



# Offer and Acceptance

State of Arizona  
State Procurement Office  
100 N. 15<sup>th</sup> Ave. Suite 201  
Phoenix, AZ 85007

SOLICITATION NO.: ADSPO16-00005912 Request  
for Qualifications: 2016 Annual Professional  
Services List

PAGE  
1

Offeror: Southwest Ground-water Consultants

OF  
1

## OFFER

### TO THE STATE OF ARIZONA:

The Undersigned hereby offers and agrees to furnish the material, service or construction in compliance with all terms, conditions, specifications and amendments in the Solicitation and any written exceptions in the offer. Signature also certifies Small Business status.

Southwest Ground-water Consultants

Company Name

3033 North 44th Street, Suite 120

Address

Phoenix, Arizona 85018-7226

City State Zip

snoel@sgcground-water.com

Contact Email Address

Signature of Person Authorized to Sign Offer

Stephen D. Noel, R.G.

Printed Name

Director/Principal Hydrogeologist

Title

Phone: 602-955-5547

Fax: 602-955-7585

By signature in the Offer section above, the Offeror certifies:

1. The submission of the Offer did not involve collusion or other anticompetitive practices.
2. The Offeror shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, State Executive Order 2009-9 or A.R.S. §§ 41-1461 through 1465.
3. The Offeror has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause shall result in rejection of the offer. Signing the offer with a false statement shall void the offer, any resulting contract and may be subject to legal remedies provided by law.
4. The Offeror certifies that the above referenced organization  IS/  IS NOT a small business with less than 100 employees or has gross revenues of \$4 million or less.

## ACCEPTANCE OF OFFER

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the solicitation, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by the State.

This Contract shall henceforth be referred to as Contract No. ADSPO16-00005912

The effective date of the Contract is March 1, 2016

The Contractor is cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order, contract release document or written notice to proceed.

State of Arizona  
Awarded this 29 day of February 2016

  
Procurement Officer



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
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**DEFINITIONS**

**Architect Services, Engineer Services, Land Surveying Services, Assayer Services, Geologist Services and Landscape Architect Services:** Those professional services within the scope of the practice of those services as provided in ARS § 32-101.

**Branch Office:** A geographically distinct place of business or subsidiary office of a firm that has a key role on the team.

**Discipline:** Primary technical capabilities of key personnel, as evidenced by academic degree, professional registration, certification, and/or extensive experience.

**Firm:** Defined in ARS § 32-101(B.19.).

**Key Personnel:** Individuals who will have major contract responsibilities and/or provide unusual or unique expertise.

**SPECIFIC INSTRUCTIONS:**

1. Complete this form for each branch office seeking work under this RFQ.
  - a. – e. **Firm (or Branch Office) Name and Address.** Self-explanatory.
  - f. **Year Established.** Enter the year the firm (or branch office, if appropriate) was established under the current name.
  - g. **Ownership.**
    - (g1). *Type.* Enter the type of ownership or legal structure of the firm (sole proprietor, partnership, corporation, joint venture, etc.).
    - (g2). *Small Business Status.* A firm is a small business if the firm has less than 100 employees **or** has gross revenues of \$4 million or less.
  - h.-j. **Point of Contact.** Provide this information for a representative of the firm that the Customer can contact for additional information. The representative must be empowered to speak on contractual and policy matters.
  - k. **Name of Firm.** Enter the name of the firm.
2. **Employees by Discipline.**
  - a. Select disciplines from the List of Disciplines (Function Code) listed on Page 3 of 4 Instructions. For employees that do not qualify for any of the disciplines, select "Other". *Note: The intended searchable database indicated in the RFQ will be populated from the Qualifications Form I Excel attachment only.*
  - b. Each person can be counted only twice; once for his/her primary function and once for his/her secondary function. Primary and secondary functions should be indicated by including a "P" or an "S" in column b after the Description Title is given.
  - c-d. If the form is completed for a firm (including all branch offices), enter the number of employees by disciplines in column c. If the form is completed for a branch office, enter the number of employees by discipline in column d and for the firm in column c.
3. **Profile of Firm's Experience and Annual Average Revenue for Last Year.**
  - a. Enter the approximate number of projects the firm (or branch) has done attributable by Profile Code listed on Page 3 of 4 Instructions over the last year.



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- b. Enter the appropriate Profile Codes from Instructions Pages 3 of 4 that represent the type of work the firm (or branch) has done over the last year.
  - c. Using the Revenue Index Number on Page 3 of 6 Form, indicate the approximate revenue the firm has earned over the last year per Profile Code entered into the table.
4. **Resumes of Key Personnel Proposed for This Contract.** Complete this section for each key person who will participate in this contract.
  - a. Self-explanatory.
  - b. Self-explanatory
  - c. Total years of relevant experience (block c1), and years of relevant experience with current firm, but not necessarily the same branch/office (block c2).
  - d. Name, City and State of the firm where the person currently works, which must correspond with one of the firms (or branch office or a firm, if appropriate) listed in Section 1.
  - e. Provide information on the highest relevant academic degree(s) received. Indicate the area(s) of specialization for each degree.
  - f. Provide information on current relevant professional registration(s) and in which State(s) they are current.
  - g. Provide information on any other professional qualifications relating to this contract, such as education, professional registration, publications, organizational memberships, certifications, training, awards, and foreign language capabilities.
  - h. Provide information on no more than five (5) projects in the last year which the person had a significant role that demonstrates the person's capability relevant to her/his proposed role in this contract. These projects do not necessarily have to be any of the projects presented in Section 5 for the project team if the person was not involved in any of those those projects or the person worked on other projects that were more relevant than the team projects in Section 5. Use the check box provided to indicate if the project was performed with any office of the current firm. If any of the professional services or construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description and Specific Role.
5. **Example Projects Which Best Illustrate Firms Qualification for this contract.** Select project where multiple team members worked together, if possible, that demonstrate the team's capability to perform work similar to that required for this contract. Complete one Section 5 for each project. List no more than five (5) projects.
  - a. Title and Locations of project or contract. For an indefinite delivery contract, the location is the geographic scope of the contract.
  - b. Enter the year completed of the professional services (such as planning, engineering study, or design), and/or the year completed if construction. If any of the professional services or the construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description of Project and Relevance to This Contract (block f).
  - c. Project Owner or user, such as a government agency or installation, an institution, a corporation or private individual.
  - d. Provide the original budget or not to exceed dollar amount for the project.
  - e. Provide the Total Cost of the Project. If any of the professional services or construction projects is not complete, indicate the percentage complete and whether this project will be on budget, over or under budget.
  - f. Brief Description: Indicate scope, size, and length of project, principle elements and special features of the project. Discuss the relevance of the example project to this contract.
6. **Additional Information.** Use this section to provide additional information you feel may be necessary to describe your firm's qualifications for this contract.
7. **Annual Average Professional Services Revenues of Firm for Last 3 Years.** Complete this block for the firm or branch office for which this form is completed. In column a, enter an approximate percentage of total work attributable to State, Federal or Municipal Work. In column b, enter an approximate percentage of total work attributable to Non-Government work. Percentages should take into consideration work completed over the last 3 years.
8. **Authorized Representative.** An authorized representative of the firm or branch office must sign and date the completed form. Signing attests that the information provided is current and factual. Provide the name and title of the



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authorized representative who signed the form.

