

CITY CLERK ORIGINAL

C-8260
12/11/2012

PROFESSIONAL SERVICES AGREEMENT ARROWHEAD RANCH EFFLUENT PIPELINE CONDITION ASSESSMENT City Project No. 111215

This Professional Services Agreement ("Agreement") is entered into and effective between CITY OF GLENDALE, an Arizona municipal corporation ("City") and BLACK & VEATCH CORPORATION, a Delaware corporation authorized to do business in Arizona, ("Consultant") as of the 11 day of DECEMBER, 2012 ("Effective Date").

RECITALS

- A. City intends to undertake a project for the benefit of the public and with public funds that is more fully set forth in **Exhibit A**, Project (the "Project");
- B. City desires to retain the professional services of Consultant to perform certain specific duties and produce the specific work as set forth in the attached **Exhibit B**, Project Scope of Work ("Scope");
- C. Consultant desires to provide City with professional services ("Services") consistent with best consulting or architectural practices and the standards set forth in this Agreement, in order to complete the Project; and
- D. City and Consultant desire to memorialize their agreement with this document.

AGREEMENT

In consideration of the Recitals, which are confirmed as true and correct and incorporated by this reference, the mutual promises and covenants contained in this Agreement, and other good and valuable consideration, City and Consultant agree as follows:

1. Key Personnel; Other Consultants and Subcontractors.

- 1.1 Professional Services. Consultant will provide all Services necessary to assure the Project is completed timely and efficiently consistent within Project requirements, including, but not limited to, working in close interaction and interfacing with City and its designated employees, and working closely with others, including other consultants or contractors, retained by City.
- 1.2 Project Team.
 - a. Project Manager.
 - (1) Consultant will designate an employee as Project Manager with sufficient training, knowledge, and experience to, in the City's opinion, complete the project and handle all aspects of the Project such that the work produced by Consultant is consistent with applicable standards as detailed in this Agreement; and
 - (2) The City must approve the designated Project Manager.
 - b. Project Team.
 - (1) The Project Manager and all other employees assigned to the Project by Consultant will comprise the "Project Team."
 - (2) Project Manager will have responsibility for and will supervise all other employees assigned to the Project by Consultant.
 - c. Discharge, Reassign, Replacement.
 - (1) Consultant acknowledges the Project Team is comprised of the same persons and roles for each as may have been identified in **Exhibit A**.
 - (2) Consultant will not discharge, reassign, replace or diminish the responsibilities of any of the employees assigned to the Project who have been approved by City

without City's prior written consent unless that person leaves the employment of Consultant, in which event the substitute must first be approved in writing by City.

- (3) Consultant will change any of the members of the Project Team at the City's request if an employee's performance does not equal or exceed the level of competence that the City may reasonably expect of a person performing those duties, or if the acts or omissions of that person are detrimental to the development of the Project.

d. Subcontractors.

- (1) Consultant may engage specific technical contractors (each a "Subcontractor") to furnish certain service functions.
- (2) Consultant will remain fully responsible for Subcontractor's services.
- (3) Subcontractors must be approved by the City.
- (4) Consultant will certify by letter that all contracts with Subcontractors have been executed incorporating requirements and standards as set forth in this Agreement.

2. **Schedule.** The Services will be undertaken in a manner that ensures the Project is completed timely and efficiently in accordance with the Project.

3. **Consultant's Work.**

3.1 Standard. Consultant must perform Services in accordance with the standards of due diligence, care, and quality prevailing among consultants having substantial experience with the successful furnishing of Services for projects that are equivalent in size, scope, quality, and other criteria under the Project and identified in this Agreement.

3.2 Licensing. Consultant warrants that:

- a. Consultant and its Subconsultants or Subcontractors will hold all appropriate and required licenses, registrations and other approvals necessary for the lawful furnishing of Services ("Approvals"); and
- b. Neither Consultant nor any Subconsultant or Subcontractor has been debarred or otherwise legally excluded from contracting with any federal, state, or local governmental entity ("Debarment").
 - (1) City is under no obligation to ascertain or confirm the existence or issuance of any Approvals or Debarments, or to examine Consultant's contracting ability.
 - (2) Consultant must notify City immediately if any Approvals or Debarment changes during the Agreement's duration. The failure of the Consultant to notify City as required will constitute a material default under the Agreement.

3.3 Compliance. Services will be furnished in compliance with applicable federal, state, county and local statutes, rules, regulations, ordinances, building codes, life safety codes, and other standards and criteria designated by City.

3.4 Coordination; Interaction.

- a. For projects that the City believes requires the coordination of various professional services, Consultant will work in close consultation with City to proactively interact with any other professionals retained by City on the Project ("Coordinating Project Professionals").
- b. Subject to any limitations expressly stated in the Project Budget, Consultant will meet to review the Project, Schedule, Project Budget, and in-progress work with Coordinating Project Professionals and City as often and for durations as City reasonably considers necessary in order to ensure the timely work delivery and Project completion.

- c. For projects not involving Coordinating Project Professionals, Consultant will proactively interact with any other contractors when directed by City to obtain or disseminate timely information for the proper execution of the Project.

3.5 Work Product.

- a. Ownership. Upon receipt of payment for Services furnished, Consultant grants to City, and will cause its Subconsultants or Subcontractors to grant to the City, the exclusive ownership of and all copyrights, if any, to evaluations, reports, drawings, specifications, project manuals, surveys, estimates, reviews, minutes, all "architectural work" as defined in the United States Copyright Act, 17 U.S.C § 101, *et seq.*, and other intellectual work product as may be applicable ("Work Product").
 - (1) This grant is effective whether the Work Product is on paper (e.g, a "hard copy"), in electronic format, or in some other form.
 - (2) Consultant warrants, and agrees to indemnify, hold harmless and defend City for, from and against any claim that any Work Product infringes on third-party proprietary interests.
- b. Delivery. Consultant will deliver to City copies of the preliminary and completed Work Product promptly as they are prepared.
- c. City Use.
 - (1) City may reuse the Work Product at its sole discretion.
 - (2) In the event the Work Product is used for another project without further consultations with Consultant, the City agrees to indemnify and hold Consultant harmless from any claim arising out of the Work Product.
 - (3) In such case, City will also remove any seal and title block from the Work Product.

4. **Compensation for the Project.**

- 4.1 Compensation. Consultant's compensation for the Project, including those furnished by its Subconsultants or Subcontractors will not exceed \$682,050 as specifically detailed in **Exhibit D** ("Compensation").
- 4.2 Change in Scope of Project. The Compensation may be equitably adjusted if the originally contemplated Scope as outlined in the Project is significantly modified.
 - a. Adjustments to Compensation require a written amendment to this Agreement and may require City Council approval.
 - b. Additional services which are outside the Scope of the Project contained in this Agreement may not be performed by the Consultant without prior written authorization from the City.
- 4.3 Allowances. An "Allowance" may be identified in **Exhibit D** only for work that is required by the Scope and the value of which cannot reasonably be quantified at the time of this Agreement.
 - a. As stated in Sec. 4.1 above, the Compensation must incorporate all Allowance amounts identified in **Exhibit D** and any unused allowance at the completion of the Project will remain with City.
 - b. Consultant may not add any mark-up for work identified as an Allowance and which is to be performed by a Subconsultant.
 - c. Consultant will not use any portion of an Allowance without prior written authorization from the City.
 - d. Examples of Allowance items include, but are not limited to, subsurface pothole investigations, survey, geotechnical investigations, public participation, radio path studies and material testing.

4.4 Expenses. City will reimburse Consultant for certain out-of-pocket expenses necessarily incurred by Consultant in connection with this Agreement, without mark-up (the "Reimbursable Expenses"), including, but not limited to, document reproduction, materials for book preparation, postage, courier and overnight delivery costs incurred with Federal Express or similar carriers, travel and car mileage, subject to the following:

- a. Mileage, airfare, lodging and other travel expenses will be reimbursable only to the extent these would, if incurred, be reimbursed to City of Glendale personnel under its policies and procedures for business travel expense reimbursement made available to Consultant for review prior to the Agreement's execution, and which policies and procedures will be furnished to Consultant;
- b. The Reimbursable Expenses in this Section are approved in advance by City in writing; and
- c. The total of all Reimbursable Expenses paid to Consultant in connection with this Agreement will not exceed the "not to exceed" amount identified for Reimbursable Services in the Compensation.

5. **Billings and Payment.**

5.1 Applications.

- a. Consultant will submit monthly invoices (each, a "Payment Application") to City's Project Manager and City will remit payments based upon the Payment Application as stated below.
- b. The period covered by each Payment Application will be one calendar month ending on the last day of the month.

5.2 Payment.

- a. After a full and complete Payment Application is received, City will process and remit payment within 30 days.
- b. Payment may be subject to or conditioned upon City's receipt of:
 - (1) Completed work generated by Consultant and its Subconsultants and Subcontractors; and
 - (2) Unconditional waivers and releases on final payment from all Subconsultants and Subcontractors as City may reasonably request to assure the Project will be free of claims arising from required performances under this Agreement.

