



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

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.



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



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Hotels; Motels
Hydraulics and Pneumatics
Hydrographic Surveying
Industrial Buildings; Manufacturing Plants
Industrial Processes; Quality Control
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 3rd 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:	Hydro Geo Chem, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	51 W Wetmore Road, Suite 101
c. FIRM (OR BRANCH OFFICE) CITY:	Tucson
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85705
f. YEAR ESTABLISHED:	1978
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Small Business
h. POINT OF CONTACT NAME AND TITLE:	Abra J. Bentley, President
i. POINT OF CONTACT TELEPHONE NUMBER:	(520) 293-1500 x115
j. POINT OF CONTACT E-MAIL ADDRESS:	abrab@hgcinc.com
k. NAME OF FIRM (If block 1a is a branch office):	



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

1. **Annual Request for Qualifications**

g. FIRM (OR BRANCH OFFICE) NAME:	Hydro Geo Chem, Inc.
h. FIRM (OR BRANCH OFFICE) STREET:	6340 E Thomas Road, Suite 228
i. FIRM (OR BRANCH OFFICE) CITY:	Scottsdale
j. FIRM (OR BRANCH OFFICE) STATE:	Arizona
k. FIRM (OR BRANCH OFFICE) ZIP CODE:	85251

l. YEAR ESTABLISHED:	1978
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(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Small Business

h. POINT OF CONTACT NAME AND TITLE:	Frank J. Skocypec, Vice President
i. POINT OF CONTACT TELEPHONE NUMBER:	(480) 421-1501 x145
j. POINT OF CONTACT E-MAIL ADDRESS:	franks@hgcinc.com

k. NAME OF FIRM (If block 1a is a branch office):	Hydro Geo Chem, Inc.
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2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
CADD Technician	P	1	1
Civil Engineer	P	1	1
Construction Manager	P	1	
Environmental Engineer	S	1	1
Environmental Scientist	P	1	
Environmental Scientist	S	1	1
Geographic Information System Specialist	S	1	
Geological Engineer	S	1	1
Geologist	P	3	2
Geologist	S	1	
Hydrologist	P	4	
Project Manager	P	4	1
Technician/Analyst	P	1	
Technician/Analyst	S	1	
Total		23	8



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

a. NAME Abra Bentley, R.G.	b. ROLE IN THIS CONTRACT Project Manager/Contract Manager	c. YEARS EXPERIENCE	
		1. TOTAL 17	1. WITH CURRENT FIRM 14
d. LOCATION <i>(City and State)</i> Hydro Geo Chem, Inc. Tucson, Arizona			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. Environmental Engineering 1994 B.S Chemistry and Biology, 1991		f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Geologist State of Arizona, Certificate No. 54327	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> OSHA 40-hour HAZWOPER + refreshers, 1991 - present			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> ADEQ Highway 260 & Johnson Lane Preliminary Investigation, Lakeside, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: Preliminary investigation of a potential Arizona WQARF site with PCE and TCE contamination in groundwater. Project work has included: environmental site characterization, hydrogeologic characterization, private well sampling and reporting activities, including a final Preliminary Investigation report with recommendations. Project is expected to be listed in the WQARF registry and is ongoing. Contract to Date: \$58,897 Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION <i>(City and State)</i> ADEQ 7th St. and AZ Ave. RI/FS WQARF Site, Tucson, Arizona	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: The site has a 4,500-foot chlorinated VOC plume in perched groundwater and a large LNAPL body, mixed with chlorinated ethenes, constituting an ongoing source. Project work has included: environmental site characterization activities, Remedial Investigation report, Feasibility Study report, QAPP, Land Use Study, PRAP; SVE and air sparge remedial design; SVE remedial activities; monitoring well installation activities; and groundwater, soil and soil vapor sampling activities. Contract to Date: \$1,358,000 Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION <i>(City and State)</i> SCAQMD Sunshine Canyon LF Odors Invest, Sylmar, California	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: This project involves characterization of landfill properties to understand and make recommendations to fix an odor issue at an active landfill in California. Project work has included: Installation of wells and collection and analysis of baro-pneumatic and shut-in test data to evaluate the performance of the existing landfill gas control system (LFGCS) in controlling odors. The effect on the LFGCS of the current practice of adding a relatively thick daily cover material was additionally evaluated. Recommendations for further testing have been made and project is potentially ongoing. Contract to Date: \$150,489	<input checked="" type="checkbox"/> Check if project performed with current firm	



