

DocuSign City Council Transmittal Coversheet

PSA	7347
File Name	LAKE LEWISVILLE PIPELINE CONDITION ASSESSMENT
Purchasing Contact	Crystal westbrook
City Council Target Date	August 25, 2020
Piggy Back Option	Not Applicable
Contract Expiration	N/A
Ordinance	20-1571

**PROFESSIONAL SERVICES AGREEMENT
FOR CONSULTING SERVICES
FILE 7347**

STATE OF TEXAS §

COUNTY OF DENTON §

THIS AGREEMENT (the "Agreement") is made and entered into on 08/255/2020, by and between the City of Denton, Texas, a Texas municipal corporation, with its principal office at 215 East McKinney Street, Denton, Denton County, Texas 76201, hereinafter called "OWNER" and PURE TECHNOLOGIES U.S. INC., a Delaware corporation, with its corporate office at 2310 McDaniel Drive, Carrollton, TX 75006, hereinafter called "CONSULTANT," acting herein, by and through their duly authorized representatives.

WITNESSETH, that in consideration of the covenants and agreements herein contained, the parties hereto do mutually agree as follows:

**ARTICLE I
CONSULTANT AS INDEPENDENT CONTRACTOR**

The OWNER has selected CONSULTANT on the basis of demonstrated competence and qualifications to perform the services herein described for a fair and reasonable price pursuant to Chapter 2254 of the Texas Government Code. The OWNER hereby contracts with the CONSULTANT as an independent contractor and not as an employee, and as such, the OWNER will not assert control over the day-to-day operations of the CONSULTANT. The CONSULTANT is customarily engaged to provide services as described herein independently and on a nonexclusive basis in the course of its business. This Agreement does not in any way constitute a joint venture between OWNER and CONSULTANT. The CONSULTANT hereby agrees to perform the services described herein based on the skills required for the scope of work in connection with the Project as stated in the sections to follow, with diligence and in accordance with the highest professional standards customarily obtained for such services in the State of Texas. The professional services set out herein are in connection with the following described project:

The Project shall include, without limitation, Lake Lewisville Pipeline Condition Assessment, as described in Exhibit A, which is on file at the purchasing office and incorporated herein (the "Project").

**ARTICLE II
SCOPE OF BASIC SERVICES**

The CONSULTANT shall perform the following services in a professional manner:

- A. The CONSULTANT shall perform all those services as necessary and as described in the OWNER's RFP 7347-Lake Lewisville Pipeline Condition Assessment, which is on file at

the purchasing office and made a part hereof as **Exhibit A** as if written word for word herein.

- B. To perform all those services set forth in CONSULTANT's proposal, which proposal is attached hereto and made a part hereof as **Exhibit B** as if written word for word herein.
- C. CONSULTANT shall perform all those services set forth in individual task orders, as described in **Exhibit B**, which shall be attached to this Agreement and made a part hereof.
- D. If there is any conflict between the terms of this Agreement and the exhibits attached to this Agreement, the terms and conditions of this Agreement will control over the terms and conditions of the attached exhibits or task orders.

ARTICLE III **ADDITIONAL SERVICES**

Additional services to be performed by the CONSULTANT, if authorized by the OWNER, which are not included in the above-described Basic Services, may be negotiated as needed, per rates included in **Exhibit B**.

- A. Preparing applications and supporting documents for government grants, loans, or planning advances and providing data for detailed applications.
- B. Preparing data and reports for assistance to OWNER in preparation for hearings before regulatory agencies, courts, arbitration panels or mediator, giving testimony, personally or by deposition, and preparations therefore before any regulatory agency, court, arbitration panel or mediator.
- C. Assisting OWNER in preparing for, or appearing at litigation, mediation, arbitration, dispute review boards, or other legal and/or administrative proceedings in the defense or prosecution of claims disputes with Contractor(s).
- D. Assisting OWNER in the defense or prosecution of litigation in connection with or in addition to those services contemplated by this AGREEMENT. Such services, if any, shall be furnished by CONSULTANT on a fee basis negotiated by the respective parties outside of and in addition to this AGREEMENT.
- E. Visits to the site in excess of the number of trips included in **Exhibit B**.
- F. Preparing statements for invoicing or other documentation for billing other than for the standard invoice for services attached to this professional services agreement.

ARTICLE IV
TIME OF COMPLETION

CONSULTANT is authorized to commence work under this contract upon execution of this AGREEMENT. CONSULTANT shall perform and complete its obligations herein in a prompt and continuous manner, so as to not delay the completion of the Project in accordance with the schedules as described in **Exhibit B**. The contract shall remain effective for a period which may reasonably be required for the completion of the Project, acceptance by an authorized representative of the OWNER, exhaustion of authorized funds, or termination as provided in this Agreement, whichever occurs first.

ARTICLE V
COMPENSATION

A. COMPENSATION TERMS:

1. "Subcontract Expense" is defined as expenses incurred by the CONSULTANT in employment of others in outside firms for services related to this agreement.
2. "Direct Non-Labor Expense" is defined as that expense for any assignment incurred by the CONSULTANT for supplies, transportation and equipment, travel, communications, subsistence, and lodging away from home, and similar incidental expenses in connection with that assignment.

B. BILLING AND PAYMENT: For and in consideration of the professional services to be performed by the CONSULTANT herein, the OWNER agrees to pay, based on the cost estimate detail at an hourly rate shown in **Exhibit B** which is attached hereto and made a part of this Agreement as if written word for word herein, a total fee, including reimbursement for direct non-labor expenses not to exceed \$612,000.

Partial payments to the CONSULTANT will be made on the basis of detailed monthly statements rendered to and approved by the OWNER through its City Manager or his designee; however, under no circumstances shall any monthly statement for services exceed the value of the work performed at the time a statement is rendered.

Nothing contained in this Article shall require the OWNER to pay for any work which is unsatisfactory, as reasonably determined by the City Manager or his designee, or which is not submitted in compliance with the terms of this Agreement. The OWNER shall not be required to make any payments to the CONSULTANT when the CONSULTANT is in default under this Agreement.

It is specifically understood and agreed that the CONSULTANT shall not be authorized to undertake any work pursuant to this Agreement which would require additional payments by the OWNER for any charge, expense, or reimbursement above the maximum not to exceed fee as stated, without first having obtained written authorization from the OWNER. The CONSULTANT shall not proceed to perform the services listed in Article III "Additional Services," without obtaining prior written authorization from the OWNER.

- C. **ADDITIONAL SERVICES:** For additional services authorized in writing by the OWNER in Article III, the CONSULTANT shall be paid based on the Schedule of Charges at an hourly rate shown in **Exhibit B**. Payments for additional services shall be due and payable upon submission by the CONSULTANT and approval by the City staff, and shall be in accordance with subsection B hereof. Statements shall not be submitted more frequently than monthly.
- D. **PAYMENT:** If the OWNER fails to make payments due the CONSULTANT for services and expenses within thirty (30) days after receipt of the CONSULTANT's undisputed statement thereof, the amounts due the CONSULTANT will be paid interest in accordance with the Texas Government Code 2251.025. Additionally, the CONSULTANT may, after giving seven (7) days' written notice to the OWNER, suspend services under this Agreement until the CONSULTANT has been paid in full all amounts due for services, expenses, and charges. Nothing herein shall require the OWNER to pay the late charge if the OWNER reasonably determines that the work is unsatisfactory, in accordance with this Article V, "Compensation," there is a bona fide dispute concerning the amount due, or the invoice was not mailed to the address or in the form as described in this Agreement. The OWNER will notify CONSULTANT of any disputes within twenty-one (21) days of receipt of the invoice.
- E. **Invoices** shall be sent directly to the City of Denton Accounts Payable Department, 215 E McKinney St, Denton, TX, 76201-4299. A pro-forma invoice shall be sent to the contract administrator. It is the intention of the City of Denton to make payment on completed orders within thirty days after receipt of invoice or items; whichever is later, unless unusual circumstances arise. **Invoices must be fully documented as to labor, materials, and equipment provided, if applicable, and must reference the City of Denton Purchase Order Number in order to be processed. No payments shall be made on invoices not listing a Purchase Order Number.**

ARTICLE VI OBSERVATION AND REVIEW OF THE WORK

The CONSULTANT will exercise reasonable care and due diligence in discovering and promptly reporting to the OWNER any defects or deficiencies in the work of the CONSULTANT or any subcontractors or subconsultants.

ARTICLE VII OWNERSHIP OF DOCUMENTS

All documents prepared or furnished by the CONSULTANT (and CONSULTANT's subcontractors or subconsultants) pursuant to this Agreement are instruments of service, and shall become the property of the OWNER upon the termination of this Agreement. The CONSULTANT is entitled to retain copies of all such documents. The documents prepared and furnished by the CONSULTANT are intended only to be applicable to this Project, and OWNER's use of these documents in other projects shall be at OWNER's sole risk and expense. In the event the OWNER uses any of the information or materials developed pursuant to this Agreement in another project or for other purposes than specified herein, CONSULTANT is released from any and all liability relating to their use in that project.

ARTICLE VIII
INDEMNITY AGREEMENT

THE CONSULTANT SHALL INDEMNIFY AND SAVE AND HOLD HARMLESS THE OWNER AND ITS OFFICERS, OFFICIALS, AGENTS, AND EMPLOYEES FROM AND AGAINST ANY AND ALL LIABILITY, CLAIMS, DEMANDS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING, BUT NOT LIMITED TO COURT COSTS AND REASONABLE ATTORNEY FEES ASSERTED AGAINST OR INCURRED BY THE OWNER, AND INCLUDING, WITHOUT LIMITATION, DAMAGES FOR BODILY AND PERSONAL INJURY, DEATH AND PROPERTY DAMAGE, RESULTING FROM THE NEGLIGENT ACTS OR OMISSIONS OF THE CONSULTANT OR ITS OFFICERS, SHAREHOLDERS, AGENTS, OR EMPLOYEES INCIDENTAL TO, RELATED TO, AND IN THE EXECUTION, OPERATION, OR PERFORMANCE OF THIS AGREEMENT.

Nothing in this Agreement shall be construed to create a liability to any person who is not a party to this Agreement, and nothing herein shall waive any of the parties' defenses, both at law or equity, to any claim, cause of action, or litigation filed by anyone not a party to this Agreement, including the defense of governmental immunity, which defenses are hereby expressly reserved.

ARTICLE IX
INSURANCE

During the performance of the services under this Agreement, CONSULTANT shall maintain insurance in compliance with the requirements of **Exhibit C** which is attached hereto and made a part of this Agreement as if written word for word herein.

ARTICLE X
ALTERNATIVE DISPUTE RESOLUTION

The parties may agree to settle any disputes under this Agreement by submitting the dispute to mediation with each party bearing its own costs of mediation. No mediation arising out of or relating to this Agreement, involving one party's disagreement may include the other party to the disagreement without the other's approval. Mediation will not be a condition precedent to suit.

ARTICLE XI
TERMINATION OF AGREEMENT

- A. Notwithstanding any other provision of this Agreement, either party may terminate by giving thirty (30) days' advance written notice to the other party.
- B. This Agreement may be terminated in whole or in part in the event of either party substantially failing to fulfill its obligations under this Agreement. No such termination will be affected unless the other party is given (1) written notice (delivered by certified mail, return receipt requested) of intent to terminate and setting forth the reasons specifying the non-performance, and not less than fifteen (15) calendar days to cure the failure; and (2) an opportunity for consultation with the terminating party prior to termination.

C. If the Agreement is terminated prior to completion of the services to be provided hereunder, CONSULTANT shall immediately cease all services and shall render a final bill for services to the OWNER within thirty (30) days after the date of termination. The OWNER shall pay CONSULTANT for all services properly rendered and satisfactorily performed and for reimbursable expenses to termination incurred prior to the date of termination, in accordance with Article V “Compensation.” Should the OWNER subsequently contract with a new consultant for the continuation of services on the Project, CONSULTANT shall cooperate in providing information. The CONSULTANT shall turn over all documents prepared or furnished by CONSULTANT pursuant to this Agreement to the OWNER on or before the date of termination, but may maintain copies of such documents for its use.

