



**PURCHASING ITEM  
FOR  
COUNCIL AGENDA  
Memo No. CA09-072**

**1. Agenda Item Number:**  
**29**  
**2. Council Meeting Date:**  
September 25, 2008

**TO: MAYOR & COUNCIL**  
**THROUGH: CITY MANAGER**

**3. Date Prepared:** September 8, 2008  
**4. Requesting Department:** Municipal Utilities

**5. SUBJECT:** Award a project agreement to Clear Creek Associates, PLC, for Tumbleweed Aquifer Storage and Recovery (ASR) Well #8 Construction Management, Project No. WW0701-451, in an amount not to exceed \$39,293.

**6. RECOMMENDATION:** Staff recommends Council award a project agreement to Clear Creek Associates, PLC, for Tumbleweed Aquifer Storage and Recovery (ASR) Well #8 Construction Management, Project No. WW0701-451, in an amount not to exceed \$39,293.

**7. BACKGROUND/DISCUSSION:** ASR wells are needed to support the reclaimed water distribution system. ASR wells are used to inject reclaimed water in the upper aquifer when irrigation demands are low. When irrigation water demand is high, these wells are pumped to recover the stored effluent water for use in the reclaimed water distribution system.

This project agreement provides for construction management services during the drilling of one (1) ASR well in the Tumbleweed Recharge area. A construction contract for the drilling of the well will be awarded separately.

**8. EVALUATION PROCESS:** On September 11, 2008, Council approved a one year renewal of an annual contract, EN0710-101, with Clear Creek Associates, PLC, for permitting, study, construction management services, and design of water and wastewater facilities. Staff has reviewed the scope of work, billing rates, and total fee for this project, compared them to historical costs, and determined that they are acceptable.

**9. FINANCIAL IMPLICATIONS:**

Cost:	\$39,293
Savings:	None
Long Term Costs:	None

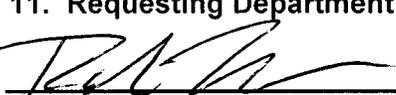
Fund Source:

<u>Acct. No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
615.3910.0000.6817.8VWV189	VW Operating	Effluent Reuse Storage & Recovery Wells	FY 07/08	\$39,293

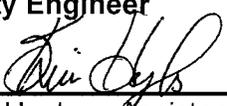
**10. PROPOSED MOTION:** Move that Council award a project agreement to Clear Creek Associates, PLC, for Tumbleweed Aquifer Storage and Recovery (ASR) Well #8 Construction Management, Project No. WW0701-451, in an amount not to exceed \$39,293.

