

BILL NO. 25-45

ORDINANCE NO. 25.45

AN ORDINANCE OF THE CITY OF OSAGE BEACH, MISSOURI, AUTHORIZING THE MAYOR TO EXECUTE A CONTRACT WITH MCKIM & CREED FOR THE EAST SYSTEM LEAKE SURVEY OR PROJECT FOR AN AMOUNT NOT TO EXCEED \$20,000.

BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF OSAGE BEACH, MISSOURI, AS FOLLOWS:

Section 1. The Board of Aldermen hereby authorizes the Mayor to execute on behalf of the City a contract with McKim & Creed under substantially the same or similar terms and conditions as set forth in "Exhibit A".

Section 2. Total expenditures or liability authorized under this Ordinance shall not exceed Twenty Thousand Dollars. (\$20,000.00)

Section 3. The City Administrator is hereby authorized to take such further actions as are necessary to carry out the intent of this Ordinance and Contract.

Section 4. This Ordinance shall be in full force and effect from date of passage and approval by the Mayor.

READ FIRST TIME: May 1, 2025

READ SECOND TIME: May 15, 2025

I hereby certify that the above Ordinance No. 25.45 was duly passed on May 15, 2025, by the Board of Aldermen of the City of Osage Beach. The votes thereon were as follows:

Ayes: 5

Nays: 0

Abstain: 0

Absent: 1

This Ordinance is hereby transmitted to the Mayor for his signature.

May 15, 2025
Date

Tara Berreth
Tara Berreth, City Clerk

Approved as to form:

Cole Bradbury
Cole Bradbury, City Attorney

I hereby approve Ordinance No. 25.45.

May 15, 2025
Date

Michael Harmison
Michael Harmison, Mayor

ATTEST:

Tara Berreth
Tara Berreth, City Clerk

**Bid Tabulation
East System Leak Survey
Project No. OB25-002
April 11, 2025**



City of Osage Beach
1000 City Parkway • Osage Beach, MO 65065
Phone [573] 302-2000 • Fax [573] 302-0528 • www.OsageBeach.org

Page 1

Item	Description	Unit	Quantity	Engineer's Estimate		McKim & Creed		M.E. Simpson Co., Inc.	
				Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)
1	Line Item No. 0001 Project Lump Sum	LS	1	\$60,000.00	\$ 60,000.00	\$ 20,000.00	\$ 20,000.00	\$ 44,900.00	\$ 44,900.00
TOTAL BASE BID					\$ 60,000.00		\$ 20,000.00		\$ 44,900.00



Professional Services Bid

OSAGE BEACH LEAK SURVEY

HARD COPY

APRIL 11, 2025

SUBMITTED TO:

OSAGE BEACH

City Hall, 1000 City Parkway
Osage Beach, Missouri 65065
573 302 2020x2008

SUBMITTED BY:

MCKIM & CREED

Wilmington, NC



April 11, 2025

Caleb Devore, Public Works Water Foreman
OSAGE BEACH
City Hall, 1000 City Parkway, Osage Beach, Missouri 65065
573.302.2020x2008



RE: IFB: Osage Beach Leak Detection

Dear Mr. DeVore and Members of the Selection Committee:

McKim & Creed, Inc. demonstrates a robust capability to perform watermain leak detection and locating services, leveraging their extensive experience and advanced technology. The company employs a comprehensive approach that integrates acoustic leak detection methodologies, which have been refined over years of practice to ensure precise and reliable results. Our team of certified technicians is trained to use state-of-the-art equipment, such as acoustic noise loggers and ground microphones, to accurately pinpoint leaks. This expertise is complemented by their ability to conduct non-invasive internal pipe inspections, which minimizes disruption and maximizes efficiency. McKim & Creed's commitment to quality is evident in their adherence to the best practices outlined in the AWWA Manual of Water Supply Services and their rigorous quality assurance processes. Our track record includes successful projects across various municipalities, where they have significantly reduced water loss and improved operational performance, underscoring their capability to deliver high-quality leak detection services.

The Leak Survey project for Osage Beach is designed to enhance the utilities infrastructure management through precise and timely identification of watermain leaks.

Key deliverables include weekly detailed reports and an annual summary table, providing comprehensive data on detected leaks, including their location, type, and recommended actions. This project aims to support Osage Beach in maintaining a robust and efficient water infrastructure, ensuring public safety and resource conservation.

Please know that the McKim & Creed staff is worthy, capable and thanks you for the opportunity to submit our proposal for consideration.

Sincerely,

McKim & Creed, Inc.

Tony Popolo

Operations Director

E: apopolo@mckimcreed.com

P: 910.274.5095

INDUSTRY RANKINGS



#155

TOP 500
DESIGN FIRM
[ENR]



#141

TOP 200
ENVIRONMENTAL
FIRM [ENR]



#62

TOP MID-ATLANTIC
DESIGN FIRM
[ENR]



#8

TOP TRENCHLESS
TECHNOLOGY FIRM



Osage Beach, Missouri

WATERMAIN LEAK DETECTION AND LOCATING SERVICES



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FIRM OVERVIEW

1 Firm Overview

► WHO WE ARE & WHAT WE DO

We are an **employee-owned engineering** and surveying firm of people helping people solve complex, demanding infrastructure challenges. Our proven integrated approach leverages national and localized subject matter experts who can provide fresh ideas based on lessons learned from a wide array of clients, while still being available to support you at a moment's notice.

Our technical specialties include civil, instrumentation & controls, electrical, mechanical, and structural engineering; industrial design-build services; airborne and mobile LiDAR/scanning; unmanned aerial systems; subsurface utility engineering; and hydrographic and conventional surveying services for the energy, transportation, federal, land development, water, and building markets.