ARTICLE XII
RESPONSIBILITY FOR CLAIMS AND LIABILITIES

Approval by the OWNER shall not constitute, nor be deemed a release of the responsibility and liability of the CONSULTANT, its employees, associates, agents, subcontractors, and subconsultants for the accuracy and competency of their designs or other work; nor shall such approval be deemed to be an assumption of such responsibility by the OWNER for any defect in the design or other work prepared by the CONSULTANT, its employees, subcontractors, agents, and consultants.

ARTICLE XIII
NOTICES

All notices, communications, and reports required or permitted under this Agreement shall be personally delivered or mailed to the respective parties by depositing same in the United States mail to the address shown below, certified mail, return receipt requested, unless otherwise specified herein. Mailed notices shall be deemed communicated as of three (3) days’ mailing:

To CONSULTANT:

Pure Technologies U.S. Inc.
William Clayton Coe
2310 McDaniel Drive
Carrollton, TX 75006

To OWNER:

City of Denton
Purchasing Manager –File 7347
901B Texas Street
Denton, Texas 76209

All notices shall be deemed effective upon receipt by the party to whom such notice is given, or within three (3) days’ mailing.

ARTICLE XIV
ENTIRE AGREEMENT

This Agreement and related exhibits constitute the complete and final expression of this Agreement of the parties, and is intended as a complete and exclusive statement of the terms of their agreements, and supersedes all prior contemporaneous offers, promises, representations,

negotiations, discussions, communications, and agreements which may have been made in connection with the subject matter hereof.

ARTICLE XV
SEVERABILITY

If any provision of this Agreement is found or deemed by a court of competent jurisdiction to be invalid or unenforceable, it shall be considered severable from the remainder of this Agreement and shall not cause the remainder to be invalid or unenforceable. In such event, the parties shall reform this Agreement to replace such stricken provision with a valid and enforceable provision which comes as close as possible to expressing the intention of the stricken provision.

ARTICLE XVI
COMPLIANCE WITH LAWS

The CONSULTANT shall comply with all federal, state, and local laws, rules, regulations, and ordinances applicable to the work covered hereunder as those laws may now read or hereinafter be amended.

ARTICLE XVII
DISCRIMINATION PROHIBITED

In performing the services required hereunder, the CONSULTANT shall not discriminate against any person on the basis of race, color, religion, sex, sexual orientation, national origin or ancestry, age, or physical handicap.

ARTICLE XVIII
PERSONNEL

- A. The CONSULTANT represents that it has or will secure, at its own expense, all personnel required to perform all the services required under this Agreement. Such personnel shall not be employees or officers of, or have any contractual relations with the OWNER. CONSULTANT shall inform the OWNER of any conflict of interest or potential conflict of interest that may arise during the term of this Agreement.
- B. All services required hereunder will be performed by the CONSULTANT or under its supervision. All personnel engaged in work shall be qualified, and shall be authorized and permitted under state and local laws to perform such services.

ARTICLE XIX
ASSIGNABILITY

The CONSULTANT acknowledges that this Agreement is based on the demonstrated competence and specific qualifications of the CONSULTANT and is therefore personal as to the CONSULTANT. Therefore, the CONSULTANT shall not assign any interest in this Agreement,

and shall not transfer any interest in this Agreement (whether by assignment, novation, or otherwise) without the prior written consent of the OWNER.

ARTICLE XX **MODIFICATION**

No waiver or modification of this Agreement or of any covenant, condition, or limitation herein contained shall be valid unless in writing and duly executed by the party to be charged therewith, and no evidence of any waiver or modification shall be offered or received in evidence in any proceeding arising between the parties hereto out of or affecting this Agreement, or the rights or obligations of the parties hereunder, and unless such waiver or modification is in writing and duly executed; and the parties further agree that the provisions of this section will not be waived unless as set forth herein.

ARTICLE XXI **MISCELLANEOUS**

A. The following exhibits are attached to and made a part of this Agreement:

Exhibit A – RFP 7347-Lake Lewisville Pipeline Condition Assessment (on file at the purchasing office)

Exhibit B – Consultant’s Scope of Services Offer and Project Schedule, Compensation Rate Sheet

Exhibit C – Consultant’s Insurance Requirements

What is called for by one exhibit shall be as binding as if called for by all. In the event of an inconsistency or conflict in this Agreement and any of the provisions of the exhibits, the inconsistency or conflict shall be resolved by giving precedence first to this Agreement then to the exhibits in the order in which they are listed above.

B. This Agreement shall be governed by, construed, and enforced in accordance with, and subject to, the laws of the State of Texas or federal law, where applicable, without regard to the conflict of law principles of any jurisdiction. In the event there shall be any dispute arising out of the terms and conditions of, or in connection with, this Agreement, the party seeking relief shall submit such dispute to the District Courts of Denton County or if federal diversity or subject matter jurisdiction exists, to the United States District Court for the Eastern District of Texas-Sherman Division.

C. For the purpose of this Agreement, the key persons who will perform most of the work hereunder shall be Stacie Sandmann. However, nothing herein shall limit CONSULTANT from using other equally qualified and competent members of its firm to perform the services required herein.

D. CONSULTANT shall commence, carry on, and complete any and all projects with all applicable dispatch, in a sound, economical, and efficient manner and in accordance with the provisions hereof. In accomplishing the projects, CONSULTANT shall take such steps

as are appropriate to ensure that the work involved is properly coordinated with related work being carried on by the OWNER.

- E. The OWNER shall assist the CONSULTANT by placing at the CONSULTANT's disposal all available information pertinent to the Project, including previous reports, any other data relative to the Project, and arranging for the access thereto, and make all provisions for the CONSULTANT to enter in or upon public and private property as required for the CONSULTANT to perform services under this Agreement.
- F. The captions of this Agreement are for informational purposes only, and shall not in any way affect the substantive terms or conditions of this Agreement.
- G. The parties agree to transact business electronically. Any statutory requirements that certain terms be in writing will be satisfied using electronic documents and signing. Electronic signing of this document will be deemed an original for all legal purposes.

ARTICLE XXII **INDEPENDENT CONTRACTOR**

CONSULTANT shall provide services to OWNER as an independent contractor, not as an employee of the OWNER. CONSULTANT shall not have or claim any right arising from employee status.

ARTICLE XXIII **RIGHT TO AUDIT**

The OWNER shall have the right to audit and make copies of the books, records and computations pertaining to this agreement. The CONTRACTOR shall retain such books, records, documents and other evidence pertaining to this agreement during the contract period and five years thereafter, except if an audit is in progress or audit findings are yet unresolved, in which case records shall be kept until all audit tasks are completed and resolved. These books, records, documents and other evidence shall be available, within 10 business days of written request. Further, the CONTRACTOR shall also require all Subcontractors, material suppliers, and other payees to retain all books, records, documents and other evidence pertaining to this agreement, and to allow the OWNER similar access to those documents. All books and records will be made available within a 50 mile radius of the City of Denton. The cost of the audit will be borne by the OWNER unless the audit reveals an overpayment of 1% or greater. If an overpayment of 1% or greater occurs, the reasonable cost of the audit, including any travel costs, must be borne by the CONTRACTOR which must be payable within five business days of receipt of an invoice.

Failure to comply with the provisions of this section shall be a material breach of this contract and shall constitute, in the OWNER'S sole discretion, grounds for termination thereof. Each of the terms "books", "records", "documents" and "other evidence", as used above, shall be construed to include drafts and electronic files, even if such drafts or electronic files are subsequently used to generate or prepare a final printed document.

ARTICLE XXIV

Prohibition On Contracts With Companies Boycotting Israel

Supplier acknowledges that in accordance with Chapter 2270 of the Texas Government Code, City is prohibited from entering into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. The terms “boycott Israel” and “company” shall have the meanings ascribed to those terms in Section 808.001 of the Texas Government Code. ***By signing this agreement, Supplier certifies that Supplier’s signature provides written verification to the City that Supplier: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the agreement.*** Failure to meet or maintain the requirements under this provision will be considered a material breach.

ARTICLE XXV

Prohibition On Contracts With Companies Doing Business with Iran, Sudan, or a Foreign Terrorist Organization

Section 2252 of the Texas Government Code restricts CITY from contracting with companies that do business with Iran, Sudan, or a foreign terrorist organization. ***By signing this agreement, Supplier certifies that Supplier’s signature provides written verification to the City that Supplier, pursuant to Chapter 2252, is not ineligible to enter into this agreement and will not become ineligible to receive payments under this agreement by doing business with Iran, Sudan, or a foreign terrorist organization.*** Failure to meet or maintain the requirements under this provision will be considered a material breach.

ARTICLE XXVI

CERTIFICATE OF INTERESTED PARTIES ELECTRONIC FILING

In 2015, the Texas Legislature adopted House Bill 1295, which added section 2252.908 of the Government Code. The law states that the City may not enter into this contract unless the Contractor submits a disclosure of interested parties (Form 1295) to the City at the time the Contractor submits the signed contract. The Texas Ethics Commission has adopted rules requiring the business entity to file Form 1295 electronically with the Commission.

Contractor will be required to furnish a Certificate of Interest Parties before the contract is awarded, in accordance with Government Code 2252.908.

The contractor shall:

1. Log onto the State Ethics Commission Website at :
https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm
2. Register utilizing the tutorial provided by the State
3. Print a copy of the completed Form 1295
4. Enter the Certificate Number on page 2 of this contract.
5. Complete and sign the Form 1295
6. Email the form to purchasing@cityofdenton.com with the contract number in the subject line.
(EX: Contract 1234 – Form 1295)

The OWNER must acknowledge the receipt of the filed Form 1295 not later than the 30th day after Council award. Once a Form 1295 is acknowledged, it will be posted to the Texas Ethics Commission’s website within seven business days.

ARTICLE XXVII
PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS

No officer, employee, independent consultant, or elected official of the City who is involved in the development, evaluation, or decision-making process of the performance of any solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that solicitation as defined in the City’s Ethic Ordinance 18-757 and in the City Charter chapter 2 article XI(Ethics). Any willful violation of this section shall constitute impropriety in office, and any officer or employee guilty thereof shall be subject to disciplinary action up to and including dismissal. Any violation of this provision, with the knowledge, expressed or implied, of the Contractor shall render the Contract voidable by the City. The Contractor shall complete and submit the City’s Conflict of Interest Questionnaire.

IN WITNESS HEREOF, the City of Denton, Texas has caused this Agreement to be executed by its duly authorized City Manager, and CONSULTANT has executed this Agreement through its duly authorized undersigned officer on this date 08/25/2020.

THIS AGREEMENT HAS BEEN
BOTH REVIEWED AND APPROVED
as to financial and operational
obligations and business terms.

DocuSigned by:
Frank Pugsley
22943FE13318483...
SIGNATURE

Frank Pugsley

PRINTED NAME

Director, Water & Wastewater Utilities

TITLE
water Utilities

DEPARTMENT

APPROVED AS TO LEGAL FORM:

AARC DocuSigned by: _____ ATTORNEY
BY: Mack Reinward
7F9D328BF0204E5... _____

CITY OF DENTON, TEXAS
“OWNER”

DocuSigned by:
Todd Hileman
E776C711BA0D454...
TODD HILEMAN, CITY MANAGER

ATTEST:
ROSA RIOS, CITY SECRETARY

BY: DocuSigned by:
Rosa Rios
1C5CA8C5E175493... _____

Company Name,
A TEXAS CORPORATION
“CONSULTANT”

DocuSigned by:
John Galleher
337E38580B51448... _____
BY: _____

ITS: Vice President
2020-652149

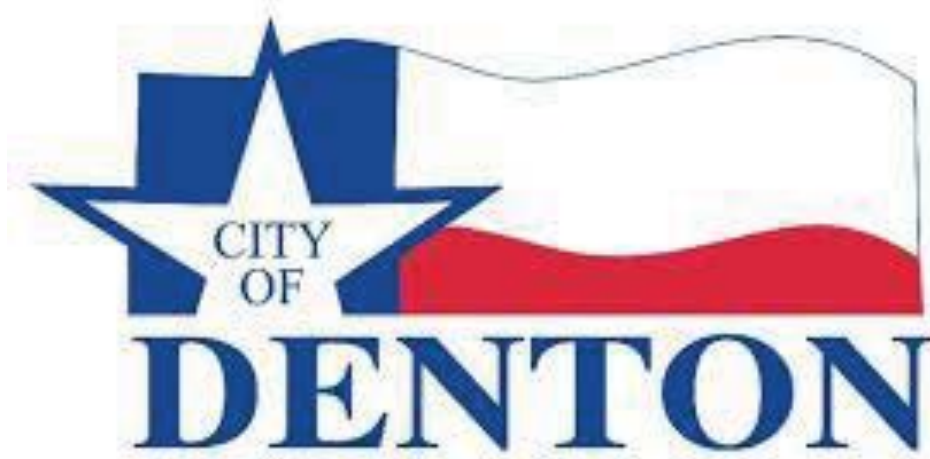
TEXAS ETHICS COMMISSION
CERTIFICATE NUMBER

Exhibit A
RFP 7347-LAKE LEWISVILLE PIPELINE CONDITION ASSESSMENT (on file at the Office
of the Purchasing Agent)

27-inch Water Supply Line COMPREHENSIVE CONDITION ASSESSMENT

Prepared for:

City of Denton



Prepared by:

Pure Technologies U.S. Inc.
2310 McDaniel Drive
Carrollton, TX 75006



May 13, 2020



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Introduction

Pure Technologies U.S. Inc. (Pure Technologies) presents the following Scope of Services and associated fee schedule to conduct a comprehensive condition assessment of the City of Denton’s 27-inch Water Supply Line. The raw water supply line runs approximately 8.5 miles from Lake Lewisville north to the Denton Water Treatment Plant.