List of Disciplines (Function Codes) for Question 2

- |                           |  |                          |
|---------------------------|--|--------------------------|
| Aeronautical Engineer     | Environmental Engineer                   | Mining Engineer          |
| Agricultural Engineer     | Environmental Scientist                  | Nuclear Engineer         |
| Archeologist              | Fire Protection Engineer                 | Petroleum Engineer       |
| Architect                 | Geodetic Surveyor                        | Photogrammetrist         |
| Architectural Engineering | Geographic Information System Specialist | Project Manager          |
| Biologist                 | Geological Engineer                      | Sanitary Engineer        |
| CADD Technician           | Geologist                                | Soils Engineer           |
| Chemical Engineer         | Hydrographic Surveyor                    | Structural Engineer      |
| Civil Engineer            | Hydraulic Engineer                       | Technician/Analyst       |
| Construction Manager      | Hydrologist                              | Transportation Engineer  |
| Construction Inspector    | Industrial Engineer                      | Water Resources Engineer |
| Control Systems Engineer  | Landscape Architect                      |                          |
| Cost Engineer/Estimator   | Mechanical Engineer                      |                          |
| Ecologist                 | Metallurgical Engineer                   |                          |
| Electrical Engineer       |  |                          |

List of Experience Categories (Profile Codes for Question 3)

- |   |  |
|---|--|
| Acoustics, Noise Abatement  | Desalinization ( <i>Process and Facilities</i> )                     |
| Aerial Photography; Airborne Data and Imagery Collection and Analysis           | Design-Build - Preparation of Requests for Proposals                 |
| Activity Centers  | Digital Elevation and Terrain Model Development                      |
| Air Pollution Control   | Digital Orthophotography   |
| Airports; Nav aids; Airport Lighting; Aircraft Fueling                          | Dining Halls; Clubs; Restaurants                                     |
| Airports; Terminals and Hangars; Freight Handling                               | Dredging Studies and Design  |
| Agricultural Development; Grain Storage; Farm Mechanization                     | Design & Planning Structured Parking Facilities                      |
| Animal Facilities   | Detention Security Systems   |
| Anti-Terrorism/Force Protection   | Disability / Special Needs   |
| Area Master Planning  | Ecological and Archeological Investigations                          |
| Auditoriums and Theaters  | Educational Facilities; Classrooms                                   |
| Automation; Controls; Instrumentation   | Electrical Studies and Design  |
| Barracks; Dormitories   | Electronics  |
| Bridge Design: Bridges  | Elevators; Escalators; People-Movers                                 |
| Cartography   | Energy / Water Auditing Savings                                      |
| Cemeteries ( <i>Planning and Relocation</i> )                                   | Energy Conservation; New Energy Sources                              |
| Chemical Processing and Storage   | <b>Environmental Impact Studies, Assessments or Statements</b>       |
| Child Care/Development Facilities   | Fallout Shelters; Blast-Resistant Design                             |
| Codes; Standards; Ordinances  | Fire Protection  |
| Cold Storage; Refrigeration and Fast Freeze                                     | Fisheries; Fish Ladders  |
| Commercial Building ( <i>Low Rise</i> ); Shopping Centers                       | Forensic Engineering   |
| Community Facilities  | Garages; Vehicles Maintenance Facilities; Parking                    |
| Communications Systems; TV; Microwave   | Gas Systems ( <i>Propane; Natural, Etc.</i> )                        |
| Computer Facilities   | Geodetic Surveying: Ground and Airborne                              |
| Conservation and Resource Management  | Heating; Ventilating; Air Conditioning                               |
| Construction Management   | Highways; Streets; Airfield Paving; Parking Lots                     |
| Construction Surveying  | Historical Preservation  |
| Corrosion Control; Cathodic Protection Electrolysis                             | Hospital and Medical Facilities                                      |
| Cost Estimating; Cost Engineering and Analysis; Parametric Costing; Forecasting | Hotels; Motels   |
| Cryogenic Facilities  | <i>Housing (Residential, Multi-Family; Apartments; Condominiums)</i> |
| Construction Materials Testing  | Hotels; Motels   |
| Dams ( <i>Concrete; Arch</i> )  | Hydraulics and Pneumatics  |
| Dams ( <i>Earth; Rock</i> ); Dikes; Levees                                      | Hydrographic Surveying   |
|   | Industrial Buildings; Manufacturing Plants                           |
|   | Industrial Processes; Quality Control                                |



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Industrial Waste Treatment  
Intelligent Transportation Systems  
Infrastructure  
Irrigation; Drainage  
Judicial and Courtroom Facilities  
Laboratories; Medical Research Facilities  
Land Surveying  
Landscape Architecture  
Libraries; Museums; Galleries  
Lighting (*Interior; Display; Theater, Etc.*)  
Lighting (*Exteriors; Streets; Memorials; Athletic Fields, Etc.*)  
Labs - General  
Labs – Research – Dry  
Labs – Research – Wet  
LEED Accredited A/E  
LEED Independent 3<sup>rd</sup> Party Building Commissioning  
Mapping Location/Addressing Systems  
Materials Handling Systems; Conveyors; Sorters  
Metallurgy  
Materials Testing  
Measurement / Verification / Conservation Water Consumption Savings  
Mining and Mineralogy  
Medical Related  
Modular Systems Design; Fabricated Structures or Components  
Mold Investigation  
Museums  
Nuclear Facilities; Nuclear Shielding  
Office Buildings; Industrial Parks  
Outdoor Recreation  
Petroleum and Fuel (*Storage and Distribution*)  
Photogrammetry  
Pipelines (*Cross-Country - Liquid and Gas*)  
**Phase I Environmental**  
Prisons & Correctional Facilities  
Plumbing and Piping Design  
Prisons and Correctional Facilities  
Product, Machine Equipment Design Pneumatic Structures, Air-Support Buildings Power Generation, Transmission, Distribution Public Safety Facilities  
Radar; Sonar; Radio and Radar Telescopes  
Radio Frequency Systems and Shielding's  
Railroad; Rapid Transit  
Recreation Facilities (*Parks, Marinas, Etc.*)  
Refrigeration Plants/Systems  
Rehabilitation (*Buildings; Structures; Facilities*)  
Research Facilities  
Resources Recovery; Recycling  
Roof Infrared Imaging to Identify Water Leaks

Roofing  
Safety Engineering; Accident Studies; OSHA Studies  
Security Systems; Intruder and Smoke Detection  
Seismic Designs and Studies  
Sewage Collection, Treatment and Disposal  
Soils and Geologic Studies; Foundations  
Solar Energy Utilization  
Solid Wastes; Incineration; Landfill  
Special Environments; Clean Rooms, Etc.  
Structural Design; Special Structures  
Surveying; Platting; Mapping; Flood Plain Studies  
Sustainable Design  
Swimming Pools  
Storm Water Handling and Facilities  
Specifications Writing  
Toxicology  
Testing and Inspection Services  
Traffic and Transportation Engineering  
Topographic Surveying and Mapping  
Towers (*Self-Supporting and Guyed Systems*)  
Tunnels and Subways  
Traffic Studies  
Transportation  
Urban renewals; Community Development  
Utilities (*Gas and Steam*)  
Value Analysis; Life-Cycle Costing  
Warehouse and Depots  
**Water Resources; Hydrology; Ground Water**  
Water Supply; Treatment and Distribution  
Wind Tunnels; Research/Testing Facilities Design  
Waste Water Treatment Facility  
**Water Well Rehabilitation; Water Well Work**  
Zoning; Land Use Studies



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(If a firm has branch offices, complete for each specific branch office seeking work.)