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Role: Project Manager

4.	(1) TITLE AND LOCATION (<i>City and State</i>) UNSE and TEP Substation Spill Modeling in Mohave County, Tucson and Nogales, Arizona	(2) YEAR COMPLETED Professional Services	Ongoing Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Project involves performing spill modeling for small to large power generating stations for inclusion in SPCC plans. Project work has included: collection of field data; modeling of potential overland oil flow; production of site maps, data summary tables, and modeling results; and preparation of a brief site-specific report for each facility. Project is ongoing. Contract to Date: \$50,000 Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) ADEQ 7 th St & Osborn Preliminary Investigation, Phoenix, Arizona	(2) YEAR COMPLETED Professional Services 2015	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Preliminary investigation of a potential Arizona WQARF site with PCE contamination in groundwater. Project work has included: environmental site characterization, hydrogeologic characterization, private well sampling and reporting activities, including a final Preliminary Investigation report with recommendations. Project is expected to be listed in the WQARF registry. Contract to Date: \$29,500 Role: Project Manager	<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 Frank J. Skocypec, P.E., C.P.G.		b. ROLE IN THIS CONTRACT Professional Engineer		c. YEARS EXPERIENCE	
				1. TOTAL 36	2. WITH CURRENT FIRM 3
d. LOCATION (<i>City and State</i>) Hydro Geo Chem, Inc. Scottsdale, Arizona					
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. (Environmental Engineering) Stevens Institute of Technology, 1997, Magna Cum Laude A.S. (Hazardous Materials Management) Front Range Community College, 1990, Magna Cum Laude B.S. (Geophysical Engineering), Colorado School of Mines, 1978			f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Professional Engineer (AZ), No. 38133 Certified Professional Geologist (National), No. 09378 Registered Professional Engineer (TX), No. 120649 Registered Professional Engineer (NM), Pending Registered Professional Engineer (PA), No. 054064-E Registered Professional Geologist (WY), No. 1176		
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) American Institute of Professional Geologists					

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) West Central Phoenix North Canal Plume WQARF Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Manager (PM) responsible for the remedial investigation (RI) activities associated with chlorinated solvents and metals impacting soil and groundwater. RI activities included installation of shallow and deep monitoring well; annual groundwater sampling event utilizing low-flow purge methods, HydroPunch samples, slug tests, passive soil gas samples to identify contaminant source in East Plume Area, and collect/evaluate natural attenuation geochemical parameters in groundwater. Prepare Draft and Revised Draft Remedial Investigation Report for ADEQ. Contract Costs to date: \$261,963. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Rocky's Shell Service Station LUST Site Gilbert, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE PM responsible for the supplemental investigation and remediation of soil impacted from the gasoline release associated with a leaking product dispensing line containing petroleum hydrocarbon constituents above the ADEQ Tier 1 residential Soil Remediation Levels (rSRLs) . Conducted a purge and pilot test using a portable trailer-mounted SVE system to evaluate the potential range of vapor extraction flow rates and estimate potential mass removal rates. Contract Costs to date: \$75,880. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Former B&D Mobil Service Station LUST Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE PM responsible for the remedial system OM&M consisting of the thermal/catalytic oxidizer soil vapor extraction unit coupled with air sparge system to remediate dissolved petroleum hydrocarbons in soil and groundwater. Expansion of existing system will incorporate a bioventing option to aerobic ally biodegrade residual soil contamination exceeding residential use soil remediation levels for naphthalene. Existing treatment system operational for ~ 1.6 years and free-phase product no longer exists and groundwater concentrations have been significantly reduced and currently exceed AWQS in one well location. Contract Costs to date: \$561,040. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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4.	(1) TITLE AND LOCATION (<i>City and State</i>) We Buy Scrap LUST Site Tempe, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE PM responsible for the continued site characterization, monitoring, pilot test and implementation of an in-situ chemical oxidation (ISCO) remedy utilizing persulfate oxidant to treat petroleum hydrocarbons constituents dissolved in shallow groundwater. Analyzed parameters including oxidant and activator selection from laboratory analyses, estimated oxidant dosage for full-scale test and impacts from natural soil oxidant demand (SOD). Contract Costs to date: \$225,198. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Cooper & Commerce WQARF Site Gilbert, Arizona	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE PM responsible for the remedial investigation and OM&M of ERA remediation systems to remove PCE from soil and groundwater. Remedial systems included groundwater pump and treat and soil vapor extraction/air sparge systems. Directed maintenance and equipment repair/replacement and oversee sampling and testing efforts to provide analytical data for evaluation of system performance in compliance with MCAQD, AZPDES, SRP Lateral discharge and Class B Remediation Discharge Permit with Town of Gilbert. Contract Costs to date: \$3,100,000	<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.)*

<p>a. NAME James G. Peck, P.E.</p>	<p>b. ROLE IN THIS CONTRACT Senior Project Engineer</p>	<p>c. YEARS EXPERIENCE</p>	
		<p>1. TOTAL 19</p>	<p>2. WITH CURRENT FIRM 12</p>
<p>d. LOCATION <i>(City and State)</i> <i>Hydro Geo Chem, Inc. Scottsdale, Arizona</i></p>			
<p>e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. Engineering Geology, 1990 B.S. Geological Engineering, 1988 J.D., 1999</p>	<p>f. PROFESSIONAL TRAINING – REGISTRATIONS Professional Engineer (Geological), Arizona No. 28074 Professional Engineer (Civil), Arizona No. 37554 Attorney at Law, 1999 Active Civil Engineering licenses are also maintained in California, Florida, Georgia, New Mexico, Washington, and Utah</p>		
<p>g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Member of the Arizona Bar in good standing OSHA 40-Hr Safety Training for Hazardous Waste Site Activities</p>			

H. RELEVANT PROJECTS

1.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> South Yuma County Landfill, Yuma County, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager - Provide regulatory compliance services including permitting, environmental monitoring, and reporting for landfill facility subject to an air quality permit, aquifer protection permit, solid waste facility plan approval, and stormwater pollution prevention plan implementation. Renewed a Title V air quality permit in the past year. Contract cost to date: \$1,002,517. Project is ongoing.</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>
2.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> Maricopa County Waste Resources and Recycling, Maricopa County, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Professional Engineer - Provide compliance consulting for closed landfills and active transfer stations owned by Maricopa County. Includes landfill gas migration evaluation, gas migration control system design and construction, and regulatory permitting associated with air quality permits. Contract cost to date: \$464,590. Project is ongoing.</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>
3.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> Wickenburg Waste Transfer Station, Wickenburg, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager - Developed stormwater pollution prevention plan for solid waste transfer station. Conducted initial inspection and reporting, training of facility personnel. Project cost to date: \$7,500. Project ongoing</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