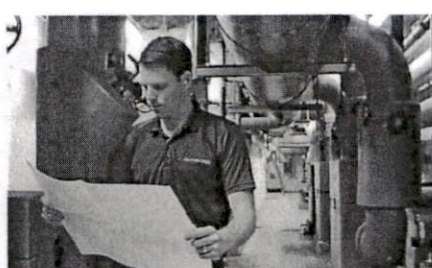
OUR DIVERSITY OF SERVICES RESULTS IN EFFECTIVE SOLUTIONS:



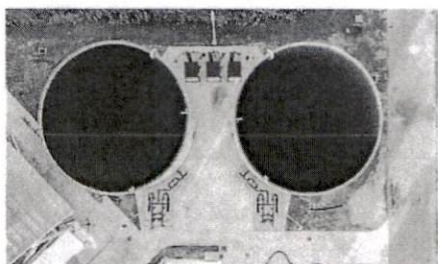
WATER ASSET MANAGEMENT



GEOSPATIAL



MECHANICAL, ELECTRICAL, PLUMBING

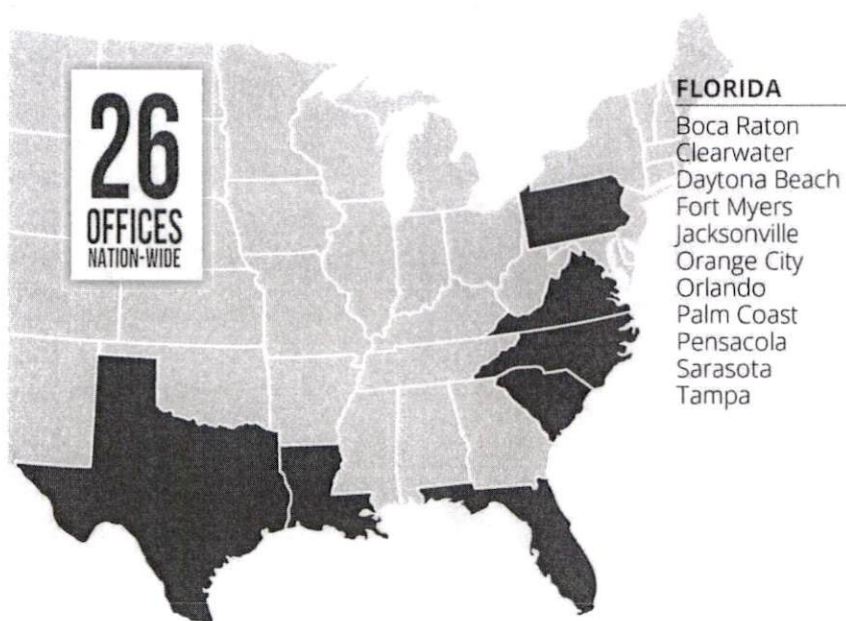


WATER AND WASTEWATER



DESIGN-BUILD

**OUR PASSION TO HELP OTHERS
MOTIVATES US TO MAKE A
DIFFERENCE.**



FLORIDA

Boca Raton
Clearwater
Daytona Beach
Fort Myers
Jacksonville
Orange City
Orlando
Palm Coast
Pensacola
Sarasota
Tampa

TEXAS

Austin
Dallas-Fort
Worth
Houston
Stafford

VIRGINIA

Norfolk
Charlottesville

PENNSYLVANIA

Pittsburgh
Sewickley

N. CAROLINA

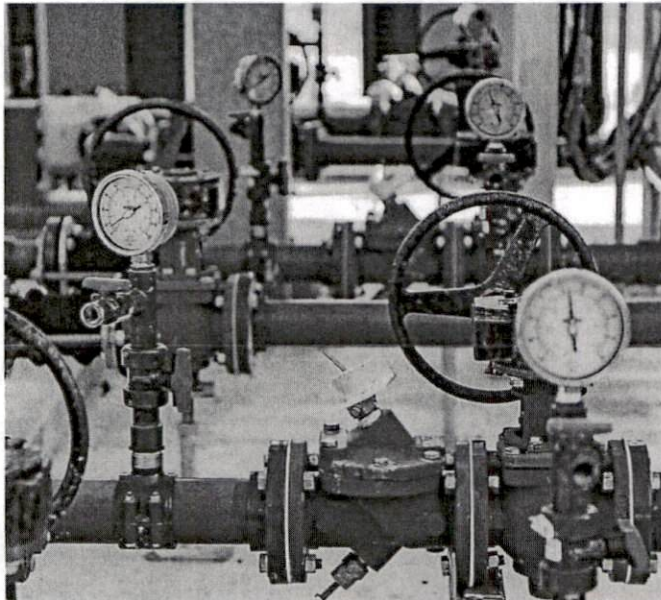
Asheville
Charlotte
Raleigh
Wilmington

S. CAROLINA

Charleston

LOUISIANA

Baton Rouge



Water Resources

Water infrastructure in the United States serves 190 million people through more than 16,000 plants and 600,000 miles of pipeline. Ongoing access to clean / safe water is a major focus for our team.

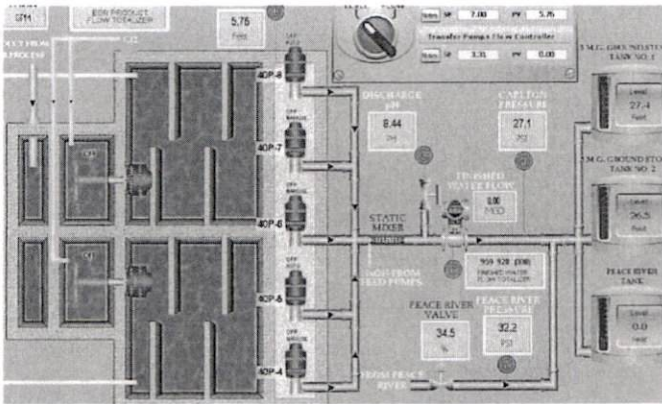
Our award-winning water management engineers consistently strive to develop new and efficient ways to improve, sustain, clean, manage and maintain our nation's water. And we find unique solutions for additional and alternative water sources when supply is an issue.