1. **Annual Request for Qualifications**

a. FIRM (OR BRANCH OFFICE ) NAME:	Southwest Ground-water Consultants
b. FIRM (OR BRANCH OFFICE) STREET:	3033 North 44 <sup>th</sup> Street, Suite 120
c. FIRM (OR BRANCH OFFICE) CITY:	Phoenix
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85018-7226
f. YEAR ESTABLISHED:	2015*
(g1). OWNERSHIP - TYPE:	S Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Small Business
h. POINT OF CONTACT NAME AND TITLE:	Stephen D. Noel, R.G.
i. POINT OF CONTACT TELEPHONE NUMBER:	602-955-5547
j. POINT OF CONTACT E-MAIL ADDRESS:	snoel@sgcground-water.com
k. NAME OF FIRM (If block 1a is a branch office):	Matrix New World Engineering, P.C.

Notes: \* In October 2015, Southwest Ground-water Consultants was established as a Division of Matrix New World Engineering, P.C. For 22 years prior (1993 – 2015), Southwest Ground-water Consultants, Inc. operated as an Arizona C Corp, providing professional hydrogeological and environmental consulting services to public, private, Native American, and government sectors.



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**Phoenix, Arizona 85007**

**2. EMPLOYEES BY DISCIPLINE**

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
Environmental Scientist	P	27	1
Environmental Scientist	S		2
Geographic Information Systems Specialist	P	3	1
Geographic Information Systems Specialist	S		2
Geological Engineer	P	1	1
Geological Engineer	S		1
Geologist	P	7	1
Geologist	S		5
Hydrologist	P	7	7
Hydrologist	S		1
CADD Technician	P	2	
Civil Engineer	P	6	
Construction Inspector	P	2	
Ecologist	P	6	
Environmental Engineer	P	5	
Project Manager	P	3	
Specialist (Other)	P	2	
<b>Total</b>		<b>71</b>	<b>22</b>





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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Stephen D. Noel, R.G.</b>	b. ROLE IN THIS CONTRACT Project Manager / Senior Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 37	2. WITH CURRENT FIRM 22
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., 1978 Geology, Purdue University, West Lafayette, Indiana B.A., 1975 Environmental Studies and History, Franklin and Marshall College, Lancaster, PA		f. PROFESSIONAL TRAINING - REGISTRATIONS  Geologist – Arizona (17065), California (4146)	

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Mr. Noel, Director of Southwest Ground-water Consultants, is the Principal Hydrogeologist for the company's four offices (3 in AZ and 1 in NM). He is currently serving as Geologist on the Arizona State Board of Technical Registration. He is responsible for a wide variety of hydrogeologic investigations throughout Arizona and the southwest involving: permitting; site-specific geologic interpretation; exploratory, monitor, and production well design and installation management; aquifer testing and analysis; design of water quality monitoring programs; recharge and recovery projects, and water rights evaluations.

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>West Salt River Valley Basin Study and Groundwater Model Development, Maricopa County, AZ</i>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Noel is Project Manager (PM) and Principal Hydrogeologist for this on-going \$250,000 project to Integrate the Salt River Valley (SRV) and Lower Hassayampa Sub-basin (LHSB) groundwater flow models to assess current and future groundwater conditions and assist in the development of a regional water management plan.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<i>Hydrologic Study and Modification of Physical Availability Determination (PAD), Maricopa/Pinal County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Noel served as PM and Principal Hydrogeologist for this \$50,600 project to conduct a Hydrologic Study supporting the Modification of the PAD application for Arizona Water Company's Superstition Water System. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the numerical Regional Ground-water Flow Model.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<i>Production Well Installation, City of Tempe Well #16, Tempe, AZ</i>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Noel served as PM and Principal Hydrogeologist for this \$36,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<i>Production Well Installation, Town of Queen Creek Sossaman Well, Queen Creek, AZ</i>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Noel served as PM and Principal Hydrogeologist for this \$44,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<i>Well Rehabilitation, Fort McDowell Yavapai Nation (FMYN) Community Water System, Maricopa County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Noel served as PM and Principal Hydrogeologist for this \$217,000 project. SGC was contracted by FMYN to investigate and analyze hydrogeologic conditions in and around two Community Water System wells due to increases in nitrate concentrations and the presence of coliform bacteria. Additional wells were evaluated to see if rehabilitation might improve pumped water quality.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME  <b>William M. Greenslade, P.E., R.G.</b>	b. ROLE IN THIS CONTRACT Project Manager / Senior Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 48	2. WITH CURRENT FIRM 20
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., 1967 Hydrology, MacKay School of Mines, University of Nevada, Reno B.S., 1965 Geological Engineering, MacKay School of Mines, University of Nevada, Reno		f. PROFESSIONAL TRAINING - REGISTRATIONS  Geological Engineer – Arizona (10313) Geologist – Arizona (9741), California (3430)	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Mr. Greenslade is experienced in the hydrogeologic characterization of ground and surface water flow systems, design of water supply and recharge & recovery wells, analysis of contaminant migration and the development of remedial plans for contaminated soil and groundwater. He has conducted surface water and groundwater studies for water supply development, flood control, dewatering and water quality management. Mr. Greenslade also served for six years as Geologist on the AZ State Board of Technical Registration.			

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>ASR and Monitor Well Construction Management Services Ocotillo Recharge &amp; Recovery Facility, Chandler, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Greenslade served as Project Manager and Principal Hydrogeologist for this \$113,800 project to provide construction management services for drilling, installation, and testing of four aquifer storage and recovery (ASR) wells and two monitor wells for the City of Chandler. The goal was to develop additional effluent recharge capacity as part of the recharge facility expansion.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<b>Red Gap Ranch Water Resources Environmental Assessment, Flagstaff, AZ</b>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Greenslade is Project Manager (PM) and Principal Hydrogeologist for this on-going \$290,400 project. SGC was retained to provide the City of Flagstaff and USBR with a water resources environmental assessment for the City's proposed pumping of groundwater from the Red Gap Ranch and impacts this may have on perennial reaches of two creeks.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<b>Groundwater Report &amp; Production Well, Navajo Housing Authority Bluestone Development Project, Apache County, Houck, AZ</b>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Greenslade is PM and Principal Hydrogeologist for this on-going \$293,000 project for the Navajo Housing Authority Bluestone Development. Working as a sub-consultant to Wood, Patel & Associates, SGC's tasks included: 1) analysis of groundwater resources, 2) Hydrologic Study, and 3) design, construction oversight, and testing for all installed wells.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<b>West Pecos Replacement Well, City of Chandler, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Greenslade served as PM and Principal Hydrogeologist for this \$95,000 project. SGC was contracted by the City of Chandler to abandon an old well and then design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<b>Riggs Road Municipal Production Well, Chandler, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Greenslade served as Project Manager and Principal Hydrogeologist for this \$81,000 project. SGC was contracted by the City of Chandler to design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (Complete one Section #4 for each key person.)

