PlainsTalk

Water & Power for the American Public

WINTER 2025-2026

Halls Coulee Siphon **CONSTRUCTION**

- DKAO water infrastructure
- Regional priorities for 2026
- Webster spillway repair
- Leadville water treatment plant

News from Reclamation's MB&ART Region

Plains Talk
Winter 2025-2026

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Plains Talk is an employee publication devoted to the interests of The Department of the Interior's Bureau of Reclamation.

Plains Talk encourages employee submissions, and assists with developing stories or photo essays. Please contact the editor with your questions or ideas at dasher@usbr.gov, (406) 247-7608.

Department of the Interior Mission Statement

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, Native Hawaiians, and affiliated Island Communities.

Reclamation Mission Statement

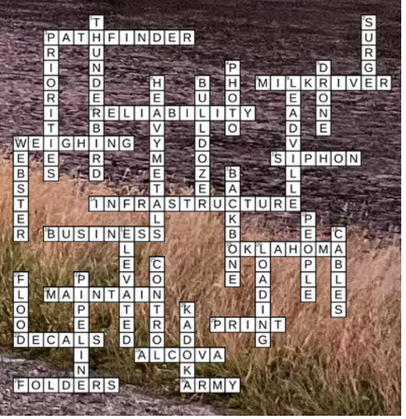
The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Cover: Halls Coulee construction.
Photo by Steve Darlinton

This page: Canyon Ferry Dam.
Photo by Chad Paulson

Contents

Crossword Solution



Crews continue concrete placement after dark to the elevated formwork tower.

Halls Coulee Siphon **CONSTRUCTION**

Reinforcing the backbone of the Milk River Project

By Nick Nohalty,
Public Affairs Specialist

Photos by Steve Darlinton,
Supervisory Civil Engineer

Workers brace and inspect the 90-inch diameter pipe prior to installation.

Construction on the Halls Coulee siphon continues to advance rapidly this season, driven by both necessity and opportunity. When the St. Mary Siphon failed in June 2024, the event underscored a hard truth long known to Reclamation staff and Hi-Line water users: the Milk River Project's aging infrastructure can no longer wait for incremental fixes. Emergency funding secured in the aftermath of that failure has become a critical lifeline—allowing Reclamation to tackle long-deferred replacement at Halls Coulee that is essential for protecting the entire system.

The Halls Coulee and St. Mary's siphons operate as a linked pair. Water must move through both before it ever reaches the Milk River. If the siphons falter, the downstream system cannot function—regardless of condition or capacity. This interdependence makes the current construction effort far more than a routine rehabilitation project; it is a fundamental reinforcement of the system's reliability and resilience.

With the secured funding, Reclamation and partners can replace outdated components, stabilize structural foundations, and install new pipe sections designed to withstand hydraulic stress and seasonal extremes better. The urgency sparked by the St. Mary failure, combined with emergency authorities and funding streams, has enabled Reclamation to confront vulnerabilities before they trigger additional system-wide outages.

The significance of this work extends well beyond the construction site. The Milk River Project delivers water to more than 120,000 farmers and supports municipalities, recreation, and ecosystems across northern Montana—embodying the mission of Reclamation as the West's largest wholesale water supplier and a steward of water and power reliability.

(Halls Coulee construction)

As emphasized in Reclamation's internal information program, capturing this progress and communicating its mission value helps employees understand how individual projects contribute to the broader reliability of western water delivery systems. The Halls Coulee upgrade is a clear example of how Reclamation protects critical infrastructure, responds to emerging challenges, and prepares for future operational demands.

Once complete, the new Halls Coulee siphon will reduce system vulnerability, extend the lifespan, and provide a more stable foundation for the entire Milk River Project.

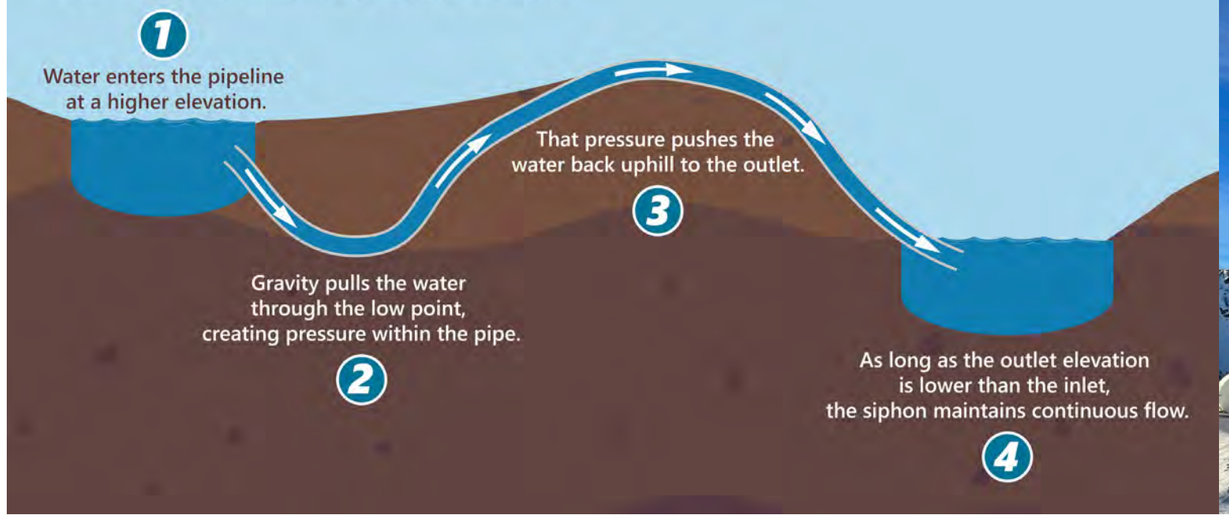
The staging area is packed with gear, vehicles and pipe sections as crews push forward despite the cold. Temporary shelters help protect the large-diameter pipe from the weather.

How siphons work

A siphon is a pressurized pipeline that carries water down into a low point, such as a coulee, and then back up the other side using hydraulic pressure. Unlike an open canal, a siphon keeps the water fully enclosed, allowing it to cross steep terrain, deep ravines, or unstable ground that cannot support open-channel flow.

The power behind the flow

Siphons operate on basic hydraulic principles:

