

QUARTERLY PROGRESS REPORT NO. 10
Victoria ASR Demonstration Project

To:
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From:
Fred Blumberg—Arcadis Project Manager
Donald Reese—Victoria Director of Public Works

Date:
April 2, 2019

ARCADIS Project No.:
25963002.0000

Subject:
Quarterly Progress Report for the Victoria ASR Demonstration Project (**Contract No. 1600011958**) for **January 1, 2019 through March 31, 2019**.

Introduction:

The Victoria Aquifer Storage and Recovery (ASR) Demonstration Project is being partially funded by the Texas Water Development Board (TWDB) under Rider 25 to HB 1 (General Appropriations Act) of the 84th Legislature. The “Project” generally consists of: permitting, designing, and constructing an ASR retrofit to an existing City of Victoria groundwater production well (Well No. 19); constructing a potable water pipeline for recharge and recovery purposes; conducting training and preparing an operation and maintenance (O&M) manual; cycle testing and assessment of the operational ASR well; and making presentations summarizing results. The Project Contractor is the Victoria County Groundwater Conservation District (the “Victoria County GCD”) and the primary Project Participant is the City of Victoria, Texas (the “City”). The Project consulting and engineering team consists of Arcadis U.S., Inc.; ASR Systems, LLC; and INTERA, Inc. (the “Arcadis Team”).

The purposes of this Quarterly Progress Report are to explain what work has been accomplished during the reporting period, and to describe any potential or anticipated challenges.

Work Completed:

Task 1: Project Management. During this reporting period the Arcadis Team continued with project management activities. Arcadis began work on the next quarterly invoice and progress report which will be reviewed and commented upon by the City of Victoria and the Victoria County GCD.

The Project participants also continued to hold monthly progress conference calls. The latest group call was held on March 21, 2019

On January 25, 2019 the Victoria County GCD requested that TWDB amend the Contract to change the Study Completion Date from March 29, 2019 to May 17, 2019. On April 2, 2019 Fred Blumberg was

notified by email that the request had been approved, and the amendment had been fully executed by the TWDB.

Task 2: Permitting. Completed.

Task 3: ASR Facilities Design. Completed.

Task 4: Retrofit of Well No. 19. The revised-program retrofit of Well No. 19 was completed in early January 2019. Bacteriological samples were collected by the City, and the results were negative. The City began recharging with water from the public water distribution system on January 18, 2019.

Task 5: Potable Water Line Construction. Completed.

Task 6: Training and Preparation of O&M Manual. **Completed.**

Task 7: Cycle Testing and Assessment. The City resumed recharging with potable water from the distribution system on January 18, 2019. The well was initially recharging at a rate 525 gallons per minute (gpm) with a wellhead pressure of 42 pounds per square inch (psi) and an annulus pressure of 0 psi. The recharge rate went as high as about 580 gpm.

The City stopped recharging on February 12, 2019, having stored in the 25 days about 19 million gallons of potable water. On February 21, 2019, the City began recovering and delivering stored water into the City's distribution system at a rate of about 1,000 gpm.

Recovery was stopped periodically to match public water demand and elevated storage tank levels in the distribution system, and to make repairs to the chemical feed equipment used to restore disinfectant residuals in the recovered water.

The first cycle test period was completed when the City stopped recovering water on March 19, 2019. Recovered water samples were collected at the end of the cycle. During the recovery period, the City recovered 5,234,762 gallons (16.06 acre-feet) of stored water.

The initial cycle test period was abbreviated in order to collect the final water quality samples needed to finalize the draft report for the TWDB. Before the draft report is submitted to the TWDB, it will be reviewed by the City and the Victoria County GCD.

The City resumed recharge of water from the distribution system on March 20, 2019. Recharge will be halted for a period of several weeks when the City staff switches from chloramines to free chlorine.

Task 8: Draft and Final Reports. The Arcadis team continues work on the sections of the draft report that can be completed to this stage in the Project.

Task 9: Presentations. On February 28, 2019 Fred Blumberg gave a presentation entitled "Water Availability and Financial Factors Related to Using Aquifer Storage & Recovery for Emergency Supply and To Meet Peak Demands" to the Capital Area Chapter of the TAWWA in Austin, Texas.

Challenges Identified:

No new challenges have been identified during this reporting period.