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

a. NAME Michael J. Barden	b. ROLE IN THIS CONTRACT Senior Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 24	2. WITH CURRENT FIRM 3
d. LOCATION (City and State) <i>Hydro Geo Chem, Inc. Tucson, Arizona</i>			
e. EDUCATION (DEGREE AND SPECIALIZATION) M.S. Program, Geology, 1983-1985 B.S. Geology and Geophysics, 1982		f. PROFESSIONAL TRAINING - REGISTRATIONS	

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

ORGANIZATIONS

American Geophysical Union (AGU); National Ground Water Association (NGWA); International Association of Hydrogeologists (IAH); International Association of Hydrological Sciences (IAHS); Geochemical Society (GS); International Association of Geochemistry and Cosmochemistry (IAGC); Society of Environmental Toxicology and Chemistry (SETAC); Geological Society of America (GSA); American Society for Microbiology (ASM); American Chemical Society (ACS); Soil Science Society of America (SSSA); American Society for Testing & Materials (ASTM); Society for Sedimentary Geology (SEPM); International Association of Sedimentologists (IAS); Arizona Geological Society; New Mexico Geological Society

AWARDS: *Geological Society of America John Mann Mentor in Applied Hydrogeology, 2012; Outstanding Volunteer Graduate Faculty Award, University of New Mexico, College of Pharmacy, 2003-2004; Nominated for WDNR's Brogan Award for outstanding contributions to environmental protection in Wisconsin, 1995; WDNR Division of Environmental Quality Outstanding Achievement Award, 1995; Dixie Oil Company Summer Research Scholarship, 1984; James W. Mitchell Award for best paper and scientific excellence, National Speleological Society, 1980;*

PUBLICATIONS

Wiedemeier, T.H., and M.J. Barden. 2006. Factors affecting the sustainability of monitored natural attenuation. Proceedings of the Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, May 22-25, 2006, Monterey, CA.

Wiedemeier, T.H., and M.J. Barden. 2006. Lines of evidence for evaluating biological and abiotic degradation of chlorinated solvents. Proceedings of the Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, May 22-25, 2006, Monterey, CA.

Wiedemeier, T.H., M.J. Barden, P.E. Haas, and W.Z. Dickson. 2006. Designing monitoring programs to effectively evaluate the performance of natural attenuation, in Practical Handbook of Ground-Water Monitoring (2nd edition), D.M. Nielsen (ed.), Lewis Publishers, Boca Raton, FL.

Wiedemeier, T.H., M.J. Barden, W.Z. Dickson, and D. Major. 2004. Multiple Lines of Evidence Supporting Natural Attenuation: Lines of Inquiry Supporting Monitored Natural Attenuation and Enhanced Attenuation of Chlorinated Solvents. U.S. Department of Energy, Office of Scientific and Technical Information, Oak Ridge, TN, WSRC TR 2003 00331.

National Research Council (contributing author). 2000. Natural Attenuation for Groundwater Remediation. National Academy Press, Washington, DC. 274 p.

Barden, M.J. 1997. Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) -- Interim Guidance. Wisconsin Department of Natural Resources, Bureau for Remediation and Redevelopment. PUBL RR-519 97, March 1997.

Yang, X., H. Glasser, R. Stoelting, M. Barden, G. Mickelson, J. Delwiche, and G. Alvarez. 1997. Natural attenuation demonstration in Wisconsin, in Fourth International Symposium on In-Situ and On-Site Bioremediation, v. 4(1). Battelle Press, Columbus, OH.

Barden, M.J. 1993 (revised 1994). Naturally Occurring Biodegradation as a Remedial Action Option -- Interim Guidance. Wisconsin Dept. of Natural Resources.

Hetrick, D.M., S. Scott, and M.J. Barden. 1992 (1994 revised). The New SESOIL User's Guide. Wisconsin Dept. of Natural Resources, Bureau of Solid and Hazardous Waste Management, Emergency and Remedial Response Section, Publication PUBL SW-200 (revised 1994).

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) 7 th Street and Arizona Avenue WQARF Site, Tucson, Arizona	(2) YEAR COMPLETED 2015
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Remedial Investigation/Feasibility Study (RI/FS) for chlorinated solvent plume. Wrote Quality Assurance Project Plan (QAPP) and Field Sampling Plan; produced Standard Operating Procedures(SOPs) for sampling; interpreted contaminant and geochemical data; evaluated contaminant transport and fate; conducted human health risk assessment; coauthored Remedial Investigation Report and Feasibility Study Report; participated in public meeting. Project Role: Senior Hydrogeologist. Contract to Date: \$474,513.	<input checked="" type="checkbox"/> Check if project performed with current firm