McKim & Creed plans and designs systems that treat, preserve and conserve the earth's finite water resources. Systems that include infrastructure that prevent water loss, meet stringent regulations and improve drinking water quality. Open-source I&C/SCADA systems and hydraulic models that help communities leverage their infrastructure. Water reuse systems that conserve potable water.

Stormwater programs that manage entire watersheds. Wastewater treatment plants that produce safe, clean effluent. And survey data for floodplain mapping, surge models, sea level rise studies and pre and post-storm surveys.

SERVICES

- | | |
|---|---|
| ✓ Construction Administration | ✓ Permitting |
| ✓ Construction Observation | ✓ Plant Start-Up |
| ✓ Distribution System Design | ✓ Rate Studies |
| ✓ Engineering Reports | ✓ Regulatory Compliance Support |
| ✓ Environmental Reports | ✓ Storage |
| ✓ Environmental Assessments | ✓ Supply Surveying & Mapping |
| ✓ Feasibility Studies | ✓ System Analysis |
| ✓ Funding Application | ✓ Treatability Studies |
| ✓ Infrastructure Rehabilitation | ✓ Water Resource Development and Planning |
| ✓ Line Replacement | ✓ Water Resources Management |
| ✓ Master Planning | |
| ✓ Operations Support & Program Management | |



INSTRUMENTATION & CONTROLS/SCADA

Through our approach of collaborative teamwork, outstanding engineering design, seamless system integration, thorough training and ongoing support, we plan, design and implement in-plant and system-wide instrumentation and controls / SCADA systems that enable utilities to operate efficiently, effectively and safely.



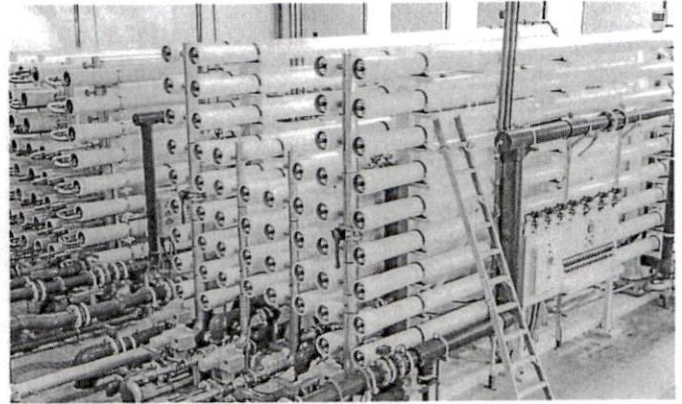
WASTEWATER MANAGEMENT

At McKim & Creed, our engineers work with government and private entities to plan, build and maintain wastewater systems that incorporate the most effective technologies to meet the community's needs.



DESIGN BUILD

Our alternative delivery professionals are experienced in all aspects of design-build, including project development, design, estimating, procurement, scheduling, budget management, safety, construction, start up, operations and project management.



WATER MANAGEMENT

Our award-winning water management engineers consistently strive to develop new and efficient ways to improve, sustain, clean, manage and maintain water.



RENEWAL & REPLACEMENT

McKim & Creed's closed circuit TV (CCTV) inspection systems provide a full, 360-degree interior view of your aging infrastructure. High-quality imagery coupled with faster production rates mean that your dollars can be spent fixing your aging infrastructure issues, rather than simply studying the problem.



TRENCHLESS TECHNOLOGY

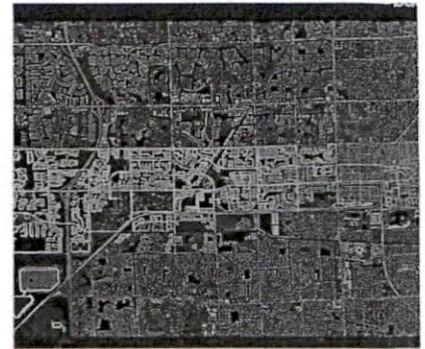
McKim & Creed has been recognized as one of the top 50 trenchless design firms in the U.S. by Trenchless Technology magazine and was ranked 8th in 2023 for Trenchless Engineering. The firm provides award-winning services, including subsurface utility engineering, infrastructure renewal and replacement, and engineering, for hundreds of trenchless projects each year.

“

"We absolutely love the work they do for us with our leak detection program. The professionalism and knowledge they have is amazing, we look forward to working with them in the near future."

**SABRINA CLARK
ADMINISTRATIVE COORDINATOR**

Village of Miramar, Florida | Leak Detection
Services Contract



Water Asset Management

QUALIFICATIONS & EXPERIENCE

McKim & Creed acquired Matchpoint, a non-revenue water and water loss recovery company, in October 2020. The former Matchpoint team now operates as the Water Asset Management division under McKim & Creed's comprehensive water services umbrella, enhancing the team's strength with additional resources, expertise, and experience. While vision drives us, value is our promise. We are committed to helping clients conserve valuable resources by revitalizing water infrastructure.