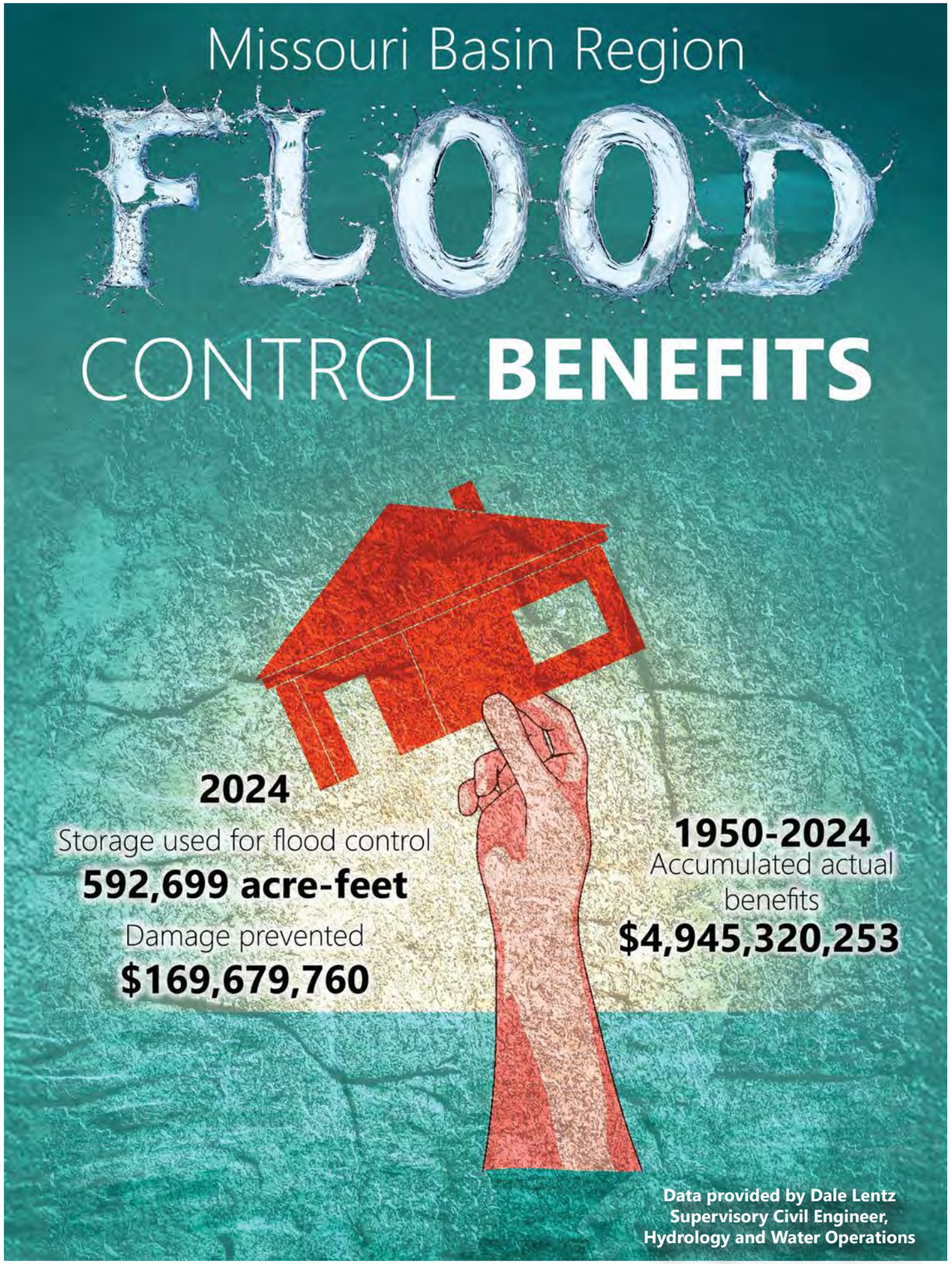


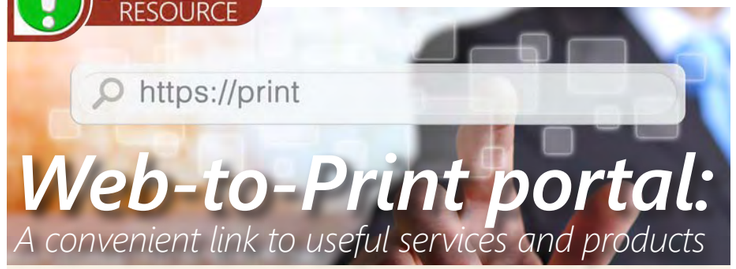
"Upgrading Halls Coulee is a long-overdue investment, one that directly supports agriculture, municipalities, and local economies. Every advancement at Halls Coulee strengthens the St. Mary Canal and the entire Milk River Project."

Steve Darlinton MTAO Project Manager

A crawler crane and support vehicles operate at the main construction site.

A large formwork tower stands at the project site as crews prepare for additional concrete lifts. Heating equipment and ducting help maintain workable temperatures around the structure.





Web-to-Print portal:

A convenient link to useful services and products

Reclamation's Publishing Services Office provides easy access to a variety of products and services through their Web-to-Print portal. The portal is available to all employees through your web browser.

Just enter https://print in your web browser's address bar to view a catalog of current offerings. (Reclamation network or VPN required.)

Some of the products and services include:

- Business cards
- Reclamation logo decals
- Letterheads & envelopes
- Pocket folders
- Award folders
- Sign ordering
- Custom printing

For questions about the Web-to-Print portal, contact the Publishing Services Office at (303) 445-2200 or publishingservices@usbr.gov.

2026 MB&ART Photo Contest update

-Darryl Asher, Public Affairs Specialist

The 2026 MB&ART Photo Contest will be officially open for entries with the summer issue of Plains Talk, so keep your eyes open for the photo opportunities around you.

The photo contest is a great way for team members to experience facilities, projects, workplaces, and people across our vast region.

The summer issue of Plains Talk will feature guidelines and information on how to submit your photos. Contest entries also help with internal and external communications by being used in posters, websites, brochures, banners, and other outreach and messaging products.

We are always impressed with the photographic skills of the MB&ART team and appreciate your enthusiastic participation.

Strengthening WATER INFRASTRUCTURE across the Dakotas

By Michelle Boehm & Austin Lewis
Photos by DKAO staff

Major upgrades advance reliability, safety and long-term performance

Significant progress is underway across the DKAO Area of Operations as multiple infrastructure projects move through key phases of construction. These efforts, ranging from large-scale waterline realignments to the construction of a new elevated water storage tower, are part of a long-term strategy to modernize essential systems, improve resilience and support growing community needs.

Together, the projects reflect collaboration between local districts, contractors and the Reclamation to ensure reliable water delivery well into the future.

• WATERLINE RELOCATION

A major milestone was recently reached on a waterline relocation project stretching from Kadoka, South Dakota, to about 2.5 miles south of the White River. As part of a broader highway improvement effort, crews completed realignment and installation of new pipeline segments designed to improve system hydraulics and long-term operability.

Crews work to feed a 12-inch pipe into the already placed 24-inch casing pipe that crosses Highway 14 for the City of Fort System.

The work included installing about 14,500 feet of new 16-inch PVC waterline and 600 feet of 20-inch PVC waterline, along with 750 feet of 24-inch steel casing installed beneath Highway 73 using directional drilling. Crews also connected 21 air-release valves, 22 blowoff hydrants and nine tie-ins to the existing system, which required a coordinated shutdown and restart of the Coreline and water treatment plant.

With installation completed in August 2025, demolition and removal of the abandoned waterline is underway. SCADA communication fiber will be installed alongside the new waterline later to further enhance system monitoring and operational control.

• ELEVATED WATER STORAGE

Another major project in the area is construction of a 1 million-gallon composite elevated water storage tower in Kadoka. Designed to increase storage capacity and improve operational flexibility, the new structure will help stabilize pressure zones and reduce the load on existing treatment and distribution facilities.

Funded through the fiscal 2023 Aging Infrastructure Program, the project represents an $8.67 million investment. Construction continues to progress, with recent work including completion of Lift 1 and ongoing pedestal pours through Lift 9. Forms are now placed for Lift 10. Substantial completion is anticipated by July 1, 2026.

When finished, the tower will integrate into the existing network through installation of new valves, pipelines and control systems, supporting improved reliability for the surrounding community.

• PIPELINE REPLACEMENT

In Fort Pierre, work is underway to replace a problematic stretch of 24-inch steel pipeline in the Waldron Street area. This segment has historically required frequent repairs, prompting the need for a more durable solution.

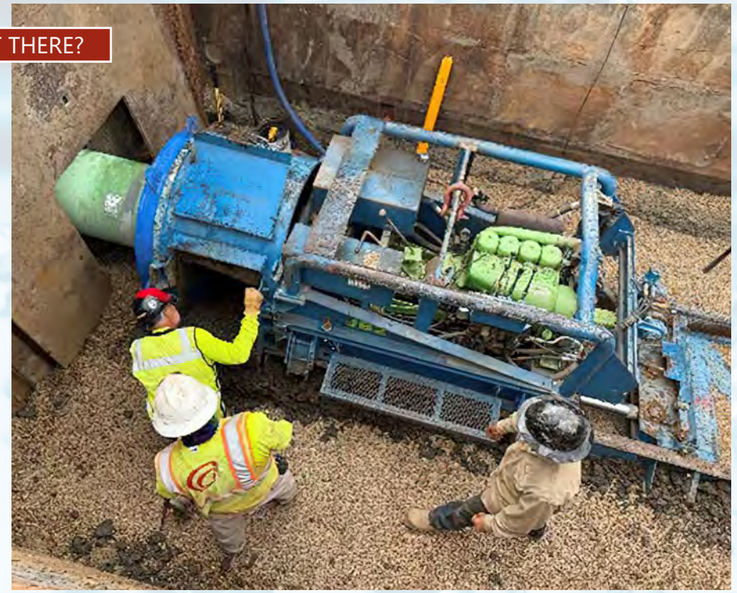
The project includes realignment and replacement of 7,300 feet of 24-inch steel Coreline and 1,900 feet of 12-inch PVC serving the city. Classified under the fiscal 2024 Aging Infrastructure initiative, the improvements are part of a broader $49.9 million regional investment, with $15 million dedicated to Zone 1 upgrades.

Recent progress includes completion of a jack-and-bore installation beneath Highway 14 and significant advancement on remaining Coreline segments. The project is expected to reach substantial completion by May 1, 2026.

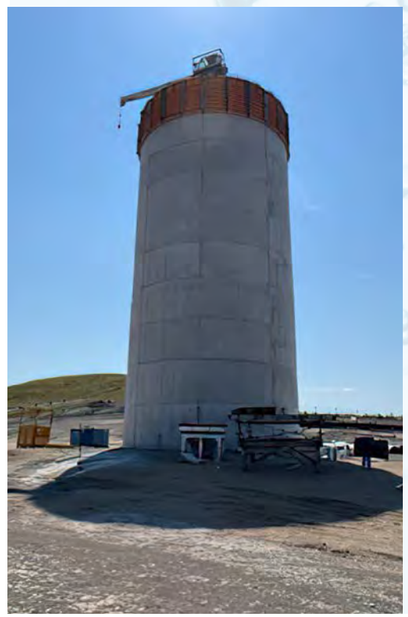
(DKAO upgrades continued)

WHAT'S THAT HYDRANT DOING OUT THERE?

While much of the region's infrastructure work involves large equipment, deep excavations and major pipeline segments, some of the system's most important components are surprisingly small. One example is the blowoff hydrant, often found at the end of rural waterlines or in open areas. These hydrants are used to flush sediment and stagnant water from low-flow or dead-end sections of the system. By operating them regularly, field crews help maintain water clarity, protect pressure stability and uphold system safety. As crews clear vegetation and prepare new routes for pipe installation, these hydrants continue to play an essential role in keeping water clean and moving reliably through the network.



Crew places 24-inch steel casing pipe for 12-inch City of Fort Pierre waterline.



