



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP015-00004729

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

(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:	TETRA TECH - GEO
b.	FIRM (OR BRANCH OFFICE) STREET:	3822 E. UNIVERSITY DR. STE. 3
c.	FIRM (OR BRANCH OFFICE) CITY:	PHOENIX
d.	FIRM (OR BRANCH OFFICE) STATE:	ARIZONA
e.	FIRM (OR BRANCH OFFICE) ZIP CODE:	85034
f.	YEAR ESTABLISHED:	1966
(g1).	OWNERSHIP - TYPE:	CORPORATON
(g2).	OWNERSHIP - SMALL BUSINESS STATUS:	NO
h.	POINT OF CONTACT NAME AND TITLE:	CHRISTOPHER JACQUEMIN, P.E., SENIOR ENGINEER
i.	POINT OF CONTACT TELEPHONE NUMBER:	602-682-3356
j.	POINT OF CONTACT E-MAIL ADDRESS:	CHRIS.JACQUEMIN@TETRATECH.COM
k.	NAME OF FIRM (If block 1a is a branch office):	TETRA TECH



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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
ENVIRONMENTAL ENGINEER	P	413	1
CIVIL ENGINEER	P	721	1
GEOLOGIST	P	403	2
OTHER	P	12963	1
<b>Total</b>	P	14500	5





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

a. NAME Christopher L. Jacquemin, P.E., BCEE	b. ROLE IN THIS CONTRACT Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 32	2. WITH CURRENT FIRM 1
d. LOCATION (City and State) Tetra Tech, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S.-Civil Engineering, Arizona State University, 1979		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Civil Engineer-Arizona, 16984, Professional Environmental Engineer-Arizona Board Certified Environmental Engineer, 33809	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)			

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Former Ted's Truck Stop, Quartzsite. Arizona	2013-2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Directed and managed corrective actions at this former fuel station where multiple releases had occurred. Corrective actions included drilling and sampling three confirmation soil borings; installing five off-site groundwater monitoring wells; installing eight ozone-spargers; constructing a remedial equipment compound; installing underground piping; connecting the new ozone-spargers to a trailer mounted ozone generator; arranging for new electric service and connecting the ozone generator to the new service panel; and providing operation and maintenance of the ozone system. Services included abandoning 43 existing remediation and groundwater monitoring wells. The new wells and remedial system were completed and made operational, the existing wells were abandoned, and one round of groundwater monitoring was completed in less than two months. Remedial work included operating the ozone injection system and injecting oxidizing chemicals in two monitoring wells.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	UST Assessment and Closure, Four Orphan Sites in Arizona	2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Directed and managed the permitting, removal, and closure of underground storage tanks at four facilities. Assessments included coordinating authorization with Arizona Department of Environmental Quality and the State Fire Marshall, observing removal of tanks and product piping, backfilling and restoration work area. Soil samples were obtained to evaluate releases from the tanks and piping. Prepared a closure assessment report to document removal activities.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	Former McCulloch Manufacturing Facility, WQARF Study Area, ADEQ, Lake Havasu City, Arizona:	2013	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Directed and managed an investigation of chlorinated solvents, chromium, chromium VI, and nitrates resulting from release at the former McCulloch chainsaw manufacturing facility in Lake Havasu City. The investigation included monitoring depth-to-water and water quality from a network of 37 wells located on private property and in public rights-of-way. Laboratory results to reviewed and analyzed and a technical report presenting the results was prepared.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	Central and Camelback WQARF Site, Phoenix. Arizona	2013	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		