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

2.	(1) TITLE AND LOCATION (<i>City and State</i>) Cooper and Commerce WQARF Site, Gilbert, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Remedial Investigation for chlorinated solvent plume. Compiled information and wrote Remedial Investigation Report; performed hydrogeological evaluation; interpreted contaminant and geochemical data; evaluated contaminant transport and fate; conducted screening level human health risk evaluation. Project Role: Senior Hydrogeologist. Contract Costs to date: \$3,100,000. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Winslow Whiting #23 State-Lead UST Site, Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project manager for investigation and remediation of extensive petroleum contamination in soil and groundwater associated with releases at a former fueling station. Planned and directed investigation and sampling activities; planned and oversaw in situ chemical oxidation pilot study; performed hydrogeological evaluation; evaluated aquifer tests and soil vapor extraction pilot tests; coordinated and directed field activities and filed staff; oversaw junior staff in data compilation and evaluation. Contract Costs to date: \$630,711. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Former Winslow Welding State-Lead UST Site, Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project manager for investigation and remediation of petroleum contamination in soil and groundwater associated with releases at a former fueling station. Planned and directed investigation and sampling activities; planned and oversaw monitoring well installation; performed hydrogeological evaluation; coordinated and directed field activities and filed staff; oversaw junior staff in data compilation and evaluation. Contract Costs to date: \$422,800. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Uranium Compliance Alternatives for Water Supply Wells, San Xavier District, Tohono O'odham Nation, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project manager for evaluation of uranium contamination in water supply wells and evaluation of compliance alternatives. Planned and directed investigation and sampling activities; directed and coordinated hydrogeological and hydrogeochemical evaluation for locating potential new water supply wells; coordinated and directed evaluation of uranium treatment alternatives; oversaw junior staff in data compilation and evaluation. Contract Costs: \$93,936. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

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

a. NAME	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
		1. TOTAL	2. WITH CURRENT FIRM
Stewart J. Smith	Associate Hydrogeologist	35	26

d. LOCATION *(City and State)* **Hydro Geo Chem, Inc. Tucson, Arizona**

e. EDUCATION *(DEGREE AND SPECIALIZATION)*
 M.S. Hydrology, 1989
 B.S. Geology, 1980

f. PROFESSIONAL TRAINING – REGISTRATIONS
 Registered Geologist UT No. 5336166-2250

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

Member: National Groundwater Association

Patent: Improved Method and System for Estimating Gas Production by a Landfill or Other Subsurface Source

PUBLICATIONS:

Smith, S.J., H.W. Bentley, and K. Reaves. 2006. Systematic Design of Methane Migration Control Systems. Proceedings, 29th Annual SWANA Landfill Gas Symposium, St. Petersburg FL, March 27-30. 18 pp. also in: <http://www.hgcinc.com>.

Bentley, H.W., S.J. Smith, and T. Schrauf. 2005. Baro-pneumatic Estimation of Landfill Gas Generation Rates at Four Operating Landfills. Proceedings, SWANA's 28th Annual Landfill Gas Symposium, March 7-10, 2005; <http://www.hgcinc.com>.

Bentley, H.W., S. Smith, J. Tang, and G.R. Walter. 2003. A Method for Estimating the Rate of Landfill Gas Generation by Measurement and Analysis of Barometric Pressure Waves. Proceedings of the 18th International Conference on Solid Waste Technology and Management, Philadelphia, Pennsylvania, March 23-26, 2003.

Bentley, H.W., G.R. Walter, S.J. Smith., J. Tang, and C.T. Williamson. 2002. (US) Patent No. US 6,611,760 B2 Method and system for estimating gas production by a landfill or other subsurface source, June 19, 2002.

Walter, G.R., S. Smith, H.W. Bentley, and J. Tang. 2002. Comparison of direct techniques for estimating LFG generation rates. Abstracts with Program. SWANA Regional Landfill Conference, Casa Grande.

Bentley, H.W. and S.J. Smith. 1998. Soil Vapor Extraction of Chlorinated VOCs in the Vicinity of a Landfill Equipped with a Landfill Gas Control System. Presentation at the 1998 Arizona Hydrological Society Eleventh Annual Symposium. September 23 to 26, 1998. Abstract with Proceedings.

Bentley, H.W., J. Tang, S.J. Smith, D. Samorano, R.G. Arnold. 1998. Analysis of Remedial Options for Chlorinated VOCs at Harrison Landfill. In: Bioremediation and Phytoremediation, Chlorinated and Recalcitrant Compounds. The First International Conference on Remediation of Chlorinated and Recalcitrant Compounds. Monterey, California, May 18 to 21, 1998. pp. 21-26.

Ward, J.J. and S.J. Smith. 1998. Arid Zone Landfills: What Do Investigation and Modeling of Containment Migration Reveal About Transport Mechanisms? Presentation at the 1998 Arizona Hydrological Society Eleventh Annual Symposium. September 23 to 26, 1998. Abstract with Proceedings.

Smith, S.J., J. Pepe, and G.R. Walter. 1995. The Effect of Variable Injection Rates on Air Sparging Patterns in Heterogeneous, Porous Media. Presented at the First International Symposium on In-Situ Air Sparging for Site Remediation. Las Vegas, Nevada.

Smith, S.J. and G. Walter. 1993. Numerical Modeling of "Raining" Soil Vapor Extraction Wells for a Hypothetical Alluvial Aquifer. Presented at Rocky Mountain Ground Water Conference - Ground Water Technology and Tasks in the 90's, Albuquerque, New Mexico, 1993.

Walter, G.R., R.D. Philip, and S.J. Smith. 1993. Chicken/Egg Arguments in the Establishment of Soil Cleanup Standards. Presented at Hazmacon '93, San Jose, California.