1.0-million-gallon composite elevated water storage tower.

A bulldozer and excavator work to clear vegetation and prepare the landscape for pipe installation.

A COORDINATED EFFORT FOR LONG-TERM RELIABILITY

From system realignment near the White River to major storage expansions in Kadoka and aging infrastructure replacement in Fort Pierre, DKAO is delivering substantial improvements that will benefit communities for decades. These projects demonstrate a sustained commitment to modernizing essential water systems, enhancing resilience and ensuring safe, reliable water service across the region.

Crews preform a pilot bore for the City of Fort Pierre waterline, crossing Highway 14.

The start of the pedestal construction. With the form in place, the concrete crew begin the pour for Lift #1.

New water storage tower construction site at the beginning of the project.

Leadville Mine DrainageTunnel Water Treatment Plant

CONSTRUCTION BEGINS

At the headwaters of the Arkansas River, in Leadville, Colorado, the Leadville Mine Drainage Tunnel Water Treatment Plant has continuously removed heavy metals from water entering the Arkansas since 1992. Now, after exceeding its 30-year expected service life, construction has begun on a new water treatment plant that will increase capacity, incorporate lessons-learned over previous decades, emphasize safety, and improve the plant's visual impact.

In September 2024, Reclamation awarded $131,755,000 to Oscar Renda Contracting, Inc. for construction of a new water treatment plant, deconstruction of the existing plant and storage building, and other site improvements. Construction—from award to substantial completion—will last approximately five years. Time lapse cameras set up by Reclamation will document the progress over time.

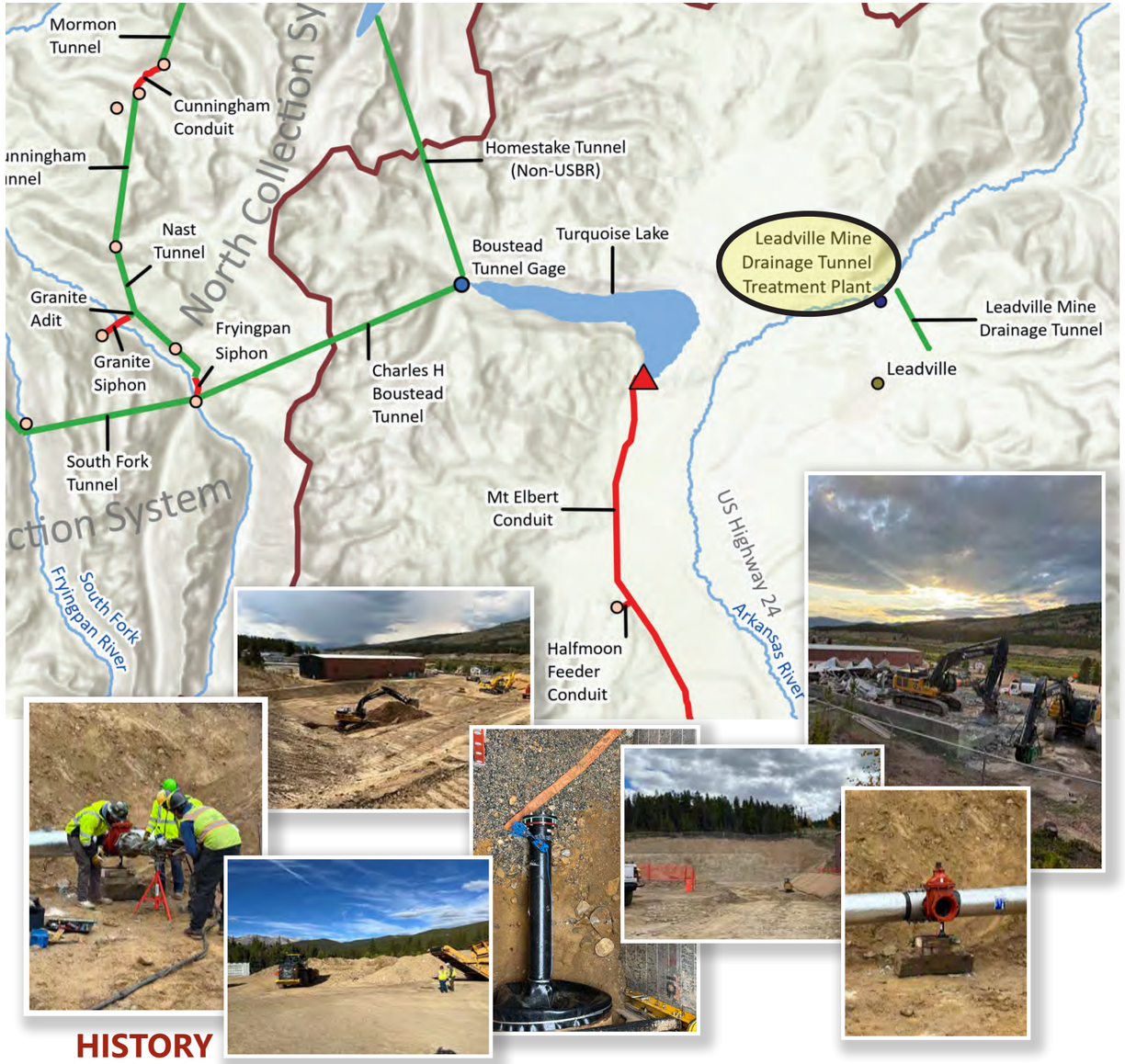
In mid-June, Oscar Renda, based out of Grapevine, Texas, set up at the construction site adjacent to the current water treatment plant. They brought personnel, heavy equipment and materials. Their first efforts focused on site development and excavation. The primary objective of the first construction season was to obtain permits that allow the new plant to connect to the Parkville Water District water line.

Other objectives included creating more space onsite and securing a location for mobile office trailers and Conex storage boxes. In August, Oscar Renda demolished the storage building just up the hill from the existing plant. A subcontractor, Underground Infrastructure Technologies, based out of Lakewood, Colorado, completed numerous excavation activities, including:

- Excavating a launch pit on the north side of the highway and a receiving pit on the south side of the highway.
- Excavating around the Parkville Water District water line to enable tapping onto their potable water source.
- Boring and installing a 48-inch steel casing under Colorado Highway 91 which will contain 8-inch HDPE pipe connected to the water line.
- Excavating the building footprint and reserving some material for structural backfill.
- Trenching and installing water line inside Reclamation boundaries.
- Excavating and removing the septic system.

Constructing a water treatment plant at an elevation of 10,000 feet in mountainous terrain requires multiple construction seasons. With a frost depth of 10 feet, construction season typically runs from May through October. Oscar Renda is currently evaluating options that will allow them to work earlier in the spring and later in the fall.

The Leadville Mine Drainage Tunnel Water Treatment Plant removes heavy metals (lead, zinc, manganese, iron, etc.) from contaminated water flowing from the two-mile-long Leadville Mine Drainage Tunnel. It discharges 650 million gallons per year of treated, clean water to the headwaters of the Arkansas River in accordance with Environmental Protection Agency discharge permit requirements. The new plant will have a capacity of 913 million gallons per year.



HISTORY

- The U.S. Bureau of Mines began building the Leadville Mine Drainage Tunnel during World War II to drain groundwater from the mine workings via the tunnel in order to access mineral reserves. Construction ended in 1945.
- Metal demands during the Korean conflict provided incentive for a second project to extend the tunnel. Construction was completed in 1952.
- In 1959, Reclamation secured title to the Leadville Mine Drainage Tunnel from the U.S. Bureau of Mines with the intent to use the tunnel water as part of the water supply for the Fryingpan-Arkansas Water Project; however, water rights conflicts prevented that use.
- Water leaving the tunnel contains high concentrations of metals, such as zinc, iron and cadmium, which can harm the Arkansas River and its aquatic life. As owner of the tunnel, Reclamation bears responsibility for removing these pollutants.
- Since commissioning the plant, Arkansas River water quality has improved substantially, enabling the recovery of fish and other aquatic life.

FY 2026 Regional Priorities

Missouri Basin & Arkansas - Rio Grande - Texas Gulf Region

MAINTAIN EXISTING INFRASTRUCTURE

Develop and implement strategies to optimize limited resources. This will address increasing demands on existing, aging infrastructure and ensure continued safe and reliable operation of our assets now and into the future.

Improve hydropower reliability and long-term energy resilience through successful execution and closeout of the Canyon Ferry Unit 2 Rewind, and complete Inter-Agency agreements with TVA for Alcova Station Service Replacement, Kortes Exciter Replacement, and Fremont Canyon Station Service Replacement. (WYAO, MTAO, IESG)

Enhance water infrastructure resilience and operational reliability through targeted investments that include: WYAO Mills Office Facility HVAC upgrade, develop a plan to address Anchor Dam Trash Rack Sediment Loading, Angostura Spillway repair, St Mary Unit - Diversion Dam Construction Phase 2, Halls Coulee siphon replacement project, Lovewell Dam surface drain restoration and improvements, and Norton Dam penstock repairs. (WYAO, DKAO, MTAO, NKAO)

Provide oversight and coordination for emergency repairs on the Mni Wiconi Core Pipeline while initiating implementation of permanent replacement plans of Zone 1 construction completion and finalizing design for Zone 2. (DKAO)

Collaborate on permitting, wetland mitigation, and final design (Spec B) documents to initiate construction contract solicitation for the Heart Butte Dam Safety Modification Project. (DKAO, IESG)

Support real-time reservoir operations and drought response at Lake Meredith and Twin Buttes Reservoir through Reclamation's Applied Science project with the Texas Water Development Board and local partners. (OTAO)

DEVELOP NEW INFRASTRUCTURE

Plan, collaborate with local communities, and build authorized infrastructure that will add value to the communities we serve.