**ATTACHMENTS:** Location Map, Project Agreement

**APPROVALS**

**11. Requesting Department**  
  
Robert Mulvey, Assistant Municipal Utilities Director

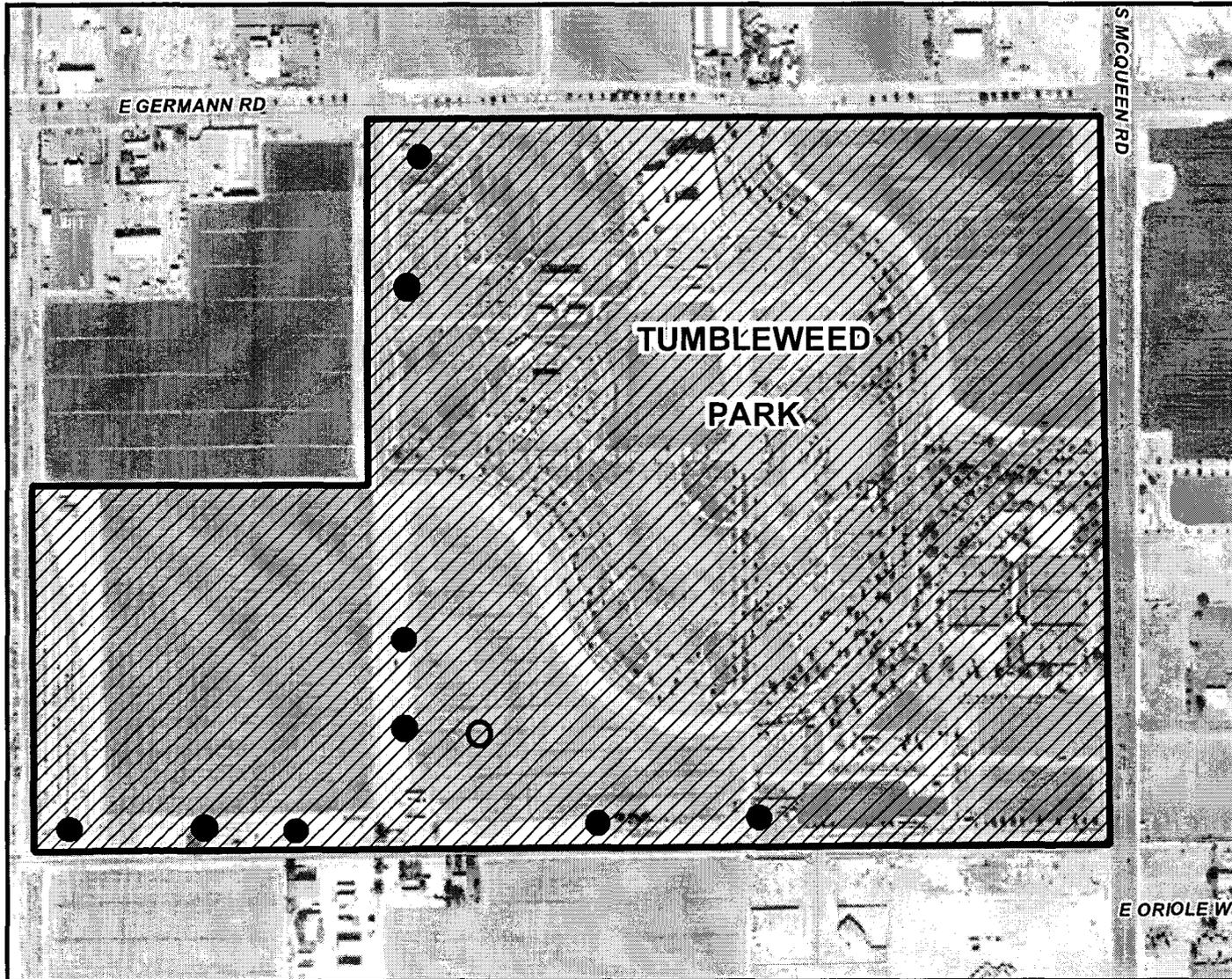
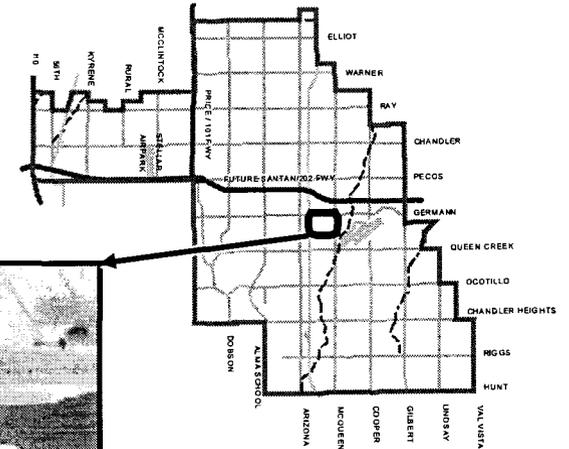
**13. Department Head**  
  
Dave Siegel, Municipal Utilities Director

**12. City Engineer**  
  
Sheina Hughes, Assistant Public Works Director/  
City Engineer

**14. City Manager**  
  
W. Mark Pentz



# TUMBLEWEED ASR WELL NO. 8 PROJECT NO. WW0701 - 451



MEMO NO. CA09-072

**LEGEND:**

- Existing ASR Wells
- Future ASR Well NO. 8







## EXHIBIT A SCOPE OF WORK

This scope of work is for the oversight of the installation and permitting of one new Aquifer Storage and Recovery (ASR) well, referred to as Tumbleweed Well #8.