5.3 Review and Withholding. City's Project Manager will timely review and certify Payment Applications.

- a. If the Payment Application is rejected, the Project Manager will issue a written listing of the items not approved for payment.
- b. City may withhold an amount sufficient to pay expenses that City reasonably expects to incur in correcting the deficiency or deficiencies rejected for payment.

6. **Termination.**

6.1 For Convenience. City may terminate this Agreement for convenience, without cause, by delivering a written termination notice stating the effective termination date, which may not be less than 15 days following the date of delivery.

- a. Consultant will be equitably compensated for Services furnished prior to receipt of the termination notice and for reasonable costs incurred.
- b. Consultant will also be similarly compensated for any approved effort expended, and approved costs incurred, that are directly associated with Project closeout and delivery of the required items to the City.

6.2 For Cause. City may terminate this Agreement for cause if Consultant fails to cure any breach of this Agreement within seven days after receipt of written notice specifying the breach.

- a. Consultant will not be entitled to further payment until after City has determined its damages. If City's damages resulting from the breach, as determined by City, are less than the equitable amount due but not paid Consultant for Services furnished, City will pay the amount due to Consultant, less City's damages, in accordance with the provision of Sec. 5.
- b. If City's direct damages exceed amounts otherwise due to Consultant, Consultant must pay the difference to City immediately upon demand; however, Consultant will not be subject to consequential damages more than \$1,000,000 or the amount of this Agreement, whichever is greater.

7. **Conflict.** Consultant acknowledges this Agreement is subject to A.R.S. § 38-511, which allows for cancellation of this Agreement in the event any person who is significantly involved in initiating, negotiating, securing, drafting, or creating the Agreement on City's behalf is also an employee, agent, or consultant of any other party to this Agreement.

8. **Insurance.**

8.1 Requirements. Consultant must obtain and maintain the following insurance ("Required Insurance"):

- a. Consultant and Subconsultants and Subcontractors. Consultant, and each Subconsultant or Subcontractor performing work or providing materials related to this Agreement must procure and maintain the insurance coverages described below (collectively referred to herein as the "Consultant's Policies"), until each Party's obligations under this Agreement are completed.
- b. General Liability.
 - (1) Consultant must at all times relevant hereto carry a commercial general liability policy with a combined single limit of at least \$1,000,000 per occurrence and \$2,000,000 annual aggregate limit.
 - (2) Subconsultants and Subcontractors must at all times relevant hereto carry a general commercial liability policy with a combined single limit of at least \$1,000,000 per occurrence.
 - (3) This commercial general liability insurance must include independent contractors' liability, contractual liability, broad form property coverage, XCU hazards if requested by the City, and a separation of insurance provision.
 - (4) These limits may be met through a combination of primary and excess liability coverage.
- c. Professional Liability. Consultant must maintain a professional errors and omissions liability policy providing a minimum limit of \$1,000,000 for each claim and a \$2,000,000 annual aggregate limit.
- d. Auto. A business auto policy providing a liability limit of at least \$1,000,000 per accident for Consultant and \$1,000,000 per accident for Subconsultants and Subcontractors and covering owned, non-owned and hired automobiles.
- e. Workers' Compensation and Employer's Liability. Consultant must also maintain a workers' compensation and employer's liability policy providing at least the minimum benefits required by Arizona law.
- f. Notice of Changes. Consultant's Policies must provide for not less than 30 days' advance written notice to City Representative of:
 - (1) Cancellation or termination of Consultant's Policies;

- (2) Reduction of the coverage limits of any of Consultant's Policies; and
 - (3) Any other material modification of Consultant's Policies related to this Agreement.
- g. Certificates of Insurance.
- (1) Within 10 business days after the execution of the Agreement, Consultant must deliver to City Representative certificates of insurance for each of Consultant's Policies, which will confirm the existence or issuance of Consultant's Policies in accordance with the provisions of this Section, and copies of the endorsements of Consultant's Policies in accordance with the provisions of this Section.
 - (2) City is and will be under no obligation either to ascertain or confirm the existence or issuance of Consultant's Policies, or to examine Consultant's Policies, or to inform Consultant, Subconsultant, or Subcontractor in the event that any coverage does not comply with the requirements of this Section.
 - (3) Consultant's failure to secure and maintain Consultant's Policies and to assure Consultant's Policies as required will constitute a material default under the Agreement.
- h. Other Contractors or Vendors.
- (1) Other contractors or vendors that may be contracted with in connection with the Project must procure and maintain insurance coverage as is appropriate to their particular contract.
 - (2) This insurance coverage must comply with the requirements set forth above for Consultant's Policies (e.g., the requirements pertaining to endorsements to name the parties as additional insured parties and certificates of insurance).
- i. Policies. Except with respect to workers' compensation and employer's liability coverages, City must be named and properly endorsed as additional insureds on all liability policies required by this Section.
- (1) The coverage extended to additional insureds must be primary and must not contribute with any insurance or self insurance policies or programs maintained by the additional insureds.
 - (2) All insurance policies obtained pursuant to this Section must be with companies legally authorized to do business in the State of Arizona and reasonably acceptable to all parties.

8.2 Subconsultants and Subcontractors.

- a. Consultant must also cause its Subconsultants and Subcontractors to obtain and maintain the Required Insurance.
- b. City may consider waiving these insurance requirements for a specific Subconsultant or Subcontractor if City is satisfied the amounts required are not commercially available to the Subconsultant or Subcontractor and the insurance the Subconsultant or Subcontractor does have is appropriate for the Subconsultant or Subcontractor's work under this Agreement.
- c. Consultant and Subcontractors must provide to the City proof of the Required Insurance whenever requested.

8.3 Indemnification.

- a. To the fullest extent permitted by law, Consultant must defend, indemnify, and hold harmless City and its elected officials, officers, employees and agents (each, an "Indemnified Party," collectively, the "Indemnified Parties") for, from, and against any and all claims, demands, actions, damages, judgments, settlements, personal injury (including

sickness, disease, death, and bodily harm), property damage (including loss of use), infringement, governmental action and all other losses and expenses, including attorneys' fees and litigation expenses (each, a "Demand or Expense" collectively "Demands or Expenses") asserted by a third-party (i.e. a person or entity other than City or Consultant) and that arises out of or results from the breach of this Agreement by the Consultant or the Consultant's negligent actions, errors or omissions (including any Subconsultant or Subcontractor or other person or firm employed by Consultant), whether sustained before or after completion of the Project.

- b. This indemnity and hold harmless provision applies even if a Demand or Expense is in part due to the Indemnified Party's negligence or breach of a responsibility under this Agreement, but in that event, Consultant will be liable only to the extent the Demand or Expense results from the negligence or breach of a responsibility of Consultant or of any person or entity for whom Consultant is responsible.
- c. Consultant is not required to indemnify any Indemnified Parties for, from, or against any Demand or Expense resulting from the Indemnified Party's sole negligence or other fault solely attributable to the Indemnified Party.

9. Immigration Law Compliance.

- 9.1 Consultant, and on behalf of any Subconsultant or Subcontractor, warrants, to the extent applicable under A.R.S. § 41-4401, compliance with all federal immigration laws and regulations that relate to their employees as well as compliance with A.R.S. § 23-214(A) which requires registration and participation with the E-Verify Program.
- 9.2 Any breach of warranty under this Section is considered a material breach of this Agreement and is subject to penalties up to and including termination of this Agreement.
- 9.3 City retains the legal right to inspect the papers of any Consultant, Subconsultant, or Subcontractor employee who performs work under this Agreement to ensure that the Consultant, Subconsultant or any Subcontractor is compliant with the warranty under this Section.
- 9.4 City may conduct random inspections, and upon request of City, Consultant will provide copies of papers and records of Consultant demonstrating continued compliance with the warranty under this Section. Consultant agrees to keep papers and records available for inspection by the City during normal business hours and will cooperate with City in exercise of its statutory duties and not deny access to its business premises or applicable papers or records for the purposes of enforcement of this Section.
- 9.5 Consultant agrees to incorporate into any subcontracts under this Agreement the same obligations imposed upon Consultant and expressly accrue those obligations directly to the benefit of the City. Consultant also agrees to require any Subconsultant or Subcontractor to incorporate into each of its own subcontracts under this Agreement the same obligations above and expressly accrue those obligations to the benefit of the City.
- 9.6 Consultant's warranty and obligations under this Section to the City is continuing throughout the term of this Agreement or until such time as the City determines, in its sole discretion, that Arizona law has been modified in that compliance with this Section is no longer a requirement.
- 9.7 The "E-Verify Program" above means the employment verification program administered by the United States Department of Homeland Security, the Social Security Administration, or any successor program.

- 10. Prohibitions.** Consultant certifies under A.R.S. §§ 35-391 *et seq.* and 35-393 *et seq.*, that it does not have, and during the term of this Agreement will not have, "scrutinized" business operations, as defined in the preceding statutory sections, in the countries of Sudan or Iran.