Advance key milestones of the Arkansas Valley Conduit project by awarding the Crowley 1 Land and Easement Acquisitions contract, achieving substantial completion of the Boone Reach 2 pipeline, completing drilling exploration to support design to Rocky Ford, and execute AVC repayment contract. (ECAO, Resources, IESG)

Provide program management to support and complete the fully executed Financial Assistance Cost Share Agreements for the remaining four Title XVI agreements obligating approximately $55 million of federal funds toward the completion of new infrastructure. (OTAO)

Finalize and deliver the concluding report for the Dry Redwater Feasibility study and provide to project sponsors. (MTAO)

Implement and actively manage WaterSMART grants with a focus on timely execution, strong partnerships, and measurable outcomes. Oversee approximately $15 million in ongoing projects while enhancing compliance coordination and streamlining reporting processes. (NKAO, Resources)

WORK WITH TRIBES

Support enduring partnerships with Tribes focusing on our Tribal Trust responsibility. Complete and implement Indian Rural Water Projects, Indian Water Rights Settlements, and other agreements that facilitate dependable infrastructure and benefits to Tribal persons and water and related resources.

Draft and execute OM&R transfer agreements for each of the Tribal O&M programs to replace the existing P.L. 93-638 agreements to streamline the approval process for reimbursement. (DKAO)

Collaborate with Tribal Partners to obligate and coordinate FY26 Aging Infrastructure Project Funds. (DKAO)

Uphold trust and treaty responsibilities by engaging Tribes and Native peoples through meaningful formal and informal consultations that foster collaboration and respect. (All offices)

PEOPLE

Recruit, retain, and develop a robust Regional workforce. Strengthen organizational trust to enable effective collaboration and coordination across disciplines and business lines.

Prioritize and support remaining staff by leveraging and coordinating the sharing of personnel and expertise across regional offices to allocate resources to priority work, reduce burnout, and improve retention. (All)

Strengthen safety leadership across the MB-ART Region by delivering 10 Supervisor Safety Training sessions and 6 COR/OGE/Project Manager Safety Training sessions. (Safety, Area Offices)

Complete the Swanson and Hugh Butler title transfers and complete Phases 1 and 2 of the Frenchman Valley Distribution Works title transfer. (NKAO, Resources)

Collaborate with partners—including TVA, WAPA, and local water districts—to complete project work, using G-Invoicing for all federal-to-federal transactions. (All Offices)

BUSINESS EFFICIENCIES

Promote continuous improvement of business processes and practices to increase flexibility in responding to changing priorities and initiatives. Provide and improve upon exceptional customer service to both internal and external partners.

Review and update the Reclamation Manual to remove unnecessary or burdensome requirements not grounded in law, ensuring policies and guidance support efficient, effective program delivery. This effort will align the Manual with evolving mission needs, reduce administrative burden, and reflect Administration priorities to better serve the American public. (Resources, OTAO)

Develop a handbook for non-Reclamation environmental and cultural compliance activities. (Resources)

Improve early execution of contracts, grants, and G-Invoicing actions to ensure timely obligation of funds and reduce year-end decommitments by strengthening planning and coordination, enabling earlier commitments and avoiding delays in award execution. (Budget, All offices)

Support the Regional Leadership Board (RLB) workgroup focused on improving billing and accounts-receivable efficiency. Contribute to process streamlining that ensures accurate, timely billing and improved customer account tracking across the Region. (All offices)

Unleash America's affordable and reliable energy and natural resources via the timely approval of oil and gas development of federal mineral interests at Choke Canyon Reservoir by developing a self-certification process that do not increase risks to dam safety and water quality. (OTAO)

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmental and economically sound manner in the interest of the American public.

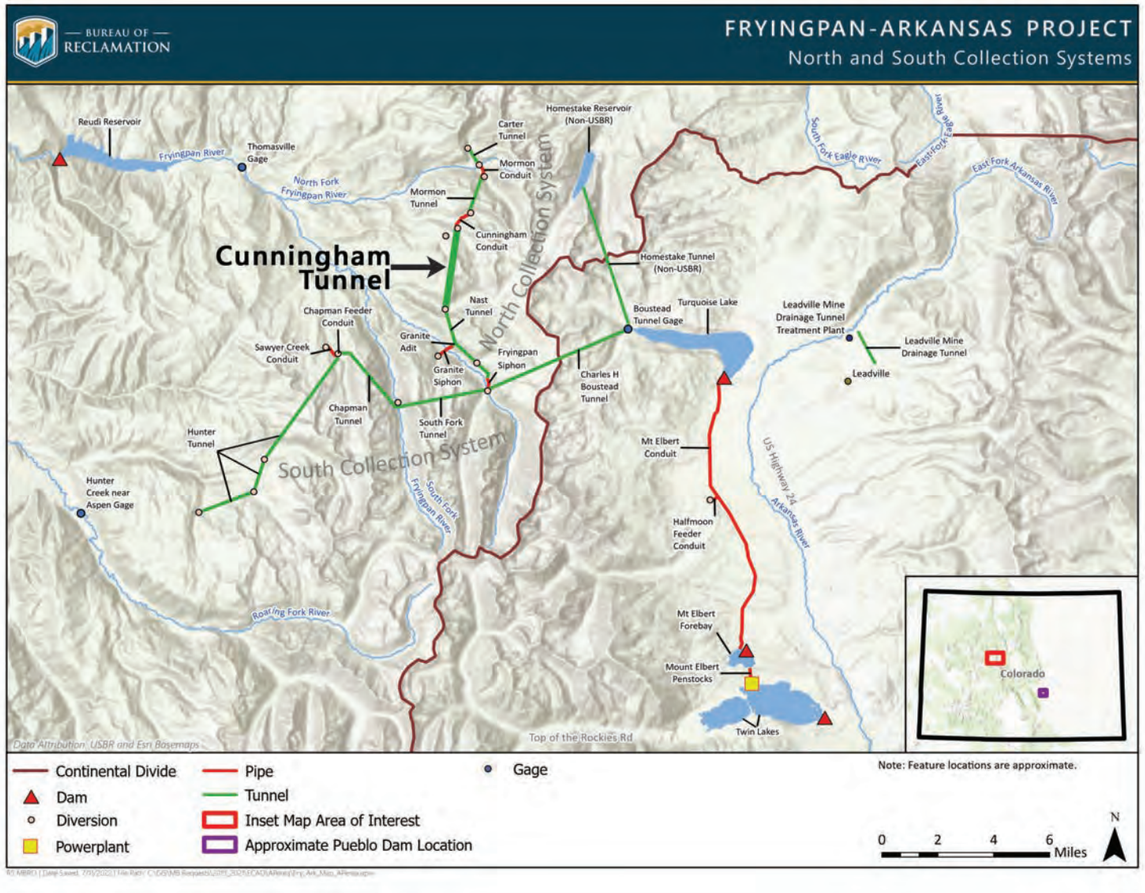
Cunningham Tunnel repairs complete

By Anna Perea, ECAO
Photos by ECAO staff

After two summers, repairs to the 2.9-mile-long Cunningham tunnel concluded on time and under budget. Contractors repaired scour damage at nine locations on the concrete invert floor and at two locations on the tunnel's shotcrete walls. Repairs used a total of 106.5 cubic yards of concrete. Work concluded on October 15th, following a clearance removal by the Mt. Elbert water crew.

Located at approximately 10,000 feet in elevation, deep in the Pike-Isabel National Forest, Cunningham tunnel's remoteness added complexity to lodging, deliveries, travel and concrete batching.