**WATER IS INVALUABLE AND IT IS OUR MISSION
TO SAVE AND MAKE BETTER USE OF IT.**

We offer a comprehensive suite of SMART water solutions that support the stewardship efforts of utilities, municipalities, and commercial enterprises across North America and the Caribbean. Our offerings include innovative technology, expert training, skilled support, and turnkey service solutions for effective water asset management. The Water Asset Management (WAM) team at McKim & Creed boasts over 100 years of combined expertise in the water industry and water loss management. Data as a Service Solutions are central to WAM's methodology, utilizing robust technologies and best practices grounded in validated and historical data collected from system sensors. This data-driven knowledge empowers organizations to make swift and reliable decisions, with solutions tailored to each customer's specific needs.



esri

In addition to our field services, we established a Certified Service Center in North Carolina in 2016 to better

serve clients by providing service, repair, and calibration of leak detection and network monitoring equipment. **McKim & Creed has been a business partner with ESRI, a GIS software for mapping and spatial analytics, for over 16 years.** Our commitment to customer objectives is at the core of our operations. We collaborate closely with clients and their teams to ensure our solutions effectively and efficiently meet their needs.

SERVICES

- ✓ Leak Detection: Acoustic and in-pipe inspections
- ✓ Network Monitoring and Data Analytics
- ✓ DMA & Data as a service system, Including Infrared Assessment
- ✓ Training and Support
- ✓ Rental Program
- ✓ Equipment Service, Repair, and Calibration
- ✓ Consultation and Design Services
- ✓ Asset Management
- ✓ Subsurface Utility Engineering (SUE)
- ✓ GPS/GNSS Data
- ✓ GIS Mapping Partnered with ESRI

McKim & Creed's Water Asset Management division offers a comprehensive suite of solutions designed to empower utilities, municipalities, and commercial enterprises in effectively managing their water infrastructure. With a focus on innovation and expertise, the division provides advanced technology, expert training, and turnkey service solutions. Central to these offerings is Data as a Service Solutions, which leverage robust technologies and best practices grounded in validated and historical data to provide actionable insights. This empowers organizations to make informed decisions swiftly and reliably, ensuring the efficient stewardship of water resources across North America and the Caribbean.

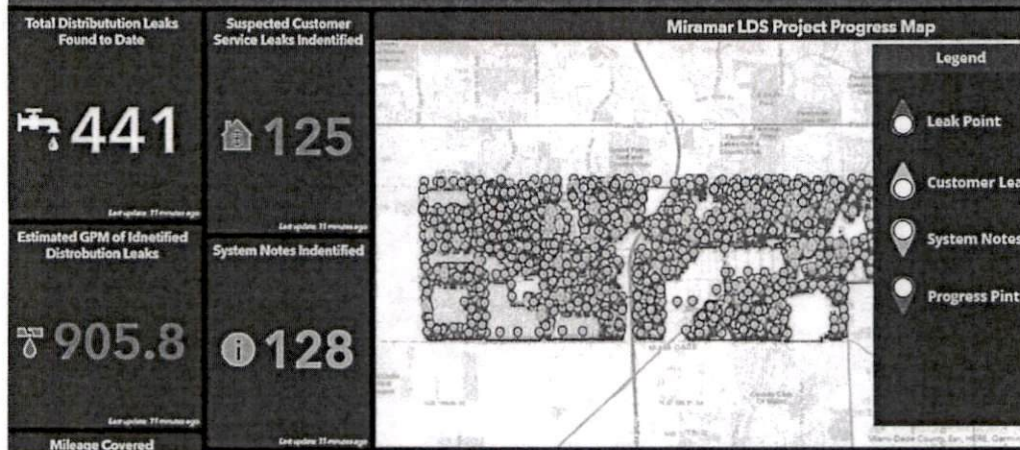
Data analysis plays a crucial role in this process by examining, organizing, and interpreting data to uncover patterns and trends. It often includes data visualization to communicate findings clearly, predictive modeling to anticipate future outcomes, and optimization techniques to improve efficiency. **Ultimately, data analysis helps businesses make informed decisions, serving as a critical driver of business success and innovation.**

OUR SOLUTIONS

- ✓ Risk Management
- ✓ Network Monitoring & Data Analytics
- ✓ Leak Detection: Acoustic & In-Pipe Services
- ✓ Training Support
- ✓ Financing
- ✓ GIS Mapping
- ✓ Satellite & UAS Based Infrastructure Assessment
- ✓ Rental Program
- ✓ Service and Calibration

PROJECT HIGHLIGHT

CITY OF MIRAMAR | WATER LOSS MANAGEMENT



The City of Miramar faced imminent water source limits, prompting a focus on reducing water loss. City staff observed a rise in water production that didn't align with population growth or new connections. After analyzing flow and pressure, McKim & Creed conducted a leak detection survey on 80 miles of pipelines, identifying 289 distribution leaks and 30 customer leaks, most of which were not visible on the surface. The team accurately located 90% of the leaks, enabling efficient repairs that saved time, money, and minimized service disruptions. This effort reduced the City's water demand by about 1 million gallons per day, saving 1,304,352 gallons daily and generating \$2 million annually. Due to this success, McKim & Creed was chosen for a multi-year program to overhaul the water distribution system, including surveys, monitoring, design, and construction, allowing the City to prioritize repairs for optimal investment returns.

ACCOMPLISHMENTS AND ACCOLADES



MONITORING
1,000'S MILES OF
PIPES.



