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## QUARTERLY PROGRESS REPORT NO. 3

### Victoria ASR Demonstration Project

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From:  
Lynn Short (City of Victoria)—Project Manager

Date:  
July 20, 2017

ARCADIS Project No.:  
25963002.0000

Subject:  
Quarterly Progress Report for the Victoria ASR Demonstration Project (**Contract No. 1600011958**) for **April 1, 2017 through June 30, 2017**.

### 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 84<sup>th</sup> 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.



Figure 1: Existing Well 19 Pumphouse and Piping

## 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 which will be reviewed and commented upon by the City of Victoria and the Victoria County GCD. The second invoice was submitted to the TWDB on April 2017. After discussions with the TWDB, a revised invoice was submitted on May 19, 2017.

Since the kickoff meeting, the Arcadis Team has held conference calls every two weeks to review progress on the various tasks. The Project participants also continued to hold monthly progress conference calls. The latest group call was held on June 15, 2017.

Task 2: Permitting. On April 17, 2017 members of the Arcadis Team and City representative Lynn Short met with TCEQ to discuss the Class V application package submitted in early March 2017. During that discussion, it was decided that the most efficient way to get the required TCEQ authorization in a timely manner was to submit a letter to TCEQ requesting that the original application package serve as the basis for a Class V Experimental Well Injection Authorization. Such a letter was submitted to TCEQ on April 25, 2017. On April 28, 2017, the City received an authorization for a Class V Injection Well (Authorization No. 5X2500127)

Task 3: ASR Facilities Design. The final detailed design and bid package was submitted to the City in March 2017. Using those documents, the City advertised for bids on the retrofit of Well No. 19 on April 16 and April 23, 2017. A pre-bid conference with prospective contractors was held on May 2, 2017, and bids were opened on May 10, 2017.

During the reporting period, the Arcadis Team also submitted the plans and specifications to TCEQ for its review of the proposed design of well, piping and chemical feed systems.

Task 4: Retrofit of Well No. 19. A pre-bid meeting with prospective contractors was held on May 2, 2017 in Victoria, Texas. In addition to Arcadis and City staff members, representatives from five drilling and/or construction companies were in attendance. The one-hour meeting was followed by a site visit to Well No. 19. **Photographs 1 and 2** below show the pre-bid meeting and site visit. The Arcadis Team responded to questions from prospective bidders between the pre-bid meeting and the bid opening.



Photograph 1: Pre-bid Meeting



Photograph 2: Site Visit

Bids for retrofit of Well No. 19 were opened on May 10, 2017. The Arcadis Team reviewed the bids and information on the bidders, and prepared a bid tabulation for use by the City. The Arcadis Team also worked with the City to analyze alternatives that might have been used if there had been a need to eliminate some components of the project. After review by the City, no revisions were necessary.

On June 6, 2017, the City Council awarded the construction contracts to Weisinger, Inc. (for the Part A, Well Rehabilitation) and Mercer Construction Company (for the Part B, ASR Surface Facilities). Construction will start as soon as the contractors submit acceptable bonds, insurance information and schedules.

Task 5: Potable Water Line Construction. The City completed design of the pipeline and initial ordering of materials. Construction of the 12-inch pipeline and the 2-inch trickle feed pipeline began in late June 2017. **See Photographs 3 and 4** below.



**Photograph 3: 12-inch Pipeline**



**Photograph 4: 2-inch Trickle Feed Pipeline**

Task 6: Training and Preparation of O&M Manual. No work on this task has been completed in this reporting period.

Task 7: Cycle Testing and Assessment. No work on this task has been completed in this reporting period.

Task 8: Draft and Final Reports. No work has been completed on this task in this reporting period.

Task 9: Presentations. Fred Blumberg moderated a panel on ASR well design and construction at the American Ground Water Trust conference in Austin, Texas on May 4, 2017. The Victoria ASR project was discussed briefly as an example of an existing production well being converted to an ASR well.

### **Challenges Identified:**

Task 2 UIC Permitting Effort. As discussed in previous progress reports, significantly more information was required to complete the TCEQ Class V application package than the Arcadis Team and City expected. The additional effort to gather data, and to prepare and produce the application package resulted in the actual expenses for Task 2 exceeding the proposed budget for that task.

In order to expedite the Project, members of the Arcadis Team and City representative Lynn Short met with TCEQ on April 17, 2017 to discuss the Class V application package. As discussed above, it was decided to submit a letter to TCEQ requesting that the original application package serve as the basis for a Class V Experimental Well Injection Authorization. On April 28, 2017, the City received an authorization for a Class V Injection Well (Authorization No. 5X2500127).

Task 4: Retrofit of Well No. 19. Bids were opened by the City on May 10, 2017. The apparent low bidder for the Part A Well Rehabilitation (Weisinger) submitted a bid reasonably close to the cost estimate included in the Rider 25 application submitted to the TWDB and the latest engineer's estimate of probable construction cost. However, the apparent low bidder for the Part B ASR Surface Facilities (Mercer) submitted a bid significantly higher than the cost estimate included in the Rider 25 application submitted to the TWDB. Although the Mercer bid was reasonably close to the latest engineer's estimate of probable construction cost, the total bid cost for the Project was higher than the proposed funding to be provided by the TWDB and the City. After discussing the matter and receiving City Council approval, the City will use available funds to pay the additional cost without the need to make major modifications to the design.