a. NAME <b>Scot Journell, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager / Geological Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 34	2. WITH CURRENT FIRM 21
d. LOCATION (City and State) Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S., 1981 Geology, Northern Arizona University, Flagstaff, Arizona		f. PROFESSIONAL TRAINING - REGISTRATIONS Geological Engineer – Arizona (23281)	

g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)  
Mr. Journell has extensive experience managing environmental projects ranging from transaction screens and environmental site assessments to large bioremediation projects. **Honors/Publications:**

- Team Member, Geological Engineering Exam Revision, AZ Board of Technical Registration, 2003
- *Field Scale Studies on the Removal of Pentachlorophenol from Contaminated Soil*, Second International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, Battelle, 2000
- *Environmental Assessment and the Role of the Consultant In Solving Problems*, State Bar of AZ 1992
- *Site Remediation of Underground Storage Tank Contamination*, Arizona/Nevada Academy Science, 1989

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>Extraction Well EC-02 Phoenix-Goodyear Airport North Superfund Site, Goodyear, AZ</i>	2015	2015
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Journell served as Hydrogeologist for this \$350,000 project to drill, install, and equip groundwater extraction well EC-02 for contaminant mass removal and hydraulic capture at the Phoenix-Goodyear Airport North Superfund Site.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<i>Riggs Road Municipal Production Well, Chandler, AZ</i>	2014	2014
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Journell served as Hydrogeologist for this \$81,000 project. SGC was contracted by the City of Chandler to design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<i>West Pecos Replacement Well, City of Chandler, AZ</i>	2014	2014
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Journell served as Hydrogeologist for this \$95,000 project. SGC was contracted by the City of Chandler to abandon an old well and then design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<i>City Shop Underground Storage Tank (UST) Site Characterization, Remediation &amp; Pilot Testing, Prescott, AZ</i>	On-going	On-going
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Journell is Project Manager and Design Engineer for this \$250,000 on-going environmental remediation project. SGC was contracted by the City of Prescott to characterize and remediate a leaking UST site. SGC designed and operates a mobile Dual Phase Extraction System to extract fuel compounds from soil and groundwater.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<i>Phase I Environmental Site Assessment (ESA), Wickenburg Ranch, Maricopa County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Journell served as Project Manager for this \$8,500 project. SGC was contracted by M3 Companies to conduct a Phase I ESAs on the Wickenburg Ranch acreage, a partially developed planned community located along U.S. Highway 93 in Maricopa County, Arizona.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Kevin D. Hebert, R.G.</b>		b. ROLE IN THIS CONTRACT Project Manager / Hydrogeologist		c. YEARS EXPERIENCE	
				1. TOTAL 31	2. WITH CURRENT FIRM 11
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018					
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., 1983 Geology, University of Southwestern Louisiana, Lafayette, Louisiana			f. PROFESSIONAL TRAINING - REGISTRATIONS Geologist – Arizona (26388)		
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Mr. Hebert has extensive experience managing multidisciplinary environmental projects. He has also served as Project Manager providing oversight and management for the permitting, installation, and testing of numerous water production wells in the Phoenix, Pinal, and Tucson Active Management Areas (AMAs). His experience includes industrial compliance issues such as wastewater treatment, landfill closure, landfill permitting, and Aquifer Protection Permitting. He has completed numerous Phase I Environmental Site Assessments (ESAs) covering a wide range of property types. Mr. Hebert is Mine Safety and Health Administration (MSHA) certified.					

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>ASR and Monitor Well Construction Management Services Ocotillo Recharge &amp; Recovery Facility, Chandler, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Hebert served as Hydrogeologist for this \$113,800 project to provide construction management services for drilling, installation, and testing of four aquifer storage and recovery (ASR) wells and two monitor wells for the City of Chandler. The goal of this project was to develop additional effluent recharge capacity as part of the recharge facility expansion.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Production Well Installation, City of Tempe Well #16, Tempe, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Hebert served as Hydrogeologist for this \$36,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Production Well Modification, Buckeye Airport Well #2, Buckeye, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Hebert served as Hydrogeologist for this \$46,600 project. As a subconsultant to Tres Rios Consulting Engineers, SGC provided professional services for modification of an existing pre-Code well to increase the volume of groundwater withdrawal.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Production Well Installation, JRC Goodyear Replacement Well GAC-04R, Goodyear, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Hebert served as Project Manager and Hydrogeologist for this \$132,100 project. SGC was contracted to prepare a hydrogeological analysis to identify potential well location(s) and then provide construction oversight for drilling, installation, and testing of a replacement water production well near the Phoenix-Goodyear Airport Superfund Site (PGA South).	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Florence Copper In-Situ Mining Project, Florence, AZ</b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Hebert served as Hydrogeologist for this \$414,900 project. SGC was contracted to analyze the feasibility/safety of the proposed Florence Copper In-situ Mining Project. Mr. Hebert delivered numerous formal presentations at hearings and provided technical assistance to the Opposition's legal representation.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Nathan E. Miller</b>	b. ROLE IN THIS CONTRACT Hydrologist / Groundwater Modeler	c. YEARS EXPERIENCE	
		1. TOTAL 17	2. WITH CURRENT FIRM 15
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., 1997 Hydrology <i>Magna Cum Laude</i> , University of Arizona, Tucson, Arizona		f. PROFESSIONAL TRAINING - REGISTRATIONS	

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

Mr. Miller is a Hydrologist with expertise in groundwater flow modeling and experience with: GIS development; relational database development, preparation of hydrogeologic maps and technical reports. Mr. Miller represents clients before ADWR and ADEQ, and manages the successful completion of permits issued by these agencies. He has conducted numerous assured water supply investigations and prepared applications for Physical Availability Demonstrations, and Certificates, Analyses, and Designations of Assured Water Supply. He has completed many well spacing and well impact investigations in support of production well permits. He has also prepared many recharge aquifer impact analyses, applications for Underground Storage Facilities, and provided hydrologic support for applications for Aquifer Protection Permits with particular expertise in performing analyses to determine the Discharge Impact Area (DIA).