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED: ongoing	
	Professional Services	Construction (if applicable)
White Mesa Uranium Mill, Blanding, Utah	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
1. Management of investigations to evaluate and remediate shallow groundwater chloroform and nitrate plumes and to support the award of and periodic updates to a groundwater discharge permit (GWDP) for the facility. Work included: site characterization; development of remedial objectives; design and evaluation of remedial systems (including evaluation of natural attenuation of contaminants) and groundwater monitoring well networks using numerical models; litigation support; preparation of interpretive reports (including comprehensive site hydrogeologic reports), Contaminant Investigation Reports and Corrective Action Plans; Preparation of quarterly chloroform and nitrate monitoring reports; and presentation of results to and negotiation with controlling regulatory agencies. Project Role: Project Manager. Project costs to date: \$1,299,000. Project is ongoing.		



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

2.	(1) TITLE AND LOCATION (<i>City and State</i>) North Canal Plume WQARF Site, Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Performed review of available site analytical, hydraulic head and hydraulic property data; analyzed historical PCE migration in the western plume area via particle tracking to identify potential source areas. The analysis required consideration of substantial drops in water levels into lower permeability materials. Also supervised performance and analysis of hydraulic tests to improve site characterization. Project Role: Associate Hydrogeologist. Costs to date: \$261,963. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) SCAQMD Sunshine Canyon LF Odors Invest, Sylmar, California	(2) YEAR COMPLETED ongoing	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Evaluation of the SCL to determine the causes of odor complaints and preparation of recommendations to improve odor control. Work involved field testing (using HGC's baropneumatic method) to evaluate the pneumatic characteristics of the landfill, evaluation of the landfill gas control system (LFGCS), and preparation of an interpretive report with recommendations. Contract costs to date: \$150,489. Project role: Associate Hydrogeologist. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Mesa DBCP Preliminary Investigation, City of Mesa, Arizona	(2) YEAR COMPLETED 2015	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Performed review of historic depths to water and hydraulic gradients within both shallow and deep aquifers beneath the site. Evaluated historic groundwater flow to better characterize potential distribution of DBCP in both shallow and deep aquifers. Project Role: Associate Hydrogeologist. Costs to date: \$30,334.	<input checked="" type="checkbox"/> Check if project performed with current firm	



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

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

a. NAME Steven P. Sutherland, R.G.		b. ROLE IN THIS CONTRACT Project Geologist/Asbestos Manager		c. YEARS EXPERIENCE	
				1. TOTAL 21	2. WITH CURRENT FIRM 3
d. LOCATION <i>(City and State)</i> Hydro Geo Chem, Inc. Scottsdale, Arizona					
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S.—Geology (environmental emphasis), University of Texas-San Antonio B.A.—Geography (environmental emphasis), University of Texas-San Antonio M.S.—Environmental Management & Sustainability, Arizona State University (Summa Cum Laude)			f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Geologist, Arizona Registration Number 33269 EPA AHERA Asbestos Building Inspector, Registration Number G4831 EPA AHERA Asbestos Management Planner, Registration Number G4857 Certified Environmental Manager (NV), Registration Number 2393 Professional Geologist (TX), Registration Number 12102		
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> -OSHA 40-Hour Training in Hazardous Waste Operations (HAZWOPER); OSHA 8-Hour HAZWOPER Site Supervisor; Certified Project Manager; RCRA Hazardous Waste & Non-Hazardous Waste Management Training Certificate; Identification and Safe Transportation of Hazardous Materials (DOT 49CFR 172.700-704); FEMA Certifications: Incident Command Systems (ICS), National Incident Management Systems (NIMS), ICS for Single Resources & Initial Action Incidents, Advanced Incident Management/Unified Command, Disaster Management for Water & Wastewater Utilities -Member of: Arizona Hydrological Society (AHS), Environmental Professionals of Arizona (EPAZ), Arizona Association of Environmental Geologists (AEG), Arizona Association of Environmental Professionals (AZAEP), and Environmental & Natural Resources Law Section of the State Bar of Arizona					

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Central & Camelback WQARF Site (ADEQ State-Lead) Phoenix, Arizona	(2) YEAR COMPLETED 2014 (December)
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Role: Project Geologist Responsible for the oversight of completion of remedial investigation (RI) and characterization activities at an ADEQ WQARF Site regarding releases of PCE and other chlorinated solvents into the soil and groundwater, using passive and active soil gas surveys, installation and sampling of soil borings, installation and sampling of monitoring wells, and other related techniques. Project area covered approximately one square mile. After completion of remedial investigation activities, was also responsible for completion of Remedial Investigation (RI) report. Remedial investigation activities were completed in December 2014. Contract Costs: \$2,700,000.	<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> 7th Street & Missouri WQARF Site (ADEQ Lead) Phoenix, Arizona	(2) YEAR COMPLETED Ongoing
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Role: Project Geologist Responsible for the oversight of preliminary investigation (PI) and characterization activities for a Site that is a candidate to be including on the ADEQ WQARF registry. Contaminants include releases of PCE and other chlorinated solvents into the soil and groundwater. Project area currently covers approximately one quarter square mile in area. Other duties have included identification of Potentially Responsible Parties (PRPs) by locating release sources, and completion of a PI report that summarizes the activities conducted to date. Investigation activities included passive soil gas surveys, installation and sampling of soil borings, installation and sampling of monitoring wells, and other related techniques. Work is ongoing. Contract costs to date: \$501,260.	<input checked="" type="checkbox"/> Check if project performed with current firm