11. Notices.

- 11.1 A notice, request or other communication that is required or permitted under this Agreement (each a "Notice") will be effective only if:
- a. The Notice is in writing; and
 - b. Delivered in person or by overnight courier service (delivery charges prepaid), certified or registered mail (return receipt requested).
 - c. Notice will be deemed to have been delivered to the person to whom it is addressed as of the date of receipt, if:
 - (1) Received on a business day before 5:00 p.m. at the address for Notices identified for the Party in this Agreement by U.S. Mail, hand delivery, or overnight courier service; or
 - (2) As of the next business day after receipt, if received after 5:00 p.m.
 - d. The burden of proof of the place and time of delivery is upon the Party giving the Notice.
 - e. Digitalized signatures and copies of signatures will have the same effect as original signatures.

11.2 Representatives.

- a. Consultant. Consultant's representative (the "Consultant's Representative") authorized to act on Consultant's behalf with respect to the Project, and his or her address for Notice delivery is:

Dan Meyer, P.E.
Black & Veatch Corporation
3133 East Camelback Road, Suite 210
Phoenix, AZ 85016

- b. City. City's representative ("City's Representative") authorized to act on City's behalf, and his or her address for Notice delivery is:

City of Glendale
c/o City Engineer
Engineering Department
5850 West Glendale Avenue
Glendale, Arizona 85301

With required copy to:

City Manager
City of Glendale
5850 West Glendale Avenue
Glendale, Arizona 85301

City Attorney
City of Glendale
5850 West Glendale Avenue
Glendale, Arizona 85301

- c. Concurrent Notices.
 - (1) All notices to City's representative must be given concurrently to City Manager and City Attorney.
 - (2) A notice will not be deemed to have been received by City's representative until the time that it has also been received by the City Manager and the City Attorney.
 - (3) City may appoint one or more designees for the purpose of receiving notice by delivery of a written notice to Consultant identifying the designee(s) and their respective addresses for notices.

- d. **Changes.** Consultant or City may change its representative or information on Notice, by giving Notice of the change in accordance with this Section at least ten days prior to the change.
12. **Financing Assignment.** City may assign this Agreement to any City-affiliated entity, including a non-profit corporation or other entity whose primary purpose is to own or manage the Project.
13. **Entire Agreement; Survival; Counterparts; Signatures.**
- 13.1 **Integration.** This Agreement contains, except as stated below, the entire agreement between City and Consultant and supersedes all prior conversations and negotiations between the parties regarding the Project or this Agreement.
- a. Neither Party has made any representations, warranties or agreements as to any matters concerning the Agreement's subject matter.
- b. Representations, statements, conditions, or warranties not contained in this Agreement will not be binding on the parties.
- c. Inconsistencies between the solicitation, any addenda attached to the solicitation, the response or any excerpts attached as **Exhibit A**, and this Agreement, will be resolved by the terms and conditions stated in this Agreement.
- 13.2 **Interpretation.**
- a. The parties fairly negotiated the Agreement's provisions to the extent they believed necessary and with the legal representation they deemed appropriate.
- b. The parties are of equal bargaining position and this Agreement must be construed equally between the parties without consideration of which of the parties may have drafted this Agreement.
- c. The Agreement will be interpreted in accordance with the laws of the State of Arizona.
- 13.3 **Survival.** Except as specifically provided otherwise in this Agreement, each warranty, representation, indemnification and hold harmless provision, insurance requirement, and every other right, remedy and responsibility of a Party, will survive completion of the Project, or the earlier termination of this Agreement.
- 13.4 **Amendment.** No amendment to this Agreement will be binding unless in writing and executed by the parties. Electronic signature blocks do not constitute execution for purposes of this Agreement. Any amendment may be subject to City Council approval.
- 13.5 **Remedies.** All rights and remedies provided in this Agreement are cumulative and the exercise of any one or more right or remedy will not affect any other rights or remedies under this Agreement or applicable law.
- 13.6 **Severability.** If any provision of this Agreement is voided or found unenforceable, that determination will not affect the validity of the other provisions, and the voided or unenforceable provision will be reformed to conform with applicable law.
- 13.7 **Counterparts.** This Agreement may be executed in counterparts, and all counterparts will together comprise one instrument.
14. **Term.** The term of this Agreement commences upon the effective date and continues for a three year initial period. The City may, at its option and with the approval of the Consultant, extend the term of this Agreement an additional 0 years, renewable on an annual basis. Consultant will be notified in writing by the City of its intent to extend the Agreement period at least 30 calendar days prior to the expiration of the original or any renewal Agreement period. Price adjustments will only be reviewed during the Agreement renewal period. There are no automatic renewals of this Agreement.
15. **Dispute Resolution.** Each claim, controversy and dispute (each a "Dispute") between Consultant and City will be resolved in accordance with **Exhibit E**. The final determination will be made by the City.

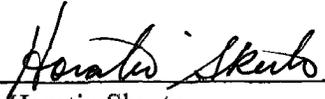
16. **Exhibits.** The following exhibits, with reference to the term in which they are first referenced, are incorporated by this reference.

Exhibit A	Project
Exhibit B	Scope of Work
Exhibit C	Schedule
Exhibit D	Compensation
Exhibit E	Dispute Resolution

(Signatures appear on the following page.)

The parties enter into this Agreement effective as of the date shown above.

City of Glendale,
an Arizona municipal corporation



By: Horatio Skeete
Its: Acting City Manager

ATTEST:



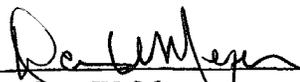
Pam Hanna, City Clerk (SEAL)

APPROVED AS TO FORM:



Craig Tindall, City Attorney

BLACK & VEATCH CORPORATION,
a Delaware Corporation



By: Dan W. Meyer
Its: Vice President

EXHIBIT A
Professional Services Agreement

PROJECT

(Cover Page)

EXHIBIT A
PROJECT DESCRIPTION
Glendale Arrowhead ERP Assessment and
Assessments for Recharge Well Improvements

The Arrowhead Effluent Reclaimed Pipeline (AERP) includes 24,225 ft of concrete reinforced steel cylinder pipeline including 8,330 ft of 36-inch, 3,110 ft of 30-inch, 2,770 ft of 24-inch and 10,015 ft of 16-inch. The pipeline conveys reclaimed water from the City's Arrowhead Ranch WRF to various irrigation facilities and lakes within the Arrowhead Ranch development. The AERP is critical to the operation of the Arrowhead Ranch WRF, an end-of-line facility. The pipeline was constructed in 1987 and in the late 1990s there were a series of three pipeline failures. At that time they were attributed to damage caused by construction of SR101. The pipeline is over 25 years old and good business practices by the City dictate that an assessment should be performed to pro-actively determine any risk of a failure or significant interruption in the effluent delivery system and provide timely solutions. The Phase 1 scope of the project includes an evaluation of the existing pipeline conditions. The scope and fee schedules allow for testing and investigative procedures to proceed in a progressive manner. If no areas of concern are found in the initial evaluation of the pipeline, there may be no need to investigate further. If the assessment determines that repairs or improvements are required to the pipeline, an amendment to the contract will be negotiated for design and construction administration services.

The Arrowhead Ranch WRF has four vadose zone recharge wells installed in 2008 at the WRF site. The City would like an assessment of the four vadose zone recharge well operations and well related control system and, if applicable, design of improvements to the control system as needed to more fully develop the recharge capacity of these wells. If the design requires construction of improvements an amendment to the contract will be negotiated for design and construction administration services, testing, and commissioning services.

The Arrowhead Ranch Water Reclamation Facility is currently undergoing modifications to the existing UV facilities, Chlorination/ Dechlorination Facilities and relocation of the compliance point. In order to operate with the modifications, an application for an "Other Amendment" as defined by the Arizona Department of Environmental Quality to the existing Aquifer Protection Permit needs to be made. This project includes completion of the APP amendment documentation for submission by City of Glendale to the Arizona Department of Environmental Quality.

EXHIBIT B
Professional Services Agreement

SCOPE OF WORK

(Cover Page)

EXHIBIT B
SCOPE OF SERVICES FOR
Glendale Arrowhead ERP Assessment and
Assessments for Recharge Well Improvements

Background: The Arrowhead Effluent Reclaimed Pipeline (AERP) includes 24,225 ft of concrete reinforced steel cylinder pipeline including 8,330 ft of 36-inch, 3,110 ft of 30-inch, 2,770 ft of 24-inch and 10,015 ft of 16-inch. The pipeline conveys reclaimed water from the City's Arrowhead Ranch WRF to various irrigation facilities and lakes within the Arrowhead Ranch development. The AERP is critical to the operation of the Arrowhead Ranch WRF, an end-of-line facility. The pipeline was constructed in 1987 and in the late 1990s there were a series of three pipeline failures. At that time they were attributed to damage caused by construction of SR101. The pipeline is over 25 years old and the City desires an assessment of the pipeline and, if needed, pipeline rehabilitation design, followed by construction management services.