ANNUAL CONSULTANT has designed and developed a technical specification for the well drill and installation for the City of Chandler (the City). Drilling permit applications, as required by the Arizona Department of Water Resources (ADWR), shall also be retained under a previous scope for the site. This scope of work assumes that a pilot hole shall be drilled initially to evaluate the aquifer conditions. ANNUAL CONSULTANT shall provide construction management for well installation, prepare a final well installation report, and complete subsequent recovery well permitting after the well has been installed and tested.

### Task 1.0      Drilling Oversight

ANNUAL CONSULTANT shall attend a pre-construction meeting with City staff and the drilling contractor (Contractor) prior to commencement of field activities. ANNUAL CONSULTANT shall provide inspection services during the pilot borehole drilling on a daily basis (typically 8 hours per day, 7 days per week), shall analyze the drilled cuttings that have been collected at 10-foot intervals by the Contractor, and shall prepare a descriptive lithologic log of the drilled material. Lithologic logging shall enable ANNUAL CONSULTANT to verify those portions of the aquifer with the greatest potential for groundwater production. The drilled cuttings from each 10-foot interval shall be secured in chip trays, which shall be provided to the City for archival purposes. Drilled cuttings from selected intervals of the borehole shall be submitted for sieve analysis by a geotechnical laboratory to evaluate the appropriate well screen slot size and filter pack grain size necessary to enhance well performance and prevent sand invasion while the well is in use. The geotechnical laboratory shall be subcontracted by ANNUAL CONSULTANT.

Geophysical logging shall be conducted in the borehole to provide additional hydrologic and geologic information. ANNUAL CONSULTANT shall oversee the performance of the geophysical logging, and shall analyze and report the geophysical logging results. The geophysical logging company shall be subcontracted by the Contractor. The recommended suite of geophysical logs includes: caliper log (in both the pilot borehole and the reamed borehole), electric log, sonic log, guard log, and natural gamma-ray log.

### Task 2.0      Construction Inspection Services

ANNUAL CONSULTANT shall provide inspection services during the well construction phase on a continual basis (24 hours per day, 7 days per week) throughout the estimated 2-day well construction period for the well. During the well construction phase of this project, continuous (24-hour per day) inspection is essential because the ultimate value of an ASR well relies greatly on the Contractor's adherence to the materials, methods, and technical standards that have been specified. ANNUAL CONSULTANT personnel shall document the construction materials, installation techniques, and well development techniques via various methods, including but not limited to pipe tallies, cement grout records, and development records. ANNUAL CONSULTANT shall collect samples of the filter pack material and cement grout to determine conformance with the project specifications, and shall prepare a detailed As-Built diagram of the ASR well for inclusion in the Well Installation Report (Task 4.0).

ANNUAL CONSULTANT shall also provide inspection services on an intermittent basis (8 hours per day) throughout the estimated 3-day development period for the well to assure that the well development is conducted in compliance with the specified standards and in a manner consistent with local aquifer conditions. ANNUAL CONSULTANT shall also provide inspection services for the final well video survey, and for the plumbness and alignment survey. ANNUAL CONSULTANT shall prepare a video survey log to document the content of the final video, and shall include the log in the Well Installation Report (Task 4.0).

### Task 3.0      Post-Construction Well Testing and Analysis

Prior to test pumping the new well, ANNUAL CONSULTANT shall coordinate with City staff to identify a water discharge area and coordinate efforts to minimize public relations problems that may result from the

discharge of large volumes of water. ANNUAL CONSULTANT shall provide logistical coordination of the discharge of water from the well site in accordance with any discharge permit issues or limitations.