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<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Managed remediation systems to remove tetrachloroethene (PCE) and other chlorinated solvents from soil and groundwater. Remedial systems included groundwater pump and treat system and soil-vapor extraction system. Responsible for evaluating soil-gas and groundwater extraction rates and making adjustments to maximize removal rates; volatile organic compound (VOC) concentrations to estimate and predict loading of granular activated carbon used to control vapor extraction emissions; and groundwater extraction rates and water levels to maintain capture zone. Directed maintenance and equipment repair/replacements, re-calibration of transducers and other measuring devices, and sampling and testing efforts to provide analytical data for evaluation of system performance and to comply with permitting requirements.</p>	<input type="checkbox"/> Check if project performed with current firm			
<p>(1) TITLE AND LOCATION (<i>City and State</i>) Cooper and Commerce WQARF Site - Gilbert, Arizona</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td data-bbox="945 611 1230 688">Professional Services 2013</td> <td data-bbox="1230 611 1489 688">Construction (if applicable) N/A</td> </tr> </table>		Professional Services 2013	Construction (if applicable) N/A
Professional Services 2013	Construction (if applicable) N/A			
<p>5. (3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Managed remediation systems to remove PCE from soil and groundwater. Remedial systems included groundwater pump and treat system and soil-vapor extraction/air sparge systems. Responsible for evaluating flow rates for vapor extraction and air sparge to maximize removal rates and evaluating VOC concentrations in soil-gas to estimate and predict loading of granular activated carbon which was used to control vapor extraction emissions. Directed construction of discharge line to complete groundwater treatment system and manage system commissioning. Mr. Jacquemin directed sampling and testing efforts to provide analytical data for evaluation of system performance and to comply with permitting requirements.</p>	<input 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 Matthew J. Branche, P.E.	b. ROLE IN THIS CONTRACT Project Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 8	2. WITH CURRENT FIRM 2
d. LOCATION (City and State) Tetra Tech, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S. Environmental Systems Engineering, College of Earth and Mineral Sciences, The Pennsylvania State University, 2006		f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Professional Environmental Engineer, No. 54867, Arizona	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) OSHA 40 hour HAZWOPER and Supervisor Training, First Aid, CPR, Defensive Driving.			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	ADEQ Water Quality Assurance Revolving Fund Site, 20 <sup>th</sup> and Factor, Yuma, Arizona	2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Early Response Action-Capping Project-Project Engineer responsible for implementation of capping of potentially contaminated soils and drainage site-in to City Stormwater drain system. Tasks included acquiring subcontractor quotes, multi-party subcontractor pre-selection site meeting/walk, subcontractor selection, oversight of all field activities, and coordination between the client, the property owner, the City, the onsite stake holders, and all subcontractors. Tasks include coordination and oversight of site health and safety, City permitting, traffic control, sub grade/asphalt/concrete testing, staking, and laboratory testing. Tasks were conducted at an active and highly dynamic site with multiple stakeholders and were performed at minimal disruption with no apparent impact to site business activities.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	Former Ted's Truck Stop, Quartzite, Arizona	2013	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Early Response Action - Staff Engineer responsible for the coordination of operation and maintenance activities by field staff at a dual phase extraction remediation facility conducted under contract to the ADEQ at the Former Ted's Truck Stop Site in Quartzite, Arizona. The remediation system was designed to stop the offsite migration of an extensive petroleum plume that consists of liquid phase hydrocarbons and dissolved phase volatile organic compounds. The remediation system includes dual phase extraction (soil vapor and groundwater), catalytic/thermal oxidation for vapor abatement, and organophilic clay and granular activated carbon treatment for the groundwater effluent. Installation of an Ozone Injection System for the Arizona State Lead Unit, system optimization and trouble shooting.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	Former Earl's Exxon Station, Benson, Arizona	2013	N/A
	Mr. Branche was responsible for Project Management and site characterization of an Arizona leaking underground storage tank site. Contaminants of concern included gasoline products and residuals in the near surface and vadose zone soils. Responsibilities included budget management, subcontractor costing and coordination, data reduction and analysis, boring location selection, direction of field staff, site characterization report deliverables and recommendations for future remedial activities.	<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> Government Accelerant Contractor, Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Staff Engineer for field investigation of perchlorate contamination at a high profile RCRA site. Tasks included coordination of subcontractors with client site operational schedules, safety program and work permits, drill rig oversight, UCSC soil classification, well installation, concrete consistency and volumetric calculations, well development, dedicated pump installation, quarterly sampling and monitoring, well operation and maintenance, writing quarterly and annual monitoring reports with tables, figures and appendices, writing field investigation reports, maintaining and reducing transducer data and using GIS software for display of data. Additional Tasks included sampling and interfacing with potential receptors (private residents) adjacent to site, coordinating with ADEQ during sample splits, and preparation of private results letters.		
5.	(1) TITLE AND LOCATION <i>(City and State)</i> ADEQ UST State Lead Unit, Numerous Sites	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Staff Engineer responsible AS/OS and SVE system well installation, piping layout plan, pressure/vacuum testing, manifold design, equipment installation, utilities coordination, system commissioning, air permitting, operation and maintenance documentation, implementation and tracking of maintenance programs, system optimization, and onsite troubleshooting of high complexity equipment issues. Field staff task management included planning and directing field staff for operation and maintenance activities, air compliance sampling, groundwater sampling, and troubleshooting low to medium complexity onsite issues.		