The Arrowhead Ranch WRF has four vadose zone recharge wells installed in 2008 at the WRF site. The City would like an assessment of the four vadose zone recharge well operations and well related control system and, if applicable, design of improvements to the control system as needed to more fully develop the recharge capacity of these wells. If the design requires construction of improvements the scope would also include construction management, testing and commissioning services.

The Arrowhead Ranch Water Reclamation Facility is currently undergoing modifications to the existing UV facilities, Chlorination/ Dechlorination Facilities and relocation of the compliance point. In order to operate with the modifications, an application for an "Other Amendment" as defined by the Arizona Department of Environmental Quality to the existing Aquifer Protection Permit needs to be made. This project includes completion of the APP amendment documentation for submission by City of Glendale to the Arizona Department of Environmental Quality.

SCOPE OF WORK

The scope of work for each component of the project will be divided into two phases. Phase I will generally include an evaluation of existing conditions, and Phase II, if required, will include design and construction administration services. Both Phases are included in this Agreement Scope of Services.

Phase I Evaluation of Existing Conditions

Task Group 100 – Project Management

Task 110: General Management and Administration

Engineer will provide general coordination with the City Engineering, Operations and any City Contractors, administer and coordinate with Engineer's subconsultants, develop and update the Phase I project schedule, and perform other administrative functions including, maintaining project data files, tracking project progress and invoicing throughout Phase I.

Task 120: Conduct Project Kickoff Meeting and Monthly Progress Meetings

At the project kickoff meeting Engineer will present the detailed preliminary schedule and the initial pipeline and recharge well improvement assessments planning. The pipeline tapping scope will be discussed along with coordination with City operations to facilitate the vadose zone (VZ) recharge well assessment. The meeting is intended to develop a common understanding of the Phase I evaluation project goals and objectives, identify the lines of communication, and discuss issues that may affect Phase I execution.

Engineer will provide an agenda for each monthly progress meeting and conduct the progress meetings. As needed Engineer will have its subconsultants attend meetings. A total of 10 progress project meetings are anticipated. Engineer will provide draft meeting minutes to the City for review and final minutes incorporating any comments as required.

Group 100 Deliverables:

- Project Schedule
- Meeting Agenda and Minutes, with Action Items
- Monthly Progress Reports
- Document and Data Request Log
- Decision Log

Task Group 200 – Arrowhead Effluent Reuse Pipeline (AERP) Assessment

AERP Assessments Summary: The project team will complete the pipeline assessment in a step-wise approach. The work completed in subsequent steps is dependent on previous assessment findings. The first step includes the following assessments:

Step 1

To provide the City with an early initial assessment of the pipeline the (1) indirect corrosion potential work, and (2) internal video and leak detection work utilizing the existing pipeline taps will be completed in Step 1. This will allow the project team to do an initial assessment of the pipeline conditions in those areas that are assessable, while tapping bidding documents, contractor procurement, and other work is completed as required to perform additional assessments. Step 1 includes the following:

- 1.1 Corrosion evaluations, including identification of potential corrosion sources such as impressed current from gas lines along the pipeline alignment, conducting soil resistivity surveys and reference electrode surveys along the pipeline alignment. This is included in base level of effort for Phase 1.

- 1.2 Internal video of the pipeline interior and acoustic leak detection monitoring utilizing the Wachs LDS 1000 assessment system. The assessment system will be inserted through existing taps at the AERP air release valves. The internal video and leak detection will be conducted with flow in the AERP. This is included in base level of effort for Phase 1.

Step 2

Depending on the findings of Step 1 assessment up to six additional 4-inch taps may be required for additional video and leak detection. Step 2 includes the following:

- 2.1 Internal video of the pipeline interior and acoustic leak detection monitoring utilizing the Wachs LDS 1000 assessment system inserted through up to six new taps installed by a contractor selected through bidding. The tapping and internal video and leak detection will be conducted with flow in the AERP. This is included in base level of effort for Phase 1.
- 2.2 Petrographical evaluations of up to 3 coupons collected during the pipeline hot-tapping process and corrosion testing of soil samples collected as part of the pipeline tapping process. This is included in base level of effort for Phase 1.

Step 3

Depending on the findings from Steps 1 and 2 assessments, the project team may proceed with one or more of the following subsequent assessments:

- 3.1 Conducting non-destructive ultrasonic (slab impulse and / or impact echo) testing of up to 15 locations along the pipeline alignment from the pipeline exterior at locations of interest identified in Steps 1 and 2. The pipeline will be exposed by the contractor selected through the project bidding phase. The cost for these Step 3 non-destructive tests is included in the assessment allowance, but the final amount will depend on the number of tests conducted. This is an Allowance task.
- 3.2 Direct examination of the pipeline exterior at four locations to assess corrosion activity. Locations will be determined from the results of the reference electrode surface survey. Three excavation locations will be where the most significant corrosion is indicated. The fourth excavation will be a control location where no corrosion activity is suspected. Sufficient data will be taken to determine any existing root cause of all significant corrosion activity observed. The pipeline will be exposed by the contractor selected through the project bidding phase. The cost for this Step 3 assessment is included as an allowance. This is an Allowance task.

Task 201: Collect and Review Existing Drawings and Data

In conjunction with the Project Kickoff Meeting, collect and review remaining design, construction and test reports, as-built drawings and other information such as corrosion survey records, leak history reports, and other available inspection reports or information generated subsequent to the year 2000 study. A preliminary listing of these documents was provided at the scoping meeting and has been updated based on the information provided by the City at the scoping meeting.

Task 201 is included in base level of effort for Phase 1.

Task 202: Field Observations and Pre-Inspection Planning

The Engineer and its subconsultants will conduct field verification of drawings and other information to identify location of valves, air release valves, tees and other features, as well as identify access and constraints, relevant below-ground or above-ground features such as power lines, driveways, private property access limitations and adjacent walls or other structures. Working with the City, the Engineer and its subconsultants will inspect existing taps for the insertion of the video / leak detection equipment (step 1 assessment insertion locations).

The team will identify the location of any additional taps required to complete the inspection along the majority of the pipeline. An allowance has been provided for pothole services to identify the depth of the pipeline and includes up to 30 potholes required for tapping in up to 6 locations and exposing the pipeline in up to 15 locations along the pipeline alignment should the assessment deem this is necessary.

The Engineer will develop a permitting coordination matrix for use by the City, Engineer and Contractor for acquisition of required permits to perform the tapping and video unit insertion.

Task 202 is included in base level of effort for Phase 1.

Task 203: Additional Access Bidding Documents and Contractor Selection

Prepare Bidding and Contracting Requirements – Engineer will supplement and complement the City's standard bidding forms with requirements for performance of the pipeline tapping work, additional excavation work, potholing and traffic control design. Engineer will coordinate with the City Project Manager for City's procurement and legal review. The Engineer will also prepare general drawings with piping, tapping sleeve, valve, embedment and backfill notes for completion of the pipeline taps without access MH and other pipeline access points. The documents will also include requirements for permitting and traffic control to be completed by the Contractor.

Engineer will answer Contractor questions during the bidding period and will evaluate bids received from three Contractors and recommend a Contractor for the work. Engineer will review shop drawings from the Contractor.

Task 203 is included in base level of effort for Phase 1.

Task 204: Develop Inspection Plan

Prior to mobilization for the Step 1 assessment, the Engineer will provide the City with an Inspection Plan for review detailing how Step 1 pipeline assessment work will be executed. This Plan will include the refined Step 1 pipeline assessment schedule and pipeline flow ranges that will need to be maintained by the City during the assessment. The Step 1 Plan will take into account field conditions, permitting requirements, mobilization requirements, and discussions with the City and the Arrowhead Effluent Reuse System Manager. Engineer will meet with the City, the Arrowhead Ranch Effluent Reuse Manager, and Contractor once to coordinate the replanning and schedule.

Prior to mobilization for the Step 2 pipeline Engineer will evaluate the Step 1 assessment results and will determine which locations for Step 2 and Step 3 assessments including new taps and pipeline sections to be exposed for Step 3 assessment by UT and direct corrosion evaluations. The Step 2 Plan will take into account field conditions, permitting requirements, public outreach, Contractor procurement and mobilization requirements, and discussions with the City and the Arrowhead Effluent Reuse System Manager. Engineer will meet with the City, the Arrowhead Ranch Effluent Reuse Manager, and Contractor to coordinate the preplanning and schedule.

Task 204 is included in base level of effort for Phase 1.

Task 205: Public Outreach

Engineer with its public outreach subconsultant will provide the following services prior to and in conjunction with the pipeline tapping and assessments. It is anticipated public outreach will be for the Step 2 and 3 assessments. The current level of effort estimate includes up to a four month assessment for Steps 2 and 3 and provides the following services:

- Identify potential community impacts and issues based on coordination with the City, Contractor, and assessment subconsultants, and provide needed information to community members as required via flyers and web access updates.
- Develop content of flyers for distribution to residents and/or businesses in the specific impacted areas, including contact information and project information, so that residents and businesses can better understand the project impacts. Produce and distribute the flyers for neighborhood outreach.
- Work with Glendale Marketing who will review any project materials/information to be distributed.
- Work with City of Glendale Webmaster to develop a webpage for the project. It is assumed Engineering and its subconsultant will provide the content for Glendale Webmaster input into the web page.
- Collect contact information from businesses, including residential management, for e-updates when the specific project duration warrants ongoing information.
- Provide information to City Council, Transportation (Traffic Control), and Engineering.
- Establish a project hotline for the project with a live response 24 hours a day.
- Review placement of traffic control signs that display project hotline number.