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>West Salt River Valley Basin Study and Groundwater Model Development, Maricopa County, AZ</i>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Miller is Hydrologist/Groundwater Modeler for this on-going \$250,000 project to Integrate the Salt River Valley (SRV) and Lower Hassayampa Sub-basin (LHSB) groundwater flow models to assess current and future groundwater conditions and assist in the development of a regional water management plan.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<i>Red Gap Ranch Water Resources Environmental Assessment, Flagstaff, AZ</i>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Miller is Hydrologist/Groundwater Modeler for this on-going \$290,400 project. SGC was retained to provide the City of Flagstaff and USBR with a water resources environmental assessment for the City's proposed pumping of groundwater from the Red Gap Ranch and impacts this may have on perennial reaches of two creeks.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<i>Hydrologic Study and Modification of Physical Availability Determination (PAD), Maricopa/Pinal County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Miller served as Hydrologist/Groundwater Modeler for this \$50,600 project to conduct a Hydrologic Study supporting the Modification of the PAD application for Arizona Water Company's Superstition Water System. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the numerical Regional Ground-water Flow Model.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<i>Hydrologic Report and Analysis of Assured Water Supply (AAWS), Iota Violet LLC, Pinal County, AZ</i>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Miller served as Hydrologist/Groundwater Modeler for this \$24,200 project to complete a Hydrologic Report and AAWS applications for two properties. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the new numerical Regional Groundwater Flow Model of the Pinal Active Management Area.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<i>Aquifer Protection Permit Response, Town of Florence Wastewater Reclamation Facility (WRF), Pinal County, AZ</i>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Miller served as Hydrologist/Groundwater Modeler for this \$45,100 project. As a subconsultant to Water Works Engineers, SGC helped prepare a response to ADEQ's consent order regarding the Aquifer Protection Permit (APP) for the Town of Florence WRF. The project included installation of a Point of Compliance monitor well and ambient water sampling.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>DeAnn G. Hauver</b>	b. ROLE IN THIS CONTRACT Hydrologist / GIS Specialist	c. YEARS EXPERIENCE	
		1. TOTAL 30	2. WITH CURRENT FIRM 12
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., 1984 Geology/Physics, East Texas State University, Texas A & M, Commerce, Texas		f. PROFESSIONAL TRAINING - REGISTRATIONS	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Ms. Hauver has a long history of work in the oil and gas industry. She is highly experienced in records research and acquisition of data for preparation of hydrogeologic maps, cross-sections, and project reports. Using her strong computer skills and proficiency in geographic information system (GIS) mapping, Ms. Hauver prepares graphics, maps, and tables for various hydrologic permit applications. She has completed well spacing and well impact investigations in support of various well permits. She also performs analytical modeling for water supply evaluations and provides technical office support by assisting with report preparation, editing, and production.			

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b><i>Aquifer Protection Permit Response, Town of Florence Wastewater Reclamation Facility (WRF), Pinal County, AZ</i></b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Hauver served as Hydrologist for this \$45,100 project. As a subconsultant to Water Works Engineers, SGC helped prepare a response to ADEQ's consent order regarding the Aquifer Protection Permit (APP) for the Town of Florence WRF. The project included installation of a Point of Compliance monitor well and ambient water sampling.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<b><i>Hydrologic Study and Modification of Physical Availability Determination (PAD), Maricopa/Pinal County, AZ</i></b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Hauver served as Hydrologist for this \$50,600 project to conduct a Hydrologic Study supporting the Modification of the PAD application for Arizona Water Company's Superstition Water System. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the numerical Regional Ground-water Flow Model.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<b><i>Groundwater Flow Modeling, Mesa Farms Analysis of Assured Water Supply (AAWS), Pinal County, AZ</i></b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Hauver served as Hydrologist for this \$42,800 project to prepare an AAWS Application for review and approval by ADWR. The application covered approximately 11,500 acres of land and required development of a detailed groundwater flow model to evaluate the impact of development and to project future 100-year water levels to meet ADWR standards.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<b><i>Hydrologic Report and Analysis of Assured Water Supply (AAWS), Iota Violet LLC, Pinal County, AZ</i></b>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Hauver served as Hydrologist for this \$24,200 project to complete a Hydrologic Report and AAWS applications for two properties. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the new numerical Regional Groundwater Flow Model of the Pinal Active Management Area.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<b><i>Hydrologic Report and Analysis of Assured Water Supply (AAWS), Iota Rodeo Road LLC, Casa Grande, AZ</i></b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Hauver served as Hydrologist for this \$22,500 project to complete a Hydrologic Report and AAWS applications for two properties. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the new numerical Regional Groundwater Flow Model of the Pinal Active Management Area.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Georgia L. Waters, R.G.</b>		b. ROLE IN THIS CONTRACT Hydrogeologist		c. YEARS EXPERIENCE	
				1. TOTAL 25	2. WITH CURRENT FIRM 21
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018					
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., 1988 Hydrology, University of Arizona - Tucson B.S., 1984 Geology, University of Wisconsin - Madison			f. PROFESSIONAL TRAINING - REGISTRATIONS  Geologist – Arizona (34434)		
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Ms. Waters has extensive field experience collecting soil, surface water and groundwater samples, monitoring drilling activities, logging cuttings, interpreting geophysical logs, and conducting aquifer tests. In the office, she maintains the firm's website, prepares proposals and statements of qualifications, and uses her computer skills to compile, validate and analyze aquifer test data, as well as prepare maps, tables, and figures for presentation in project reports. Ms. Waters earned a Certificate of Completion in Geographic Information Systems (GIS) from Mesa Community College (Aug 2012).					

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Production Well Installation, City of Tempe Well #16, Tempe, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE  Ms. Waters served as Hydrogeologist for this \$36,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<b>Production Well Installation, JRC Goodyear Replacement Well GAC-04R, Goodyear, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE  Ms. Waters served as Hydrogeologist for this \$132,100 project. SGC was contracted to prepare a hydrogeological analysis to identify potential well location(s) and then provide construction oversight for drilling, installation, and testing of a replacement water production well near the Phoenix-Goodyear Airport Superfund Site (PGA South).	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<b>Riggs Road Municipal Production Well, Chandler, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE  Ms. Waters served as Hydrogeologist for this \$81,000 project. SGC was contracted by the City of Chandler to design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<b>Production Well Installation, Chandler Heights Citrus Irrigation District Well #3, Maricopa County, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE  Ms. Waters served as Hydrogeologist for this \$28,200 project. SGC was contracted by Chandler Heights Citrus Irrigation District (CHCID) to provide professional consulting services for design, construction oversight, and testing of a replacement high capacity irrigation well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<b>Production Well Installation, Town of Queen Creek Sossaman Well, Queen Creek, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE  Ms. Waters served as Hydrogeologist for this \$44,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Chris R. Catalano, R.G.</b>	b. ROLE IN THIS CONTRACT Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 18	2. WITH CURRENT FIRM 16
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., 1997 Geology, University of Toledo, Toledo, Ohio B.S., 1995 Geology, University of Toledo, Toledo, Ohio		f. PROFESSIONAL TRAINING - REGISTRATIONS Geologist – Arizona (41781) Sanitarian – Arizona (698)	

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
 Mr. Catalano has completed hydrogeologic investigations in support of various permits issued by ADWR's Office of Assured and Adequate Water Supply. He has participated in many aspects of water well work including: design, permitting, installation, development, and testing of new production wells and monitoring wells, and rehabilitation and abandonment plans for existing wells. Mr. Catalano has completed hydrologic studies that have been submitted to ADEQ as a supplement to Aquifer Protection Permit (APP) applications. Mr. Catalano is Mine Safety and Health Administration (MSHA) certified.