100+ YEARS
OF COMBINED
EXPERIENCE



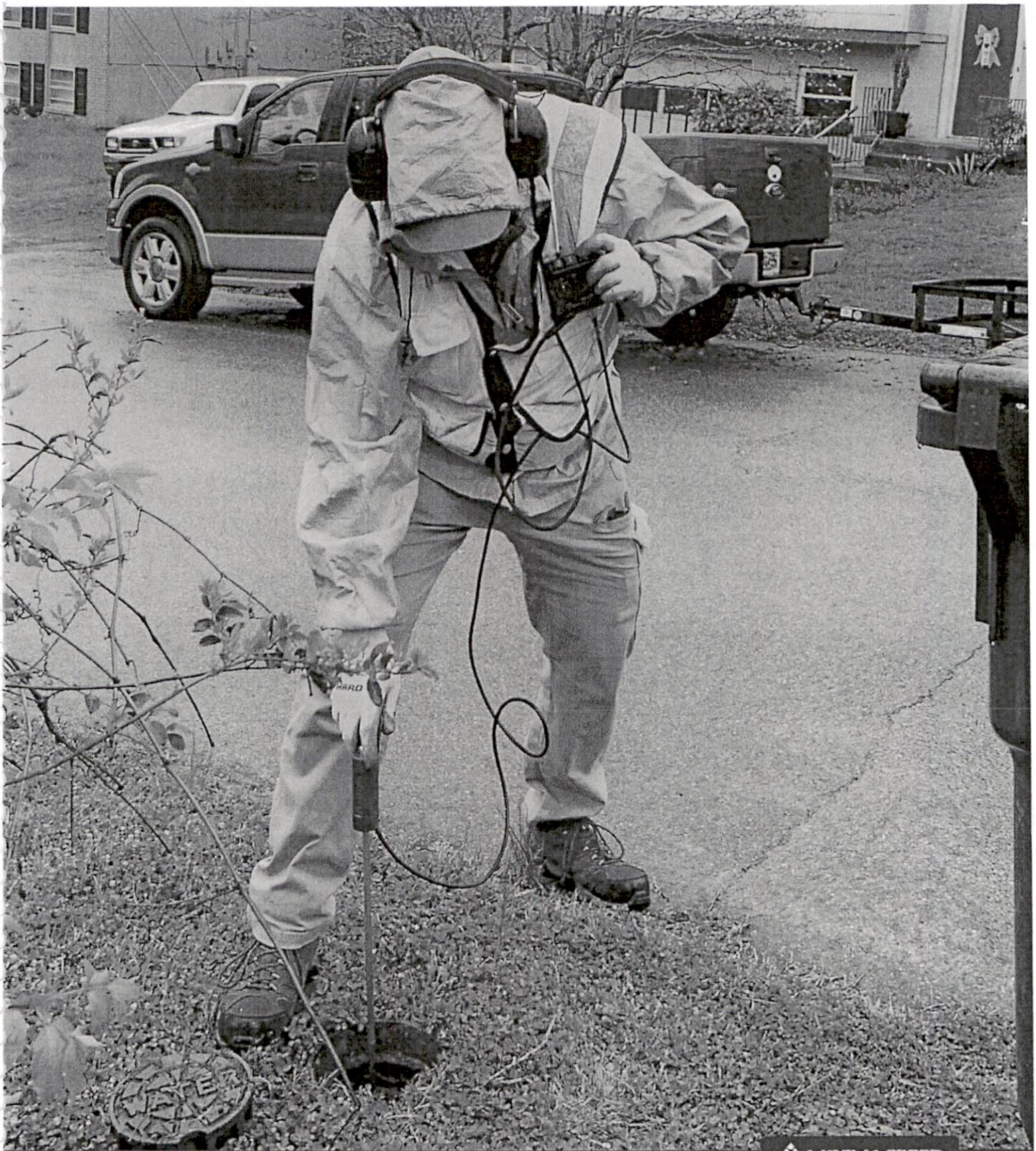
TRAINING 100'S OF
WATER COMPANIES IN
WATER LOSS RECOVERY
AND CONTROL.



EXECUTING
NUMEROUS LEAK
DETECTION SURVEYS
SUCCESSFULLY.



SERVING CUSTOMERS
NATIONWIDE AND IN
THE CARIBBEAN.