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a. NAME Scott Parsons, P.E	b. ROLE IN THIS CONTRACT Principal Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 30	2. WITH CURRENT FIRM 30
d. LOCATION (City and State) Tetra Tech , Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION)  MBA, Business Administration, California State University, Long Beach, 1995.  B.S., Mechanical Engineering, University of New Hampshire, Durham, New Hampshire, 1982.		f. PROFESSIONAL TRAINING - REGISTRATIONS	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)			

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION (City and State) United Technologies Corporation, Puente Valley Operable Unit	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Remedial Design and Remedial Action for the PVOU shallow zone remedy. Responsible for the design and implementation of 1,500 gpm extraction system that includes 10 extraction wells, over 3 miles of pipeline in the public right-of-way, advanced oxidation, granular activated carbon, and ion exchange.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Carrier Corporation, City of Industry, California	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Operating and maintaining an integrated groundwater extraction system and soil vapor extraction system. Implemented cost saving measures that have resulted in savings of approximately \$200,000 per year including reducing sampling frequency, eliminating onsite carbon regeneration system, reducing labor, and discontinuing operation of a UV oxidation vapor treatment system.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) Los Angeles Unified School District, Los Angeles, California	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Removal Action to support the construction of Central Regional Elementary School No. 16. A total of approximately 2,100 tons of soil were excavated and transported offsite for disposal as RCRA hazardous waste and non-RCRA hazardous waste. Approximately 75 post-excavation bottom confirmation samples and 200 sidewall confirmation samples were collected and analyzed for lead and arsenic to confirm that DTSC-approved remedial action objectives had been achieved. The DTSC issued a No Further Action Letter approving school construction after reviewing the Removal Action Completion Report.	<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> Los Angeles Unified School District, Los Angeles, California	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Remedial Action Plan and Remedial Design Document for Central Regional Middle School No. 7. The DTSC-approved remedial action included excavation of approximately 100,000 cubic yards of VOC-impacted soil, post excavations soil-matrix and soil vapor confirmation sampling, and contingent soil vapor extraction. The RAP, which was approved by the DTSC, included a sampling and analysis plan, quality assurance project plan, health and safety plan, design drawings, engineering specifications, and an operations and maintenance plan.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION <i>(City and State)</i> ARCO Transportation Services Company, Long Beach, California	(2) YEAR COMPLETED	
		Professional Services 1995	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Design and construction of a remediation system for soil and groundwater impacted by more than 100,000 gallons of gasoline from a transportation pipeline release. Free product with apparent thickness of up to 25 feet was measured on the groundwater. Conducted vapor extraction pilot tests and a feasibility study to evaluate the best technologies for controlling plume migration and remediating the site. Designed and obtained permits for an integrated remediation system utilizing pneumatic pumps and vapor extraction. The free product was pumped to a 2,000 gallon above ground storage tank (AST). Extracted vapors were destroyed by a thermal oxidizer.	<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 Matthew T. Miller, GIT	b. ROLE IN THIS CONTRACT Staff Geologist	c. YEARS EXPERIENCE	
		1. TOTAL 3	2. WITH CURRENT FIRM 1

d. LOCATION (City and State) Tetra Tech, Phoenix, Arizona

e. EDUCATION (DEGREE AND SPECIALIZATION) B.S., Earth and Space Exploration; Concentration Geology, School of Earth and Space Exploration, Arizona State University, 2012	f. PROFESSIONAL TRAINING - REGISTRATIONS Geologist in Training, 2014
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g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)  
OSHA 40 hour HAZWOPER and Supervisor Training, MISHA, Frist Aid, CPR, Defensive Driving