ANNUAL CONSULTANT shall coordinate and analyze a 10-hour step rate pumping test and a 24-hour constant rate aquifer test at the new ASR well. This task also includes a 4-hour water level recovery test after the completion of the constant rate aquifer test. The Contractor shall provide the test engine, motor, and ancillary equipment for both tests, and shall be responsible for maintaining and operating the equipment during the tests. The step-rate pumping test shall consist of five varying pumping rates (steps), each approximately 2 hours in duration. ANNUAL CONSULTANT shall record the water-level measurements and water quality field parameters, including electrical conductivity, sand content, pH, and temperature of the discharge water.

Following the step rate pumping test, a constant rate aquifer test of approximately 24 hours shall be conducted at the new well. During the constant rate aquifer test, ANNUAL CONSULTANT shall collect the initial 8 hours of water-level measurements, and shall coordinate the collection of subsequent water-level data by the Contractor. The optimum pumping rate of the well (determined during the step-rate pumping test) shall be maintained throughout the constant rate aquifer test.

After the cessation of pumping, ANNUAL CONSULTANT shall conduct a water-level recovery test for a period of 4 hours, or until 95% water-level recovery has been achieved (whichever occurs first).

ANNUAL CONSULTANT shall provide start-up support for the new ASR well once the permanent pump equipment has been installed. ANNUAL CONSULTANT shall monitor the initial start-up and injection test activities.

#### Task 4.0 Well Installation Reports

ANNUAL CONSULTANT shall prepare a well installation report for the ASR well. The report shall summarize all work conducted during the installation of the ASR well. The well installation report shall include all documentation collected during well drilling and installation, including but not limited to pipe tallies, grout records, penetration rate logs, geophysical logs, the lithologic log, zonal groundwater sample results, aquifer test results, the final plumbness and alignment analysis, and the final video log. A detailed As-Built drawing of the ASR well shall also be included in the report. ANNUAL CONSULTANT shall provide the City with five (5) draft copies of the Well Installation Report for review and response by City staff. ANNUAL CONSULTANT shall incorporate comments received from City staff and shall provide the City with ten (10) final copies of the Well Installation Report.

#### Task 5.0 Recovery Well Permitting

ANNUAL CONSULTANT shall perform all necessary permitting for the Recovery Well Permit for the new well. As part of the Recovery Well Permitting, ANNUAL CONSULTANT shall complete a Well Impact/Well Spacing analysis as required by ADWR. One impact report shall be completed for the ASR well site. The Recovery Well application along with the Well Impact Analysis shall be submitted to the City for signature and then to ADWR for processing. ANNUAL CONSULTANT shall also address any deficiencies needed to finalize the permit. This task also includes permit application fees.

#### Task 6.0 Project Management/Meetings

ANNUAL CONSULTANT shall provide overall technical and financial management of the project, including weekly and monthly financial tracking, preparation of monthly billing letters, and overall project coordination. In addition, ANNUAL CONSULTANT shall attend up to four meetings during the well installation/abandonment portion of the project.

**EXHIBIT B  
FEE SCHEDULE**

	Task	Annual Consultant		Other Direct Costs	TOTAL COST
		Hrs	Costs		
1.0	Drilling Oversight	57	\$ 5,099	\$ 600	\$ 5,699
2.0	Construction Inspection Services	89	\$ 7,721	\$ 400	\$ 8,121
3.0	Post-Construction Well Testing and Analysis	72	\$ 6,622	\$ 700	\$ 7,322
4.0	Well Installation Report	103	\$ 9,117	\$ 500	\$ 9,617
5.0	Recovery Well Permitting	50	\$ 4,411	\$ 450	\$ 4,861
6.0	Project Management/Meetings	28	\$ 3,473	\$ 200	\$ 3,673
	<b>TOTAL</b>	<b>400</b>	<b>\$ 36,443</b>	<b>\$ 2,850</b>	<b>\$ 39,293</b>

<b>ASSUMPTIONS:</b>	Task 1.0 includes geotechnical laboratory subcontractor costs.
	Task 3.0 includes up to 8 hours for startup assistance.
	Task 4.0 assumes one Well Completion report.
	Task 5.0 includes 1 Well Impact/Well Spacing Report, and recovery well permit.
	Task 6.0 assumes attendance at weekly project meetings during the course of well installation activities only (maximum of 4).