The 27-inch water supply line is a bar wrapped pipe (BWP) material manufactured and installed in 1955.

This document presents Pure Technologies’ technical approach to performing a comprehensive condition assessment of the 27-inch bar wrapped pipe water supply line.

Pure Technologies U.S. Inc.

Pure Technologies specializes in the condition assessment of critical pipeline infrastructure – supported by proprietary technologies developed for inspection of pressure pipelines, including water mains and wastewater force mains. Since 1993, Pure Technologies has been a world leader providing non-destructive testing and monitoring technologies to better understand the condition of critical pipeline infrastructure. We have performed inspections on over 16,000 miles of medium and large diameter water pipelines and more than 800 miles of wastewater force mains for more than 120 utilities worldwide. Excavations of pipe sections identified as problematic through Pure Technologies’ inspection methodologies have validated our technologies and capabilities to assess pipeline infrastructure.

Our philosophies with respect to managing critical pressure pipelines include:

1. **Assess and Address**: Pure Technologies strives to maintain existing pipelines (rather than recommend their replacement) through an “Assess and Address” approach. Performing condition assessment and repairing only individual pipes that need repair can safely extend the service life of pipelines and provide significant cost savings. On average, a comprehensive condition assessment and repair program can typically be implemented for less than 10% of the capital costs to replace a pipeline.
2. **Return on Investment**: One of Pure Technologies’ key philosophies is that the project should provide “reliable” and “actionable” data and information with tangible benefits. If this is accomplished, the Client will easily recognize a return that is far greater than their investment and gain the public’s confidence, especially if any one of these three key benefits is realized:

A comprehensive condition assessment and repair program can typically be implemented for less than 10% of the capital costs to replace a pipeline.

- i. *Averting Pipe Failure*: Identify what immediate repairs are necessary to avert imminent pipeline failures.
 - ii. *Extending the Life of Pipelines*: Without an understanding of the condition of a pipeline asset, many utilities have prematurely replaced pipelines. EPA has estimated that 70% to 90% of the pipe removed from the ground has remaining life. Condition assessment and subsequent targeted repairs should provide confidence in a pipeline to extend its service life.
 - iii. *Improved Capital Planning*: Understanding the condition of a pipeline will provide significantly improved capital planning recommendations for future pipeline management and renewal projects.
3. **Obtaining a Comprehensive Assessment**: Obtaining a comprehensive assessment, especially for high risk pipelines, is important. Other case studies have demonstrated that too much emphasis can be placed on pursuing an inexpensive condition assessment program while overlooking the level of actionable information that can be obtained. *The least expensive technology may not provide the best value or most cost-effective pipeline solution.* If an inspection does not provide defensible or actionable data, it can lead to pipeline failures or incorrectly allocated capital funds replacing the wrong pipelines at the wrong time; easily eliminating the savings that were expected by deploying a less expensive condition assessment tool. According to an American Water Works Association Research Foundation Study, the average cost of a large diameter pipeline failure is \$500,000 to \$1,500,000. The costs can be significantly higher in urban areas.
4. **Risk Based Condition Assessment**: Pure Technologies is a firm believer that a risk-based approach should be used to perform condition assessment and of critical pipelines. There is no silver bullet technology that applies to all pipelines. In general, low resolution technologies are appropriate for low risk pipelines. However, for high risk pipelines, a high degree of reliability is essential and higher resolution tools are prudent to provide a more comprehensive understanding of the pipeline.

Project Background

The 27-inch Raw Water Supply Line originates at the Lake Lewisville Pump Station and runs approximately 8.5 miles north to the City of Denton's Water Treatment Plant. After leaving the pump station, the 27-inch bar wrapped pipe water supply line runs under IH-35 and then north along the Denton County Transportation Authority's railway track. The 27-inch bar wrapped pipe was manufactured in 1955 and is assumed to have been installed in 1955-1956.

An aerial photograph displaying the approximate location of the 27-inch raw water supply line is presented below in Figure 1.

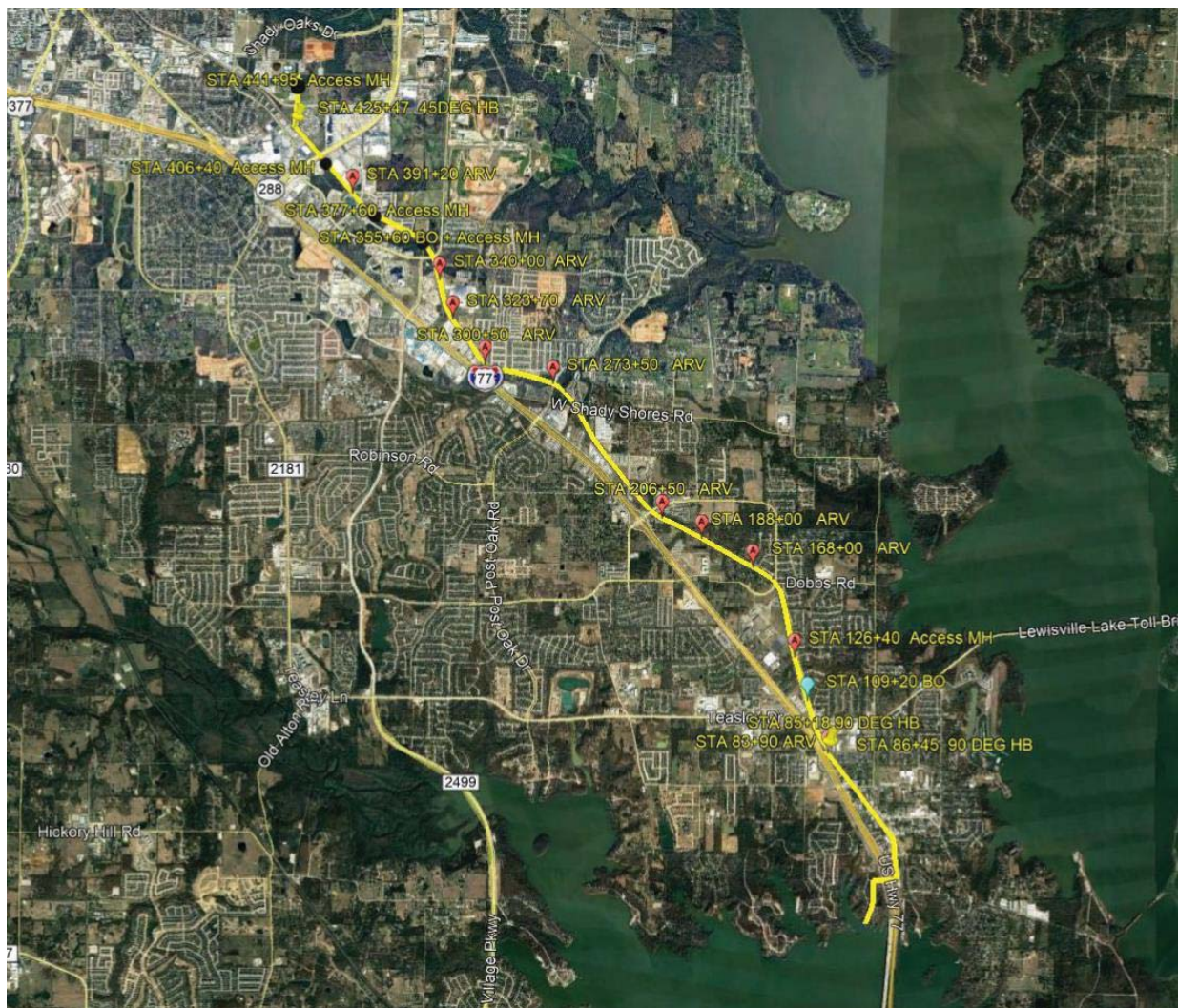


Figure 1. Aerial photograph showing the approximate location of the 27-inch BWP Raw Water Supply Line

Project Approach - “Assess & Address”

Condition Assessment Approach for Bar Wrapped Pipe Water Mains

As presented earlier, the proposed overall approach to assessing pressure pipelines consists of a risk-based approach that Pure Technologies calls *Assess and Address*TM. The goal of this approach is to identify and rehabilitate high risk pipes before they fail, which significantly increases the remaining useful life of the pipeline at a fraction of the total replacement cost and avoids pipeline failure.

A “comprehensive” condition assessment typically includes a combination of technologies and methodologies, each serving as a complementary component in addressing a comprehensive evaluation as to a pipeline’s ability to perform.

For the comprehensive assessment of the 27-inch BWP raw water supply line, Pure Technologies is proposing to include the following:

- review of existing information, a site reconnaissance, meetings with City of Denton operations and engineering, and development of a detailed project planning document addressing all phases of the project;
- a workshop with the City of Denton to review the project planning document and insure that all parties involved clearly understand their roles and responsibilities;
- continuous high-frequency pressure monitoring to identify potential sources of transient events and/or cyclical loading conditions;
- performing a baseline pipeline inspection using a combination of technologies and delivery platforms to address the appropriate level of risk to include:
 - an inspection utilizing a free-swimming internal acoustic technology (SmartBall®) to identify and locate existing leak and gas (air) pockets, and
 - an electromagnetic (EM) inspection using a long-range Robotic unit and/or a free-swimming PipeDiver® delivery platform to assess the structural integrity of each pipe within the water main.
- a structural evaluation of the pipe design as compared to AWWA design standards or other applicable standards in effect at the time of manufacture, as well as the current design standards;
- developing Pipe Performance Risk Curves for each pipe design; and
- a final report including:
 - the results of all technology inspections,
 - a risk assessment and ranking of distressed pipes based on likelihood of failure,
 - a pipe-by-pipe geospatial GIS deliverable

Each phase of a “comprehensive” condition assessment is presented in greater detail below.

Project Phases

Phase 1 - Site Reconnaissance and Project Planning

Pure Technologies will conduct a site reconnaissance, review existing pipeline drawings, meet with the City of Denton’s operations personnel, evaluate design specifications, hydraulic conditions, manufacturing and installation details which will be used in planning the condition assessment and verifying the appropriate inspection/testing technologies and engineering analysis. Any unexpected pipeline features or missing information identified in the process of the review will be noted and discussed with the City. A workshop with the City of Denton will culminate the planning process, with all parties understanding roles and project requirements prior to Pure Technologies mobilizing on site.

Phase 2 - High-Frequency Pressure Monitoring

Hydraulic pressure transients occur in pipelines when the steady-state conditions of the system change due to pressure or flow disturbances (e.g. the rapid closure of a valve, pump start-up/shutdown, etc.). The magnitude of a transient is related to several factors including the flow rate within the pipeline, the time in which the change in the steady-state condition occurs, and pipe hoop rigidity. During the change, the kinetic energy of the flow momentum is converted into potential energy with a rise in pressure and strain energy in the pipe wall.

Conventional pressure monitors typically collect data in intervals of minutes while a pressure transient may occur in a fraction of a second. When a transient occurs in the pipeline, it is important that a high rate of sampling be utilized to capture the true magnitude of the transient event. High-frequency pressure monitoring equipment addresses the sampling rate issue by continuously monitoring pressure at a high sample rate up to 256 Hz or 256 times per second).