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Red Gap Ranch Water Resources Environmental Assessment, Flagstaff, AZ</b>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Catalano is Hydrogeologist for this on-going \$290,400 project. SGC was retained to provide the City of Flagstaff and USBR with a water resources environmental assessment for the City's proposed pumping of groundwater from the Red Gap Ranch and impacts this may have on perennial reaches of two creeks.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<b>Groundwater Report &amp; Production Well, Navajo Housing Authority Bluestone Development Project, Apache County, Houck, AZ</b>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Catalano is Hydrogeologist for this on-going \$293,000 project for the Navajo Housing Authority Bluestone Development. Working as a sub-consultant to Wood, Patel & Associates, SGC's tasks included: 1) analysis of groundwater resources, 2) Hydrologic Study, and 3) design, construction oversight, and testing for all installed wells.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<b>West Pecos Replacement Well, City of Chandler, AZ</b>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Catalano served as Hydrogeologist for this \$95,000 project. SGC was contracted by the City of Chandler to abandon an old well and then design, oversee construction and testing of a new high capacity municipal water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<b>Well Rehabilitation, Fort McDowell Yavapai Nation (FMYN) Community Water System, Maricopa County, AZ</b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Catalano served as Hydrogeologist for this \$217,000 project. SGC was contracted by FMYN to investigate and analyze hydrogeologic conditions in and around two Community Water System wells due to increases in nitrate concentrations and the presence of coliform bacteria. Additional wells were evaluated to see if rehabilitation might improve pumped water quality.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<b>Production Well Installation, Marbella Ranch at Northern and El Mirage Road, Maricopa County, AZ</b>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Catalano served as Hydrogeologist for this \$400,000 project to permit, design, and provide professional oversight services for drilling, installation, and testing of a replacement water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Dylan J. Easthouse, R.G.</b>		b. ROLE IN THIS CONTRACT Hydrogeologist		c. YEARS EXPERIENCE	
				1. TOTAL 13	2. WITH CURRENT FIRM 13
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018					
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.A., 1998 Geology, Whitman College, Walla Walla, Washington			f. PROFESSIONAL TRAINING - REGISTRATIONS Geologist – Arizona (46233)		
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Mr. Easthouse has conducted numerous hydrogeologic and site characterization studies required to satisfy ADEQ requirements for Aquifer Protection Permits (APPs), and ADWR's Assured and Adequate Water Supply program. He is experienced in the design, permitting, installation, development, and testing of new production wells and monitoring wells, aquifer testing, slug testing, soil logging, geophysical logging, video logging, water quality sampling, and data analysis. He has had key roles in recharge projects which include infiltration testing using a single-ring infiltrometer, borehole drilling, and percolation testing.					

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>Production Well Installation, City of Tempe Well #16, Tempe, AZ</i>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Easthouse served as Hydrogeologist for this \$36,800 project to permit and provide professional oversight services for drilling, installation, and testing of a new municipal water production well.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<i>Groundwater Report &amp; Production Well, Navajo Housing Authority Bluestone Development Project, Apache County, Houck, AZ</i>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Easthouse is Hydrogeologist for this on-going \$293,000 project for the Navajo Housing Authority Bluestone Development. Working as a sub-consultant to Wood, Patel & Associates, SGC's tasks included: 1) analysis of groundwater resources, 2) Hydrologic Study, and 3) design, construction oversight, and testing for all installed wells.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<i>Well Rehabilitation, Fort McDowell Yavapai Nation (FMYN) Community Water System, Maricopa County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Easthouse served as Hydrogeologist for this \$217,000 project. SGC was contracted by FMYN to investigate and analyze hydrogeologic conditions in and around two Community Water System wells due to increases in nitrate concentrations and the presence of coliform bacteria. Additional wells were evaluated to see if rehabilitation might improve pumped water quality.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<i>City Shop Underground Storage Tank (UST) Site Characterization, Remediation &amp; Pilot Testing, Prescott, AZ</i>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Easthouse is Hydrogeologist for this \$250,000 on-going environmental remediation project. SGC was contracted by the City of Prescott to characterize and remediate a leaking UST site. SGC designed and operates a mobile Dual Phase Extraction System to extract fuel compounds from soil and groundwater.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<i>Production Well Installation, Marbella Ranch at Northern and El Mirage Road, Maricopa County, AZ</i>	2015	2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Easthouse served as Hydrogeologist for this \$400,000 project to permit, design, and provide professional oversight services for drilling, installation, and testing of a replacement water supply well.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME  <b>Justin A. Clark</b>	b. ROLE IN THIS CONTRACT Hydrologist / Groundwater Modeler	c. YEARS EXPERIENCE	
		1. TOTAL 3	2. WITH CURRENT FIRM 2
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., 2011 Earth Sciences, University of Waterloo, Ontario, Canada B.S., 2008 Hydrology and Water Resources, University of Arizona, Tucson, Arizona		f. PROFESSIONAL TRAINING - REGISTRATIONS	

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
 Mr. Clark has worked as a research/teaching assistant in hydrogeology and geochemistry. His education has focused on groundwater flow and the chemical interactions that evolve through mixing. As a graduate student, Mr. Clark developed 3D representations of local field-scale geology and characterized organic chemical contamination of a fractured bedrock network. At SGC, Mr. Clark performs: geodatabase management and spatial analysis, conceptual hydrogeologic model development, numerical model construction and calibration, and post-processing of model outputs including preparation of maps, charts, tables, and project narratives.

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>West Salt River Valley Basin Study and Groundwater Model Development, Maricopa County, AZ</i>	On-going	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Clark is Hydrologist/Groundwater Modeler for this on-going \$250,000 project to Integrate the Salt River Valley (SRV) and Lower Hassayampa Sub-basin (LHSB) groundwater flow models to assess current and future groundwater conditions and assist in the development of a regional water management plan.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	<i>Red Gap Ranch Water Resources Environmental Assessment, Flagstaff, AZ</i>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Clark is Hydrologist/Groundwater Modeler for this on-going \$290,400 project. SGC was retained to provide the City of Flagstaff and USBR with a water resources environmental assessment for the City's proposed pumping of groundwater from the Red Gap Ranch and impacts this may have on perennial reaches of two creeks.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	<i>Hydrologic Study and Modification of Physical Availability Determination (PAD), Maricopa/Pinal County, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Clark served as Hydrologist/Groundwater Modeler for this \$50,600 project to conduct a Hydrologic Study supporting the Modification of the PAD application for Arizona Water Company's Superstition Water System. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the numerical Regional Ground-water Flow Model.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	<i>Hydrologic Report and Analysis of Assured Water Supply (AAWS), Iota Violet LLC, Pinal County, AZ</i>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Clark served as Hydrologist/Groundwater Modeler for this \$24,200 project to complete a Hydrologic Report and AAWS applications for two properties. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the new numerical Regional Groundwater Flow Model of the Pinal Active Management Area.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	<i>Hydrologic Report and Analysis of Assured Water Supply (AAWS), Iota Rodeo Road LLC, Casa Grande, AZ</i>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Clark served as Hydrologist/Groundwater Modeler for this \$22,500 project to complete a Hydrologic Report and AAWS applications for two properties. The 100-year impact on the aquifer due to projected groundwater pumping was estimated using the new numerical Regional Groundwater Flow Model of the Pinal Active Management Area.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section #4 for each key person.)*

a. NAME <b>Patricia L. Slim</b>	b. ROLE IN THIS CONTRACT Office Manager/Hydrologist	c. YEARS EXPERIENCE	
		1. TOTAL 13	2. WITH CURRENT FIRM 2
d. LOCATION <i>(City and State)</i> Southwest Ground-water Consultants – 3033 North 44 <sup>th</sup> Street, Suite 120, Phoenix, AZ 85018			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., B.S., 2013 Geology, University of New Mexico, Albuquerque, New Mexico		f. PROFESSIONAL TRAINING - REGISTRATIONS  Navajo Nation Ambassadors	

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
 Ms. Slim is a Navajo citizen, recently hired by SGC in order to enhance the Firm's ability to serve clients of the Navajo Nation. She has held several engineering and hydrogeologic-related positions for various Navajo Nation departments including: Water Management, Water Resources – Domestic Section and Water Code Administration, Navajo EPA, Abandon Mine Land – UMTRA, and Department of Agriculture. Ms. Slim's experience includes: groundwater level measurement, water sample collection, and inspecting production/monitor wells for compliance. She has also monitored groundwater remediation projects, aquifer tests, and assisted with collection of water samples from tribal wells.