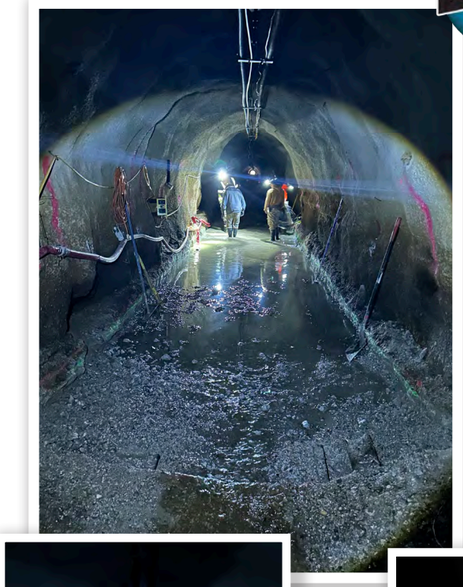
The project also faced contracting hurdles. For example, a complete turnover in contracting and inspection staff at the beginning of the second season resulted in the contractor placing out-of-specification concrete that required later

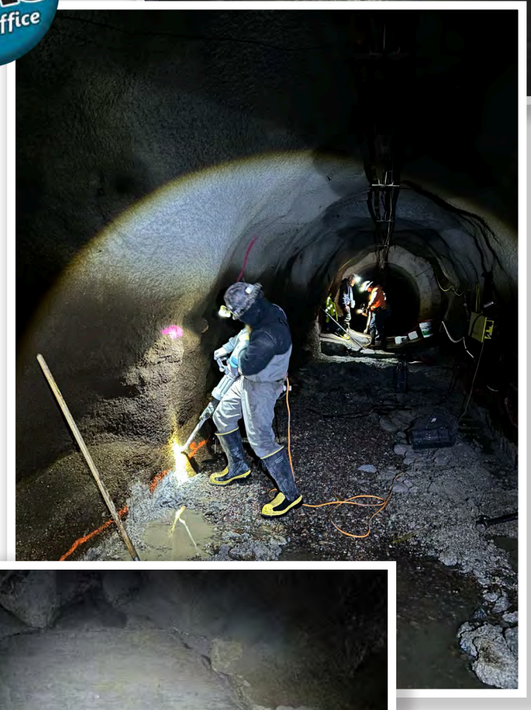


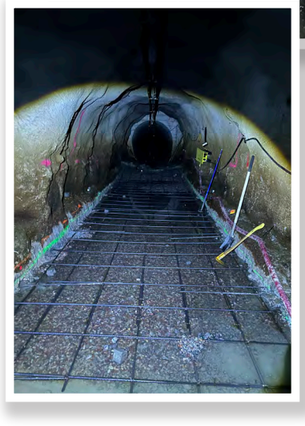
remediation. Additionally, two new scoured areas were discovered during construction. These damaged areas required immediate repair, initiating further negotiations and contract modifications.

This is the first time the tunnel has required repair during its four decades of service.

Cunningham Tunnel has a capacity of 270 cubic feet per second and flows into the Nast Tunnel. It came into service in 1979 and receives runoff from the North, Middle, and South Cunningham diversion structures. These features make up part of the North Side Collection System of the Fryingpan-Arkansas Project, which can divert, collect and transport up to 18,400 acre-feet per year.





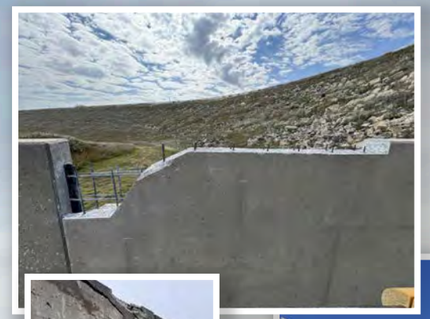
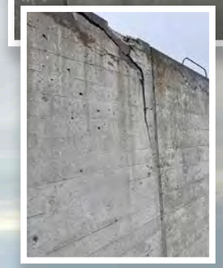


PLAINS TALK - NEWS FROM THE MB&ART REGION

WEBSTER SPILLWAY REPAIRED
by NKAO Maintenance Group



By Tyler Pool, Administrative Officer
and Frank Sanchez, Public Affairs Specialist


A damaged section of the spillway training wall at Webster Reservoir has been repaired by the Nebraska Kansas Area Office after routine inspections revealed cracked concrete and exposed reinforcement steel. The deterioration raised concerns about the long term stability, prompting the Bureau of Reclamation to move quickly on the fix.

The work was completed by the NKAO Maintenance Group, which handled the project without the use of outside contracting. Crews removed loose concrete, exposed the full extent of the damage, and prepared the surface for reconstruction.

New reinforcement steel was installed, and the team built custom forms to bring the wall back to it's original shape and height.

Once everything was set, crews then poured new concrete, completing the structural repair. Reclamation officials say the project protects public safety and supports reliable reservoir operations for irrigation districts and downstream communities. The spillway is a key feature In Webster's ability to manage high water, and early repairs help prevent larger structural problems.

By completing the work in-house, Reclamation realized notable cost savings and avoided the time and expense associated with the contracting and acquisition process.

The project underscores the importance of regular inspections, timely maintenance, and ongoing communication with local stakeholders who rely on the reservoir for water deliveries and flood management.

Nebraska-Kansas NKAO Area Office

TSC's 5-MILLION-POUND universal testing machine

By Westin Joy, TSC | Photos by TSC staff

The Technical Service Center's iconic 5-Million-Pound testing machine continues to provide mission critical support for Reclamation's most complex and large-scale infrastructure projects. The unique capabilities and very large load rating are integral to the continued operation of Reclamation's specialized facilities.

Since its installation, this essential equipment has tested materials and components for high-profile projects and advanced research, including concrete samples for numerous Reclamation dams and water infrastructure projects across multiple agencies. Recent testing includes tensile tests of Hoover Dam intake tower gate stems which allowed the Lower Colorado Basin to make informed cost-saving decisions for replacement schedules. Critical components of Shasta Dam Temperature Control Device hanger rods were tested during a replacement contract, and large-diameter concrete cores taken from the dam were tested to assess structural viability for a dam raise. The experts at the Concrete and Structural laboratory, responsible for the massive piece of equipment, have also orchestrated the testing of prestressed concrete beams, wire ropes, mine cribbing, 36-inch-diameter helical foundation piers, concrete formwork shoring towers, and even aerospace components for NASA and Lockheed Martin.

More than just a machine, this engineering giant remains a cornerstone of structural testing for Reclamation and others, enabling breakthroughs and design verification in civil, mining, and aerospace engineering for over 75 years.

Constructed in 1948 by Baldwin Locomotive Works in Eddystone, Pennsylvania, the 5-million-pound universal testing machine is a monumental feat of engineering. Shipped to Denver on railroad flatcars, it was installed in Building 56 at the Denver Federal Center after the building underwent extensive modifications, including raising the ceiling and adding a traveling crane. A two-story excavation was required to build an innovative cork-insulated concrete foundation, designed to support the machine's massive 750,000-pound weight. Installation took a full year, and in July 1950, the machine was showcased during an open house to dedicate the Reclamation Engineering Center, attracting around 40,000 visitors.

Standing 50 feet above the floor and extending 16 feet below, the machine can apply loads of up to 5 million pounds on specimens as tall as 32 feet, in either compression or tension. Its largest component, the bedplate, is a 96,000-pound steel casting. The sensitive crosshead, also weighing 96,000 pounds, houses the weighing capsule and moves along two precision screws—each 16 inches in diameter and 46 feet long. The foundation extends 25 feet beyond each end of the bedplate, enabling testing of specimens up to 50 feet long.

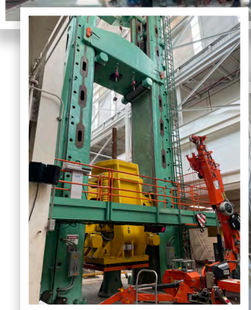
The machine operates through three systems:

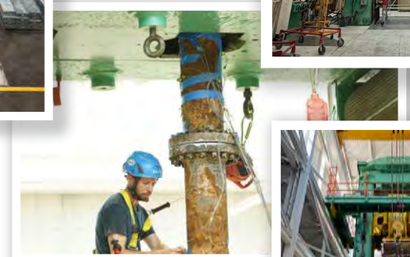
•Loading System: A pump delivers oil to a 5-foot-diameter hydraulic cylinder, moving the crosshead downward to apply load at up to 4.5 inches per minute.

•Weighing System: Equipped with precision pressure transducers, it offers NIST traceable calibrated load ranges from 6,000 to 5 million pounds to within 1% accuracy, verified annually in accordance with ASTM standards.

•Control System: Originally manual, it was upgraded in 1999 to a computerized system for precise load control and data acquisition. The system was recently upgraded again in 2024 to newer computer hardware and software systems, allowing for more customized control of the system.

Supporting equipment includes a full-load rated floor pedestal measuring 6 feet by 6 feet to raise test specimens off the floor by 30 inches, an elevator platform for access to perform maintenance, reconfiguration, and access to tall test specimens, and a 15-ton traveling crane for positioning heavy specimens.





Technical TSC Service Center

Department of the Army presents **Public Service Commendation Medal** to Catherine Lucero and team

By Public Affairs

Colonel Andy J. Pannier, Commander & District Engineer for the U.S. Army Corps of Engineers St. Louis District presented Catherine Lucero, Technical Service Center, Concrete & Structural Laboratory, and her team, the "Department of the Army Public Service Commendation Medal" for her contributions to the Lock and Dam 25 project in a virtual awards ceremony this October. The Lock and Dam 25 project is a critical piece of the nationally significant Upper Mississippi River – Illinois Waterway navigation system.

USACE is constructing a new 1,200-foot lock at Lock and Dam 25, on the Mississippi River near Winfield, Missouri. The new lock will be integrated into the existing facility, which is more than 80 years old. The construction of the new lock will include large concrete placements and will require a full thermal analysis to aid in design and construction. The USACE St. Louis District requested the assistance of Reclamation's Concrete and Structural Laboratory to provide thermal properties testing on the existing concrete and on new concrete mixtures developed by USACE's Engineering Research & Design Center to support a Level 3 Non-Linear Stress Analysis thermal study. Because of the specialized nature of the work and the large specimen size, the work could not be completed by a commercial testing laboratory.