 MCKIM & CREED

2

COMMITMENT TO SAFETY

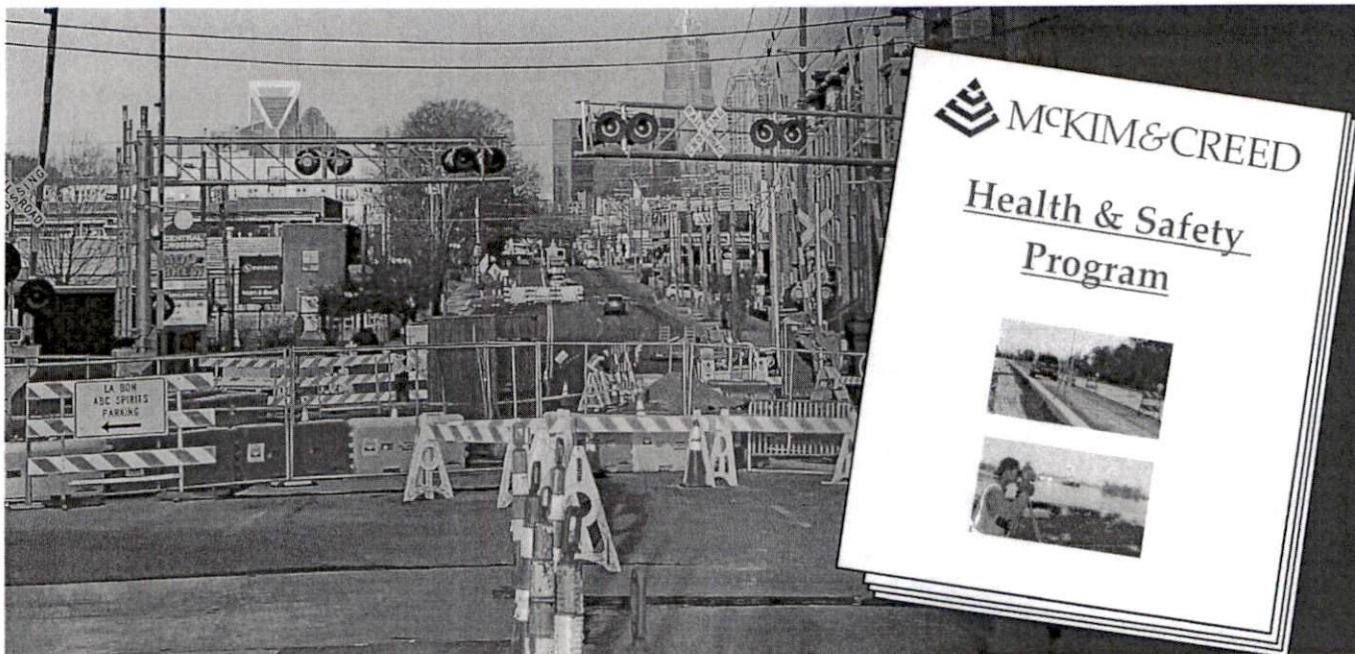


Figure 2.1 | McKim & Creed Health & Safety Program Booklet

2 Commitment to Safety

McKim & Creed makes every effort to provide safe working conditions for employees. The Company observes the safety laws of the governmental bodies with whose jurisdiction we operate. No one will knowingly be required to work in any unsafe manner. Safety is every employee's responsibility. Therefore, all employees are requested to point out potential hazards do everything reasonable to keep the company a safe place to work. Employees also are required to wear appropriate personal protective equipment in all operations where there is an exposure to hazardous standards, rules, and orders applicable to job site safety. Any staff member who visits a project site must wear appropriate safety equipment. PPE is issued to employees as needed.

Maintaining a safe work environment for our employees, clients, contractors, consultants, subconsultants, and the public, is of utmost importance to McKim & Creed. We have developed and abide by detailed work processes and procedures, to continually maintain a safe work environment while providing high-quality services to our clients.

It is a top priority of the company to prevent work-related accidents and injuries. For site-specific safety, special attention is given during the course of on-site review prior to the beginning of work. A specific plan is developed, reviewed, and provided to field crew during our Project Initiation meeting, held prior to any field work. Safety is also a topic during our Project Progress meetings. It is important to discuss issues, difficulties, and reasonable options, and to be able to make adjustments to the plan during the project.

McKim & Creed educates its employees in order to ensure safe working conditions through training and review of safety procedures and review of safety-conscious work habits. Safety is every employee's responsibility.

Our employees, through awareness, are encouraged to point out potential hazards and to do everything reasonable to prevent potential accidents or injuries.





 MCKIM & CREED

2

PROJECT APPROACH

② Project Approach

The foundation for our Project Approach begins with the AWWA M36 Manual of Water Loss Control Programs. The best practices are supplemented with a myriad of inputs such as water loss, system capacity, client objectives, pipe size, materials, environment, density, and criticality of failure. Our analytics program then designs our project tasks to maximize Return on Investment (ROI) specifically for your system.

PHASE ONE: ACOUSTIC LEAKAGE INSPECTION TECHNOLOGY

McKim & Creed will utilize all available assets and access points to provide a thorough and complete initial investigate of the area we are contracted to survey.

- The area of investigation will be inspected initially with manual sounding equipment which includes the listening stick and ground microphone technology.
- We will inspect all fire hydrants, valves and service connection
- A ground microphone and line probing will be used where valve spacing exceeds the range of the direct contact points for adequate coverage based on pipe material and infrastructure environment in order to ensure a thorough initial investigation of the suspected area for any indications of leak noise.
- When warranted, acoustic noise loggers will be placed in a designated system area on direct contact points during daytime hours and set to listen overnight when the system is at highest pressure and ambient noise is less of an obstruction.



TECHNOLOGY	APPLICATION
Electronic Listening Stick and Ground Microphone	 • A leak listening system with high acoustic sensitivity and multiple frequency range filters • Direct leak listening on water fittings or directly over the pipe • Used for initial survey and/or for pinpointing leaks • Sounding will take place to comprehensively cover the area of investigation for the presence of leak noise based on the system pipe material, diameter and pressure
Acoustic Noise Loggers and Communication Module	 • Wirelessly detects and localizes water leakage for temporary, semi-permanent or permanent applications • Used for sounding of high consumption areas and heavy background noise locations • Programmed to listen and record noise at night when listening conditions are optimal: the distribution system is at its highest pressure and ambient noise is lowest. • Take three separate listening samples throughout the night
Chlorine and/or Fluoride Test Kits	 • Testing kits used to identify the chemical nature of visible or surfacing water • Confirms whether the water is sourced from the distribution system or otherwise

PHASE TWO: LEAKAGE PINPOINTING

All suspect leak locations will be subjected to further detection practices including a second visit for verification. Multiple leaks will be prioritized based on severity and/or consequence of failure.

⦿ EQUIPMENT AND FUNCTIONALITY: CORRELATOR

- Two or more correlation loggers will be placed on direct contact points surrounding the identified leak. Pipe material, logger distance, and pipe size are entered into the system.
- The correlator uses the information, listens for leakage, and programmed algorithms generate the leak velocity and location of the leak in feet from each contact point.

The field crew will then physically measure out the distance from each logger above the pipeline as indicated by provided system maps. McKim & Creed will utilize pipe locators to find the pipelines and map the system if needed, prior to conducting the correlation.

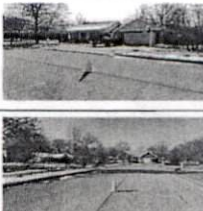
⦿ CONFIRMATION

To ensure maximum precision and leak point accuracy, it is McKim & Creed's protocol to confirm all pinpointed leaks by listening over the pinpointed location using a ground microphone, or hand probing over the line for additional confirmation on the precise location where leakage is occurring.

⦿ REPORTING RESULTS

Once confirmed with the ground microphone or hand probing, the pinpointed location is marked and reported via a daily leak card and report. Any repaired leakage locations identified will be revisited post repair within the project timeline for a verification that no other leakage noise remains present in the immediate area.