Task 205 is included in base level of effort for Phase 1.

Task 206: Internal Video and Acoustic Leak Detection Survey

Following approval of the Step 1 Inspection Plan, the Engineer and its subconsultant will proceed with the Step 1 video and acoustic leak detection survey. The internal pipeline observations will be recorded, areas of concern will be referenced by pipeline station, and leaks will be estimated and rated as small,

medium, and large. It is anticipated that the Step 1 internal video and acoustic leak detection survey will require a total of six days. The Engineer will remain on-site during all pipeline inspection services in order to direct inspection activities by subconsultant, coordinate with City staff and Arrowhead Effluent management staff, and respond immediately to any issues or preliminary findings that may require adjustment to the Inspection Plan. Informal results of the Step 1 internal video and acoustic leak detection will be available within one week of the field work.

The Step 1 scope of services assumes the City's distribution system field staff will remove the existing ARVs from the vent pipeline and provided access to Black & Veatch and its subconsultants for the video equipment insertion. After completion of the video insertion, it is assumed that the City Staff will reconnect the ARV and if required, recompact the soil and return the surface at the ARV outlet to original condition. It is also assumed the City will obtain ADOT ROW access for the Black & Veatch team, provide any safety barricades and traffic control required for the duration of Step 1 services.

Following the Step 1 assessment, finalization of Step 2 Inspection Plan, and modifications to the pipeline by the City's Contractor for the inspection, the Engineer and its subconsultant will proceed with the Step 2 video and acoustic leak detection survey. The internal pipeline observations will be recorded, areas of concern will be referenced by pipeline station, and leaks will be estimated and rated as small, medium, and large. It is anticipated that the Step 2 internal video and acoustic leak detection survey will require a total of six days. The Engineer will remain on-site during all pipeline inspection services in order to direct inspection activities by subconsultant, coordinate with City staff and Arrowhead Effluent management staff, and respond immediately to any issues or preliminary findings that may require adjustment to the Inspection Plan. Informal results of the Step 2 internal video and acoustic leak detection will be available within one week of the field work.

A draft electronic format leak detection and pipeline assessment summary will be available within twenty one calendar days of the completion of the Steps 1 and 2 field work. It will include photos of areas of concern, classification of any leaks detected including pipeline station, and inspection videos. The video and leak assessment will be included in Technical Memorandum 1 described in Task 210.

Task 206 is included in base level of effort for Phase 1.

Task 207: Indirect Corrosion Assessment

Indirect corrosion assessments along the pipeline alignment will include identification of potential sources of corrosion, including soil corrosivity and electrical stray current such as from gas line impressed current systems and from overhead power lines. The corrosion assessment will be performed in compliance with NACE International Standard Recommended Practice SP0502-2008 – Pipeline External Corrosion Direct Assessment Methodology. The assessments will include the following:

- In-situ soil resistivity testing performed using the Wenner 4-pin Method in accordance with ASTM G57-06 – Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method.

- Two-reference-electrode surface survey consisting of measuring the potential difference between two matched copper/copper sulfate electrodes (CSE) in contact with the earth along the pipeline alignment, not under pavement, in ROW accessible to the Engineer, to detect locations for suspected active pipeline corrosion.
- Inspection of pipeline route for potential sources of stray current interference.

We estimate about 4,000 ft of the 36-inch pipeline, about 2,000 ft of the 30-inch pipeline, and about 5,000 ft of the 16-inch pipeline will be accessible for the in-situ soil resistivity and electrode surveys.

Soil samples will be collected from the tapping and any other locations excavated by the Contractor and will be analyzed in a laboratory for pH, sulfide reaction, oxidation/reduction, and chlorides. The electrical resistivity of the samples shall also be measured in the lab and correlated with the results of the field resistivity survey.

Task 207 is included in base level of effort for Phase 1.

Task 208: Petrographic Evaluations

The pipeline material removed for three of the six new 4-inch taps made for the Step 2 video and leak detection will be evaluated through petrographic methods to determine cement mortar lining and coating conditions.

Task 208 is included in base level of effort for Phase 1.

Task 209: Identify Need for Additional Assessments and Pipe Segments Requiring Repair

Based on the results from Steps 1 and 2 assessments, the Engineer will determine if additional assessments are required and, if yes, what the assessments should be and at which pipeline segments and appurtenances the assessments should be conducted. Additional assessments including those described as Step 3 assessments are included as an Allowance to the Phase 1 level of effort.

If additional assessments are not required, the Engineer will evaluate which segments of the pipeline and appurtenances require repair or rehabilitation and prioritize these in terms of severity of need. For those segments not requiring any form of repair or rehabilitation, the Engineer will estimate remaining service life and develop recommendations periodic future condition monitoring. Note that remaining service life estimates will be based on the pipeline inspected and the accuracy will depend in part of the amount of assessments completed for the pipeline. If only Step 1 assessment is completed then the remaining life estimates will be less accurate than if subsequent steps are completed.

Task 209 is included in base level of effort for Phase 1.

Task 210: Inspection Technical Memorandum

The Engineer will prepare **Technical Memorandum 1 (TM 1): Pipeline Inspection Results**, and present this to City staff for review and comment. TM 1 will summarize the Arrowhead Effluent Pipeline condition assessments and corrosion evaluations and findings. The draft TM will be issued electronically along with three hard copies. Engineer will present the findings included in TM 1 and will

discuss the draft at a progress meeting with the City. It is assumed that the City will provide comments to the TM within ten (10) business days after it is provided to the City, and Engineer will incorporate comments and subsequently issue the final TM electronically along with three hard copies within 10 business days after receiving all of the City's comments.

Task 210 is included in base level of effort for Phase 1.

Task Group 200 Deliverables:

- Step 1 Inspection Plan with permitting coordination matrix
- Step 2 Inspection Plan with permitting coordination matrix
- Step 2 Contractor bidding documents with drawings and other tapping requirements
- Flyers for distribution to neighborhoods for public outreach (Step 2 assessment)
- Content for public outreach Web Page (Step 2 assessment)
- e-updates to neighborhoods and business affected by traffic control (Step 2 assessment)
- Draft electronic format leak detection and pipeline assessment summary
- Technical Memorandum 1: Pipeline Inspection Results

Task Group 300 – Arrowhead Effluent Reuse Pipeline Rehabilitation

Task 301: Develop Pipeline Rehabilitation Plan

The Engineer will evaluate rehabilitation methods applicable to the pipeline conditions. The most feasible rehabilitation methods will be identified. A rehabilitation plan will be developed along with a draft rehabilitation schedule. The Engineer will present the draft plan and schedule to the City at a progress meeting and receive input from the City to adjust the rehabilitation plan.

Task 301 is included in base level of effort for Phase 1.

Task 302: Prepare Cost Estimate for Draft Rehabilitation Plan

The Engineer will develop site-specific cost estimates for the recommended rehabilitation plan, including costs for supply to the downstream users, constructability requirements, geotechnical, traffic, etc. Costs will be to AACE Level 5.

Task 302 is included in base level of effort for Phase 1.

Task 303: Rehabilitation Plan

Based on integration of the various analyses performed during the study and input from City staff, the Project Team will provide a recommended pipeline and appurtenances rehabilitation plan in **Technical Memorandum 2 (TM 2)**: Pipeline Rehabilitation Plan. The draft TM will be issued electronically along with three hard copies. Engineer will present the findings included in TM 2 and will discuss the draft at a progress meeting with the City. It is assumed that the City will provide comments to the TM within ten (10) business days after it is provided to the City, and Engineer will incorporate comments and

subsequently issue the final TM electronically along with three hard copies within 10 business days after receiving all of the City's comments.

Task 303 is included in base level of effort for Phase 1.

Task Group 300 Deliverable:

- Technical Memorandum 2: Pipeline Rehabilitation Plan

Task Group 400 – Arrowhead Vadose Zone Recharge System Operations Assessments

The project team will evaluate potential control system issues that prevent the City from operating the four on-site vadose zone recharge (VZ) wells VZ-1, VZ-2, VZ-3 and VZ-4 constructed in 2008 at the same time at design capacity (one at 300 gpm, and three at 500 gpm). This evaluation will assess control system interaction between the Effluent Pump Station and the recharge well control system.

Task 401: VZ Well Control Problem Definition and Data Collection

Engineer and its recharge well subconsultant will meet with City to discuss the observed issues, available data, and information that can be collected. In addition, this task includes the project hydrogeologist, hydraulic engineer and control system engineer being at the ARWRF control room for up to 16 hours (two days) during which time the interactions between the VZ well recharge system and the pump station can be observed at various flow conditions and discussions can occur with the City Operations staff regarding historic operations, previous troubleshooting, and results.