While the scope of work was complex, the CSL is uniquely equipped to provide testing related to mass concrete. Lucero has completed similar testing programs over the years and was comfortable taking on the work and committing to an aggressive schedule. The CSL team had a clear understanding of the scope, their roles and responsibilities, and the risks involved with lab testing which helped them prepare for the whirlwind of testing in the months to come.

The CSL received materials and mix designs from USACE and within two weeks, the team had mixed about 3 cubic yards of concrete in the lab. In total, the team cast, instrumented, and tested nearly 200 cylinders to evaluate compressive and tensile strength, elastic properties, and hardened thermal properties like thermal expansion and thermal diffusivity. Increased data acquisition capacity enabled the CSL to run multiple thermal properties tests concurrently, cutting the testing time in half. New dataloggers with modules to read embedded vibrating wire strain gauges allowed continuous strain logging, eliminating the need to take time-consuming manual strain measurements. The CSL recently increased capacity from four to six chambers available for adiabatic calorimetry, a capability unique to the CSL.

An interim report was provided within 60 days and a final report within 150 days of receiving mix designs. The work was completed on schedule and under budget. Consistent and open communication between USACE and Reclamation enabled rapid response to issues.

During the presentation of the Public Service Commendation Medal, it was noted that Lucero provided exemplary service as Project Manager and was recognized for outstanding leadership, customer service, and professionalism. The success of this project highlights the CSL's specialized capabilities and dedication to meeting clients' needs.

PLAINS TALK - NEWS FROM THE MB&ART REGION 23

Lake Thunderbird

Oklahoma's gem for recreation, water and wildlife

By Frank Sanchez, Public Affairs Specialist

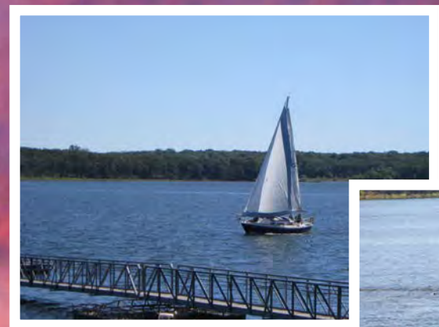
Lake Thunderbird continues to serve as one of central Oklahoma's most relied-upon multipurpose reservoirs, supporting municipal water needs while providing year-round recreation for the surrounding region. Constructed by the Bureau of Reclamation in the 1960s, the project remains a key asset for the Norman area and an example of how long-term water infrastructure planning benefits communities today.

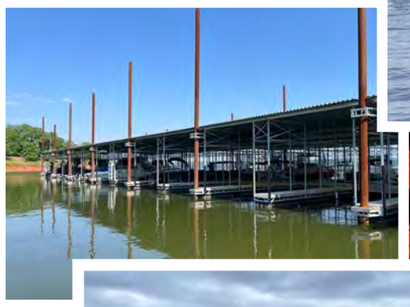
Visitors depend on the lake for a wide range of outdoor activities. Lake Thunderbird State Park draws more than a million people each year for boating, fishing, hiking, camping and wildlife viewing. Two marinas and multiple boat ramps support steady recreational use, while anglers regularly target crappie, bass, saugeye and catfish across the reservoir's coves and open water. Trail networks around the shoreline accommodate hikers, mountain bikers and equestrian users, making the lake an accessible outdoor space for residents and visitors.

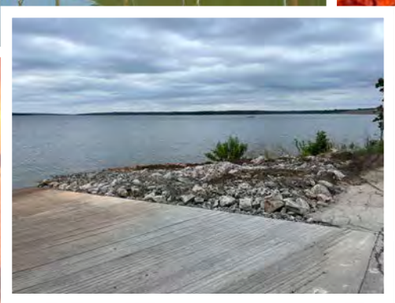
Beyond recreation, the reservoir plays a critical role in regional water management. Lake Thunderbird provides drinking water for Norman, Midwest City and Del City, helping communities maintain stable supplies through seasonal dry periods and prolonged drought. The project also supports downstream flood risk reduction and provides important habitat for migratory birds and native wildlife.

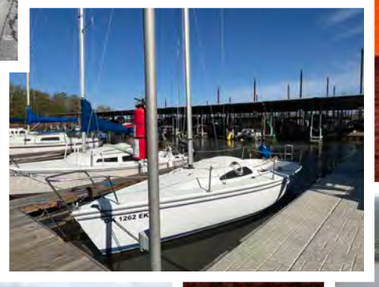
The lake's reliability continues to shape economic growth and community planning across the region. Access to a consistent municipal water supply allows local governments to meet rising demand, while the recreational setting strengthens quality of life for families, students and businesses throughout the area.

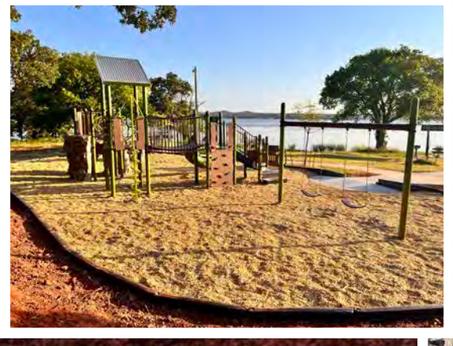
For more than five decades, Lake Thunderbird has demonstrated the long-term value of Reclamation's projects. It remains an essential resource for the people who depend on it every day, balancing water supply, recreation and environmental stewardship for Oklahoma's future.

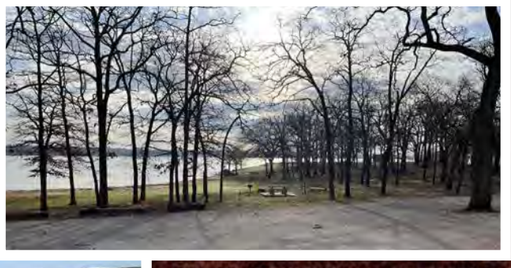


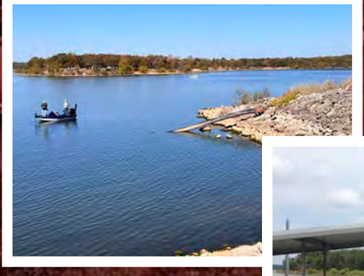


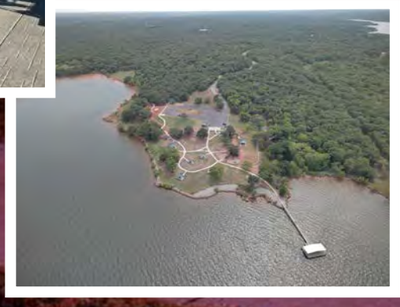


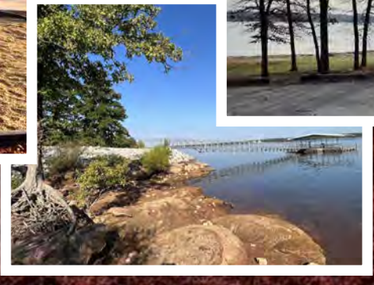












Drone inspection enhances safety

at Fremont Canyon Powerplant surge tanks

Story by Elizabeth Smith - MB&ART Public Affairs
Photos by Miles Morgan - NKAO Civil Engineer