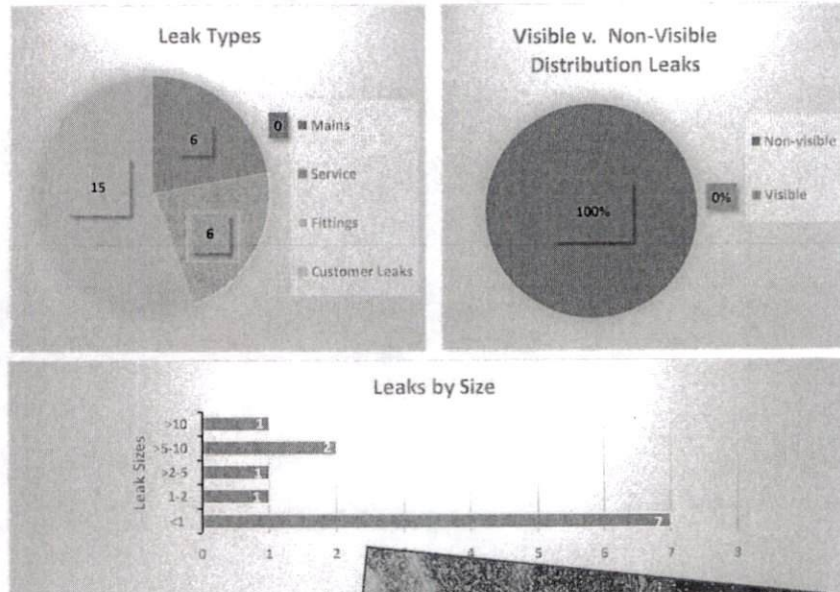
TECHNOLOGY	APPLICATION
Real-Time Acoustic Correlator	 • Real-time correlator with advanced filtering system to pinpoint the most difficult leaks
Non-Real Time Acoustic Correlator	 • Non real-time correlating system for noisy, complex, or busy areas
Hydrophone Adapter Non-Real Time Acoustic Correlator	 • Non real-time correlating system further optimized for larger pipes and over longer distances
Ground Microphone	 • A ground microphone and electronic listening stick that can be used for pinpointing leaks with direct sounding over top of the pipe to pinpoint leak location and validate correlation results

 McKIM & CREED PLUMBING • SEWERS • PUMPS		McKim & Creed Water Asset Management		2022 Double Knight Way Suite 200 Millsboro, DE 19966		
Leak Card # 8						
Project:	Riverside Sewer, W- 2022 Leak Detection Investigation			Address:	BGS Cedar Lane	
Urgency:	High	Turfine Material	Aggravate	Severe	Pipe Size: 2"	Pipe Material: HDPE
Leak Detection Method(s):	Sounding	Visible Water	No	DB Level: 15	Person Submittal To: Mr. Thomas Willey	
AAC Estimated GPM:	Gallons Per Minute:	30		Utility Map		
	Gallons Per Day:	63,000		+1-313-023-9299 / 35-996-0015650035 Leak		
	Gallons Per Month:	1,924,800				
	Gallons Per Year:	23,097,600				
Leak Description & Comments:						
Disturbment level detection service line located north found on service cut stop. Best ground noise found further middle of the road 23 feet from the main.						
						
						
Project Manager:		Schuyler Floyd		Date:	January 18, 2023	

Project: Prairie Grove Arkansas / Jan 2025 Leak Detection Investigation

Area Contract Mileage:	65.00
Area Percentage Complete To Date:	100.00%
Area Mileage Completed To Date:	65.00
Area Mileage Remaining To Complete:	0.00
Days Completed In Area:	15.75
Average Miles Covered Per Day Per Person:	4.13
Est Days Remaining On Project Area:	0.00
Overall System Leaks Found To Date:	12
Overall GPM Loss Found To Date In Area:	58.70
Leaks Found Per Mile In Area:	0.18
Water Loss Per Mile (in GPM):	0.90
Average Leak Size (in GPM):	4.89
Total Fittings/Connections Sounded:	2370
Average Fittings Sounded Per Mile:	36

Additional Project Info:
Leak Detection Investigation for 65 miles of the Prairie Grove Arkansas Utility water distribution system conducted in January 2025.



WEEKLY CUMULATIVE REPORTS

Progress reports will be submitted weekly with all project data, including all cumulative information for the week, thus serving as a daily and weekly report combined. The report includes cumulative information gathered to date, including:

- Details of Leaks Located (including type, visible versus non-visible, size, location)
- Mileage Surveyed
- Location and Status of Loggers Deployed
- Number of Fittings Sounded
- Estimated Gallons per Minute Found to Date
- Suspected Custom Service Leaks
- System Notes
- Requested Customer Shutoffs

PROJECT SUMMARY REPORT

A comprehensive report will be prepared and submitted within 30 working days upon completion of the investigation. The summary report includes a final version of our daily report, combined PDF file of all leak cards submitted for the project, all correlation reports conducted during the project and project/system specific recommendations based on our investigation analysis. Other supporting documentation gathered throughout the project may be included as well. Furthermore, McKim & Creed's report will include recommendations to help continually and proactively reduce the City's water loss in years to come.

McKim & Creed will assist with the future analysis for additional leak detection investigations or other services that would be beneficial for the client in the interest of reducing their NRW and to achieve the best ROI going forward.





QUALITY CONTROL / QUALITY ASSURANCE

We believe that Quality Assurance begins before the first computer is turned on.

McKim & Creed is a Professional Services Firm operating under a Professional Services Agreement.

As a standard, all services will be executed to meet and often exceed, the best practices listed in the AWWA Manual of Water Supply Services (M36) and will be performed at the highest level of health and safety standards (OSHA safety standards).

