



## FY 2019/20 GROUNDWATER WELL REHABILITATION PROJECT

Riverside Public Utilities

Board of Public Utilities  
October 28, 2019

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### BACKGROUND

1. 52 wells
2. Performance decreases
  1. Wear and tear
  2. Declining water levels
3. Periodic maintenance



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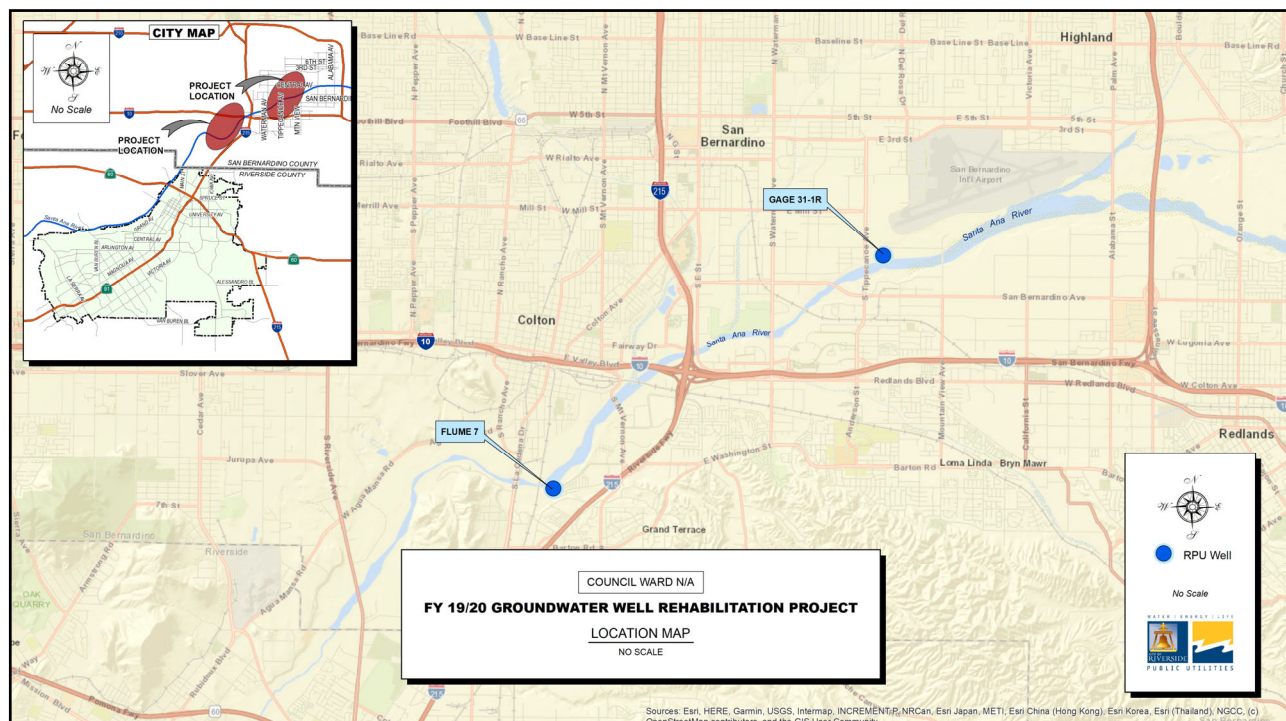
## PROJECT DESCRIPTION

1. Evaluate and prioritize groundwater wells
  - a. Hired Geoscience on June 21, 2013
  - b. Assess current operational data and needs
2. Two wells to undergo rehabilitation work during FY2019/20:
  - a. Flume 7
  - b. Gage 31-1R



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## SCOPE OF WORK

1. Remove and inspect pumping equipment
2. Repair / replace, as needed
3. Adjust pump depth
4. Video survey
5. Clean well
6. Redevelop and test



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## MOTOR REMOVAL, INSPECTION AND REPAIR



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## COLUMN, SHAFT AND PUMP REMOVAL AND REPLACEMENT



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## MECHANICAL CLEANING – BRUSHING AND BAILING

1. The inside of the well screen is mechanically cleaned by raising and dropping a tight fitting brush tool.
2. Debris is removed from the bottom of the well.



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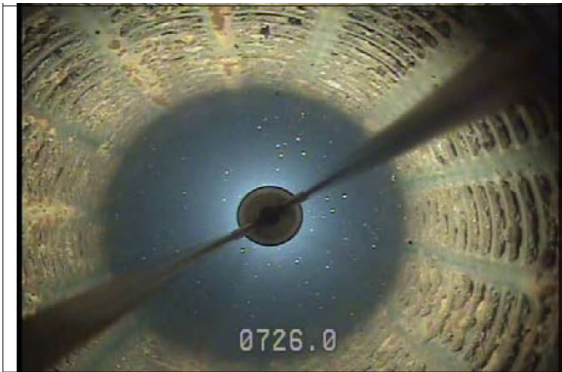
# CLEANING ADDITIVES

Special additives are mixed into the well to assist in descaling the well screen and demineralizing the well formation.