The Engineer will also review the following as provided by the City:

- Facility record drawings and specifications.
- Equipment shop drawings and datasheets for pre-filter, wells system, effluent pumps, effluent pump VFDs, instrumentation, and Effluent Pump Station and VZ Wells controls system.
- O&M manuals for pre-filter, and pumps.
- Effluent Pump station and VZ well controls system setpoint ranges and current typical settings.
- Existing control descriptions and SCADA screenshots for the Effluent Pump Stations and VZ wells.
- Chemical dosing and feed information.
- At least one to two years of detailed historical data provided in Excel format from SCADA representative of system operation, including the following:
 - Individual effluent pump status, flow, pressure, and speed
 - Alarm status
 - Effluent Pump Station wetwell level and inflow
 - Effluent Reuse Distribution System (ERDS) and vadose zone well flow, pressure and status
 - VZ well prefilter pressure (upstream and downstream) and status

Engineer and its subconsultant will evaluate the collected data to confirm that equipment and control system is operating as designed. A hydraulic model of the existing VZ system (effluent pump station and four 2008 wells) will be created, if required, to understand the hydraulic and control system interaction, and to identify the possible cause of the capacity/control issues related to the VZ wells and pump station control system.

Task 401 is included in base level of effort for Phase 1.

Task 402: Effluent Pump Station and VZ System Operation Technical Memorandum

Engineer will prepare **Technical Memorandum 3 (TM 3)** that (1) summarizes the Effluent Pump Station and 2008 VZ well system operation and the results of the data and information analysis, (2) identifies the potential cause of the capacity/control issues, and (3) provides recommended alternatives for resolution. The recommendations may include: (1) conceptual modifications to the VZ well and Effluent Pump Station control system operational strategy, (2) an outline of conceptual modifications to the “existing” VZ wells and Effluent Pump Station system controls, and / or (3) a description of recommended physical modifications to VZ well and Effluent Pump Station system equipment (valves, pumps, piping, orifices) and AACE Level 5 cost estimates for modifications.

Engineer will provide a draft TM 3 and will discuss the draft at a progress meeting with the City. The draft TM will be issued electronically along with three hard copies. The level of effort estimate includes up to two alternatives in TM 3 to establish VZ well and effluent pump station system changes to mitigate the VZ well capacity limitations related to the recharge well and pump station control system. It is assumed that the City will provide comments to the TM within ten (10) business days after it is provided to the City and Engineer will incorporate comments and subsequently issue the final TM electronically along with three hard copies within 10 business days after receiving all of the City’s comments.

Detailed design CAD drawings, specifications, or detailed control descriptions resulting from the evaluation will be provided during Phase II. Other recharge facilities or control of the monitor wells, chemical feed system, ERDS or ASR system and system optimization for future operation are not included in the scope at this time but can be evaluated with a scope and fee modification if authorized by the City.

Task 402 is included in base level of effort for Phase 1.

Task Group 400 Deliverables

- Effluent Pump Station and VZ Well Control System Operation Technical Memorandum 3

Task Group 500 – Arrowhead WRF Aquifer Protection Permit Modifications

The Arrowhead Ranch Water Reclamation Facility (ARWRF) is currently undergoing modifications to the existing UV facilities, Chlorination/Dechlorination Facilities and relocation of the compliance point. In order to operate with the modifications, an application for an “Other Amendment” as defined by the Arizona Department of Environmental Quality (ADEQ) to the existing Aquifer Protection Permit (APP)

needs to be made. This Task Group includes work to facilitate completion of the amendment to the existing APP permit including all necessary coordination with ADEQ.

Task 501 – Coordination Meetings with ADEQ

1. Pre-Application Meeting – Black & Veatch will organize and attend a pre-application meeting with ADEQ to establish requirements for the application submittal. An agenda will be prepared along with a preliminary list of data that is assumed to be part of the application package. During the meeting the list will be reviewed and any other information that is needed will be identified. Black & Veatch will prepare meeting minutes and distribute to document meeting outcomes and decisions.
2. Comment Review Meetings – Black & Veatch will organize and attend 2 comment review meetings to discuss any comments generated after the amendment application package is submitted. Prior to meetings an agenda and comment summary document will be prepared for review with ADEQ personnel. Meeting minutes documenting any decisions or resolutions reached during the meetings will be prepared and distributed. The level of effort for this task is based on 1 meeting for administrative review comments, and 1 meeting for technical comments.

Task 501 is included in base level of effort for Phase 1.

Task 502 – Preliminary Evaluations

Black & Veatch will review the existing APP permit to determine which sections require modifications. Data will be collected and reviewed along with other data including, but not limited to the following:

- a. Previous Basis of Design Reports
- b. Design Documents (Drawings and Specs)
- c. Plant Maps
- d. Latest Copies of Self Monitoring Report Forms (SMRF)
- e. Operator Licenses
- f. Plant O&M Manual
- g. Emergency Action Plan and Emergency Contact List
- h. ADWR Well Maps
- i. Latest Plant Hydrogeologic Study
- j. Resume information for design Engineer's on each project

Information that is not readily available from City sources will require solicitation of other entities including Arizona State Agencies, Federal Agencies and other Engineering Firms. The level of effort for this task is based on all documentation that is issued by outside agencies being solicited and available from the agency itself. This task assumes that the existing hydrogeologic study and emergency action plan are adequate for the permit modification and do not require any action or modifications.

Task 502 is included in base level of effort for Phase 1.

Task 503 - Prepare Application Package

Black & Veatch will prepare the application package in accordance with ADEQ requirements and based on information obtained in the pre-application meeting and document investigation. The level of effort for this task is based on a single application that includes modifications to the existing UV facilities, Chlorination/Dechlorination facilities and relocation of the compliance point and the documentation provided under Task 502. This task also includes up to two resubmittals of information to ADEQ for each

phase (Administrative and Technical). The application package will at a minimum include the following information:

- a. ADEQ Application
- b. Projects design documentation (BDR, etc.)
- c. Required drawings, maps, etc.
- d. Design Calculations
- e. Latest Copies of Self Monitoring Report Forms (SMRF)
- f. Operator Licenses
- g. Plant O&M Manual
- h. Emergency Action Plan and Emergency Contact List
- i. Design Engineer Resumes

Documents will be submitted directly to the City of Glendale for review and submission to ADEQ.

Task 503 is included in base level of effort for Phase 1.

Group 500 Deliverables:

1. Coordination Meeting Agendas and Minutes (3)
2. Application Package Submittal
3. Administrative Responses (2 response documents)
4. Technical Responses to ADEQ Comments (2 response documents)

Items Excluded from this scope include:

- Payment of permit fees
- Additional meetings beyond those defined by this task group
- Application requirements for more substantial permit modification, such as a major amendment

Phase II - Design and Construction Administration Services (If determined needed)

The following presents a general description of the work anticipated during Phase II - Design and Construction Administration Services for the pipeline rehabilitation and recharge system improvements. The scope of services for this phase will be finalized and negotiated with the City near the completion of Phase I – Evaluation of Existing Conditions. The major elements of work anticipated during this phase include:

Task Group 600 - Design and Construction Documents

Design will consist of 60, 90 and 100 percent deliverables, which may include plans and specifications and programming including, but not necessarily limited to, the following:

- Design of pipeline rehabilitation including associated appurtenances.
- Design of the control system for the VZ recharge wells and associated appurtenances.
- Design of electrical, instrumentation and control systems design and programming control descriptions.

Task Group 700 - Coordination and Permitting (if determined needed)

Coordination and permitting including but not necessarily limited to, the following:

- Review and approval through City of Glendale Development Services
- Approval to Construct and Approval of Construction by Maricopa County Environmental Services Department (MCESD)
- Permitting with Arizona Department of Environmental Quality and Arizona Department of Water Resources
- Coordination and any required permitting with Arizona Department of Transportation (ADOT)
- Coordination and Communication with Arrowhead Ranch Property Owners Association and adjacent developments and homeowners as applicable

Task Group 800 - Bid Phase Services

Coordination with the City for preparation of bidding documents, bid advertisement, pre-bid meeting, review and issuance of addendums, if any, attending bid opening, bid evaluation, and recommendations.

Task Group 900 - Construction Administration

This task will span all customary activities related to construction administration including: preconstruction conference, submittal reviews, pay-application reviews, RFIs, construction meetings, inspection, Resident Engineering, Change Orders, Field Directives, instrumentation and control programming, record drawing preparation, coordination with the City for materials testing, and any other ancillary activities.

ALLOWANCE TASKS:

Allowance items described below are applicable to the Phase 1 Evaluation of Existing Conditions.

Utility Engineering & Potholing

Engineer will coordinate and assemble data relevant to the utilities at locations where taps are needed for insertion of the video and leak detection or for uncovering pipeline for UT or direct corrosion evaluations may be needed. All subsurface utility data will be depicted to Level D as defined in ASCE 38-02.