Figure 2 illustrates the difference between conventional and high-frequency pressure monitoring.

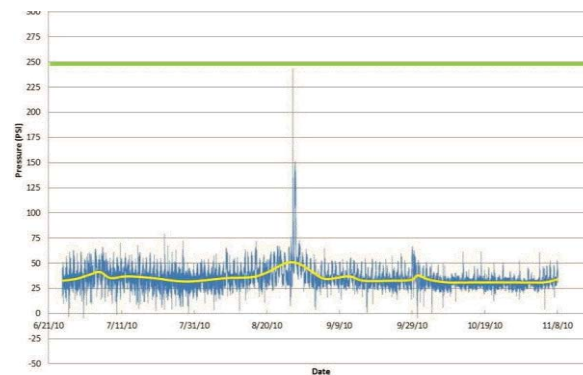


Figure 2: Comparison of Traditional (in yellow) and High-Frequency (in blue) Pressure Monitoring Data

The yellow trend line in the figure shows the pressure data recorded at a sample rate of one reading per minute. Based on conventional pressure monitoring, the internal pipeline pressure ranges between 25 and 50 psi, which is well below the pipe design pressure of 250 psi (green horizontal line). However, when the high-frequency pressure monitor data, recorded at a sample rate of more than 100 samples per second (blue trend line) is analyzed, a significant transient event can be seen that reaches nearly 240 psi. Further evaluation of available pump station operational data indicated that the transient coincided with a rapid pump shutdown. If a pipeline owner/operator relies solely on conventional pressure monitoring, the actual pressures impacting a pipeline may not be detected thereby limiting an accurate structural evaluation, condition assessment, and operational awareness.

Why implement Transient Pressure Monitoring?

Collection of transient pressure data is critical in the hydraulic evaluation of a pipeline's performance and can add significant value to the condition assessment. The occurrence of pressure transients within a pipeline can have adverse effects on the integrity of a pipe section. Damage from pressure transients can include cracking of the cement mortar coating and /or lining, crack propagation, movement at joints and structural fatigue. The impact of pressure transients can vary depending on the magnitude of the transient and current condition of the pipe. Accumulated damage of this nature can eventually decrease the structural integrity of the pipe.

Understanding the maximum pressure (operating + transient) experienced in the pipeline, allows for optimal utilization of the Pipe Performance Risk Curve when assessing the potential risk of failure for distressed pipes identified as part of the condition assessment inspections.

Implementation of continuous high-frequency pressure monitoring also measures the true impact of various system operations on a pipeline and can help validate and calibrate a hydraulic surge model.

Phase 3 - Identifying/locating Leak(s) and Gas (Air) Pocket(s)

As part of the baseline inspection, Pure Technologies typically inspects each pipeline for leaks and pockets of trapped gas (air) pockets. Whereas leaks indicate an obvious concern, air pockets can also be a major concern - restricting flow capacity in a pipeline.

Because the sound created by leaks in large diameter pipelines attenuate much more rapidly (versus smaller diameter pipe), conventional external leak detection using listening mics and correlators is typically not feasible. Transmission mains also do not provide enough "touch" points at which external listening mics or correlators can detect most leaks.

Because of these limitations associated with conventional external leak detection, Pure Technologies utilizes an internal acoustic leak and gas pocket detection technology that allows

the acoustic sensor to pass directly by a leak. Given the sensitivity of the internal acoustic system, Pure Technologies can detect leaks less than 0.1 gallons per minute. The internal acoustic leak detection systems require a minimum operating pressure in the pipeline of 15 to 20 psi. The higher the pressure in the pipeline, the lower the detection level. The pressure does not affect the technology's ability to detect gas pockets.

Pure Technologies is proposing to utilize a free-swimming internal acoustic device called "SmartBall®" to identify and locate leaks and gas (air) pockets in each water supply line.

Additional information regarding the SmartBall is presented below.

SmartBall® Free Swimming Device

Pure Technologies' patented SmartBall technology is a free-swimming device that consists of a foam ball that envelops a water-tight aluminum sphere (approximately 2-½ inches in diameter) that contains instrumentation and a power source. The inner core contains the battery power source, as well as an acoustic sensor, microprocessor, ultrasonic transmitter to track the device, an accelerometer to measure the rotation of the ball and a magnetometer to assist in identifying features along the pipeline.



Figure 3: SmartBall and SmartBall Tracking System

The device is inserted into a live and flowing pipeline and released to allow the flow to roll it downstream. The SmartBall is designed to roll on the bottom of the pipe, which allows the accelerometer to record the rotations of the device, which in turn aids in establishing its velocity and placement of the device at any given time during the survey.

The compressible foam outer ball allows for insertion through any existing 4-inch diameter outlet. The outer foam material deadens any sound the tool may make while rolling on the bottom of the pipeline and provides mass by which the device is pushed by the flow of the water. While the ball is traversing the pipeline, it continuously records all acoustic activity in the pipeline.

Because signals generated by an electromagnetic inspection of bar wrapped pipe (BWP) may be partially masked at the joint rings where the metallic mass increases due to the thicker steel bell and spigot that overlap, the SmartBall will identify if any leaks have occurred at the joint due to a

rolled gasket, a slightly opened or pulled joint and/or possible corrosion through the cylinder because of poor exterior mortar protection and/or a poor quality weld between the steel cylinder and thicker joint rings.

Insertion

The SmartBall tool is typically inserted through a 4-inch or 6-inch gate valve into an active pipeline, as illustrated in Figure 4. In instances where a hot tap is required to provide access, Pure Technologies requires a six (6) inch tap. The gate valve for insertion is mounted on the top of the pipe, without any bends in the riser connecting the valve to the pipeline. The minimum internal diameter of the opening from the gate valve to the pipe must not be less than 4-inches or the insertion equipment will not pass through. A minimum of 4 feet overhead clearance is required above the top of the insertion valve flange.

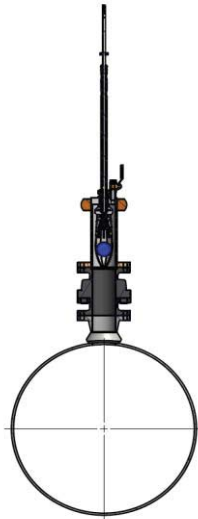


Figure 4: SmartBall Insertion

Extraction

The SmartBall tool is typically extracted from the pipeline by inserting an expandable, retractable extraction net deployed into the flow of the pipeline. The ball, which is rolling along the bottom of the pipe, will be caught in the net and retrieved from the active pipeline, as illustrated in Figure 5, below.

The standard extraction net can be inserted through a 4-inch or 6-inch gate valve into the active pipeline. Again, if a hot tap is required to provide access, Pure Technologies will require a 6-inch hot tap. The gate valve must be oriented vertically off the top portion of a flat section of pipeline (flat and straight for a minimum of 30 feet before the extraction site). The minimum internal diameter of the opening from the gate valve to the pipe must not be less than 4-inches or the extraction equipment will not pass through. At least 16 feet of headroom is required above the top of the gate valve to extract the ball from. Pure must be made aware of any additional valves nearby the planned extraction site.

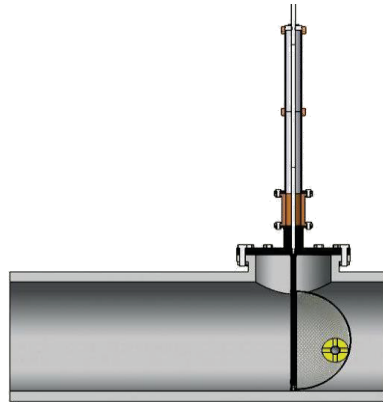


Figure 5: SmartBall Extraction

SmartBall Tracking Receivers (SBRs)

Pure Technologies utilizes proprietary SmartBall tracking receivers (SBR's), as shown previously in Figure 3, to track the location of the device as it travels through the pipeline. The SBR's utilize a small sensor that is applied to the outer surface of a metallic surface in direct contact with the fluid column.

Prior to the inspection, SBR tracking sensors will be installed along the pipeline to allow for the SBRs to track the position of the SmartBall as it travels through the pipeline. The SBRs perform best when attached directly to the metal surfaces of pipeline appurtenances, such as existing air release valves, flanges, valves or any other contact points on the pipe. At these locations, Pure Technologies' staff will adhere the requisite number of acoustic sensors on the pipe for the duration of the survey.

To achieve a desired locating resolution of plus or minus three (3) feet for any leaks and/or air pockets identified, Pure Technologies prefers that SBR tracking locations be spaced 2,500 to 3,500 feet apart.

Details for installing SBR's will be included in the Project Planning document prior to the inspection.

Pure Technologies will evaluate the use of existing appurtenances for installation of the SBR tracking sensors and will advise as to the need for any vacuum extraction “pothole” excavations that may be necessary to provide necessary SBR tracking locations. These locations will be field verified to avoid existing utilities and roadways and summarized in the Project Planning document.

Flow Requirements

The SmartBall tool requires a minimum pipeline liquid average velocity of 1 to 3 feet per second (fps). The inspection rate is approximately 70% of average liquid velocity. The City of Denton staff will control the flow rate to confirm the requisite velocity during tool deployment.

The existence of any bottom outlets, off-takes or inline valves must be brought to the attention of Pure Technologies when planning the inspection. All in-line valves located along the length of the pipeline must be fully opened prior to inspection. Any off-take lateral valves must be assessed in advance of the field inspection and shall be fully closed during the inspection.

Pipeline Pressures

City of Denton staff will operate the system to maintain pipeline pressures as necessary to accommodate system requirements. Approximate pressure measurements may be requested during inspection. Pressure in the pipeline should not be less than 20 psi at any time.

Data Analysis & Reporting

Once the SmartBall is retrieved, the recorded data is downloaded and analyzed by experienced data analysts. The SmartBall report will identify and locate all leaks and gas (air) pockets in each pipeline. Whereas the benefits of finding and repairing leaks is obvious, many utilities have become more aware of the importance of eliminating gas (air) pockets in the line, as they can reduce capacity in the line and increase energy consumption required for pumping. Gas (air) pockets will also exacerbate the effect of any transient events that may be occurring in a pipeline.



Figure 6. Tracking at a pothole location.
Note the 8-inch green PVC sleeve and cap installed as part of the vacuum extraction excavation process.

Phase 4 – Direct Measurement of Structural Integrity using Electromagnetic (EM) Inspection

Over the years, bar wrapped pipe has been called various names, including pre-tensioned concrete cylinder pipe (P303), concrete cylinder pipe (CCP), rod wrapped pipe and C303 pipe. The proper name is Bar-Wrapped Pipe (BWP). The minimum design and manufacturing requirements are covered by the AWWA C303 standard.

BWP is comprised of a welded steel cylinder that serves as a watertight membrane and works together with steel reinforcing bars wrapped under tension around the cylinder to provide strength. An internal cement mortar lining and external cement mortar coating provide corrosion protection to the steel components.

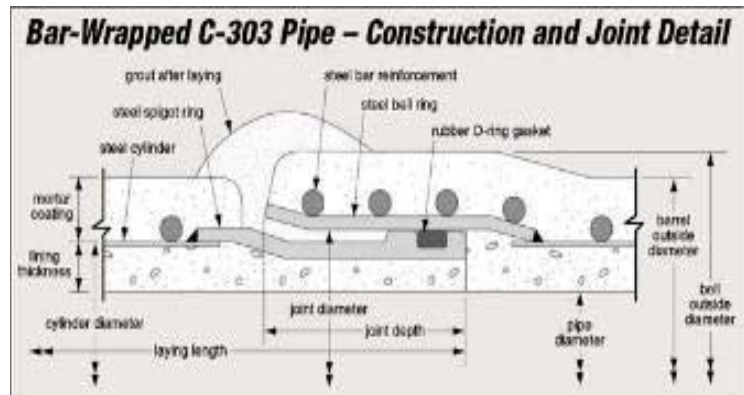


Figure 7: Cross section of bar wrapped pipe

BWP is essentially designed as a steel pipe with mild steel used to manufacture the steel cylinder and steel bars. BWP utilizes a cement mortar coating placed over the steel cylinder and bars to protect the pipe. The coating places the steel in an alkaline environment that prohibits corrosion. If the coating deteriorates or is damaged due to improper handling, operations, aggressive environments, etc., the alkaline environment will be compromised which may lead to corrosion of the steel cylinder and bars. As these elements corrode, the steel cylinder and bars will pit, thereby reducing the effective area of steel. If corrosion continues to progress, the pipe will likely develop a small, non-visible leak, which will grow with time. Eventually a large visible leak or a pipe failure will occur.