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION (City and State) Teds Truck Stop, Remedial Equipment Removal and Decommissioning, Quartzite, Arizona	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Provided oversight of removal and decommissioning of existing remedial system for ADEQ.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Soil Vapor and Cyanide Sapling, Yuma, Arizona	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Conducted vapor sampling using a Gilian air pump with soda lime tubes for cyanide, and Summa canisters for volatile organic compounds. Review data and tables for QA/QC and produced diagrams for reports.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) ARCGIS Work, Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Compiled data and created over 60 diagrams and maps for a project in Puente Valley, California. All work was done on a plume containing volatile organic compounds.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Anfield Resources, Utah, Colorado and Arizona	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Conducted research participated in planning and oversaw staking of new mining claims in Colorado and Utah. Investigated abandoned mines for reports.	<input type="checkbox"/> Check if project performed with current firm	



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5.	(1) TITLE AND LOCATION ( <i>City and State</i> ) Equinox Copper, Apache Junction, and Prescott Valley, Arizona	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION ( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE Conducted surface sampling, geologic mapping, and extensive geophysical study using airborne and magnetic surveys. Logged over 500 feet of core for massive sulfide deposit for copper mineralization.	<input 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 Dallen C. West	b. ROLE IN THIS CONTRACT Sci. Geologist I	c. YEARS EXPERIENCE	
		1. TOTAL 1	2. WITH CURRENT FIRM 1
d. LOCATION (City and State) Tetra Tech, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S., Environmental Science, College of Agriculture and Life Science. University of Arizona, 2014		f. PROFESSIONAL TRAINING - REGISTRATIONS	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) OSHA 40 hour HAZWOPER			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) UST Removal Oversight, Phoenix, Bisbee, Wilcox and Sunsites, Arizona	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Responsible for observing excavation and exposure of UST's; removal and containerization of liquids; removal of UST's from the ground, soil sampling, and oversight of backfill and paving of excavation areas.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Phase I, Multiple Locations in Phoenix, Tempe, Scottsdale, Tucson, and Sedona, Arizona	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Responsibilities included conducting Phase I site reconnaissance, and assembling photographic and locational documentation.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) SVE Optimization, City of Industry, California	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Assisted in optimization efforts on sealing soil vapor extraction well vaults to minimize vapor intrusion. Also, responsible for the repair of damaged wells.	<input type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Phase I, Sierra Vista, Arizona	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Responsibilities included conducting Phase I site reconnaissance, and assembling photographic, historic, and locational documentation.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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(1) TITLE AND LOCATION *(City and State)*

Well Inventory Study, 19<sup>th</sup> Avenue Landfill Superfund Site,  
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services

2014

Construction (if applicable)

N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Check if project performed with current firm

5.

Reviewed records on the Arizona Department of Water Resources (ADWR) Well 55 Register database. Searched for well records within a one-mile distance from the Site borders. Reviewed applicable information in the database to eliminate records for soil borings that were not completed as wells; for wells that were cancelled or never drilled; and for wells that have been abandoned. Prepared maps showing monitoring wells use by the City of Phoenix to evaluate groundwater conditions, and drinking water wells, within on-mile of the Superfund Site. Reviewed and corrected inconsistent cadastral locations for City of Phoenix monitoring wells.



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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) Former Ted's Truck Stop, ADEQ, Quartzsite, Arizona:	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2013-2014	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Arizona Department of Environmental Quality (ADEQ)	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$400K	e. TOTAL COST OF PROJECT \$400K
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Tetra Tech was retained to complete corrective actions at this former fuel station where multiple releases had occurred. Corrective actions included drilling and sampling three confirmation soil borings; installing five off-site groundwater monitoring wells; installing eight ozone-spargers; constructing a remedial equipment compound; installing underground piping; connecting the new ozone-sparger wells to a trailer mounted ozone generator; arranging for new electric service and connecting the ozone generator to the new service panel; and providing operation and maintenance of the ozone system. Services included abandoning 43 existing remediation and groundwater monitoring wells. The new wells and remedial system were completed and made operational, the existing wells were abandoned, and one round of groundwater monitoring was completed in less than two months. Services included operating and maintaining the ozone injection system to address on-site groundwater contamination, and injecting chemical oxidants into selected monitoring wells to address off-site groundwater contamination.



