



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 (MMI)
b.	FIRM (OR BRANCH OFFICE) STREET:	2015 West River Road, Suite 141
c.	FIRM (OR BRANCH OFFICE) CITY:	Tucson
d.	FIRM (OR BRANCH OFFICE) STATE:	Arizona
e.	FIRM (OR BRANCH OFFICE) ZIP CODE:	85704
f. YEAR ESTABLISHED:		1966
(g1).	OWNERSHIP - TYPE:	Corporation
(g2)	OWNERSHIP - SMALL BUSINESS STATUS:	N/A
h.	POINT OF CONTACT NAME AND TITLE:	William Slanaker
i.	POINT OF CONTACT TELEPHONE NUMBER:	520.247.0884 (cell) 520.297.7723 (office)
j.	POINT OF CONTACT E-MAIL ADDRESS:	William.slanaker@tetrattech.com
k.	NAME OF FIRM (If block 1a is a branch office):	Tetra Tech







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

a. NAME William Slanaker	b. ROLE IN THIS CONTRACT Technical Manager	c. YEARS EXPERIENCE	
		1. TOTAL 28	2. WITH CURRENT FIRM 1.5
d. LOCATION (City and State) Tetra Tech (MMI) Tucson, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) Pima Community College, 1984 Mechanical Engineering, University of Arizona, 1986 Graduate Course Work, Project Management, 2012		f. PROFESSIONAL TRAINING - REGISTRATIONS Project Management Professional: Project Management Institute	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)			

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION (City and State) Heap Leach Project, Phelps Dodge, Morenci, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Managed a large scale Mine for Leach Project, this project required all construction disciplines (over 180 people) on a fast pace project, constructing multiple overland conveyors, and agglomeration system.	<input type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Maintenance Manager / Construction Manager / Mine Manager, Cobre Mining Phelps Dodge, Silver City, New Mexico.	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Managed the mechanical department with responsibility for supervising and motivating large maintenance crews and outside contractors for all phases of mill and mine maintenance (all surface activities). Engineering, designing, troubleshooting and implementing new concepts relating to milling, crushing, pumping and conveying. Program Manager: responsibilities included; feasibility studies, planning, scheduling, coordinating, budget forecasting and procurement of large capital projects. Coordinate and manage maintenance crews through concentrator shutdowns, and all mechanical repairs: crushers, grinding mills, pumps, float cells, and conveying equipment. Supervise and assume responsibilities for special projects. Major construction projects during this time include: Pit crusher (Jaw Crusher) relocation, concentrator expansion; installation of a Nordberg Mill, installation of a new cyclone bank, column cells, booster pumping station, filter drums.	<input type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) Underground/Surface Mine, East Boulder Project, Stillwater Mining, Big Timber, Montana	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Responsibilities included: Complete conceptual design through detailed design of TBM launching facility, pumping stations, water diversions, water separation systems, and office / maintenance buildings. Also included the study and launch of underground horizontal boring and conveying systems (TBM) with automated GPS guidance systems.	<input type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Relocation of Polyester Coating Line, 3M Corporation, San Luis Potosi, Mexico.	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE This project scope included disassembly, documentation, and load-out of multiple large pieces of precision equipment in Chicago, Illinois US. Ship, export/import, re-assemble, up-grade, start-up and commission the entire coating line in San Luis Potosi, Mexico.	<input type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (City and State) Greenfield project, 3M Guangzhou, Guangzhou, China.	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Overall project management/coordination of engineering and construction, industrial building/laboratory, new utilities, and installation/commissioning of a Hot melt coating line for PCD.	<input type="checkbox"/> Check if project performed with current firm	



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a. NAME Marvin Silva, Ph.D., P.E.	b. ROLE IN THIS CONTRACT Senior Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL 31	2. WITH CURRENT FIRM 4
d. LOCATION (City and State) Tetra Tech (MMI) Tucson, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) PhD, Geotechnical/Geoenvironmental Engineering, University of Alberta, 1999 AS, Civil Engineering, Northern Alberta Institute of Technology, 1991 MS, Soils and Water Resources Engineering, Institute of Odessa, Ukraine, 1985 BS, Civil Engineering, National Autonomous University of Nicaragua, 1981		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Civil Engineer: Arizona #43472, Massachusetts Professional Engineer (Canada): Alberta	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)			