Fremont Canyon Powerplant, Wyoming

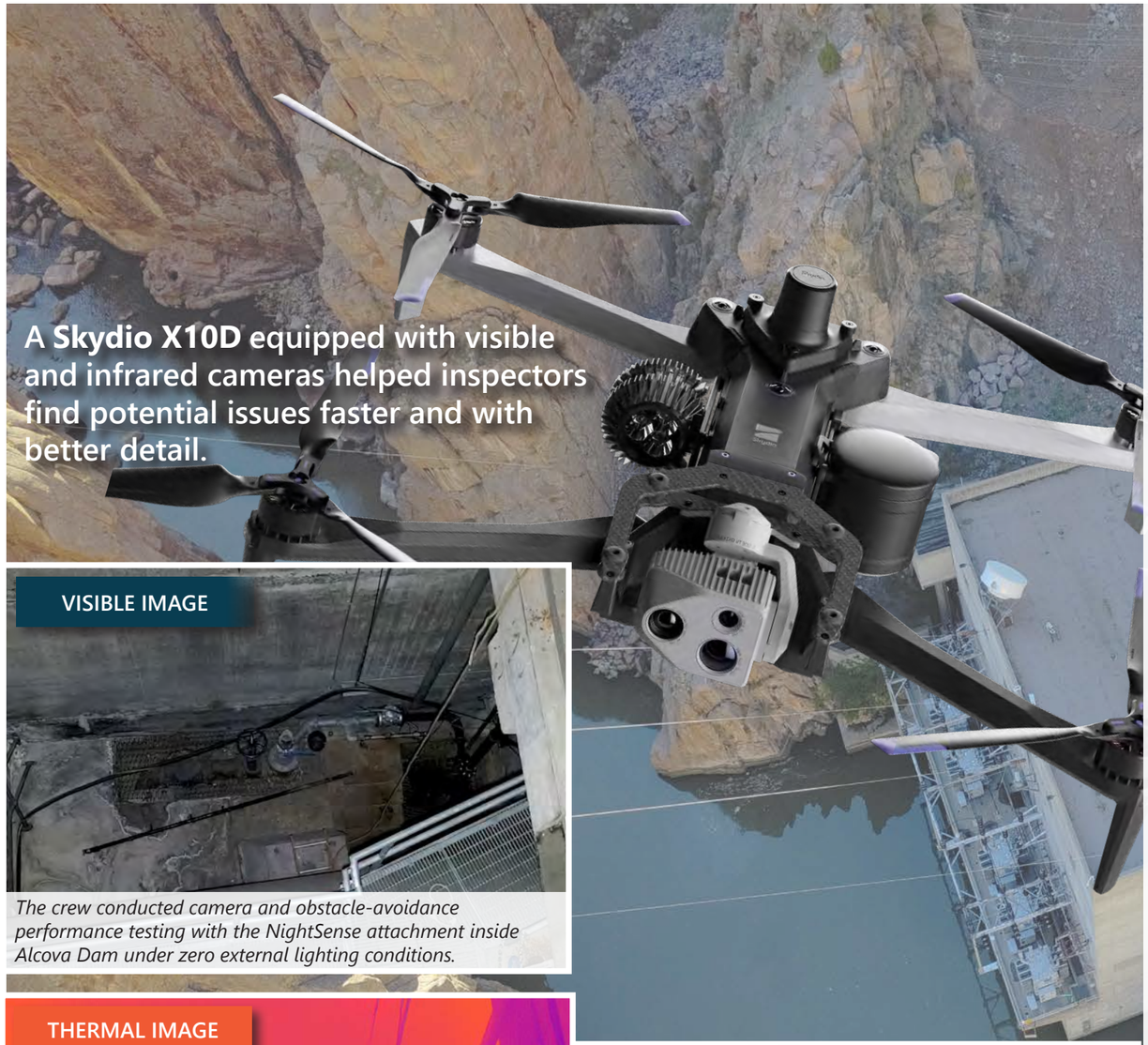
Engineers at the Bureau of Reclamation recently used drone technology to inspect the surge tank at Fremont Canyon Powerplant, improving safety while capturing detailed data on a critical component of the facility's water conveyance system.

Located along the North Platte River in central Wyoming, Fremont Canyon Powerplant is part of the Pick-Sloan Missouri Basin Program and has generated renewable power for the region since the early 1960s. Water from Pathfinder Reservoir travels through penstocks to the powerplant, where it drives turbines to produce electricity.

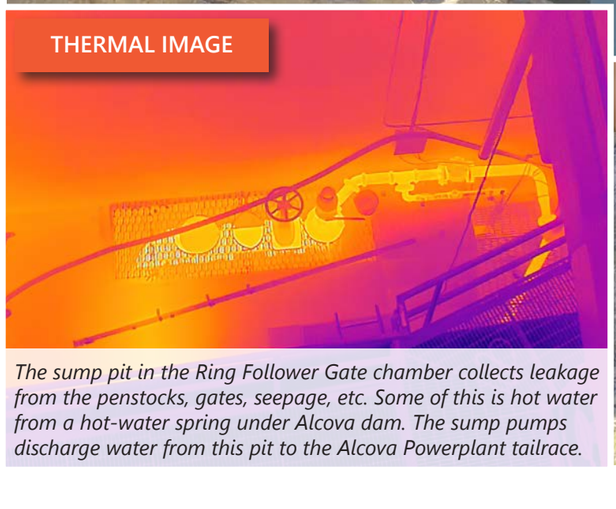
The surge tank plays a key role in that system.

Connected to penstocks, the vertical structure helps with regular sudden changes in water pressure that occur when turbine operations shift. By absorbing pressure surges, the surge tank protects penstocks, valves, and other equipment damage caused by water hammer (changes in pressure).

North Platte Facilities Manager Billy Bright compared the weight movement to freight trains. "The water inside the penstock that feeds the powerplant weighs about 125,000 tons – roughly the same as six fully loaded coal trains. When that much mass needs to slow down or stop, the surge tank absorbs the energy, protecting the powerplant's equipment from damage."

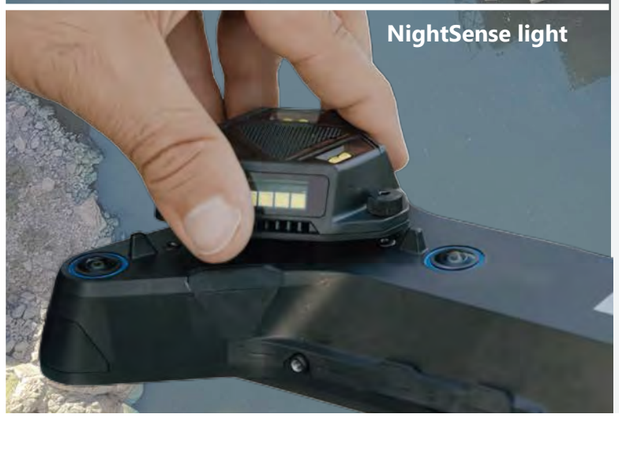


A **Skydio X10D** equipped with visible and infrared cameras helped inspectors find potential issues faster and with better detail.



The crew conducted camera and obstacle-avoidance performance testing with the NightSense attachment inside Alcova Dam under zero external lighting conditions.

The sump pit in the Ring Follower Gate chamber collects leakage from the penstocks, gates, seepage, etc. Some of this is hot water from a hot-water spring under Alcova dam. The sump pumps discharge water from this pit to the Alcova Powerplant tailrace.



(Drone inspection continued)

The surge tank is only emptied when the crew inspects the penstock, which requires the entire plant to be shut off.

Mechanical Engineer at the Wyoming Area Office Ken Miech said, "We do that about every six years, so missing an inspection window means we must wait another six years before we can inspect again. It's really vital that we get the inspection done, when scheduled, so we can assess the condition of as much of the penstock as is possible."

During the inspection, a Skydio X10D drone equipped with high-resolution and infrared cameras flew around the exterior and interior of the surge tank allowing engineers to examine coatings, concrete structures, joints and access points that are difficult to reach safely by traditional methods.

"What would normally cost $30,000 to $60,000, take a six-person team, and require about three days of work was completed in just three hours with a drone operator, visual observer, and engineer monitoring the inspection feed, at a significantly lower cost," said Miech.

Live video and imagery provided a close-up view of the structures' condition while avoiding the need for a rope team for the inspection.

Civil Engineer and drone pilot at the Nebraska-Kansas Area Office Morgan Miles flew the drone around the base of the surge tank at the concrete-steel interface. He then flew into the 30 ft diameter surge tank to examine the current condition of the steel and concrete within the tank.

"We connected an HDMI cable to the controller so the observing crew could watch the video feed in real time and direct my maneuvers, allowing them to see exactly what they wanted to view," said Morgan.

> ***What would normally cost $30,000 to $60,000, take a six-person team, and require about three days of work was completed in just three hours using a drone.***

Testing the Nightsense lighting attachment for the Skydio X10D began the day at the bottom of Alcova Dam. The crew checked the camera and obstacle-avoidance performance in the complete absence of external light.

Next, they were able to navigate approximately 180 feet down inside of the Pathfinder Dam to examine the emergency gate access shaft and drainage system at the bottom. "It was pitch black inside the shaft after about 20 feet down, so we were able to really able to take advantage of the Nightsense attachment," said Morgan.

Inspections of the surge tank and gate shaft confirmed that both components are in good condition. The surge tank plays a standard role in penstock operations. "Having the infrared camera available to distinguish between blemishes and damage was incredibly helpful. It gave further insight into where we would need repair crews to plan on going versus where it would be nice to have a second look," said Miech.