Figure 8: Examples of BWP deterioration: crack, extensive Corrosion, delamination and leakage

There are two important aspects to note regarding the deterioration of BWP:

1. Broken bars: there may or may not be broken bars, as corrosion and deterioration can begin on the bars or on the cylinder.
2. Ductile failure: since the structural elements of BWP consist of mild steel, a brittle (sudden) failure is highly improbable. Rupture can occur; however, it usually takes place after an extended period of deterioration, usually preceded by leakage. This has been anecdotally contradicted in field observations, where reported sudden failures have occurred; however, in these cases, it is likely that the pipe was previously leaking for an extended period, but the leak was unnoticed.

Evaluating the condition of BWP involves a combination of technologies and techniques to identify the various signs of deterioration. Signs of deterioration can include degradation of the bars and steel cylinder, leakage, concrete cracking, spalling and deflection.

Electromagnetic (EM) Inspection of Steel Pipe and Bar Wrapped Pipe

Pure Technologies' patented EM system can detect wall loss due to corrosion on the steel pipe and the steel cylinder of BWP, as well as the broken bars on BWP. It is reasonable to expect that the bars on BWP can be severely corroded but not yet broken. Since the EM system can only detect broken bars and not partially corroded bars, inspections where no broken bars are detected does not necessarily indicate that the pipe is structurally sound.

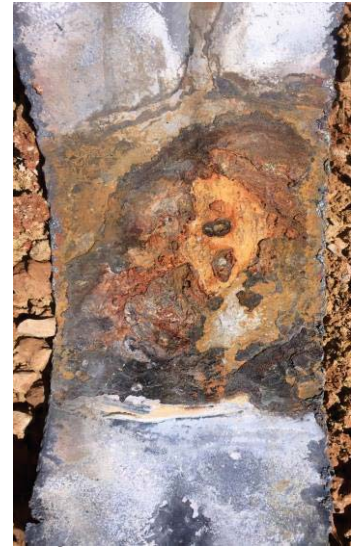
With BWP, corrosion can begin on the bar or on the cylinder. Although the EM system cannot detect corrosion alone, it can identify areas of corrosion that has resulted in significant wall loss, including large holes in the cylinder or areas where significant cylinder perforation has occurred. The size depends on the pipe class, diameter and number of detectors.

EM technology identifies regions of wall loss on the steel pipe/cylinder along the full alignment of a pipeline. An exciter coil generates an electromagnetic field that then diffuses into the pipe wall. If the pipe wall thickness is consistent (i.e. no wall loss), this field remains relatively constant as determined by signals captured by receiver coils on the delivery platform that are positioned around the internal circumference of the pipe.

In the presence of wall loss (corrosion), changes in the field are detected by the receiver coils and later identified as wall loss during the analysis of the data. EM inspections evaluate the electromagnetic signature over the pipe wall to identify anomalies that are produced by variations in the cylinder thickness due to wall loss or manufacturing defects. Various characteristics associated with an electromagnetic anomaly (length, magnitude, phase shift, etc.) are evaluated to provide an estimate of the size and depth of the anomaly.

The expected resolution of the EM inspection technology depends on the proximity of the detectors to the area of wall loss and the spacing of those sensors around the circumference of the pipe. For the 27-inch water supply line, the minimum defect size for detection is approximately 3-in x 3-in x 30% loss. This means that the pipe will be fully scanned circumferentially and longitudinally for defects this size and larger. It is possible that defects that are smaller than this will be detected if they pass directly under a detector.

Pure Technologies recommends a thorough validation and calibration process for any technology implemented over the course of the project. Test pits will serve to allow for external verification of wall thickness to validate the results of any inspection and provide an opportunity to further document the actual condition and environment of the pipeline. Direct access to the exterior of the pipe will also allow for the collection of soil or material samples, identification of issues with bedding or settlement, visual examination of the exterior coating and for wall thickness measurements to be taken.



20-inch steel cylinder identified by EM

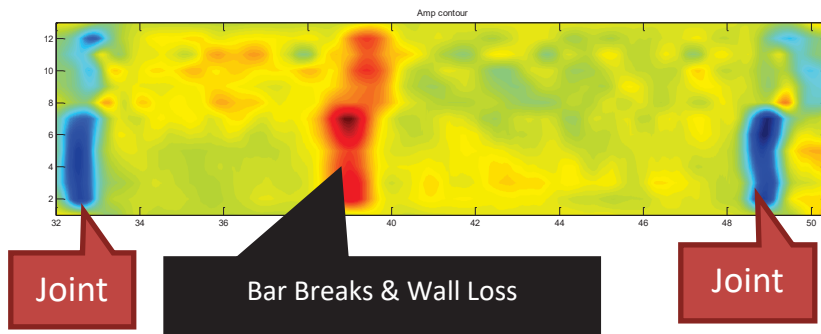


Figure 10. Bar Breaks/cylinder corrosion on BWP identified using EM Inspection

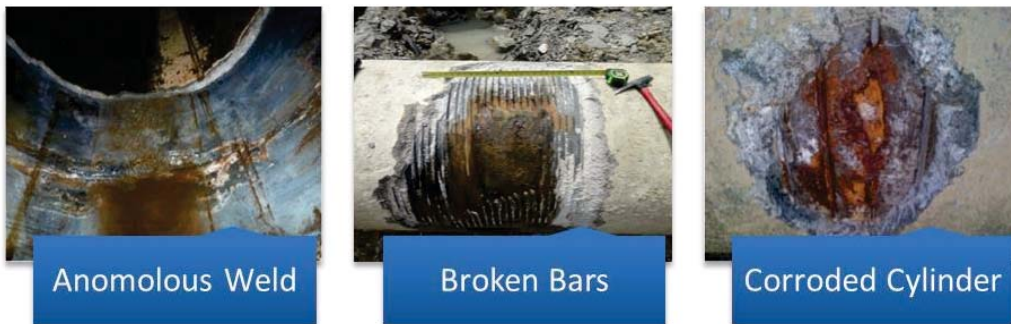


Figure 11. Examples of distressed bar wrapped pipe identified by EM inspection

Delivery Platforms for EM Inspection

The EM inspection technology can be deployed using one of three delivery platforms: manned cart, long-range multi-sensor robotic unit and/or a free-swimming PipeDiver® tool. Because manned cart applications can only be performed in pipe diameters 36-inch and larger, Pure Technologies is limited to conducting the electromagnetic inspection using the long-range robotic system and/or the free-swimming PipeDiver tool.

Free-Swimming PipeDiver

PipeDiver is a free-swimming device consisting of a battery module, electromagnetic exciter with multiple detectors (receivers), and a tracking module. The PipeDiver is typically deployed and captured under temporary de-pressurized conditions. Once inside the line, PipeDiver will travel with the water flow until it reaches a predetermined extraction point.

For the EM inspection of bar wrapped pipe, Pure Technologies utilizes two different PipeDiver EM configurations. A “24D” PipeDiver unit utilizes a 24-detector circumferential array designed to identify regions of wall loss on the steel cylinder of the BWP along the full alignment of a pipeline. A “Standard” PipeDiver utilizing a 6-detector array configured is used to identify and locate broken reinforcing bars on the 27-inch BWP water line.

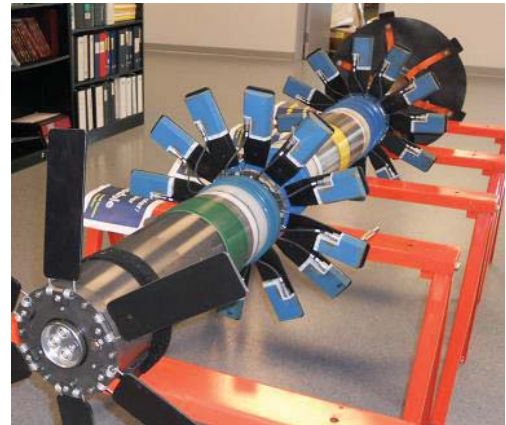


Figure 12. PipeDiver EM with 24-Detector

For the steel cylinder, an exciter coil generates an electromagnetic field that then diffuses into the pipe wall. If the pipe wall thickness is consistent (i.e. no wall loss), this field remains relatively constant as determined by signals captured by receiver coils on the delivery platform that are positioned around the internal circumference of the pipe.

In the presence of wall loss (corrosion), changes in the field are detected by the receiver coils and later identified as wall loss during the analysis of the data. EM inspections evaluate the electromagnetic signature over the pipe wall to identify anomalies that are produced by variations in the cylinder thickness due to wall loss or manufacturing defects. Various characteristics associated with an electromagnetic anomaly (length, magnitude, phase shift, etc.) are evaluated to provide an estimate of the size and depth of the anomaly.

The expected resolution of the EM inspection technology depends on the proximity of the detectors to the area of wall loss and the spacing of those sensors around the circumference of the pipe.

Tracking of the PipeDiver EM Tool

PipeDiver location is tracked from above ground using proprietary SBR tracking sensors (refer to discussion on SmartBall) attached to the pipe or accessible pipeline appurtenances. Verification as to the accessibility and acceptability for attaching at these locations is determined as part of our advanced site reconnaissance and preparation of the project planning document prior to performing any field work. In instances where reasonable locations for attachment of the tracking sensors is not available, access points that can be provided utilizing vacuum extraction methods to create an 8-inch access chamber to the surface of the exterior pipe wall.

Insertion and Extraction of the PipeDiver EM Tool

The PipeDiver will be inserted into the water line during a temporary shutdown of flow in the line. Once inserted into a force main, the PipeDiver will be held in place using a “lasso” configuration until such time that the required pressure and flow velocity are established; at which time the PipeDiver would be released.

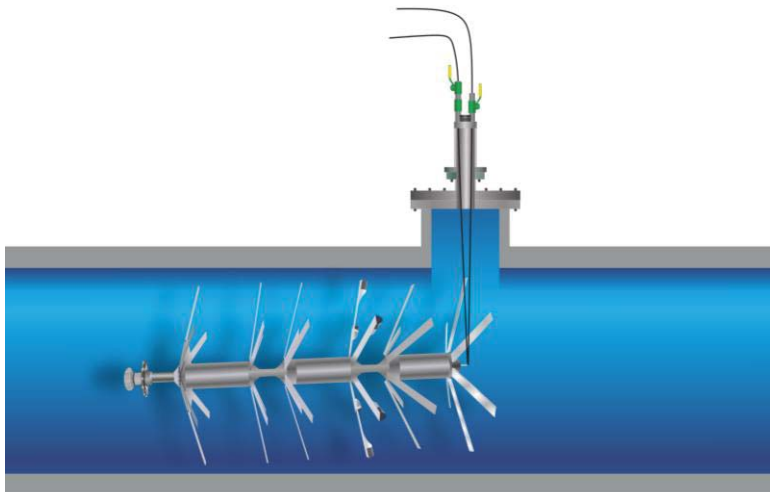


Figure 13: “Lasso” configuration used when deploying the PipeDiver under de-pressurized conditions.

To ensure reliability and repeatability of data collected by the 24D PipeDiver, Pure Technologies conducts two (2) inspection runs as standard operating procedure. Only one inspection run using the standard PipeDiver to assess reinforcing bars is required. A consistent flow velocity between 1 to 3 fps is typically acceptable when running the standard PipeDiver; *however, the 24D PipeDiver requires a consistent 1 fps flow velocity.*

A net that will stop the PipeDiver tool at the end of inspection can also be installed (during a brief shutdown and de-pressurization) into the pipeline to accommodate retrieval of the PipeDiver. Once the PipeDiver is captured in the net, a second depressurization is required to remove the tool and net from the pipeline through a minimum 16-inch access.

Figures 14 and 15 show a capture net and a configuration of the de-pressurized extraction net system.