Our leak detection services are traditional, non-invasive, and are reliant on acoustic technology combined with personnel expertise. Our leak detection approach has been refined over the lifetime of our company, to ensure optimum customer satisfaction, effective communication and precise results. We abide by a comprehensive process that maximizes the potential of reducing water loss and minimizes the likelihood of dry holes or excavating a leak-free hole.



PEOPLE

Our technicians are trained to conduct themselves in a professional manner and to put the customer's needs in top focus while they are conducting the leak surveys.

All of our technicians have passed certified technical training on the equipment and all are well trained in the functionality and limitations of this equipment.

The project team members are involved in the development and refinement of the final scope of work, project schedule and budget.

McKim & Creed prioritizes a safe work environment with detailed processes to ensure safety and high-quality services. Safety plans are reviewed before fieldwork and discussed during project meetings. The company emphasizes employee education on safe practices, making safety everyone's responsibility to prevent accidents and injuries.



PROCESSES

Once the project has begun, McKim & Creed adheres to an approach that is established in our project execution manual.

The scope of services is reviewed by the manager of the technical group to ensure that the clients' needs are addressed;

Status meetings are scheduled by the Director of Operations to oversee that deadlines are met and to address any necessary issues;

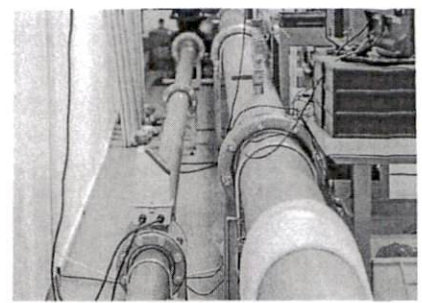
- ▶ Daily quality assurance/quality control reviews by individual team members;
- ▶ Periodic assessments by design teams;
- ▶ Evaluation by a Project Manager before each submission to the client;
- ▶ Project check-ups with our customers are performed at the conclusion of their projects;
- ▶ Internal post-project evaluation; including measures that worked well, lessons learned, new technology or process assessments.



TECHNOLOGY

We use technology in addition to personnel, wherever possible to ensure the results are supported by multiple investigation methods. All investigation points are visited a second time to ensure that the leakage indication is present on multiple visits, as leakage is continuous in nature. Our on-site project manager, as well as the director of operations, conducts a daily review of all data collected to ensure accuracy and consisting of reported information and processes.

Our Support Services department is involved in quality control of each project by assisting with the review of data captured throughout the project and advises on further interpretations of potential outcomes for leak location pinpointing.



PROJECT TIMELINE

McKim & Creed can furnish a refined schedule of events once the contract has been awarded to include firm dates that correspond with the award date. The schedule will be maintained throughout the project. There is little to no effort required from the utility throughout the life of the project, these details will be discussed during the PreCon Meeting before Project Kick-Off.

**THE PROJECT FIELD WORK WILL BE COMPLETED WITHIN 30 DAYS OF THE KICKOFF DATE,
WITH THE SUMMARY REPORT PROVIDED WITHIN 30 DAYS OF FIELD WORK COMPLETION.**



 MCKIM & CREED

4

REFERENCES

4 References

The following projects highlight our expertise in delivering comprehensive solutions through assessments, rehabilitation plans, and GIS platforms for efficient water services.

PWSD 1, 5 DAY INVESTIGATION

JEFFERSON COUNTY, MO

Results 11 leaks Estimated 12.5 GPM recovered

PROJECT DATES

January 2025

CLIENT

Public Water Supply District #1
Jefferson County, Missouri
P.O. Box 646,
2970 Schneider Dr., Arnold,
MO, 63010

Erin DeVore

Executive Director
Phone: 636-296-0659
Fax: 636-296-4918

PWSD 2, 5 DAY INVESTIGATION

JEFFERSON COUNTY, MO

Results 8 leaks estimated 8.75 GPM recovered

PROJECT DATES

March 2025

CLIENT

Public Water Supply District
Jefferson County, Missouri
P.O. Box 646,
2970 Schneider Dr., Arnold,
MO, 63010

Art Gilbers -

Operations Manager
art@pwsd2.com -
Phone: (636) 495-3106

PWSD 6, 5 DAY INVESTIGATION

JEFFERSON COUNTY, MO

Results 8 leaks estimated 8.75 GPM recovered

PROJECT DATES

February 2025

CLIENT

Public Water Supply District
#6 Jefferson County
6000 Kingsway Dr.
(PO box 218)
House Springs, MO 63051

Kevin Ritz

District Manager
Manager@pwsd6.org
Office: (636) 671-4096
Cell: (636) 262-0126

65 MILES COVERED, 15 DAYS INVESTIGATION

PRAIRIE GROVE AR

Results 12 leaks estimated 59 GPM recovered

PROJECT DATES

December 2024

CLIENT

City of Prairie Grove
PO Box 944
Prairie Grove, AR 72753

Chuck Wiley

Director of Public Works
(479)846-6540

COMPREHENSIVE LEAK DETECTION SERVICES

CITY OF BRISTOL, TN

280-mile survey found 92 distribution and 15 suspected customer leaks, potentially saving 150 million gallons annually.

PROJECT DATES

September - October 2023

CLIENT

City of Bristol
801 Anderson Street
Bristol, TN 37620

Will Witcher

wwitcher@bristoltn.org



 MCKIM & CREED

5

FEE & ADDENDUM ACKNOWLEDGMENT

5 Fee

Leak Study

Item	Description	Quantity	Unit Price (\$)	Total Cost (\$)
1	Line Item No. 0001 Total Project Lump Sum	1	\$20,000	\$20,000

**McKim & Creed will obtain a business license to operate within the state. The services provided are considered professional services, and the company's liability insurance covers these professional services.*