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION (City and State) Heap Leach Design Feasibility Level, Rosemont, Arizona	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project engineer responsible for conducting geotechnical investigation, directing laboratory testing, and conducting engineering analysis including slope stability analysis (Slope/W), seepage analysis (Seep/W), and settlement analysis using Settle3D software. Laboratory tests included direct shear test of the clay, interface direct shear, puncture tests, and permeability test of the ore.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Geological and Seismic Hazard Evaluation, Wildcat Silver, Arizona	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Conducted seismic hazard analysis using deterministic and probabilistic methods to determine the peak ground acceleration (PGA) associated with the maximum credible earthquake (MCE) and maximum probable earthquake (MPE) to be used in the design of mine facilities including tailings dams and waste rock dumps. Geological hazard evaluation included rock fall hazard, land subsidence, soil collapse potential, and soil expansion potential.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) Waste Rock Dump Design, Silver Bell, Arizona	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Engineer responsible for the design of a new waste rock dump facility at the Silver Bell mine. Work included slope stability and seepage analyses, stormwater control plan, geochemical characterization, and closure strategy. The stability analysis was performed using Slope/W and the seepage analysis was performed using Vadose/W, both components of the GeoStudio 2007 software package.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Excavation Plan/Slope Stability/Observation, Gould Electronics, Inc., Chandler, Arizona.	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Engineer for the preparation of Excavation Plans for the demolition and remediation of existing industrial plant. Slope stability analyses were conducted for the side slopes of the temporary excavation. The maximum depth of the open excavation was about 33 feet and the maximum side slope recommended was 0.5H to 1V, which was based on a minimum factor of safety of 1.5. Observation of the excavation side slopes were performed twice per month giving recommendations to correct deficiencies and making modifications during excavation depending on soil profile changes.	<input type="checkbox"/> Check if project performed with current firm	



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5.	(1) TITLE AND LOCATION ( <i>City and State</i> ) Pit Slope Angle Recommendations Pre-Feasibility Level, Wildcat Silver, Hermosa Project, Arizona	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION ( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE Pit Slope Angle Recommendations Pre-Feasibility Level, Wildcat Silver, Hermosa Project, Arizona. Project Manager responsible for conducting geological mapping of rock outcrops. Performing Stereonet projection analysis using DIPS software and limit equilibrium analyses using RocPlane and Swedge to determine the safe pit slope angles.	<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.)*

<b>a. NAME</b> Michael L. Dieckhaus	<b>b. ROLE IN THIS CONTRACT</b> Environmental Scientist	<b>c. YEARS EXPERIENCE</b>	
		<b>1. TOTAL</b> 25	<b>2. WITH CURRENT FIRM</b> 17
<b>d. LOCATION (City and State)</b> Tetra Tech (MMI) Tucson, Arizona			
<b>e. EDUCATION (DEGREE AND SPECIALIZATION)</b> BS, Marine Science with a Concentration in Biology, Long Island University/Southampton, New York		<b>f. PROFESSIONAL TRAINING - REGISTRATIONS</b>	
<b>g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.)</b> 2014 Mine Safety and Health Administration Surface Miner Refresher 2014 8-hr Hazardous Waste Operations and Emergency Response Refresher (29 CFR 1910.120/29 CFR 1926.65) 2012 First Aid/CPR and AED 2009, ISO 14001: 2004 Auditor Training 2006, ISO 14001: 2004 Standard Auditor Training 2000, ISO 14001: 1996 Standard Lead Auditor Training 1996, Emergency Responder Nuclear, Biological, and Chemical Technician HAZMAT 1992, U.S. EPA Scientific Working Diver/Diving Accident Management Certification for Polluted Water Diving			