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<i>Groundwater Report &amp; Production Well, Navajo Housing Authority Bluestone Development Project, Apache County, Houck, AZ</i>	On-going	On-going
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Slim is Hydrologist for this on-going \$293,000 project for the Navajo Housing Authority Bluestone Development. Working as a sub-consultant to Wood, Patel & Associates, SGC's tasks included: 1) analysis of groundwater resources, 2) Hydrologic Study, and 3) design, construction oversight, and testing for all installed wells.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<i>Production Well Modification, Buckeye Airport Well #2, Buckeye, AZ</i>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Slim served as Hydrologist for this \$46,600 project. As a subconsultant to Tres Rios Consulting Engineers, SGC provided professional services for modification of an existing pre-Code well to increase the volume of groundwater withdrawal.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<i>Production Well Installation, Chandler Heights Citrus Irrigation District Well #3, Maricopa County, AZ</i>	2014	2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Slim served as Hydrologist for this \$28,200 project. SGC was contracted by Chandler Heights Citrus Irrigation District (CHCID) to provide professional consulting services for design, construction oversight, and testing of a replacement high capacity irrigation well.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	Professional Services	Construction (if applicable)
		<input type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	Professional Services	Construction (if applicable)
		<input type="checkbox"/> Check if project performed with current firm	



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State) Production Well Installation, City of Tempe Well #16 Tempe, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2015	CONSTRUCTION (If applicable) 2015

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER City of Tempe	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$36,800	e. TOTAL COST OF PROJECT \$36,800
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



SGC was contracted by Wilson Engineers, LLC to permit and provide professional oversight services for drilling and installation of City of Tempe Well #16 which was to be located near a busy street in close proximity to existing commercial, retail, and residential development. SGC hydrogeologists provided construction oversight, documented all drilling and testing operations and determined the optimal screen and filter pack design following analysis of drill cuttings, downhole geophysical logs, and zonal water quality samples. The challenge in designing this well was to avoid portions of the aquifer having elevated concentrations of arsenic. In addition, sound barriers were utilized and dust control measures implemented to minimize the impact of well construction and testing activities on nearby businesses and residents. Step-rate and constant-rate discharge testing at rates of 3,600 to 4,000 gallons per minute (gpm) resulted in minimal water level drawdown. The quality of groundwater pumped from the newly installed production well met safe drinking water standards for primary Maximum Contaminant Levels (MCLs) for all constituents analyzed.



This project is an example of SGC's experience providing professional services in the categories of:

- **Water Well Rehabilitation; Water Well Work,** and
- **Water Resources; Hydrology; Ground Water**



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
ASR and Monitor Well Construction Management Services Ocotillo Recharge & Recovery Facility, Chandler, Arizona		PROFESSIONAL SERVICES 2015	CONSTRUCTION (If applicable) 2015
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER City of Chandler	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$113,800	e. TOTAL COST OF PROJECT \$113,800	

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



SGC was contracted to provide construction management services for drilling, installation, and testing of four aquifer storage and recovery (ASR) wells and two monitor wells to be installed at the City of Chandler's Ocotillo Recharge and Recovery Facility. The goal of this project was to develop additional effluent recharge capacity as part of the facility expansion. SGC assisted the City with the following Construction Management and Testing tasks:

1. **Pre-construction Meeting** – SGC attended an on-site pre-construction meeting with the City and drilling contractor to facilitate a shared understanding of the project requirements.
2. **Drilling and Logging** – Ensured that drilling activities were in compliance with technical specifications, and prepared a lithologic log for each pilot borehole
3. **Well Construction** – Monitored and documented well construction activities including installation of the well casing, screen, and annular materials to ensure compliance with the well design and technical specifications
4. **Well Development** – Provided oversight and documentation of well development activities to maximize well efficiency and reduce pumping costs
5. **Pumping Tests** – Performed 10-hour step-rate, 24-hour constant-rate, and 24-hour recovery tests
6. **Post-construction Surveys** – Oversaw performance of final well video and plumbness and alignment surveys

SGC prepared a Well Completion Report documenting the above results for all six wells. The report also included recommendations for the final pump settings, purging rates, and estimated purging water levels for the ASR wells.

This project is an example of SGC's experience providing professional services in the categories of:

- **Water Well Rehabilitation; Water Well Work,** and
- **Water Resources; Hydrology; Ground Water**



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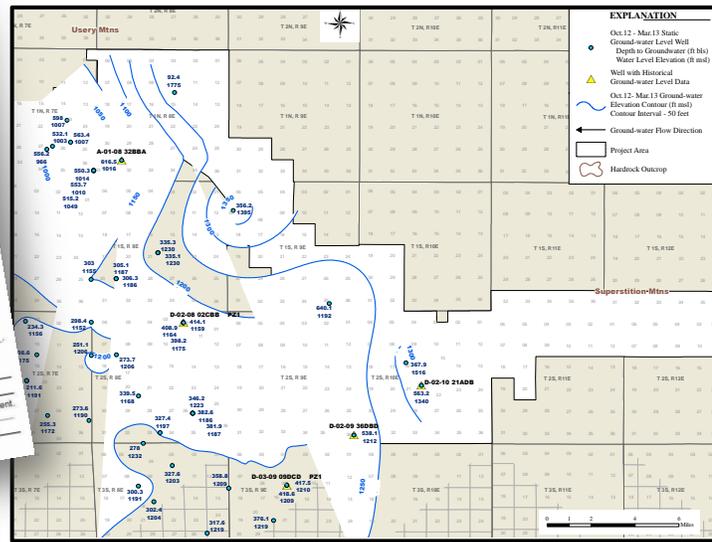
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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>		b. YEAR COMPLETED	
Hydrologic Study and Modification of PAD, Arizona Water Company's Superstition System, Maricopa/Pinal County, AZ		PROFESSIONAL SERVICES 2014	CONSTRUCTION <i>(If applicable)</i> N/A
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER Arizona Water Company	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$50,600	e. TOTAL COST OF PROJECT \$50,600	

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



SGC was contracted by Arizona Water Company (AWC) to conduct a Hydrologic Study supporting the Modification of the Physical Availability Determination (PAD) application for the Superstition Water System (AWC-Superstition) located in the East Salt River Valley (ESRV) Sub-basin of the Phoenix Active Management Area (AMA). The long-term 100-year impact on the aquifer due to the projected groundwater pumping for AWC-Superstition was estimated using the numerical Regional Ground-water Flow Model of the Salt River Valley (SRV83-06v3) (ADWR, 2014). For this study, SGC refined and recalibrated the SRV Model in and around the AWC-Superstition Certificate of Convenience and Necessity (CCN) area. Conservatively assuming that AWC-Superstition's entire water demand would be met by pumped groundwater, simulated depths to groundwater beneath AWC-Superstition after 100 years of pumping current, committed, and approved demands were less than the 1,000 ft bls depth to groundwater limit established for water providers inside the Phoenix AMA by ADWR Rule R12-15-716. Based on this impact analysis, SGC demonstrated that sufficient groundwater is available in the underlying regional aquifer to meet the water demands of AWC-Superstition for 100 years.