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

3.	(1) TITLE AND LOCATION (<i>City and State</i>) Fuels, LLC Waste Oil Release Phoenix, Arizona	(2) YEAR COMPLETED 2015
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Role: Project Geologist Managed and conducted investigation and remediation-related work associated with an explosion at a fuel facility where approximately 7,000 gallons of waste oil was released to the ground, which then impacted 2.3 miles of City of Phoenix storm sewer and discharged into the Salt River. Work was conducted in three phases: investigation and remediation (via excavation) of impacted soil at the facility under the ADEQ Voluntary Remediation Program (VRP), remediation of impacted material at the Salt River outfall, and the remediation and video logging of 2.3 miles of the waste oil-impacted storm sewer. Work also included closure of Sky Harbor Airport runways. Upon completion of remediation, all facilities were restored to pre-release conditions. Work was summarized in an investigation and remediation report and was submitted to the ADEQ. The result was 'no further action'. Contract cost: \$195,516.	<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Former B&D Mobil Service Station LUST Investigation/Remediation (ADEQ State-Lead), Phoenix, Arizona	(2) YEAR COMPLETED Ongoing
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Role: Project Geologist Responsible for remedial system O&M (thermal/catalytic oxidizer SVE unit with air sparge), to remediate dissolved and free-phase petroleum hydrocarbons in soil and groundwater. Also responsible for conduct of associated confirmation soil borings, soil and soil vapor sample collection, and also was recently responsible for oversight of excavation of impacted soil using bucket auger techniques. Project is ongoing. Contract Costs to date: \$561,040.	<input checked="" type="checkbox"/> Check if project performed with current firm
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Diamond Car Care LUST Investigation Lake Havasu City, Arizona	(2) YEAR COMPLETED Ongoing
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Role: Project Manager & Project Geologist Responsible for the conduct and management of a LUST site characterization at a former fueling operation with a recent gasoline release to soil and groundwater. Work has consisted of the installation multiple soil borings for soil sampling and analysis, and the installation of multiple groundwater monitoring wells for groundwater sampling and analysis. To date the soil impact has been fully characterized; however, additional characterization of the groundwater is necessary, with the next phase including the installation of monitoring wells in the City right-of-way. Also responsible for completion of interim site characterization reporting to ADEQ. Project is ongoing. Contract Costs to date: \$48,451.	<input checked="" type="checkbox"/> Check if project performed with current firm



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

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

a. NAME Warren A. Thompson		b. ROLE IN THIS CONTRACT Senior Geologist/Construction Manager		c. YEARS EXPERIENCE	
		1. TOTAL 31	2. WITH CURRENT FIRM 26		
d. LOCATION (City and State)		Hydro Geo Chem, Inc. Tucson, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S. Geology/Math, 1983			f. PROFESSIONAL TRAINING – REGISTRATIONS Registered Geologist State of Arizona, Certificate No. 50536, Dec. 2009 ROC AE State of Arizona, No 114979 (2010) ROC A- State of Arizona, No 21821 (2010)		
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) Certified HDPE Fusion Welder, February 2005; MSHA New Miner Training, 2003; OSHA 40-Hr Health and Safety Training for Hazardous Waste Operations, 1990; OSHA Construction Safety & Health, 2009; Damage Prevention Ambassador Award of Excellence (2013)					

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) Rio Nuevo, A-Mountain Landfill Tucson, AZ	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Manager, Construction oversight and hands on work to install a series of multi depth nested probe monitoring piezometers. Wells were drilled to determine the thickness of the landfill and the later extent of land filled refuse. Probes were outfitted with data logging pressure transistors to evaluate the vertical permeability of the landfill materials as landfill gas generation rates. Soil gas samples were collected for laboratory analysis. Purpose of the project was to determine the suitability of the site for building construction. Project Costs: \$61,550.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Former B&D Mobil Service Station LUST Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Manager - Installation of a thermal catalytic oxidizer for and soil vapor extraction (SVE) system and air sparge (AS) system to remediate contaminated soils and groundwater. Installed interlink between the SVE and AS system to shut down the entire system should the SVE/Oxidizer malfunction and call out an alarm condition to a responder. Contract Costs to date: \$561,040. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) Arizona Public Power Supply Tempe, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Manager. Design and construction oversight for the installation of a ventilation system to remove methane gas from collecting in series of underground 230 KVA electrical vaults along Rio Salado Parkway. On going project performing system upgrades and O&M as required. System utilizes redundant positive displacement, 250 scfm, blowers installed in parallel and wired so that if the primary blower malfunctions the secondary backup blower kicks in automatically accompanied with a call out voice alarm to responsible parties. Contract Cost to date: \$29,412. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007**