Figure 14: Capture Net for de-pressurized extraction

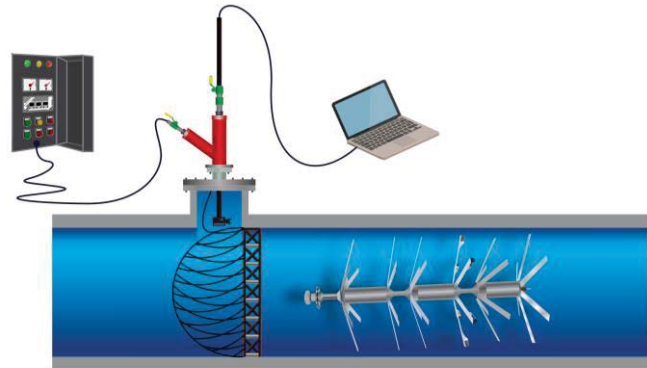


Figure 15: Configuration of de-pressurized extraction net system.

In addition to using the capture net, Pure Technologies can also capture the tool when it discharges to open atmosphere and coordinate with the pump operator to stop flow as the PpeDiver nears an extraction location and the unit can be retrieved by a remote operated vehicle.

Data Analysis and Reporting

Upon collection and verification of acceptable data for each run, Pure Technologies. Specialized data analysis will evaluate the data and identify distressed pipes and other anomalies. The analysis and reporting of the results typically take 12 to 14 weeks. In addition to proving all results in a detailed Excel spreadsheet for each pipe, Pure Technologies also presents the findings in a pipe-by-pipe geo-spatial GIS deliverable.

Long-Range Robotic EM Unit

Pure Technologies is also able to utilize our long-range, multi-sensor robotic delivery platform to perform electromagnetic inspection of the 27-inch water supply line. Photographs of the robotic unit equipped with the 24-detector array are presented in Figures 16 and 17 below.



Figure 16 and 17: Robotic unit equipped with 24-detector EM array.

The robotic unit is designed to operate in fully submerged conditions and can be equipped with a high-definition pan-tilt-zoom camera. It also can be equipped with multiple sensor technologies such as laser and SONAR profilers, as well as an inertial mapping unit capable of 3D mapping. As with the PipeDiver delivery platform, EM inspection of metallic pipelines requires two inspection passes to assure reliability and repeatability.

The robotic unit is equipped with a 9,000-foot tether; however, the actual inspected distance will vary depending on the pipeline configuration (i.e., in-line valves, bends, slopes, etc.) and interior pipeline condition (i.e., debris, sediment accumulation, bio-film, etc.).

The robotic unit requires a minimum 18-inch diameter access for deployment in a 27-inch pipeline. The quality of the high-definition pan-tilt-zoom camera will depend on the clarity in the water. The turbidity in raw water often prevents a clear viewing of the interior pipe wall.

Phase 5 – Design Check & Pipe Performance Risk Curve(s)

For the 27-inch BWP water supply line, Pure Technologies will conduct an evaluation of the existing pipe to verify that the pipe was manufactured in accordance with the design parameters established in AWWA Standard C303 at the time the pipe was manufactured, as well as compared to current C303 Standard.

While the electromagnetic inspection described herein will provide reliable data on reinforcing bar breaks and cylinder wall loss due to corrosion, *the challenge associated with assessing and managing distressed pipe is determining what level of distress (i.e., combination of broken reinforcing bars and cylinder corrosion) creates an unacceptable level of risk*, thereby requiring repair and/or replacement actions.

Pure Technologies uses 3D finite element analysis (FEA) to develop a structural model based on the pipe design and incorporating hydraulic evaluation data that provides a decision-making tool – “Pipe Performance Curve” - for the management of a bar wrapped pipe main.

Based on the Pipe Performance Curve results, distress in a pipe may be present, but this may not require the immediate rehabilitation or replacement of the pipe section allowing for management and/or monitoring deterioration.

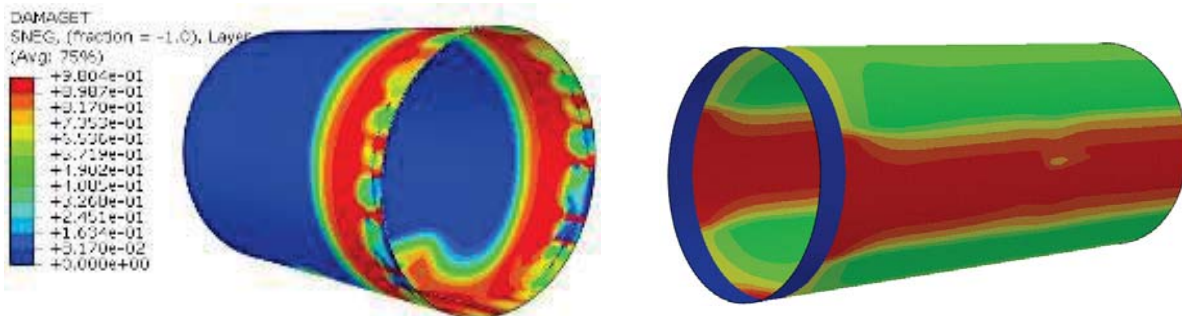


Figure 18: 3D FEA used to determine Pipe Performance Curves for each class of distressed pipe.

Pure Technologies can develop a Pipe Performance Curve for each design class of BWP that is found to be in distress. If the original pipe manufacturer’s design and lay drawings are not available, Pure Technologies can conduct a physical inspection of the pipe to measure reinforcing bar diameter and spacing, as well as the cylinder wall thickness (using non-destructive UT measurement).

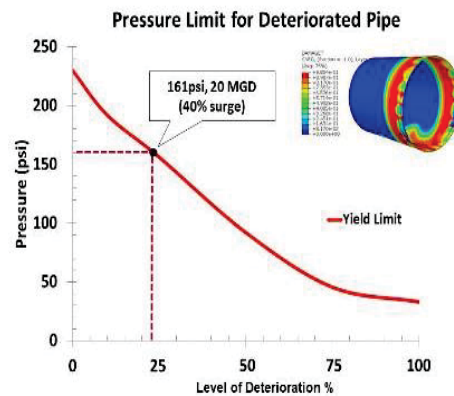


Figure 19. Example of a BWP Pipe Performance Curve

These curves can be used to determine how close a distressed pipe is relative to the yield and strength limits based on the operational and surge pressure identified using transient pressure monitoring. If no surge data is available, Pure Technologies can utilize the allowable design factor in AWWA C303.

Phase 6 - Report and Pipe-by-Pipe GIS Deliverable

Following completion of all field inspections and data analysis, Pure Technologies will submit a draft report presenting the results of the high-frequency pressure monitoring, the SmartBall leak and gas pocket inspection and the electromagnetic inspection.

The report will address the results of any high-frequency pressure monitoring that identifies any transient events and/or cyclical loading on the pipeline, along with the results from any subsequent investigations with the City to determine the cause of any pressure anomaly.

The report will identify the location of all leaks and/or gas (air) pockets identified by the SmartBall inspection, including the approximate size of the leak and/or length of the gas (air) pockets. Leaks are reported in terms of Small (9 to 2 gpm), medium (2 to 10 gpm) and large (greater than 10 gpm).

The report will list all pipes within a given pipeline including a description as to the extent of distress (i.e., bar breaks, wall loss, and miscellaneous anomalies) on each pipe. Any distress will be identified axially on the pipe. Wall loss will also be identified and displayed circumferentially on the pipe.

Should distressed pipes of concern be identified, Pure Technologies can utilize the Pipe Performance Curve(s) as may be applicable and evaluate distressed pipes to determine how close a distressed pipe is relative to the yield and strength limits based on the projected operational and surge pressure.

The draft report may also include recommendations for specific pipes to be repaired or replaced.

In addition to providing the electromagnetic results in a line item (by pipe) summary spreadsheet, the pipeline and corresponding EM inspection results will can be incorporated into a pipe-by-pipe geospatial GIS representation of the pipeline. All inspection information will then be associated with this pipeline representation and displayed via an ESRI Shapefile, geodatabase, KML or other geospatial format compatible with the Client's GIS or mapping system.



Figure 20: Geospatial GIS displays pipe-by-pipe location along with inspection results

After submittal of the draft report and receipt of comments or edits from the City of Denton, Pure Technologies will finalize the report and present to the City at a Workshop.

Phase 7 - External Inspection/Verification and Forensic Evaluation

Pure Technologies is available to assist in the external inspection and forensic analysis of pipes that are excavated and exposed by the City of Denton. Pure Technologies will furnish an Engineer to visually assess the exterior of the exposed pipe, including the exposed joints at each end to verify the presence of corrosion or other distress. Pure Technologies' engineer may sound the exterior cement coating to identify potential delamination of the exterior coating and will collect soil and groundwater (if present) samples adjacent to the pipe. If broken or corroded reinforcing bars are present and exposed, our engineer may also collect samples of the reinforcing bars and the exterior cement mortar. The engineer will also utilize UT technology to measure the thickness of the steel cylinder. All material samples will be sealed and held pending laboratory analysis on approval by the City. All findings will be included in a separate report.

Assessing the 27-inch Steel Water Supply Line

The following discussion addresses delivery platform alternatives and logistical support requirements that may be necessary to assure a successful condition assessment of the 27-inch raw water supply line.

Site Reconnaissance & Project Planning Document

Pure Technologies will require that the City of Denton provide personnel and equipment to accompany our project team during a site reconnaissance of the entire 27-inch water supply line. The City will need to afford Pure Technologies' personnel access to all appurtenances on the pipeline, including access manholes and air relief valves.

Pure Technologies requests that each of the air relief valves be assessed and repaired/replaced as necessary to insure operability in advance of the field inspections. Pure Technologies' Wachs Water Services Division is available to assess and repair/replace air relief valves. Any required materials and/or replacement air relief valves to be furnished by the City.

High-Frequency Pressure Monitoring

Pure Technologies will furnish and install a high-frequency pressure monitor on the pipeline near the pump station for a period of 30-days. The City will need to furnish a ¼-inch threaded outlet on which we can install the pressure monitoring unit. Pure Technologies will identify a potential access location as part of the site reconnaissance and project planning. If there is no readily available access, Pure Technologies may be able to provide the required access in conjunction with the adaptor utilized to insert the SmartBall tool.

SmartBall Leak & Gas Pocket Inspection

The City will need to furnish a minimum 4-inch access equipped with a 4-inch full bore valve or immediately downstream of the pump station via which to insert the SmartBall under live conditions. If there is no readily available access at the pump station Pure Technologies may be able to utilize the existing ARV at Station 00+80. The typical ARV configuration detailed in Freese and Nichols pipeline drawings show an 18-inch flange outlet on the top of the pipe with an 18-inch by 3-inch reducing flange that accommodated the ARV. The City will need to remove the existing reducing flange and replace with an 18-inch by 4-inch reducing flange equipped with a 4-inch full bore valve.

To extract the SmartBall, the City will also need to furnish a minimum 4-inch access equipped with a 4-inch full bore valve at the water treatment plant. If there is no readily available access at the water treatment plant Pure Technologies may be able to utilize the existing ARV at Station 424+80. The typical ARV configuration detailed in Freese and Nichols pipeline drawings show an 18-inch flange outlet on the top of the pipe with an 18-inch by 3-inch reducing flange that accommodated the ARV. The City will need to remove the existing reducing flange and replace with an 18-inch by 4-inch reducing flange equipped with a 4-inch full bore valve.

Based on review of the plan and profile drawings, there appears to be enough existing ARV's and access manhole to provide adequate tracking locations. Pure Technologies will confirm the appropriate tracking locations as part of the site reconnaissance and project planning document. Should we determine the need for any pothole excavation, Pure Technologies will advise the City accordingly.

Electromagnetic Inspection

The City has the option as to which delivery platform Pure Technologies can use to conduct an electromagnetic inspection of the 27-inch raw water supply line. The fee schedule presented herein accommodates pricing for each option.

Pure Technologies had utilized the Robotic EM unit when assessing the City's 30-inch raw water supply line in 2017. Using the Robotic unit to inspect the 27-inch water supply line will require that the supply line be removed from service for an extended time, and that the pipeline be dewatered at insertion locations. The City will also need to remove existing appurtenances and blind flanges at selected access locations (i.e., ARV's and Access Manholes) and replace said configurations on completion of inspections. Pure Technologies will also request that the City provide lifting equipment to assist in placing the robotic unit into the pipeline at each inspection access. Based on our preliminary review of the drawings, it appears that there are sufficient 18-inch outlets to accommodate robotic inspection of the entire water supply line.