**H. RELEVANT PROJECTS**

<b>1.</b>	<b>(1) TITLE AND LOCATION (City and State)</b> ASARCO Trust Arizona Sites Environmental Support, Arizona	<b>(2) YEAR COMPLETED</b>	
		Professional Services 2014	Construction (if applicable) N/A
	<b>(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE</b> Tetra Tech is providing support to the ASARCO Multi-State Environmental Custodial Trust and the ADEQ VRP for three former mining sites (i.e. Salero and Trench Mines in Patagonia, Arizona and Sacaton Mine in Casa Grande, Arizona) and one former concrete block manufacturing facility (i.e. TruStone) which is located on the Sacaton Mine property. He was stormwater compliance task manager for the project ensuring stormwater permitting, preparation of SWPPPs and NOIs, and completion of comprehensive facility inspections (CFIs) and is the Project Manager ensuring completion of all tasks for the three abandoned mine sites and one former concrete block manufacturing facility. Work at the sites includes stormwater management, acid rock drainage pipeline and evap pond maintenance, and reclamation/closure planning and execution.	<input checked="" type="checkbox"/> Check if project performed with current firm	
<b>2.</b>	<b>(1) TITLE AND LOCATION (City and State)</b> Artillery Peak mine Environmental Clearance, Arizona	<b>(2) YEAR COMPLETED</b>	
		Professional Services 2012	Construction (if applicable) N/A
	<b>(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE</b> He managed and coordinated the environmental clearance work as part of a prefeasibility and planning work for a proposed mine in northwestern Arizona. The environmental clearance work included stormwater and surface water permitting; Arizona aquifer protection permitting and the supporting groundwater, waste rock and tailings characterizations; biological, cultural and jurisdictional delineation surveys to support an environmental assessment or environmental impact study for NEPA and 404 permitting; and air regulatory applicability and permitting. Field activities included establishment of a remote weather station; remote stormwater sampling stations; and biological, cultural, wetlands; and navigable waters surveys.	<input checked="" type="checkbox"/> Check if project performed with current firm	
<b>3.</b>	<b>(1) TITLE AND LOCATION (City and State)</b> Oracle Ridge Mine Arizona Stormwater Permitting and Surface Water, Arizona	<b>(2) YEAR COMPLETED</b>	
		Professional Services 2014	Construction (if applicable) N/A
	<b>(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE</b> As part of an underground mine preparation work, Tetra Tech prepared a new Stormwater Pollution Prevention Plan (SWPPP) to address the requirements of the Arizona Mining Multi-sector General Permit issued in 2011. Tetra Tech also completed the Notice of Intent (NOI) to file for coverage and Best Management Practices Manual for this operation in a mountainous region. From 2012-2014, Tetra Tech completed the annual comprehensive facility inspection, annual SWPPP review and annual SWPPP revisions to represent the current operations.	<input checked="" type="checkbox"/> Check if project performed with current firm	
<b>4.</b>	<b>(1) TITLE AND LOCATION (City and State)</b> City of Nogales Stormwater Management Program, Nogales, Arizona	<b>(2) YEAR COMPLETED</b>	
		Professional Services 2009	Construction (if applicable) N/A



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE As stormwater compliance lead, he reviewed the City of Nogales Stormwater Management Program (SWMP) and its progress per annual reports to evaluate the status against the requirements in the Arizona Pollutant Discharge Elimination System (AZPDES) General Permit for Discharge from Small Municipal Separate Storm Sewer Systems (MS4s).</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Rosemont Copper, Arizona</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td data-bbox="941 409 1234 462">Professional Services 2010</td> <td data-bbox="1234 409 1485 462">Construction (if applicable) N/A</td> </tr> </table>	Professional Services 2010	Construction (if applicable) N/A
Professional Services 2010	Construction (if applicable) N/A			
5.	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE A noise attenuation study was completed for a proposed mine located approximately 30 miles southeast of Tucson. The study involved placement of noise meters in areas proximal to the proposed mine, nearby residences and the major roadway, State Route 83, to determine the background noise levels prior to active mining. Noise monitoring was also conducted at an active mine to obtain “typical” noise levels. Additional noise evaluations were completed for alternative designs for the proposed open pit mine.</p>	<input type="checkbox"/> Check if project performed with current firm		



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<b>a. NAME</b> Morris I. Riback, P.E.	<b>b. ROLE IN THIS CONTRACT</b> Senior Project Manager	<b>c. YEARS EXPERIENCE</b>	
		<b>1. TOTAL</b> 28	<b>2. WITH CURRENT FIRM</b> 6
<b>d. LOCATION</b> <i>(City and State)</i> Tetra Tech (MMI) Tucson, Arizona			
<b>e. EDUCATION</b> <i>(DEGREE AND SPECIALIZATION)</i> MS, Civil Engineering, University of Arizona BS, Political Science, University of Arizona		<b>f. PROFESSIONAL TRAINING - REGISTRATIONS</b> Professional Engineer: Arizona #25009	
<b>g. OTHER PROFESSIONAL QUALIFICATIONS</b> <i>(Organizations, Awards, etc.)</i>			