Copies of the projected locations for additional evaluations will be sent to utility companies, and their record drawings, and right-of-way / entry requirements will be solicited. Submittal and schedule requirements associated with obtaining permits from utilities will be investigated.

Based on the above, Engineer will identify utilities which may conflict with pothole or other areas for excavation. The potholing and excavation of these locations will be coordinated with the Engineer's potholing subconsultant; for budget purposes, costs are included for up to 10 potholes located in unpaved areas and 20 potholes located in paved areas.

This is an Allowance task.

Additional Petrographic Evaluations and Ultrasonic Testing

The pipeline material removed for the remaining three of six new 4-inch taps will also be evaluated through petrographic methods to determine cement mortar lining and coating conditions.

This is an Allowance task.

Ultrasonic Testing

At locations of interest identified by the video, leak detection, and field corrosion evaluation efforts, the pipeline will be excavated in up to 15 locations by the City's Contractor. The Engineer will then use Slab Impulse Response (SIR) ultrasonic tests to determine delamination of the outer or inner cement mortar from the steel cylinder and outer bars. The test points will be on a 1 ft lengthwise grid along a 3-5 ft long pipe length of pipeline exterior exposed by Contractor's excavations. The test will be conducted at 4 to 8 points around the pipe radius. Impact Echo testing may also be conducted to supplement the SIR Testing.

This is an Allowance task.

Direct Corrosion Assessments

Depending on the findings from the indirect corrosion assessment, the Engineer may recommend and conduct direct examination of the pipeline exterior at four locations to assess corrosion activity. Locations will be determined from the results of the reference electrode surface survey. Three excavation locations will be where the most significant corrosion is indicated. The fourth excavation will be a control location where no corrosion activity is suspected. Sufficient data will be taken to determine any existing root cause of all significant corrosion activity observed

This is an Allowance task.

AERP System Transient Assessment

A hydraulic model of the Arrowhead ERP will be built by the Engineer based on the as-built drawings, pump information, and valve characteristics provided by the City. The model will include all dynamic characteristics of the system (pump curves, horsepower, rpm and inertia, valve flow curves, check valves, actuated valves, and pipe wave speed). Engineer will review system operation with the City to gain a clear understanding of the detailed mode of operation, pressure and flow requirements, and control philosophy of the existing system under all conditions with flow to the Arrowhead ERP. This understanding will serve to establish a range of operating scenarios.

Potential surge conditions which may occur in the system as a result of pump and valve operations will be reviewed. These include conditions resulting from both normal and abnormal, but possible, operations. The evaluation will determine the system capacity and allowances with regard to surge pressures. Model simulations (up to six scenarios) will be performed with the hydraulic model to identify potential risks associated with surge conditions. Should any simulated operation result in unacceptable surge conditions, surge remediation systems will be considered. Typical surge suppression systems include changes of operation (valve opening/closure times, pump normal start-up and stop time, system pressure adjustment, etc., surge relief valves, air valves, and surge tanks. The results of the hydraulic

**GLENDALE ARROWHEAD RANCH EFFLUENT PIPELINE CONDITION ASSESSMENT
AND ASSESSMENTS FOR RECHARGE WELL IMPROVEMENTS**

and surge analysis will be summarized in **Technical Memorandum 4: System Transient Assessment**. The draft TM will be issued electronically along with three hard copies. Engineer will present the findings included in TM 4 and will discuss the draft at a progress meeting with the City. It is assumed that the City will provide comments to the TM within ten (10) business days after it is provided to the City, and Engineer will incorporate comments and subsequently issue the final TM electronically along with three hard copies within 10 business days after receiving all of the City's comments.

This is an Allowance task.

EXHIBIT C
Professional Services Agreement

SCHEDULE

(Cover Page)

EXHIBIT C
Glendale Arrowhead Effluent Reuse Pipeline Assessment and
Assessment for Recharge Well Improvements Project
Professional Services

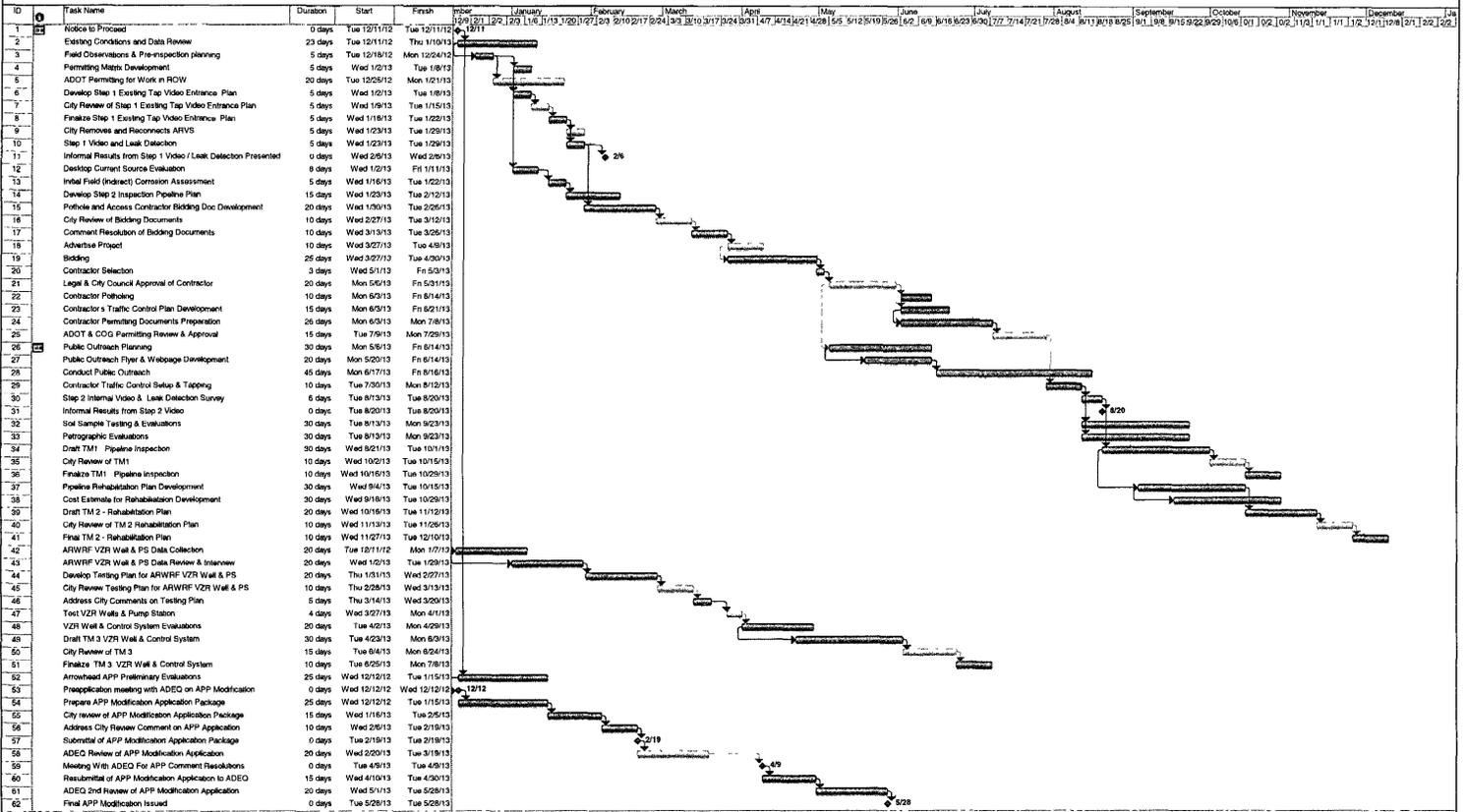


EXHIBIT D
Professional Services Agreement

COMPENSATION

METHOD AND AMOUNT OF COMPENSATION

Compensation shall be hourly rate plus allowable reimbursable expenses.

NOT-TO-EXCEED AMOUNT

The total amount of compensation paid to Consultant for full completion of all work required by the Project during the entire term of the Project must not exceed \$682,050.

DETAILED PROJECT COMPENSATION

See Attached.