The PipeDiver EM tool should be able to inspect the entire line via single deployments. Three (3) runs will be required. As described earlier for deployment of the SmartBall, the PipeDiver could be inserted via the existing ARV access located at Station 00+80 and extracted at the existing ARV located at Station 424+80. The City will need to maintain a consistent flow velocity of 1 foot per second (fps) throughout the entire run. Based on the 8.5-mile length of pipeline, we estimate each inspection run to take approximately 10 hours. Please note that the PipeDiver inspection would not capture data on portion of the water supply line between the pump station and Station 00+80 or between Station 424+80 and into the water treatment plant. Pure Technologies can address these portions of the pipeline using the Robotic EM unit.

City of Denton Responsibilities

1. Notification to landowners as required.
2. Provide personnel familiar with the pipeline system available during site reconnaissance and field work and to accompany Pure Technologies personnel.
3. Provide access for insertion and retrieval of SmartBall, Robotic and/or PipeDiver inspection technologies, as well as access to attach the tracking sensors.
4. Provide access for deployment and retrieval of technologies, and placement of the tracking sensors.
5. Provide Traffic Control. Pure Technologies can perform this task as part of our contract if requested.
6. Shut down pumps and de-pressurize the line for an extended time to accommodate deployment of the Robotic unit or temporary periods to accommodate insertion and extraction of the of the PipeDiver EM tool. Project will require two (2) shutdowns per PipeDiver inspection run (3 inspection runs); total of 6 temporary shutdowns).
7. Assess the working condition of all in-line and lateral valves prior to the inspection. Repair valves as necessary. Close all lateral valves during all inspection. Pure Technologies' Wachs Water Services Division is available to perform all work related to the assessment and management of the valves if requested.
8. As needed, furnish and operate lifting equipment to assist in placing the Robotic EM and/or PipeDiver EM tool into, and removing from, the pipeline.
9. Provide threaded outlet for high frequency pressure monitor.
10. Requirements and permits for disposal of water resulting from any de-watering.
11. If required, provide excavation/backfill of pipes selected for test pit excavations and field verification. Also provide air compressor and generator.
12. Repair/rehabilitation of pipe(s) as needed.
13. If deemed necessary, provide 8-inch vacuum extraction potholes at selected locations to allow for attachment of the tracking sensors to the crown of the pipe.

Fee Schedule

Projected fee schedule for the Comprehensive Condition Assessment of the 27-inch raw water supply line using the Robotic EM delivery Platform and the SmartBall is presented below:

27-inch BWP Raw Water Supply Line (Robotic EM and Leaks & Gas Pockets):

Task	Total
Site Reconnaissance and Project Planning Document	
High Frequency Pressure Monitoring (One Unit for ~30 days)	
SmartBall Set-Up/Mobilization/Demobilization/Travel/Equipment Fee/Shipping	
SmartBall Insertion/Tracking/Retrieval/Data Analysis	
Robotic EM Set-Up/Mobilization/Demobilization/Travel/Equipment Fee/Shipping	
Robotic EM Insertion/Tracking/Retrieval/Data Analysis	
Pipe Performance Curves	
Design Check and Report	
Pipe-by-Pipe GeoSpatial GIS Deliverable	
Projected Total (Robotic EM)	\$492,000.00
Projected Total (Leaks & Gas Pockets)	\$120,000.00

Additional Notes:

1. All pricing is based on performing field work under a single mobilization for each inspection technology and in a contiguous manner without delays. Stand-by rates for delays caused by others for SmartBall inspection shall be billed at \$6,500 per day and re-mobilization to be billed at \$20,000 each. Stand-by rates for delays caused by others for the Robotic EM inspection shall be billed at \$15,500 per day and re-mobilization to be billed at \$47,500 each.
2. Results of the SmartBall inspection will be available within 4 to 6 weeks following completion of the field inspection. Results of the EM inspection will be available within 14 to 16 weeks following completion of the field inspection.

3. Condition assessment report including design check and pipe performance curve to be submitted within two (2) weeks following receipt of EM inspection data.
4. Billing Schedule:

Task	Billing Schedule
Site Reconnaissance & Planning Document	100% upon delivery of planning document
SmartBall Set-Up and Mobilization	100% upon site mobilization
SmartBall Field Inspection	100% upon completion of field work
EM Inspection Set-Up and Mobilization	100% upon site mobilization
EM Field Inspection	100% upon completion of field work
High-Frequency Pressure Monitoring	100% on delivery of draft report
Design Check and Report	100% on delivery of draft report
Performance Curves	100% on delivery of curves
Pipe-by-Pipe GIS Deliverable	100% on delivery of GIS shapefile

5. Payment Terms: Net 30 days.
6. Fees do not include any local, state or federal taxes.
7. All work to be conducted in accordance with the attached Terms of Condition.

Pure Technologies appreciates this opportunity to present our technologies and engineering services in support of the City of Denton's assessment of the 27-inch BWP Raw Water Supply Lines. If you have any questions, please call me at (214) 240-4412.

Respectfully submitted,

PURE TECHNOLOGIES US INC.



Clayton Coe

Attachment A: Conditions of Engagement

The Proposal is issued upon and is subject to these Conditions of Engagement. If the Proposal is accepted by the Client, these Conditions of Engagement and the Proposal will be deemed to form part of the Contract between the Client and Pure.

1. DEFINITIONS: In these Conditions of Engagement the following definitions apply:

Client	means any person or persons, firm or company engaging Pure to provide the Services.
Contract	means the agreement awarded to Pure as a result of the Proposal.
Pure	means Pure Technologies Ltd., Pure Technologies U.S. Inc., Pure Engineering Services Inc., or any of their affiliates, as the case may be, which submitted the Proposal and is a party to the Contract.
Proposal	means Pure's offer to carry out the Services and includes all related correspondence plus agreed written variations or amendments thereto.
Services	mean those services of whatever nature to be supplied by Pure under the Contract.
Site	means the facility, land, installation or premises to which Pure is granted access for the purposes of the Contract and may include any combination of the foregoing.

2. PURE'S OBLIGATIONS

- 2.1 Pure will perform the Services in accordance with the procedures described in the Proposal, using reasonable skill, care and diligence and consistent with industry standards.
- 2.2 Pure will ensure that the equipment used in performing the Services is in a good and functional state.

3. CLIENT'S OBLIGATIONS

- 3.1 The Client will provide to Pure full, good faith co-operation to assist Pure in providing the Services. Unless otherwise specified in the Proposal and without limiting the generality of the foregoing, the Client will at its own expense:
 - (i) ensure, if required, access to private land will be given to Pure and that any official permits or permissions required for Pure to have access to the Site or carry out the Services are obtained and are in force for the duration of the Services;
 - (ii) inform Pure in writing of any special circumstances or danger which the execution of the Services may entail or which are inherent in the Site, including the existence and identity of any known hazardous substance or material;

(iii) perform such additional duties and responsibilities and provide such information and resources as are described in the Proposal.

3.2 The description of the Services and related compensation amount set out in the Proposal will be based upon information that the Client shall have provided to Pure, and assumptions that Pure shall have identified in the Proposal. The Client acknowledges that if any such information provided by Client is materially incomplete or inaccurate, or if the assumptions identified by Pure are not correct, then the parties will modify the Proposal to reflect the actual information, assumptions, and Services required, and the compensation to Pure will be adjusted accordingly using the change order process set out in the Contract, or if there is no such process, on an equitable basis.

4. PROPRIETARY AND CONFIDENTIAL INFORMATION

4.1 All reports generated in the performance of the Services and delivered by Pure to the Client will become the property of the Client.

4.2 Pure's equipment which is made available to the Client in connection with the Contract and the raw data generated in the performance of the Services will remain the sole and exclusive property of Pure. The Client will not acquire any proprietary rights in Pure's equipment, systems, software, technology, inventions (whether or not patentable), patents, patent applications, documentation, specifications, designs, data, databases, methods, processes or know-how ("Pure's Proprietary Technology"). Any modifications or improvements to the Pure's Proprietary Technology made during the performance of the Services will be the sole and exclusive property of Pure.

4.3 Both parties agree to keep confidential all documentation and information provided by the other during the performance of the Contract. The obligations set out in this clause 4.3 will remain in full force and effect after any termination or expiry, as the case may be, of the Contract.

5. LIABILITY AND WARRANTIES

5.1 Pure will indemnify the Client against any expense, demand, liability, loss, claim or proceeding whatsoever in respect of personal injury to or the death of any person, or any loss, destruction or damage to any tangible property and arising directly or indirectly from the negligence of Pure, its employees, servants or agents except to the extent caused by the negligence of the Client or any person for whom the Client is responsible. The Client will similarly indemnify Pure.

5.2 Pure will not be liable for any loss of production, loss of use of property, loss of revenue or profit, equipment downtime, business interruption, loss of goodwill, loss of anticipated savings, cost of procurement of substitute goods or services, or for any consequential, indirect, incidental, or special loss or damage suffered by the Client or

any third party, or for any punitive damages, even if advised of the possibility thereof and notwithstanding the failure of essential purpose of any remedy.

- 5.3 Pure's cumulative liability under the Contract, whether in contract, tort (including negligence), or otherwise, will in no event exceed the aggregate consideration paid by the Client to Pure for the portion of the Services that gave rise to the liability, provided, however, that this clause 5.3 shall not limit Pure's indemnification obligations under these Conditions of Engagement.
- 5.4 The report(s) and any other recommendations or advice made by Pure relating to the pipeline or the Services will be made in accordance with the procedures described in the Proposal, using reasonable skill, care and diligence consistent with industry standards, but do not and will not constitute a warranty of the pipeline's quality, capacity, safety or fitness for purpose. Pure will not be liable to the Client for any liability or damages that arise from the Client's reliance upon or application or use of such final report or recommendations or advice made by Pure in relation to the pipeline or Services, and the Client will indemnify Pure against any liability to third parties resulting therefrom.
- 5.5 Pure's warranties for the Services will be set out in the Contract. Pure disclaims all implied or statutory warranties or conditions, including of merchantability, merchantable quality, durability, or fitness for particular purpose to the extent allowed by applicable law. This means Pure's warranty obligations will be limited to what is expressly set out in the Contract.

6. RISKS AND RESPONSIBILITIES

- 6.1 Prior to commencing any field activities, Pure will provide the Client with a planning document outlining the full scope and schedule of Pure's inspection activities. Contained therein is a description of any risks and the responsibilities of PURE and the Client regarding risk mitigation, risk consequences, and schedule deviations. Acceptance of this proposal and general terms constitutes acceptance of risks and responsibilities as set forth in the planning document. Any amendment to the risks and responsibilities as set forth in the planning document should be notated in writing and will be agreed to by both parties prior to commencement of field inspections.

Exhibit C

Bidder's attention is directed to the insurance requirements below. It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of Bid submission the availability of insurance certificates and endorsements as prescribed and provided herein. If an apparent low bidder fails to comply strictly with the insurance requirements, that bidder may be disqualified from award of the contract. Upon bid award, all insurance requirements shall become contractual obligations, which the successful bidder shall have a duty to maintain throughout the course of this contract.

STANDARD PROVISIONS:

Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall provide and maintain until the contracted work has been completed and accepted by the City of Denton, Owner, the minimum insurance coverage as indicated hereinafter.

*As soon as practicable after notification of bid award, Contractor shall file with the Purchasing Department satisfactory certificates of insurance, containing the bid number and title of the project. Contractor may, upon written request to the Purchasing Department, ask for clarification of any insurance requirements at any time; however, Contractors are strongly advised to make such requests prior to bid opening, since the insurance requirements may not be modified or waived after bid opening unless a written exception has been submitted with the bid. **Contractor shall not commence any work or deliver any material until he or she receives notification that the contract has been accepted, approved, and signed by the City of Denton.***

All insurance policies proposed or obtained in satisfaction of these requirements shall comply with the following general specifications, and shall be maintained in compliance with these general specifications throughout the duration of the Contract, or longer, if so noted:

- Each policy shall be issued by a company authorized to do business in the State of Texas with an A.M. Best Company rating of at least **A- VII or better**.
- Any deductibles or self-insured retentions shall be declared in the bid proposal. If requested by the City, the insurer shall reduce or eliminate such deductibles or self-insured retentions with respect to the City, its officials, agents, employees and volunteers; or, the contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.
- Liability policies shall be endorsed to provide the following:

- Name as additional insured the City of Denton, its Officials, Agents, Employees and volunteers.
- That such insurance is primary to any other insurance available to the additional insured with respect to claims covered under the policy and that this insurance applies separately to each insured against whom claim is made or suit is brought. The inclusion of more than one insured shall not operate to increase the insurer's limit of liability.
- Provide a Waiver of Subrogation in favor of the City of Denton, its officials, agents, employees, and volunteers.
- ***Cancellation: City requires 30 day written notice should any of the policies described on the certificate be cancelled before the expiration date.***
- Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the term of this contract and, without lapse, for a period of three years beyond the contract expiration, such that occurrences arising during the contract term which give rise to claims made after expiration of the contract shall be covered.
- Should any of the required insurance be provided under a form of coverage that includes a general annual aggregate limit providing for claims investigation or legal defense costs to be included in the general annual aggregate limit, the Contractor shall either double the occurrence limits or obtain Owners and Contractors Protective Liability Insurance.
- Should any required insurance lapse during the contract term, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this contract, effective as of the lapse date. If insurance is not reinstated, City may, at its sole option, terminate this agreement effective on the date of the lapse.