4.	(1) TITLE AND LOCATION (<i>City and State</i>) Winslow Welding Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Field Manager – for ongoing gasoline and diesel LUST remediation project. Conducted field pilot study for use of persulfate as an in-situ contaminant oxidation (ISCO) as an effective remediation method. Test involved injecting ISCO solution in conjunction with conservative chemical tracers into shallow silts and sands. Followed tests with field evaluation of tracer movement through formation which yielded data indicating the effectiveness of the oxidant injections to reach the contaminant and interact with the contaminants as intended. Contract Costs to date: \$422,800. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(<i>City and State</i>) Rocky's Shell Station, Green Valley, AZ	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Field Project Manager and hands on construction for the installation of a soil vapor extraction system and extraction well for the removal of a subsurface gasoline release. Project involved site characterization in terms of vertical and horizontal permeability, lithology and establishing contaminant concentrations. Monitoring contaminant concentrations during system operation were made to calculate mass removal. System ran until contaminant levels dropped below cleanup standards established by the ADEQ. Subsequent confirmatory soil samples were collected in the release area for laboratory analysis for reporting. Contract Costs to date: \$75,880. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
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5.1. 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	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Cooper & Commerce WQARF Site, Gilbert, Arizona	2015	2014

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Scott Goodwin, Project Manager Arizona Department of Environmental Quality	\$3,100,000	\$3,100,000

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

In 2004, Hydro Geo Chem was retained to conduct a soil and groundwater investigation at a former metals-processing facility located in Gilbert, Arizona. As part of an Early Response Action, HGC drilled multiple soil borings and installed groundwater, soil vapor monitoring, and extraction wells. The primary contaminants of concern were chlorinated solvents including PCE and TCE. Based on the results of the investigation, HGC designed and installed a soil-vapor extraction (SVE) system and a groundwater pump and treat (GWPT) system. This included the permitting and installation oversight of discharge lines to both the Salt River Project canal and the Town of Gilbert sewer system. New GW monitoring and SVE wells were designed into the system in 2011 and 2012. Responsibilities included operation and maintenance of the SVE and GWPT remedial systems, data collection and periodic groundwater sampling. HGC completed a final Remedial Investigation report which was submitted mid-year 2015.



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007**

5.2. 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	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
7th Street and Arizona Avenue WQARF Site, Tucson, Arizona	2015	2015

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
William Ellett Arizona Department of Environmental Quality	\$1,358,481	\$1,358,481

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

HGC has conducted soil and groundwater investigations, soil gas investigations, remedial design, remediation, and operation and maintenance at this state Superfund site contaminated with PCE. The source area is a former dry cleaner at which releases of PCE have impacted shallow groundwater resulting in a solute plume that is over 4,500 feet long. The site is further complicated by the presence of diesel free product on the aquifer. Site investigations have included passive and active soil gas sampling and installation of groundwater monitoring wells, vapor monitoring wells, soil borings, a vapor extraction well, and an air sparge well. Existing and newly installed groundwater monitoring wells have been sampled semi-annually. Offsite wells installed by HGC required access agreements and right-of-way permits from the City of Tucson. A soil vapor extraction (SVE) system was designed, installed, and operated by HGC as an Early Response Action to remove source PCE vapors to prevent further degradation to the aquifer. Operation of the SVE system for approximately 1½ years resulted in a tenfold decrease in soil vapor concentrations on the site. Air sparging was also evaluated in conjunction with SVE to remove PCE from groundwater and from diesel free product beneath the site. HGC has completed a Remedial Investigation report, human health risk assessment, Feasibility Study and Proposed Remedial Action Plan for the site.



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
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5.3. 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	
Maricopa County Waste Resources and Recycling, On Call Services	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Brian Kehoe, Manager Maricopa County Waste Resources	\$750,000	\$464,590

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

HGC currently provides general engineering services to the Maricopa County Solid Waste Department. Work has included regulatory compliance audits for ten landfills and six transfer stations evaluating compliance with environmental regulations that apply to solid waste facilities in Arizona. One such project is the Queen Creek Landfill where HGC processed applications for a Title V air quality permit. A landfill gas migration evaluation was also performed for the Queen Creek Landfill and is being performed for the Gilbert Landfill along with recommendations for remediating off-site gas migration, including a design for an intermittent vapor extraction system. Additionally, air emission reports have been prepared for the Queen Creek Landfill and the Morristown Landfill under the terms of non-Title V air quality permits. HGC also processed an Aquifer Protection Permit for the Avondale Landfill and renovated the landfill gas migration monitoring system at the Hassayampa Landfill. Project is ongoing.



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
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5.4. 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	
White Mesa Hydrogeologic Consulting, Blanding, Utah	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Kathy Weinel, Manager Energy Fuels Resources, Inc.	\$1,299,000	\$1,299,000

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

Since 1999 Hydro Geo Chem has been conducting hydrogeologic investigations at the Energy Fuels Uranium Mill Site in Blanding, Utah. This includes the initial application for and ongoing modifications to a groundwater discharge permit as well as investigation and remediation of groundwater VOC and nitrate plumes. Work includes: site characterization activities, well testing to evaluate aquifer characteristics, numerical modeling, selection of monitoring well locations and well field densities, development of remedial objectives and evaluation of the interim remedial action plan. Also relevant to this contract are HGC's preparation of the preliminary contaminant investigation report and corrective action plan, ongoing support in the preparation of quarterly monitoring reports, litigation support, and the presentation of results to, and negotiations with, the controlling regulatory agencies. Project is ongoing.