Exhibit D Compensation
Arrowhead Ranch Effluent Pipeline Condition and Recharge Assessment
Phase I - Evaluation of Existing Conditions
City of Glendale
Professional Services

Task	Description	Total Hours	Total Fee	Assumptions (see also notes below)
100	PROJECT MANAGEMENT			
	General Management & Administration	104	\$16,420	12 Month Phase I
	Kick-off & Monthly Progress Meetings	136	\$24,160	10 Progress meetings
	Subtotal	240	\$40,580	
200	ARROWHEAD EFFLUENT REUSE PIPELINE ASSESSMENT			
	Collect and Review Existing Drawings and Data	130	\$20,330	
	Field Observations and Pre-Inspection Planning	154	\$25,320	
	Additional Access Bidding Documents & Contractor Selector	132	\$20,620	Assumes up to 1 bid addenda.
	Develop Inspection Plan	98	\$16,520	
	Public Outreach	66	\$11,470	
	Internal Video and Acoustic Leak Detection Survey	150	\$27,120	
	Indirect Corrosion Assessment	218	\$40,240	
	Petrographic Evaluations (3 Initial)	28	\$4,890	
	Identify Need for Additional Assessment & Pipe Segments Requiring Re	60	\$10,500	
	TM-1 Inspection Technical Memorandum	146	\$23,070	
	Subtotal	1,182	\$200,080	
300	ARROWHEAD EFFLUENT REUSE PIPELINE REHABILITATION			
	Develop Pipeline Rehabilitation Plan	136	\$22,130	
	Prepare Cost Estimate for Draft Rehabilitation Plan	72	\$10,910	
	TM-2 Rehabilitation Plan	114	\$18,520	
	Subtotal	322	\$51,560	
400	ARROWHEAD RECHARGE SYSTEM OPERATIONS ASSESSMENTS			
	VZR Well Control Problem Definition and Data Collector	236	\$37,670	
	TM-3 Effluent Pump station and VZR System Operations	102	\$15,990	
	Subtotal	338	\$53,660	
500	AQUIFER PROTECTION PERMIT MODIFICATIONS			
	Coordination meetings with ADEQ	24	\$4,580	
	Preliminary Evaluations	28	\$4,940	
	Prepare Application Package and Documentation	108	\$15,360	
	Subtotal	160	\$24,880	
	BLACK & VEATCH PHASE I TOTAL w/o ALLOWANCES	2,242	\$370,760	
	BLACK & VEATCH ALLOWANCES			
	Utility Engineering and Potholing Coordination	62	\$10,850	
	Petrographic Evaluations, 3 additional (Step 3 Assessment)	10	\$1,600	
	Ultrasonic Testing, Up to 15 locations (Step 3 Assessment)	74	\$13,530	
	Direct Corrosion Assessment (Step 3 Assessment)	90	\$19,620	
	TM AERP System Transient Assessment	146	\$23,980	
	Engineering Allowance for Unanticipated Conditions	68	\$14,180	
	Total Phase I Black & Veatch Allowances	450	\$83,760	
	BLACK & VEATCH PHASE I TOTAL w/ ALLOWANCES	2,692	\$454,520	
	SUBCONSULTANTS			
	CLEAR CREEK AND ASSOCIATES (Well Control Assessment)			
	General Management & Administration		\$4,444	
	Kick-off Mtg, One Progress Meetings and TM 3 Review Meeting		\$4,198	
	VZR Well Control Problem Definition and Data Collector		\$8,696	
	TM-3 Effluent Pump station and VZR System Operations		\$7,292	
	WACHS (Video and Acoustic Leak Detection)		\$140,000	
	Olson (Petrographic Step 1 Assessment)		\$6,200	
	Makpro (Public Outreach)		\$9,800	
	Speedie & Associates (Soil Corrosion Testing)		\$3,000	
	Subconsultants Phase I Subtotal w/o Allowances		\$183,630	
	SUBCONSULTANT PHASE I ALLOWANCES			
	Pothole Subconsultant			
	Pothole Services		\$18,000	
	Olson			
	Petrographic Evaluations, 3 additional (Step 2 Assessment)		\$6,000	
	Ultrasonic Testing, Up to 15 locations (Step 2 Assessment)		\$17,500	
	Speedie and Associates			
	Additional Corrosion Assessment (Step 2 Assessment)		\$2,400	
	Subconsultants Phase I Allowances Subtotal		\$43,900	
	Phase I PROJECT TOTAL W/O ALLOWANCES		\$554,390	
	PHASE I PROJECT TOTAL W/ ALLOWANCES		\$622,050	
600-900	Phase II Tasks			
	The level of effort for Phase II tasks will be estimated once assessments are near completion to provide the City with a better estimate of services			

Notes:

- Expenses include delivery such as Courier, Fed Exp and UPS, travel costs, including meals, lodging, and travel mileage at IRS approved rates, mobilization, etc., for pipeline assessment experts and testing subconsultants, reproduction (printing, reproduction of deliverable
- The level of effort estimate is based on data currently provided by the City. Unforeseen conditions which require additional Engineer and subconsultant services will be considered as supplemental services that will be performed following scopes of services and level of effort negotiations as required and approval by the City
- Level of Effort Estimate is exclusive of Contractor services for installing new taps for video access (Step 2 assessment) and exposing pipeline for UT and direct corrosion assessment (Step 3 assessments), permitting fees, contractor's supervision, safety, general conditions, traffic control planning and traffic control implementation

EXHIBIT E
Professional Services Agreement

DISPUTE RESOLUTION

1. Disputes.

- 1.1 Commitment. The parties commit to resolving all disputes promptly, equitably, and in a good-faith, cost-effective manner.
- 1.2 Application. The provisions of this Exhibit will be used by the parties to resolve all controversies, claims, or disputes ("Dispute") arising out of or related to this Agreement-including Disputes regarding any alleged breaches of this Agreement.
- 1.3 Initiation. A party may initiate a Dispute by delivery of written notice of the Dispute, including the specifics of the Dispute, to the Representative of the other party as required in this Agreement.
- 1.4 Informal Resolution. When a Dispute notice is given, the parties will designate a member of their senior management who will be authorized to expeditiously resolve the Dispute.
 - a. The parties will provide each other with reasonable access during normal business hours to any and all non-privileged records, information and data pertaining to any Dispute in order to assist in resolving the Dispute as expeditiously and cost effectively as possible;
 - b. The parties' senior managers will meet within 10 business days to discuss and attempt to resolve the Dispute promptly, equitably, and in a good faith manner, and
 - c. The Senior Managers will agree to subsequent meetings if both parties agree that further meetings are necessary to reach a resolution of the Dispute.

2. Arbitration.

- 2.1 Rules. If the parties are unable to resolve the Dispute by negotiation within 30 days from the Dispute notice, and unless otherwise informal discussions are extended by the mutual agreement, the Dispute will be decided by binding arbitration in accordance with Construction Industry Rules of the AAA, as amended herein. Although the arbitration will be conducted in accordance with AAA Rules, it will not be administered by the AAA, but will be heard independently.
 - a. The parties will exercise best efforts to select an arbitrator within 5 business days after agreement for arbitration. If the parties have not agreed upon an arbitrator within this period, the parties will submit the selection of the arbitrator to one of the principals of the mediation firm of Scott & Skelly, LLC, who will then select the arbitrator. The parties will equally share the fees and costs incurred in the selection of the arbitrator.
 - b. The arbitrator selected must be an attorney with at least 15 years experience with commercial construction legal matters in Maricopa County, Arizona, be independent, impartial, and not have engaged in any business for or adverse to either Party for at least 10 years.
- 2.2 Discovery. The extent and the time set for discovery will be as determined by the arbitrator. Each Party must, however, within ten (10) days of selection of an arbitrator deliver to the other Party copies of all documents in the delivering party's possession that are relevant to the dispute.

2.3 Hearing. The arbitration hearing will be held within 90 days of the appointment of the arbitrator. The arbitration hearing, all proceedings, and all discovery will be conducted in Glendale, Arizona unless otherwise agreed by the parties or required as a result of witness location. Telephonic hearings and other reasonable arrangements may be used to minimize costs.

2.4 Award. At the arbitration hearing, each Party will submit its position to the arbitrator, evidence to support that position, and the exact award sought in this matter with specificity. The arbitrator must select the award sought by one of the parties as the final judgment and may not independently alter or modify the awards sought by the parties, fashion any remedy, or make any equitable order. The arbitrator has no authority to consider or award punitive damages.

2.5 Final Decision. The Arbitrator's decision should be rendered within 15 days after the arbitration hearing is concluded. This decision will be final and binding on the Parties.

2.6 Costs. The prevailing party may enter the arbitration in any court having jurisdiction in order to convert it to a judgment. The non-prevailing party will pay all of the prevailing party's arbitration costs and expenses, including reasonable attorney's fees and costs.

3. **Services to Continue Pending Dispute.** Unless otherwise agreed to in writing, Consultant must continue to perform and maintain progress of required Services during any Dispute resolution or arbitration proceedings, and City will continue to make payment to Consultant in accordance with this Agreement.

4. **Exceptions.**

4.1 Third Party Claims. City and Consultant are not required to arbitrate any third-party claim, cross-claim, counter claim, or other claim or defense of a third-party who is not obligated by contract to arbitrate disputes with City and Consultant.

4.2 Liens. City or Consultant may commence and prosecute a civil action to contest a lien or stop notice, or enforce any lien or stop notice, but only to the extent the lien or stop notice the Party seeks to enforce is enforceable under Arizona Law, including, without limitation, an action under A.R.S. § 33-420, without the necessity of initiating or exhausting the procedures of this Exhibit.

4.3 Governmental Actions. This Exhibit does not apply to, and must not be construed to require arbitration of, any claims, actions or other process filed or issued by City of Glendale Building Safety Department or any other agency of City acting in its governmental permitting or other regulatory capacity.