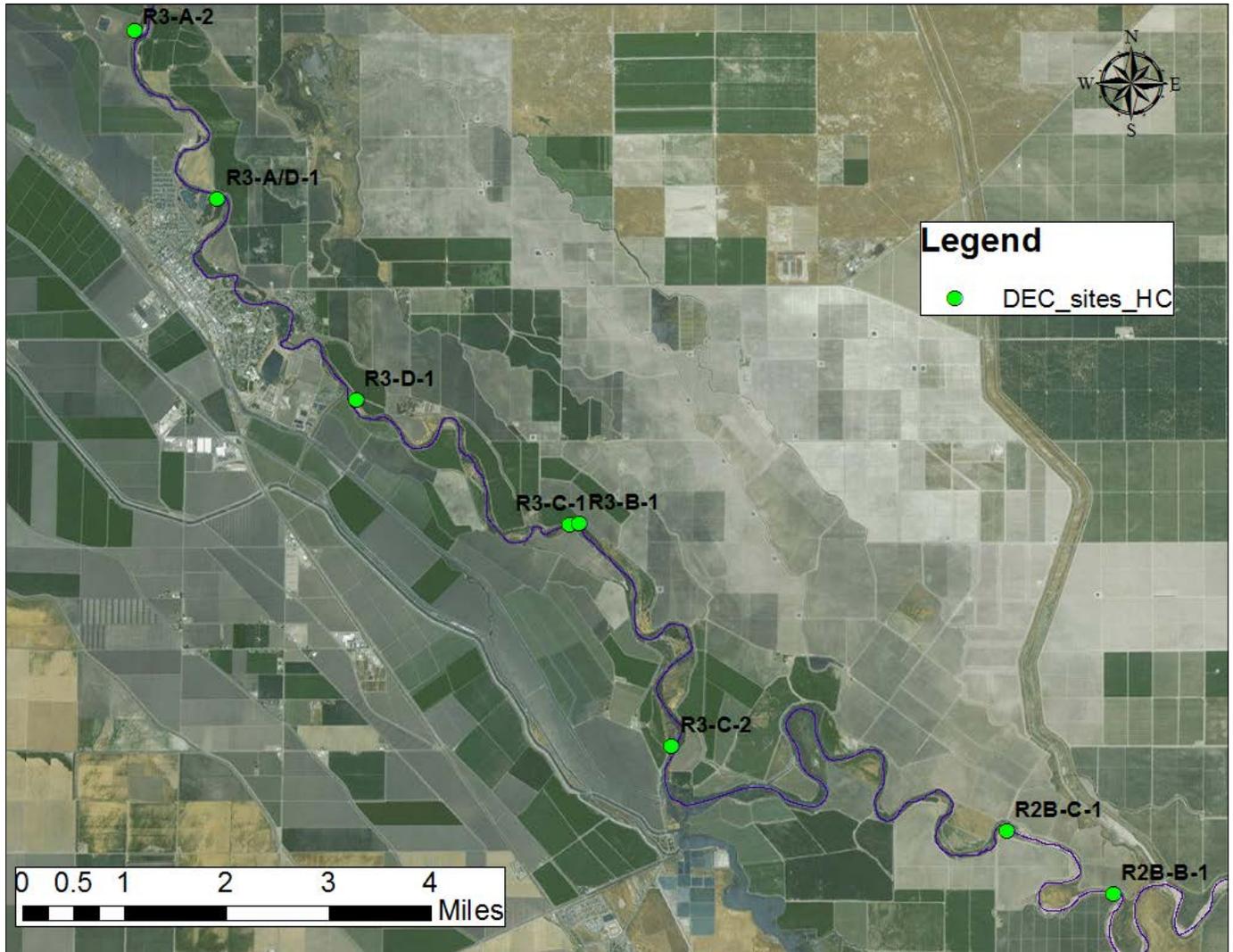


Figure 3 - Sample site locations along the San Joaquin River Restoration Reach 2B and 3.

If you have questions, please contact the SJRRP Landowner Coordinator, Craig Moyle. Craig's contact information is provided below.

Craig Moyle, Landowner Coordinator  
Office (operator): 916-924-8844  
Office (direct line): 916-418-8248  
Mobile: 916-642-6383  
Fax: 916-924-9102  
Email: [craig.moyle@mwhglobal.com](mailto:craig.moyle@mwhglobal.com)

For more information, please visit the SJRRP Web site at [www.restoresjr.net](http://www.restoresjr.net).