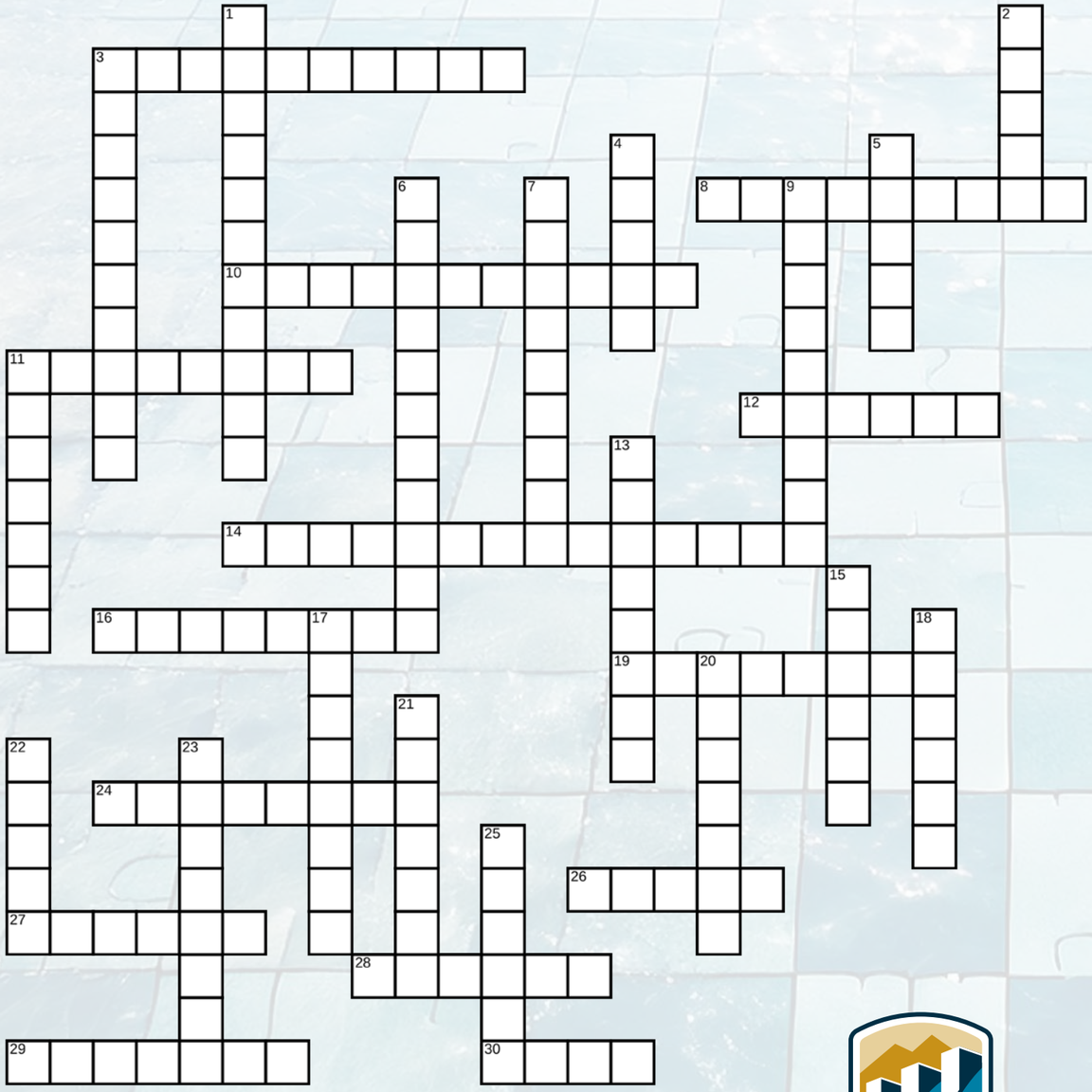
While the drone is used for inspection, a rope-access repair crew is still required to enter the surge tank to complete repairs. The aerial inspection helps crews plan the work more efficiently and safely.

"The use of the drone in the confined space of the gate shaft was nerve wracking for everyone, and we took extra safety precautions to get the drone in place while keeping everyone clear of possible injury," said Miech.

The data collected will be reviewed alongside previous inspection records to track long-term performance and identify any maintenance needs. Using drones for routine inspections helps Reclamation reduce risk, improve efficiency, and maintain reliable operations at aging infrastructure sites.

Fremont Canyon Powerplant continues to support regional power generation while meeting broader project purposes that include irrigation, flood control, recreation, and water supply. Drone-based inspections are one of several tools Reclamation is using to ensure these facilities remain safe and dependable for decades to come.

Crossword



Answers can be found within this issue.
Crossword solution on contents pages.

BUREAU OF RECLAMATION

ACROSS

3. Water from this reservoir travels to Fremont Powerplant

8. Halls Coulee is part of this project

10. Defined as "The quality of being trustworthy or of performing consistently well," this is a vital aspect of Reclamation's work

11. One of the three systems of TSC's testing machine

12. A pressurized pipeline capable of conveying water uphill

14. The focus of the first item listed of the Regional Priorities

16. These types of efficiencies are listed as a Regional Priority

19. The home of Lake Thunderbird

24. _____ Existing Infrastructure is one of the Regional Priorities

26. A vital resource for support items and services can be accessed by typing https://_____ in your web browser

27. The Web-to-Print portal has various sizes of these, bearing the Reclamation logo

28. The site used for testing the capabilities of drone inspections

29. Whether for holding papers or presenting awards, the Web-to-Print portal offers a variety of these

30. TSC staff received a commendation medal from this Department

DOWN

1. This lake is a jewel of Oklahoma

2. Drone technology was used to inspect these types of tanks

3. This issue features the FY26 Regional _____

4. This beloved regionwide contest will resume this year

5. This uncrewed aircraft increases efficiency and reduces costs of inspections

6. These are removed by the appropriately named Leadville Treatment Plant

7. This worked with an excavator to prepare ground for pipe installation

9. Construction on this new treatment plant has begun

11. This spillway was repaired using in-house expertise at considerable cost saving

13. Halls Coulee is referred to as part of the _____ of the Milk River Project

15. One of the Regional Priorities

17. This type of water storage is being constructed in Kadoka, SD

18. Blocks were placed at Pathfinder Dam using these

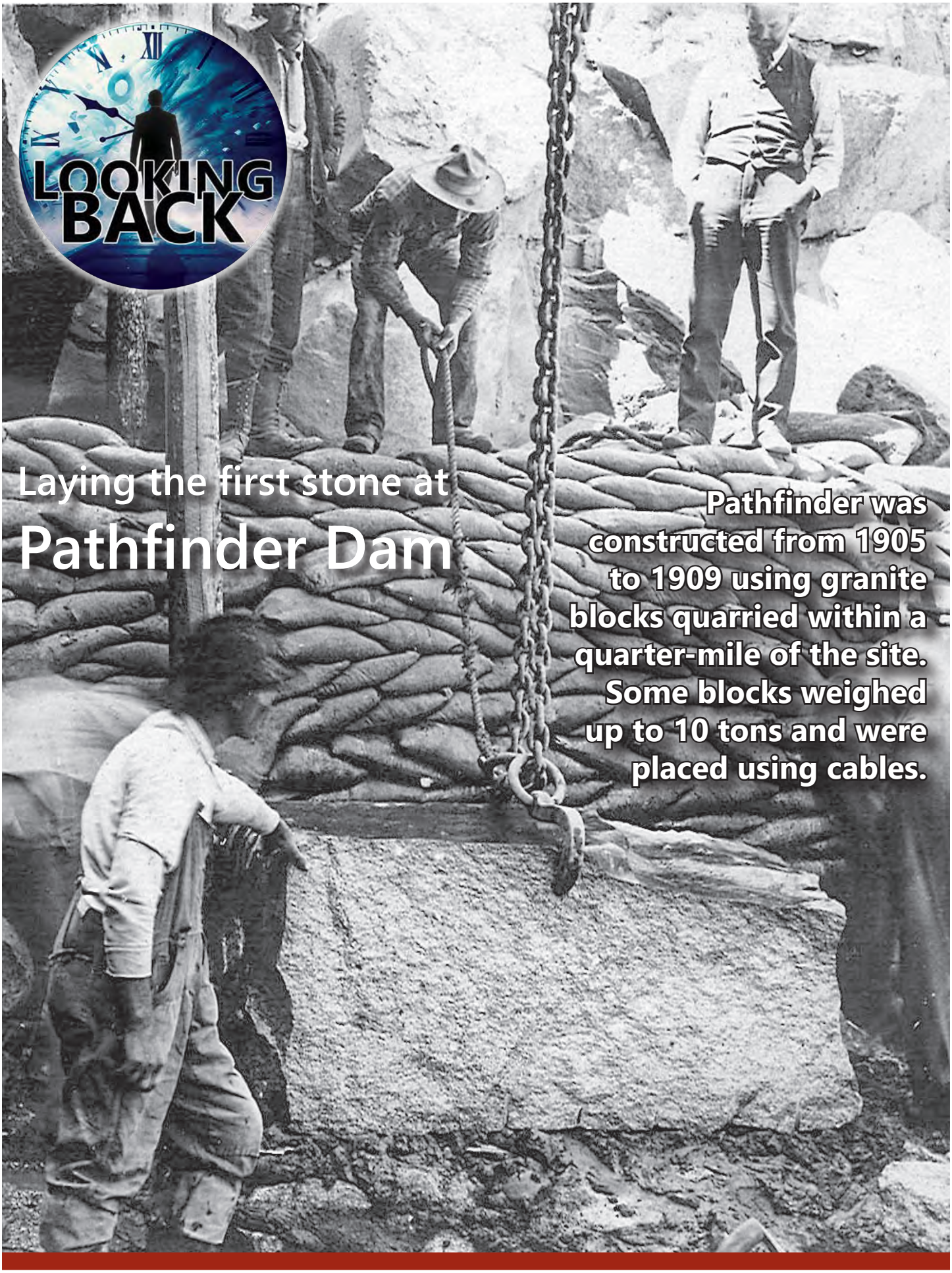
20. One of the three systems of TSC's testing machine

21. Another of the three systems of TSC's testing machine

22. Controlling this type of water event accrues actual benefits in dollars and lives

23. This is being replaced in Fort Pierre, SD

25. The site of a waterline relocation project



Laying the first stone at Pathfinder Dam

Pathfinder was constructed from 1905 to 1909 using granite blocks quarried within a quarter-mile of the site. Some blocks weighed up to 10 tons and were placed using cables.