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
1.	Oasis Santa Rita, Pima County, Arizona.	Professional Services 2005	Construction (if applicable) 2008
	<b>(3) BRIEF DESCRIPTION</b> <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Design of paving and grading for roadways, streets, water distribution, sewer, storm drain and culverts for 320-acre development. Work included new alignment for major arterial Camino del Toro and major box culvert crossings of Monte Verde Drive.		<input type="checkbox"/> Check if project performed with current firm
2.	Tanque Verde La Rienda, Tucson, Arizona.	Professional Services 2005	Construction (if applicable) N/A
	<b>(3) BRIEF DESCRIPTION</b> <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Commercial subdivision with sewer, water, storm drains, detention/retention facilities, paving, grading and floodplain encroachment adjacent to Agua Caliente Wash at Houghton and Tanque Verde.		<input type="checkbox"/> Check if project performed with current firm
3.	Santa Rita Acres Estates, Pima County, Arizona.	Professional Services 2005	Construction (if applicable) 2008
	<b>(3) BRIEF DESCRIPTION</b> <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Design of booster facilities, water mains, and roadway paving and grading plans for 960-acre subdivision in the New Tucson area.		<input type="checkbox"/> Check if project performed with current firm
4.	J-6 Road Extension, Cochise County, Arizona.	Professional Services 2006	Construction (if applicable) N/A
	<b>(3) BRIEF DESCRIPTION</b> <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <i>Design extension of arterial roadway to County standard including paving, grading, drainage and rural roundabout design to FHWA standards.</i>		<input type="checkbox"/> Check if project performed with current firm
5.	Santa Cruz Interceptor Phase III, Pima County, Arizona.	Professional Services 2008	Construction (if applicable) 2010
	<b>(3) BRIEF DESCRIPTION</b> <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Responsible for design of new 66-inch sewer interceptor along the Santa Cruz River from Congress to Speedway. Work included installation of several junction structures and installation of new sewer crossings under the Interstate within ADOT right-of-way. The crossing was processed with the ADOT Tucson District Permit Office to successful acceptance within the terms of an existing Encroachment Permit.		<input type="checkbox"/> Check if project performed with current firm



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

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

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
ASARCO Multi-State Custodial Trust Support, Arizona	PROFESSIONAL SERVICES 2014	CONSTRUCTION <i>(If applicable)</i> N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER ASARCO Multi-State Environmental Custodial Trust by and through Le Petomane XXV, Inc., not individually, but solely as Trustee	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$2,359,509	e. TOTAL COST OF PROJECT \$945,954
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)  
Tetra Tech is providing support to the ASARCO Multi-State Custodial Trust for three former mining sites (i.e. Salero and Trench Mines in Patagonia, Arizona and Sacaton Mine, Casa Grande, Arizona) and one concrete block manufacturing facility (i.e. TruStone), which is located on the Sacaton Mine property. The Salero Mine, which is roughly 470 acres, is located approximately 8 miles northwest of the Town of Patagonia in Santa Cruz County, Arizona. The Salero Mine site was mined between 1687 and 1959 for silver, lead, copper, and zinc. Ore was retrieved from underground adits, tunnels, and shafts. Reclamation work was completed prior to this year including construction of an acid mine drainage pipeline and evaporation ponds to capture drainage from three of the mine adits on the property. The main issues on the site are the pipeline, evaporation ponds, and having secured access to the adits in order to ensure proper drainage. Tetra Tech is reviewing the pipeline to improve its function and also completing monthly inspections of the pipeline and site to maintain and repair pipeline issues. This is a remote site with a rough and steep access road that requires improvements in order to facilitate access onto the site open shafts and adits, and the acid mine drainage. Tetra Tech has utilized its resources and skills to plan road and pipeline improvements. Tetra Tech has completed environmental permitting including stormwater AZPDES and is completing inspections for the pollutant sources and associated control measures.