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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) Waste Stream Analysis of the Cocopah Indian Tribe, Yuma, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2013-2014	CONSTRUCTION (if applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Cocopah Indian Tribe	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$55K	e. TOTAL COST OF PROJECT \$55K
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Tetra Tech was contracted by the Cocopah Indian Tribe to prepare a comprehensive solid waste management plan that incorporates some of the following components: efficient waste management; analyzing benefits of recycling partnerships; analyzing current waste streams to understand and identify possible waste diversions, including food waste; and, guidance with respect to special waste materials.

The Waste Stream Analysis will be used to evaluate the waste management program that the Tribe already has in place, alongside the waste disposal habits of residents and tribal enterprises, to create a solid foundation to build the waste management plan that will best suit the needs of the Tribe.

A Residential Waste Characterization Audit was performed on April 10, 2013 in the parking facility of the Cocopah Police Department. At the request of Tetra Tech, four containers trash were collected and reserved by the Tribe from the April 8, 2013 trash collection of residential waste. The locations were selected at random to prevent a bias in results. One canister was collected from the northern residential area, two cans were collected from the western residential area, and one canister was collected from the eastern residential area. Waste was separated into primary categories as per the EPA's Municipal Solid Waste (MSW) Characterization Methodology (EPA-530-F-11-005). Additional categories were added to target materials that may have value and are marketable.

This integrated solid waste management plan serves as a planning tool which will enable the Tribal Council to make necessary and appropriate solid waste management decisions now and in the future. Adoption of the Plan by the Tribe will ensure the most environmentally beneficial and best value approach for solid waste management. Improving solid waste management practices on the reservation has many benefits, such as protecting the environment, maintaining the aesthetic appearance of the reservation, cost savings, and minimizing health hazards associated with current practices. In addition, the goal of continuously improving solid waste management practices on the reservation should be adopted by the Tribe. Examples of continuous improvement would include the expansion of recycling, waste diversion programs on the reservation, and integrating profitable recycled product into the marketplace.

This plan provides recommendations for both short term and long term solid waste programs which are intended to improve solid waste management on the reservation. Implementation of these programs will assist the Tribe in developing a well-organized recycling program thus reducing the amount of solid waste sent to a landfill.

This Technical Memorandum has been developed by Tetra Tech, Inc. (Tetra Tech) in order to analyze data compiled from the Residential Waste Audit performed on April 10, 2013, and data provided by waste servicers and results from surveys distributed to commercial entities within the Cocopah community.



**ATTACHMENT I – General Qualifications**

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP015-00004729**

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

**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> Former Earl's Exxon Station, Benson, Arizona, Former Eloy's Chevron, Douglas, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(if applicable)</i> N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER Arizona Department of Environmental Quality (ADEQ)	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$55K and \$32K	e. TOTAL COST OF PROJECT \$55K and \$32K
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Former Earl's Exxon Station, Benson, Arizona - The purpose of this task was to assess the severity and extent of soil contamination and groundwater contamination resulting from the release(s) of the former Underground Storage Tank (UST) systems. The scope of work included: 1) utility locating and agency permitting; 2) drilling, soil sampling and analysis; 3) monitoring well installation, development, and well head survey; 4) groundwater sampling and laboratory analysis; 5) Contingency well installation; 6) disposal of Investigative Derived Waste (IDW); and, 7) report preparation.