This project is an example of SGC's experience providing professional services in the categories of:

- **Water Resources; Hydrology; Ground Water**



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

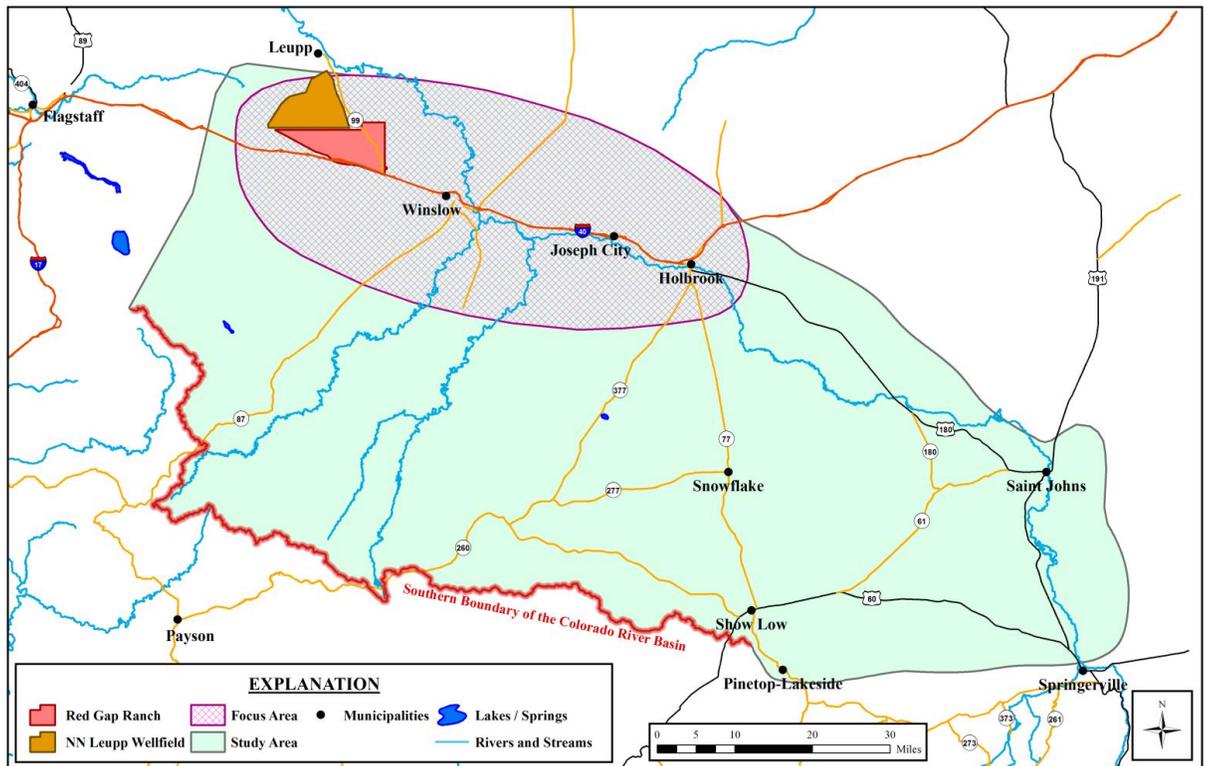
(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State) Red Gap Ranch Water Resources Environmental Assessment, Flagstaff, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES On-going	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER City of Flagstaff	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$290,400	e. TOTAL COST OF PROJECT 98% complete – On budget
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



For this on-going project, SGC was contracted by the City of Flagstaff to conduct a detailed groundwater modeling study for the Red Gap Ranch Water Resources Environmental Assessment Services (Project No. 524900). SGC modified a version of the Northern Arizona Regional Groundwater Flow Model (NARGFM; Pool, et al., 2011) to assess the impact of pumping groundwater from proposed well fields on base flow in perennial reaches of tributaries to the Little Colorado River. SGC is currently preparing final edits and model runs to be incorporated into the final report.

This project is an example of SGC's experience providing professional services in the categories of:

- **Water Resources; Hydrology; Ground Water**



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
Groundwater Report & Production Well, Navajo Housing Authority Bluestone Development Project, Apache County, Houck, Arizona	PROFESSIONAL SERVICES On-going	CONSTRUCTION (If applicable) On-going	
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER Navajo Housing Authority	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$293,000	e. TOTAL COST OF PROJECT 50% complete – On budget	

g. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

SGC was contracted as a sub-consultant to Wood, Patel & Associates, Inc. to provide a water supply investigation for the Navajo Housing Authority (NHA) Bluestone Development Project in Houck, Arizona. The project is on-going. SGC's services include:



NAVAJO HOUSING AUTHORITY

*Analysis of Groundwater Resources Available to the Project*

Evaluate both the regional and shallow aquifers, with primary focus on the regional C-Aquifer.

*C-Aquifer Evaluation*

Conduct a deep resistivity survey (CSAMT) of the property to assess the depth of the C-Aquifer (Coconino Sandstone) and the presence and distribution of water bearing fractures. Design/drill a test well up to 1,500 feet below land surface. Lithologic and geophysical logs will be obtained. The C-Aquifer will be sampled at up to three (3) depth intervals to assess water quality and potential production rates.

*Shallow Aquifer Evaluation*

Compile available hydrogeologic and well data on the shallow aquifer in the project area. Prepare a report summarizing SGC's findings and an assessment of the suitability of the shallow aquifer system to meet project needs in the event that the C-Aquifer is incapable of supplying all or a portion of the project water supply requirements.

*Adequate Water Supply (AWS) Hydrologic Study and Water Report Application:*

Complete a hydrologic study for the Project, which addresses water demand, water supply, water quality, and long-term reliability of the aquifer (100-years). Complete an application for a Water Report that will be submitted to ADWR for review. SGC will compile the application with the hydrologic study and other required documents.

*Production Wells*

Design, oversee construction, test, and provide a well completion report for all installed wells.

This project is an example of SGC's experience providing professional services in the categories of:

- **Water Well Rehabilitation; Water Well Work,** and
- **Water Resources; Hydrology; Ground Water**



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Please see Attachment I-A: Company Brochure, Southwest Ground-water Consultants

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	42%
b.	Percentage of Total Work Attributable to Non-Government Work:	58%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature: Stephen D. Noel

Date: 12/18/15

Name: Stephen D. Noel, R.G.

Title: Director/Principal Hydrogeologist