The Trench Mine, which has approximately 45 acres of disturbed area on 250 acres of property, is located in a remote area northeast of Patagonia in Santa Cruz County, Arizona. ASARCO mined copper from the Trench Mine site from 1939 to 1957 with some sporadic mining until 1992. Previously completed reclamation activities has included demolition of the mill and other buildings, backfilling underground workings, and recontouring and capping waste rock deposition areas and four tailings impoundments. The main issues at the site are drainage from the tailings impoundments, which have sediment basins to prevent stormwater runoff from carrying sediments into the adjacent washes which are Arizona impaired waters. Tetra Tech is planning excavation of the sediment basins in order to reconstitute their capacity back to the original design and also establishing stormwater sampling stations to demonstrate the stormwater quality. Tetra Tech is conducting bi-monthly site visits in order to review current site conditions, pollutant sources, and control measures. Tetra Tech also completed the reconnaissance of a disputed parcel and identified mine hazards and features on the parcel including shafts, adits, and seeps using a Trimble GPS.

The Sacaton Mine, which is approximately 2,000 acres, is located in Casa Grande in Pinal County, Arizona. This former open pit and underground copper mine operated from 1972 until 1984. Previous reclamation activities included capping and vegetating of the tailings impoundment, waste rock piles, and alluvium waste were completed. The main issues at the site are the numerous safety hazards posed by the structures, pits, vaults and trenches present at the site along with the environmental hazards posed by erosion of the caps on the waste rock and alluvium piles and transport of these materials via runoff. Tetra Tech is maintaining security services at the site, mitigating safety concerns, and planning how erosion concerns will be corrected. Tetra Tech has completed stormwater permitting and is completing routine inspections of the site.

TruStone is a former concrete block manufacturing facility located on approximately 20 acres of the Sacaton Mine property. The TruStone operation was a refractory brick manufacturing plant that used mine tailings in the process. The main issues at the site are the uncovered materials present at the site including finished and damaged blocks, tailings piles, equipment, and containers. Tetra Tech has completed stormwater permitting and is planning collection of stormwater samples if runoff leaves the bermed area of the property. Tetra Tech is completing routine inspections and is planning how to address erosion and exposed material issues.



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

a. TITLE AND LOCATION (City and State) APP Amendment Project, Marana, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES Current	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Silver Bell Mining, LLC	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$78,227	e. TOTAL COST OF PROJECT \$68,192
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g. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Silver Bell copper mine, which consists of four (4) open-pits, is located in Pima County about 35 miles west-northwest of Tucson, Arizona. Current operations involve in-situ (in pit) rubble leaching areas or placing run-of-mine (ROM) ore on leach dumps. In either case, the ore is leached with a weak sulfuric acid solution called Raffinate to produce a pregnant leach solution (PLS). The PLS is then processed on-site through an SX-EW process nearly pure copper cathodes.

The Silver Bell APP Amendment Project involved preparation of a Significant Amendment application for the Silver Bell Mining, LLC Aquifer Protection Permits (APPs) for submittal to the Arizona Department of Environmental Quality (ADEQ). The project involved:

- Permitting the expansion of an open pit mine;
- Permitting the construction of a new waste rock dump;
- Permitting the relocation of the materials in two (2) inactive leach dumps;
- Permitting the expansion of a current waste rock dump;
- Permitting the relocation of a non-municipal solid waste landfill (NMSWLF);
- Conducting a seepage analysis on an existing waste rock dump;
- Merging two (2) APPs into one (1) APP;
- Development of a geochemical analysis program to characterize future waste dumps to provide site specific data to support stability and seepage analysis; and
- Design of a new NMSWLF.



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a. TITLE AND LOCATION (City and State) Silver Bell Mine Mammoth Heap Leach Facility, Marana, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES Current	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Silver Bell Mining, LLC	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$1,362,946	e. TOTAL COST OF PROJECT \$1,057,423
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h. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)  
 The Silver Bell copper mine, which consists of four (4) open-pits, is located in Pima County about 35 miles west-northwest of Tucson, Arizona. Tetra Tech is providing all Detailed Design Engineering for the Mammoth Wash Leach Facility to advance the design from the current conceptual level, through permitting, to Issued-for-Construction.

Once the detailed engineering design has been completed, Tetra Tech will prepare a detailed Engineer's Opinion of the Probable Cost for Construction that may be used as a Capital Cost Estimate. Additionally, Tetra Tech will prepare a Project-Specific Health and Safety Management Program that will establish the Health and Safety requirements for the Project.

Tetra Tech will prepare an APP Amendment Application for the Project and provide all necessary permitting support and coordination with SBM eliminating the need for an additional permitting consultant.