Former Eloy's Chevron, Douglas, Arizona - The purpose of this task was to assess the extent of release from the former waste oil Underground Storage Tank (UST) and to confirm whether a release had occurred from the pump end of one or both of the remaining inactive gasoline USTs at the site. The scope of work included: 1) utility locating and agency permitting; 2) drilling and soil sampling; 3) monitoring well installation, development, and groundwater sampling; 4) laboratory analysis; 5) disposal of IDW; and, 6) report preparation.



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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	
ASRAC Contract, Multiple Sites in Arizona	PROFESSIONAL SERVICES 2000-2014	CONSTRUCTION (if applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Arizona Department of Environmental Quality	\$7.1 M	\$7.1 M

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

Water Quality Assurance Revolving Fund (WQARF) Sites; Early Response Actions (ERAs), Remedial Investigations (RIs), Feasibility Studies (FSs), Preliminary Remedial Action Plans (PRAPs), Records of Decision (RODs), Remedy Design and Implementation, and Community Involvement Services, Arizona.

Since 2000, Tetra Tech has been the prime contractor on the ASRAC contract for the Arizona Department of Environmental Quality (ADEQ) WQARF (i.e., State Superfund) Program. Major individual sites under contract include the 20<sup>th</sup> and Factor Site in Yuma, AZ; Park-Euclid Site in Tucson, AZ; Western Avenue Site in Goodyear, AZ; Payson PCE Site in Payson, AZ; and the Tonto and Cherry Site in Payson, AZ. Tetra Tech drilled, logged, and sampled numerous soil borings, and drilled, logged, installed, and sampled numerous groundwater and soil vapor monitoring wells.

The projects also involved conceptual site hydrogeologic model generation and evaluation in the context of typical Arizona multi-aquifer systems; developing and evaluating subsurface lithology utilizing geologic cross-sections and fence diagrams; hydrogeologic flow and fate-and-transport modeling; assessment of site groundwater quality data in terms of tri-linear diagrams of geochemistry; and interpretation of Arizona Department of Water Resources (ADWR) groundwater maps and databases. Tetra Tech developed extensive Access-compatible databases of site information (geological, contaminant chemistry, etc.), which are integrated in a GIS database for each site.

Tetra Tech planned and implemented a total of 4 early response actions (ERAs) to eliminate source areas, reduce risk by removing pathways and installing caps, prepared RI reports for four sites, prepared FS reports for three sites; prepared PRAPs and RODs for two sites, and designed/built/maintained two ERA and remedial systems. Remedial investigation activities and groundwater monitoring are currently underway at one site. Tetra Tech also supported the ADEQ at site-specific Community Action Board meetings by preparing fact sheets, newsletters, and public notices. Tetra Tech also assisted ADEQ as a consultant providing oversight on other projects.



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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	
Former Cattle Feedlot Brownfields Site Phase I and II ESAs, Salt River Pima Maricopa Indian Community (SRPMIC), Arizona	PROFESSIONAL SERVICES 2007-2011	CONSTRUCTION (if applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Salt River Pima Maricopa Indian Community (SRPMIC)	\$489K	\$489K

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

Tetra Tech conducted Brownfields-related services for the SRPMIC under an USEPA Brownfields grant. The subject site is a 160-acre parcel comprised of building structures, granaries, ASTs, cattle-loading scales, livestock pens, water wells, cattle feeding troughs, a cattle dip vat, a number of concrete slabs, and possible septic systems. Several recognized environmental conditions (RECs) and areas of potential concern (AOPCs) were identified during the Phase I ESA; they included ACMs; potential buried drums; and impacted soil and groundwater. We prepared the Phase II ESA SAP, which was approved by the SRPMIC and USEPA Region 9. The Phase II ESA included well rehabilitation; groundwater monitoring; a geophysical survey of a suspected buried drum area; an asbestos survey of building structures; several soil borings; and a soil vapor assessment. The Phase II ESA report was approved in January 2009. We also rehabilitated two on-site production wells into groundwater monitoring wells. In addition, we demolished the former concrete dip vat and the associated pad and performed soil characterization after their removal. We also characterized the Northwest Disposal Area by trenching associated with visual observations and soil sampling. A Draft Site Cleanup and End Use Plans were also developed.



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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.)