SPECIFIC ADDITIONAL INSURANCE REQUIREMENTS:

All insurance policies proposed or obtained in satisfaction of this Contract shall additionally comply with the following marked specifications, and shall be maintained in compliance with these additional specifications throughout the duration of the Contract, or longer, if so noted:

[X] A. General Liability Insurance:

General Liability insurance with combined single limits of not less than **\$1,000,000.00** shall be provided and maintained by the Contractor. The policy shall be written on an occurrence basis either in a single policy or in a combination of underlying and umbrella or excess policies.

If the Commercial General Liability form (ISO Form CG 0001 current edition) is used:

- Coverage A shall include premises, operations, products, and completed operations, independent contractors, contractual liability covering this contract and broad form property damage coverage.
- Coverage B shall include personal injury.
- Coverage C, medical payments, is not required.

If the Comprehensive General Liability form (ISO Form GL 0002 Current Edition and ISO Form GL 0404) is used, it shall include at least:

- Bodily injury and Property Damage Liability for premises, operations, products and completed operations, independent contractors and property damage resulting from explosion, collapse or underground (XCU) exposures.
- Broad form contractual liability (preferably by endorsement) covering this contract, personal injury liability and broad form property damage liability.

[X] Automobile Liability Insurance:

Contractor shall provide Commercial Automobile Liability insurance with Combined Single Limits (CSL) of not less than \$500,000.00 either in a single policy or in a combination of basic and umbrella or excess policies. The policy will include bodily injury and property damage liability arising out of the operation, maintenance and use of all automobiles and mobile equipment used in conjunction with this contract.

Satisfaction of the above requirement shall be in the form of a policy endorsement for:

- any auto, or
- all owned, hired and non-owned autos.

[X] Workers' Compensation Insurance

Contractor shall purchase and maintain Worker's Compensation insurance which, in addition to meeting the minimum statutory requirements for issuance of such insurance, has Employer's Liability limits of at least \$100,000 for each accident, \$100,000 per each employee, and a \$500,000 policy limit for occupational disease. The City need not be named as an "Additional Insured" but the insurer shall agree to waive all rights of subrogation against the City, its officials, agents, employees and volunteers for any work performed for the City by the Named Insured. For building or construction projects, the Contractor shall comply with the provisions of Attachment 1 in accordance with §406.096 of the Texas Labor Code and rule 28TAC 110.110 of the Texas Worker's Compensation Commission (TWCC).

Owner's and Contractor's Protective Liability Insurance

The Contractor shall obtain, pay for and maintain at all times during the prosecution of the work under this contract, an Owner's and Contractor's Protective Liability insurance policy naming the City as insured for property damage and bodily injury which may arise in the prosecution of the work or Contractor's operations under this contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the Contractor's liability insurance. Policy limits will be at least combined bodily injury and property damage per occurrence with a _____ aggregate.

Professional Liability Insurance

Professional liability insurance with limits not less than \$1,000,000 per claim with respect to negligent acts, errors or omissions in connection with professional services is required under this Agreement.

Builders' Risk Insurance

Builders' Risk Insurance, on an All-Risk form for 100% of the completed value shall be provided. Such policy shall include as "Named Insured" the City of Denton and all subcontractors as their interests may appear.

Commercial Crime

Provides coverage for the theft or disappearance of cash or checks, robbery inside/outside the premises, burglary of the premises, and employee fidelity. The employee fidelity portion of this coverage should be written on a "blanket" basis to cover all employees, including new hires. This type insurance should be required if the contractor has access to City funds. Limits of not less than _____ each occurrence are required.

Additional Insurance

Other insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional insurance is required for a specific contract, that requirement will be described in the "Specific Conditions" of the contract specifications.

ATTACHMENT 1

[] Workers' Compensation Coverage for Building or Construction Projects for Governmental Entities

A. Definitions:

Certificate of coverage ("certificate")-A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in §406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

B. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.

C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

D. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

- 1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

- 2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
- 1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - 2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - 3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 4) obtain from each other person with whom it contracts, and provide to the contractor:
 - a) certificate of coverage, prior to the other person beginning work on the project; and
 - b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - 6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that

materially affects the provision of coverage of any person providing services on the project; and

- 7) Contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.
-
- J. By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
 - K. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

Exhibit CIQ

CONFLICT OF INTEREST QUESTIONNAIRE - FORM CIQ

For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local government entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

1 Name of vendor who has a business relationship with local governmental entity. PURE TECHNOLOGIES U.S. INC.

2 Check this box if you are filing an update to a previously filed questionnaire.

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information in this section is being disclosed.

N/A

Name of Officer

This section, (item 3 including subparts A, B, C & D), must be completed for each officer with whom the vendor has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes

No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

Yes

No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of one percent or more?

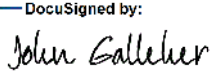
Yes

No

D. Describe each employment or business and family relationship with the local government officer named in this section.

N/A

4 I have no Conflict of Interest to disclose.

5 DocuSigned by:

 337E38580B51448... business with the governmental entity

8/3/2020

Date

Certificate Of Completion


Envelope Id: 55462D67AA36492B885C598AFA2BCA56	Status: Completed
Subject: Please DocuSign: City Council Contract 7347-Lake Lewisville Pipeline Condition Assessment	
Source Envelope:	
Document Pages: 50	Signatures: 6
Certificate Pages: 6	Initials: 1
AutoNav: Enabled	Envelope Originator:
Enveloped Stamping: Enabled	Crystal Westbrook
Time Zone: (UTC-06:00) Central Time (US & Canada)	901B Texas Street
	Denton, TX 76209
	crystal.westbrook@cityofdenton.com
	IP Address: 198.49.140.104

Record Tracking

Status: Original	Holder: Crystal Westbrook	Location: DocuSign
7/14/2020 10:27:29 AM	crystal.westbrook@cityofdenton.com	

Signer Events


Signer Events	Signature	Timestamp
Crystal Westbrook crystal.westbrook@cityofdenton.com Buyer City of Denton Security Level: Email, Account Authentication (None)	Completed Using IP Address: 198.49.140.104	Sent: 7/14/2020 10:30:48 AM Viewed: 7/14/2020 10:31:29 AM Signed: 7/14/2020 10:32:48 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

Lori Hewell lori.hewell@cityofdenton.com Purchasing Manager City of Denton Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.10	Sent: 7/14/2020 10:32:50 AM Viewed: 7/15/2020 7:37:40 AM Signed: 7/15/2020 7:39:23 AM
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Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Mack Reinwand mack.reinwand@cityofdenton.com City of Denton Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.104	Sent: 7/15/2020 7:39:25 AM Viewed: 7/22/2020 3:57:38 PM Signed: 7/22/2020 4:01:11 PM
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Electronic Record and Signature Disclosure:
Not Offered via DocuSign

John Galleher john.galleher@xylem.com Vice President Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 72.199.84.85	Sent: 7/22/2020 4:01:14 PM Resent: 7/29/2020 7:42:12 AM Viewed: 7/29/2020 2:31:21 PM Signed: 8/3/2020 10:40:39 AM
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Electronic Record and Signature Disclosure:
Accepted: 7/29/2020 2:31:21 PM
ID: 631418ef-5b80-410a-a8d0-ebf1d26af553

Signer Events	Signature	Timestamp
<p>Frank Pugsley frank.pugsley@cityofdenton.com Water and Wastewater Utilities Director City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Accepted: 8/3/2020 11:37:05 AM ID: ffde92bb-feb3-44e1-9b1d-07a4fec05b07</p>	<p>DocuSigned by: <i>Frank Pugsley</i> 22943FE13318483...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.10</p>	<p>Sent: 8/3/2020 10:40:42 AM Viewed: 8/3/2020 11:37:05 AM Signed: 8/3/2020 11:37:37 AM</p>
<p>Cheyenne Defee cheyenne.defee@cityofdenton.com Contract Administrator City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<p>Completed</p> <p>Using IP Address: 198.49.140.104</p>	<p>Sent: 8/3/2020 11:37:40 AM Viewed: 8/27/2020 8:50:20 AM Signed: 8/27/2020 8:51:03 AM</p>
<p>Todd Hileman Todd.Hileman@cityofdenton.com City Manager City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Accepted: 7/25/2017 11:02:14 AM ID: 57619fbf-2aec-4b1f-805d-6bd7d9966f21</p>	<p>DocuSigned by: <i>Todd Hileman</i> B776C711BA0D454...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 47.184.93.41</p>	<p>Sent: 8/27/2020 8:51:06 AM Viewed: 8/27/2020 9:42:06 AM Signed: 8/27/2020 9:42:11 AM</p>
<p>Rosa Rios rosa.rios@cityofdenton.com City Secretary Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Accepted: 8/27/2020 10:37:05 AM ID: dd6e766f-8617-4acf-bb3b-10d0a0c9dd40</p>	<p>DocuSigned by: <i>Rosa Rios</i> 1C5CA8C5E175493...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.10</p>	<p>Sent: 8/27/2020 9:42:14 AM Viewed: 8/27/2020 10:37:05 AM Signed: 8/27/2020 10:37:29 AM</p>

Person Signer Events	Signature	Timestamp
Editor Deliver Events	Status	Timestamp
Agent Deliver Events	Status	Timestamp
Intermediar Deliver Events	Status	Timestamp
Certified Deliver Events	Status	Timestamp
Car on Cop Events	Status	Timestamp
<p>Cheyenne Defee cheyenne.defee@cityofdenton.com Contract Administrator City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure:</p>	<p style="text-align: center; border: 2px solid blue; padding: 10px;">COPIED</p>	<p>Sent: 7/14/2020 10:32:49 AM</p>

Carion Cop Events	Status	Timestamp
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<p>Not Offered via DocuSign</p> <p>Sherri Thurman sherri.thurman@cityofdenton.com City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 1px solid blue; padding: 5px; width: fit-content; margin: 0 auto;"> COPIED </div>	<p>Sent: 8/3/2020 11:37:39 AM</p>
<p>Zolaina Parker Zolaina.Parker@cityofdenton.com City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 1px solid blue; padding: 5px; width: fit-content; margin: 0 auto;"> COPIED </div>	<p>Sent: 8/27/2020 10:37:32 AM</p>
<p>Stephen Moore stephen.moore@cityofdenton.com Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 1px solid blue; padding: 5px; width: fit-content; margin: 0 auto;"> COPIED </div>	<p>Sent: 8/27/2020 10:37:33 AM Viewed: 8/27/2020 10:39:00 AM</p>

Fitness Events	Signature	Timestamp
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Motor Events	Signature	Timestamp
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Envelope Summary Events	Status	Timestamps
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Envelope Sent	Hashed/Encrypted	8/27/2020 10:37:33 AM
Certified Delivered	Security Checked	8/27/2020 10:37:33 AM
Signing Complete	Security Checked	8/27/2020 10:37:33 AM
Completed	Security Checked	8/27/2020 10:37:33 AM

Payment Events	Status	Timestamps
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Electronic Record and Signature Disclosure
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Required hardware and software

Operating Systems:	Windows2000? or WindowsXP?
Browsers (for SENDERS):	Internet Explorer 6.0? or above
Browsers (for SIGNERS):	Internet Explorer 6.0?, Mozilla FireFox 1.0, NetScape 7.2 (or above)
Email:	Access to a valid email account
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	<ul style="list-style-type: none"> •Allow per session cookies •Users accessing the internet behind a Proxy Server must enable HTTP 1.1 settings via proxy connection

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