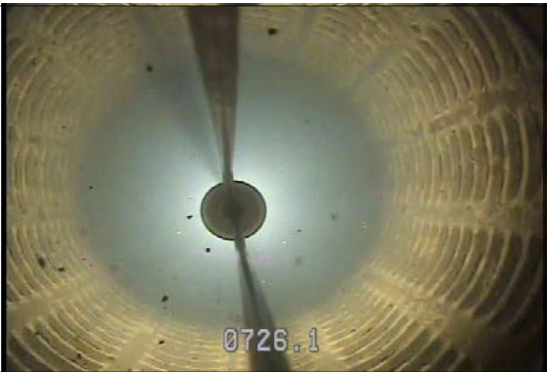


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# VIDEO LOG



Before brushing



After brushing



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## MECHANICAL CLEANING – DUAL SWAB AND SIMULTANEOUS AIRLIFT

1. The well is mechanically swabbed by raising and dropping the drill pipe equipped with a tight fitting dual swab on the bottom.
2. During swabbing, water is airlifted from the well.

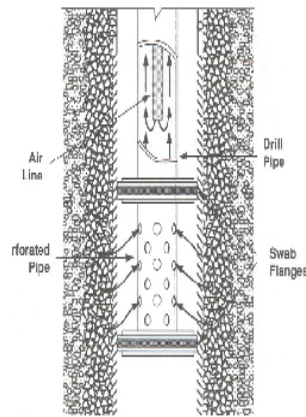


Figure 14.7. Airlift swabbing tool.



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## BID RESULTS

1. The project was advertised on September 12, 2019
2. A pre-bid conference was held on September 17, 2019
3. Bids were opened on September 27, 2019
4. Four bids were received

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## BID RESULTS (CONT.)

Rank	Vendors	City Location	Bid Total
1.	<b>Layne Christensen Company</b>	<b>Redlands, CA</b>	<b>\$578,678.57</b>
2.	Weber Water Resources	Corona, CA	\$683,100.68
3.	Best Drilling and Pump, Inc.	Colton, CA	\$688,720.00
4.	Zim Industries, Inc.	Bakersfield, CA	\$705,288.01

► Engineer's Construction Cost Estimate \$691,000



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## PROJECT BREAKDOWN

Project and Fiscal Breakdown		W.O. No. 1921584 (Flume 7)	W.O. No. 1921585 (Gage 31-1R)	Total Project
<b>Work Type:</b>	<b>Performed By:</b>	<b>Amount:</b>	<b>Amount:</b>	<b>Amount:</b>
Planning and Design	Internal Staff	\$10,146.94	\$10,306.49	\$20,453.43
Construction	Layne Christensen Company	\$229,866.06	\$348,812.51	\$578,678.57
Construction Support	Internal Staff	\$10,000	\$10,000	\$20,000
Engineering Support, Construction Management and Inspection	Internal Staff	\$35,000	\$35,000	\$70,000
Hydrogeologist Services	Vendor to be Determined (Consultant Panel)	\$10,000	\$10,000	\$20,000
Construction Contingencies	N/A	\$22,987	\$34,881	\$57,868
<b>Work Order Totals:</b>		<b>\$318,000</b>	<b>\$449,000</b>	<b>\$767,000</b>
Reimbursements:	None			
<b>Anticipated Start Date:</b>	<b>November 2019</b>			
<b>Anticipated Duration:</b>	<b>5 Months</b>			



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## RECOMMENDATIONS

That the Board of Public Utilities:

1. Award Bid No. RPU-7695 for the construction of the FY2019-20 Groundwater Well Rehabilitation Project to Layne Christensen, of Redlands, California, in the amount of \$578,678.57;
2. Approve the capital expenditures for Work Order No. 1921584 in the amount of \$318,000, which include all design, construction, contract administration, inspection, and construction change order authority costs for rehabilitating the Flume 7 Well;



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## RECOMMENDATIONS (con't)

3. Approve the capital expenditures for Work Order No. 1921585 in the amount of \$449,000 which include all design, construction, contract administration, inspection, and construction change order authority costs for rehabilitating the Gage 31-1R Well; and
4. Authorize the City Manager, or designee, to execute construction agreements and any other documents necessary to effectuate the project described herein, as well as, the ability to make minor non-substantive changes including changes to each of the work order amounts not-to exceed the cumulative project total of \$767,000 and in accordance with all purchasing policies.



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