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

a. TITLE AND LOCATION (City and State) Artillery Peak Environmental Clearance, Mohave County, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2012	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER American Manganese	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT \$3.1M
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i. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

American Manganese proposed to develop an open pit manganese mine in the Artillery Mountain Range in Mohave County in northwestern Arizona. As part of this project, Tetra Tech is completing all of the necessary environmental clearance and permitting in order for exploration drilling and mining to occur. The environmental clearance work includes stormwater and surface water permitting; Arizona aquifer protection permitting and the supporting groundwater, waste rock and tailings characterizations; biological, cultural and jurisdictional delineation surveys to support an environmental assessment or environmental impact study for NEPA and 404 permitting; and air regulatory applicability and permitting. This project is occurring over a two-year timeframe. This proposed mine project in northwestern Arizona involves open-pit manganese mining and is in the prefeasibility and planning stages.

Field activities have included establishment of a remote weather station; remote stormwater sampling stations; groundwater source investigation; and biological, cultural, wetlands; and navigable waters surveys. As part of the environmental clearance, Mr. Dieckhaus prepared a new Stormwater Pollution Prevention Plan (SWPPP) to address the requirements of the Arizona Mining Multi-sector General Permit issued in 2011. Tetra Tech also completed the Notice of Intent (NOI) to file for coverage and Best Management Practices Manual for this operation. The stormwater permit for exploration/drilling phase was approved within one week of reception by the ADEQ. Tetra Tech has also completed ADEQ De Minimis Permitting for discharges from wells as part of aquifer testing and is providing characterization of various waste materials as part of the Aquifer Permitting Program. As project manager, Mr. Dieckhaus is managing and coordinating the environmental clearance work as part of a prefeasibility and planning work for a proposed mine in northwestern Arizona.



**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> Oracle Ridge Mine, Arizona	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2010-2013	CONSTRUCTION <i>(If applicable)</i> N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER Oracle Ridge Mining, LLC	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$2.7M	e. TOTAL COST OF PROJECT \$2.5M
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- j. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)
- Tetra Tech has been retained by the new owner of an inactive copper mine located in the Santa Catalina Mountains north of Tucson that will resume operations in 2012/2013. The scope of work includes performing environmental baseline studies and obtaining environmental permits to achieve compliance with environmental programs, including: Class II Air Permit, Aquifer Protection Permit, National Environmental Policy Act (NEPA), and Arizona Pollutant Discharge Elimination System (AZPDES) program. The scope of work includes public relations and public involvement. The mine, which includes former underground workings and a reclaimed tailings facility, overlay a fractured bedrock groundwater aquifer. Structure affects groundwater flow and aquifer characteristics. Tetra Tech is assessing the hydrology of the site, contouring groundwater flow, and installing new Point of Compliance monitoring wells for expansion activities. Tetra Tech is also providing hydrologic support services for evaluating water supply options.
- The Scope of Work extends into 2013 and to date Tetra Tech has:
- Characterized tailings and waste rock from prior operations;
  - Installed two weather stations and air monitoring equipment;
  - Prepared and submitted the Stormwater Pollution Prevention Plan (SWPPP), Best Management Plans (BMPs) and Multi Sector General Permit (MSGP) for the AZPDES program, and is submitting a project wide Diminimus Notice of Intent documents for monitoring well purgewater discharge;
  - Prepared sampling and analysis plans for sampling springs, groundwater, and waste;
  - Performed monthly groundwater sampling and collected samples of groundwater from the underground workings;
  - Collected quarterly spring samples in remote access areas;
  - Submitted the Aquifer Protection Permit transfer application and facilitated meetings with ADEQ;
  - Facilitated a pre-application meeting with Pima County Department of Environmental Quality to verify the class of permit application;
  - Facilitated meetings and teleconferences with the Coronado National Forest District Ranger and prepared and submitted 299 forms for NEPA;
  - Developed and submitted plans of Study for Arizona State Land, Pima County, and the Forest Service detailing protocols for pedestrian surveys;
  - Performed cultural resource and biological surveys of Coronado National Forest, Pima County, Arizona State Land and private property;
  - Performed a jurisdictional determination on County, State, and private land to determine the level of Section 404 permitting that is applicable; and
  - Prepared 2 quarterly fact sheets and responded to public inquiries, and developed a community stakeholder database.



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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.)

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:	3
b. Percentage of Total Work Attributable to Non-Government Work:	97

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

Signature: William Slanaker Date: December 19, 2014

Name: William Slanaker Title: Office Manager