ATTACHMENT I – General Qualifications

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

**STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007**

5.5. 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	
South Yuma County Landfill, Yuma, Arizona	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
William Hunter, Landfill Manager South Yuma County Landfill	\$1,002,517	\$1,002,517

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

Since 2007, Hydro Geo Chem has provided engineering and environmental permitting services for the South Yuma County Landfill, including Title V air quality permitting services, engineering design, construction quality assurance, and liquid waste permitting. Site drainage design was performed using the US Army Corps of Engineers HEC-HMS hydrology model. Air permitting services include evaluation of emissions using dispersion modeling; preparation of an emission inventory; estimates of NMOC emissions using the U.S. EPA's landfill gas emissions model (LandGem) for Tier 1 and Tier 2 protocols; preparation of permit application; and correspondence with ADEQ and EPA. HGC completed a methane generation evaluation of the facility to determine the applicability of the mandatory GHG reporting rule. HGC also developed plans and other documents for lateral expansion of the landfill and assisted with revisions to the liquid waste disposal permit. Project is ongoing.



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

6. ADDITIONAL INFORMATION

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

Hydro Geo Chem, Inc. (HGC) is an Arizona corporation formed in 1978 with corporate headquarters in Tucson and a branch office in Scottsdale, Arizona. For more than 35 years and in more than 35 states and six foreign countries, HGC has provided high-quality, award-winning environmental services to both the public and private sector.

HGC is eminently qualified as an environmental consulting and engineering firm. Our main disciplines of the firm are Phase I and Phase II Site Assessment & Characterization; Remedial Investigation/Feasibility Studies; Engineering Services to Design Remedial Actions; Construction Management for Implementing Remedial Actions; Engineering Evaluation and Cost Analysis of Non Time Critical Removal Actions; Environmental Support including Oversight of RI/FS, Remedial Design, Remedial Action, and Negotiation Support; Technical Assistance; Development of community relations plans; Sampling and Analysis Support; Risk Assessment; Five-year Reviews; Long-term Response Actions; Pre-Design Investigations - contaminated soil and groundwater; Technical Management Services - Support of EPA's Oversight of Remedial Activities; CADD/Mapping/GIS Civil (Hydrology or Irrigation); Flood Control/Mitigation Grading and Drainage; Design Groundwater Investigations/Monitoring Instrumentation & Control; Landfill Gas Collection System Design; Landfill Gas Migration Control; Landfill Gas to Energy Design; Permitting; Remedial Feasibility Assessment; Remedial Investigation; Remedial System Design & Construction; Remedial System Operation & Monitoring; Risk Assessment; and Soil & Soil Gas Investigations. HGC has completed hundreds of projects related to soil, soil vapor, vapor intrusion and groundwater investigations and remediation of chlorinated volatile organics, heavy metals, and petroleum hydrocarbons. In addition, HGC has been involved with numerous landfill assessments to evaluate vertical and lateral gas migration, gas production rates, leachate management, and cover design.

HGC is Disadvantaged Business Enterprises (DBE) certified and a federally self-certified economically disadvantaged Woman-Owned Small Business (WOSB). Where practicable, HGC contracts with other companies who are woman-owned or who are DBEs.

HGC's professional staff includes licensed professional engineers and registered geologists. Over half of the professional staff have advanced degrees. HGC has technical staff in field operations, database management, information technology, and computer-aided drafting and design software, as well as project support staff. HGC is a licensed engineering contractor in the State of Arizona possessing license number 218121, A-General Engineering.

HGC additionally has experience with a variety of solid waste issues at over 50 landfills nationwide and internationally. HGC specializes in serving environmental needs, with an emphasis on creative and technically-sound solutions to challenging engineering problems. Our background covers a broad range of services, including but not limited to

- Air Quality Permitting, Recordkeeping and Reporting
- Civil (Hydrology or Irrigation)
- Groundwater Investigations/Monitoring
- Instrumentation & Control
- Permitting
- Remedial Feasibility Assessment
- Remedial Investigation
- Remedial System Design & Construction
- Remedial System Operation & Monitoring
- Remediation Services
- Risk Assessment
- Site Assessment & Characterization
- Leachate and Landfill Gas Migration Monitoring
- Landfill Gas Generation Estimates
- Landfill Gas Collection System and Flare Design
- Design of Landfill Gas to Energy Systems
- Construction of Landfill Gas Systems and Construction Management
- Operation and Maintenance of Landfill Gas Systems
- Landfill Remediation
- Landfill Facility Permitting and Design



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
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- Landfill Gas Migration Control
- Landfill Gas to Energy Design
- Design of Innovative Landfill Caps and Liners

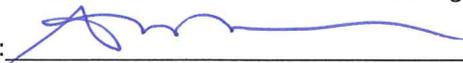
All services are provided under a rigorous system of internal checks and quality assurance to ensure a quality work product on every project.

HGC’s approach to engineering design, construction and operation & maintenance (O&M) is a key factor in our successful track record of managing solid waste projects. The heart of our management approach is developing the project work plan or O&M plan as appropriate, which defines the scope of the project, the schedule, the cost, and the responsible parties for each task. The project plan provides a well-defined task outline with preliminary drawings and specifications for the anticipated work. Emphasis is placed on deliverable work products. Scheduling is determined from the task outline in the form of a Gantt chart created in Microsoft Project that illustrates anticipated times for each project task with milestone dates called out. A critical path diagram is used to identify task items that are key to maintaining the project schedule. Costs are estimated for each element of each task and are monitored with a project expenditure curve over the progress of the project.

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:	80%
b.	Percentage of Total Work Attributable to Non-Government Work:	20%

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

Signature: 

Date: December 21, 2015

Name: Abra J. Bentley Title: President