

Marana Water Reclamation Facility Expansion

Marana, Arizona

Keller's ground improvement program was completed 1.5 weeks ahead of the contracted schedule.



The project

A 16,000-square-foot aeration basin and two 5,000-square-foot clarifiers were to be constructed within an approximately five-acre site. Near-surface alluvial soils consisted of lean clay, silty clay, and clayey sand.

The challenge

The anticipated structural loading ranging from 1,600 to 3,500 lbs per square foot would have caused significant compression of the upper strata, resulting in an intolerable differential settlement between facilities. Removal and replacement of the upper 12 to 15 feet of site material would have required approximately 14,000 cubic yards of imported fill.

The solution

In lieu of removal and replacement of compressible soils, Keller designed and installed a ground improvement program consisting of over 1,000 vibro piers that would keep differential settlement to less than 0.75 inches. This program improved the allowable bearing pressures of the in-situ soils by increasing bearing capacity and reducing anticipated settlements to tolerable values.

“ The PCL team appreciated Keller’s expertise in pier construction. The team’s knowledge and expertise was instrumental in our early talks with the design engineers to help develop a work plan to deal with our challenging soil conditions.

Jared Rubinoff
Assistant Project Manager, PCL Construction, Inc.

Project facts

Owner(s)

Town of Marana

Keller business unit(s)

Keller

Main contractor(s)

PCL Construction, Inc.

Engineer(s)

Carollo Engineers

Solutions

Ground improvement

Markets

Industrial and manufacturing

Techniques

Vibro (aggregate) piers®

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