Tetra Tech

Specializing in groundwater flow and transport modeling, Tetra Tech has provided services to some of the most complex environmental sites across the United States such as the Savannah River Site, the Lipari Landfill, the Nevada Test Site, Love Canal, and the Rocky Mountain Arsenal. Its skill set encompasses core capabilities including integrated site characterization, field investigation, risk assessment and clean-up, groundwater modeling and analysis, characterization and remediation of NAPL, brownfields redevelopment, information management, remedial design, implementation and oversight, water resources, litigation and negotiation support, telecommunications site acquisition, remedial system evaluation and optimization, mine closure, and ISO 14000 implementation.

Environmental: Tetra Tech offers a full range of environmental consulting services by drawing upon a nationwide pool of experienced and qualified environmental professionals. Our goal is to provide local experience augmented by national recognized experts. Environmental investigations require a multi-disciplinary approach. Tetra Tech is able to provide professional services in any one of many focused disciplines that may require specialized knowledge to support environmental compliance activities. Some of these disciplines include:

- Environmental Scientists
- Wetland Scientists
- Risk Assessment Specialists
- Regulatory Specialist
- Geochemists
- Reclamation Engineers
- Hydrogeologist
- Geologists
- Civil Engineer
- Ecologists
- Ecosystem Modelers
- GIS Designers
- Groundwater Specialists
- Geotechnical Engineers

Our project teams have extensive experience in providing:

- NEPA level clearances for Federally-funded projects including environmental planning and impact assessments.
- Biological assessments, wetland and riparian area delineations; and archaeological surveys and data recovery.
- Water quality assessments including Section 401, 402, and 404 permitting, hydrological monitoring and modeling, pollutions prevention plans, and sampling and testing.
- Highway development impact studies including Section 4(f) evaluations, construction impact assessments, socioeconomic evaluations, and utility conflict assessments.
- Hazardous materials evaluations including Phase I and II Environmental Site Assessments (ESAs).
- Air quality permitting, dust control plans, facility inspections, and compliance reporting.
- Analysis of state and federal environmental regulations and determination of applicability.
- Audits and facility inspections to determine status of compliance efforts.
- Monitoring and inspection of construction activities and record keeping/reporting efforts.
- Permitting to comply with air, water, and waste programs.
- Training including development of materials and presentations to large and small groups.
- General consulting concerning environmental regulations and local practices.



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Providing these services, Tetra Tech uses geographical information systems and computer databases to store, organize, and present a myriad of data and spatial information. Tetra Tech has scientist that understand the information, programmers to develop databases and environmental information management systems (EIMs), and public outreach specialist that can provide eye-catching and effective outreach materials and training to employees and the public.

Total Maximum Daily Loads: Tech’s practical experience in establishing Total Maximum Daily Loads (TMDLs) throughout the United States is unmatched. Since 1995 we have developed TMDL calculations for more than 2,500 entities in 45 states and territories covering pollutants like fecal coliforms, nutrients, pesticides, and metals for lakes, rivers, estuaries, and lagoons in watersheds of all sizes. We focus on developing techniques that result in more efficient and defensible TMDL development by the states or, when necessary, for EPA backstopping of lawsuit mandated deadlines.

NPDES Program: Tetra Tech has supported all aspects of developing and implementing the National Pollutant Discharge Elimination System (NPDES) permit program at the federal, state, and local levels. We provide our clients some of the most innovative tools available for NPDES compliance. From application review to compliance inspections, our NPDES team has the knowledge, experience, and efficiency needed to get the job done.

Geographic Information: Tetra Tech integrates Geographic Information Systems (GIS) into investigation and design tasks to more effectively visualize and assess the natural and constructed world. Tetra Tech utilizes GIS in various projects including water resources, geotechnical, environmental, planning, and permitting. Spatial databases are developed to provide thorough evaluation of geologic and hydrologic systems through modeling, data management and evaluation.

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:	60
b.	Percentage of Total Work Attributable to Non-Government Work:	40

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

Signature: \_\_\_\_\_

Date: DECEMBER 11, 2014

Name: CHRIS JACQUEMIN, P.E.

Title: SENIOR ENGINEER