

VOLUME 1, JANUARY 2026

# Get AMMPed!

A publication of the Aquifer Mapping & Monitoring Program (AMMP)  
at the New Mexico Bureau of Geology and Mineral Resources



## MESSAGE FROM THE ASSOCIATE DIRECTOR FOR WATER PROGRAMS

New Mexico is an arid state facing rapidly changing climate conditions. Water availability is not something we can take for granted. In recent years, many communities have experienced water shortages and wells going dry. Gaining a better understanding of our existing groundwater resources and identifying alternative water sources to supplement diminishing supplies is essential.

For the past 20 years, the Aquifer Mapping & Monitoring Program (AMMP) at the New Mexico Bureau of Geology and Mineral Resources (NMBGMR) has worked to address water quality and quantity issues by interpreting the subsurface geology that controls groundwater. Until recently, we worked with a more limited budget, relying heavily on existing data, and with minimal new data collection. Yet we have learned a great deal about New Mexico’s subsurface geology and hydrology, particularly through partnerships with landowners providing access to wells. In recent years, we, along with many other collaborators, have advocated that there is much more we can do to understand our aquifers if we invest in new data collection.

With deep gratitude for new and recurring state funding, we are now launching new aquifer data collection efforts. In the fall of 2025, we took a crucial first step. Using airborne electromagnetic surveys, or AEM, we are now rapidly understanding more about the subsurface geology and hydrology across large regions of the state. By combining new AEM survey data with existing studies—including other geophysical surveys, geochemical sampling, water level measurements, mapping, and modeling—we can finally map our aquifers in greater detail.

While we continue our work on regional hydrogeology studies, developing 3D aquifer maps, and groundwater level monitoring, we are also conducting AEM surveys and building improved aquifer mapping for five large regions of New Mexico. Our staff at the bureau, with a team of consultants and researchers, are supporting this effort. As you’ll learn in this edition of Get AMMPed!, in 2025–2026, we are surveying in the Mimbres Basin, the Gila and Animas Basin regions, the Lower and Middle Rio Grande Valley, and the Estancia Basin.

This is exploration. This is an opportunity to learn, grow, and improve our water management and planning efforts. Moving forward with science and data, we can move beyond guesswork and speculation and protect and better manage our valuable groundwater resources.

There is much to do. We look forward to collecting and sharing new data as we explore the subsurface of our state. The most challenging work ahead may be making choices about how to use or conserve the resources we have; however, these decisions can be informed by science and data. We are very excited for the opportunity to collaborate with you and work on this project.

Thank you for your support.

**Stacy Timmons**  
New Mexico Bureau of Geology and Mineral Resources

## WHY?

The Aquifer Mapping & Monitoring Program (AMMP) mission is to map and monitor the quantity, quality, and distribution of all groundwater in New Mexico.

### INFORMED DECISIONS

Fully characterizing the state’s groundwater will enable planning and policy decisions that ensure a high quality of life for all New Mexicans.

### SURFACE & GROUNDWATER ARE CONNECTED

Surface water in rivers, streams, and lakes in many regions is tightly connected to groundwater. What happens with water below the ground affects water above the ground and vice versa.

### URGENCY

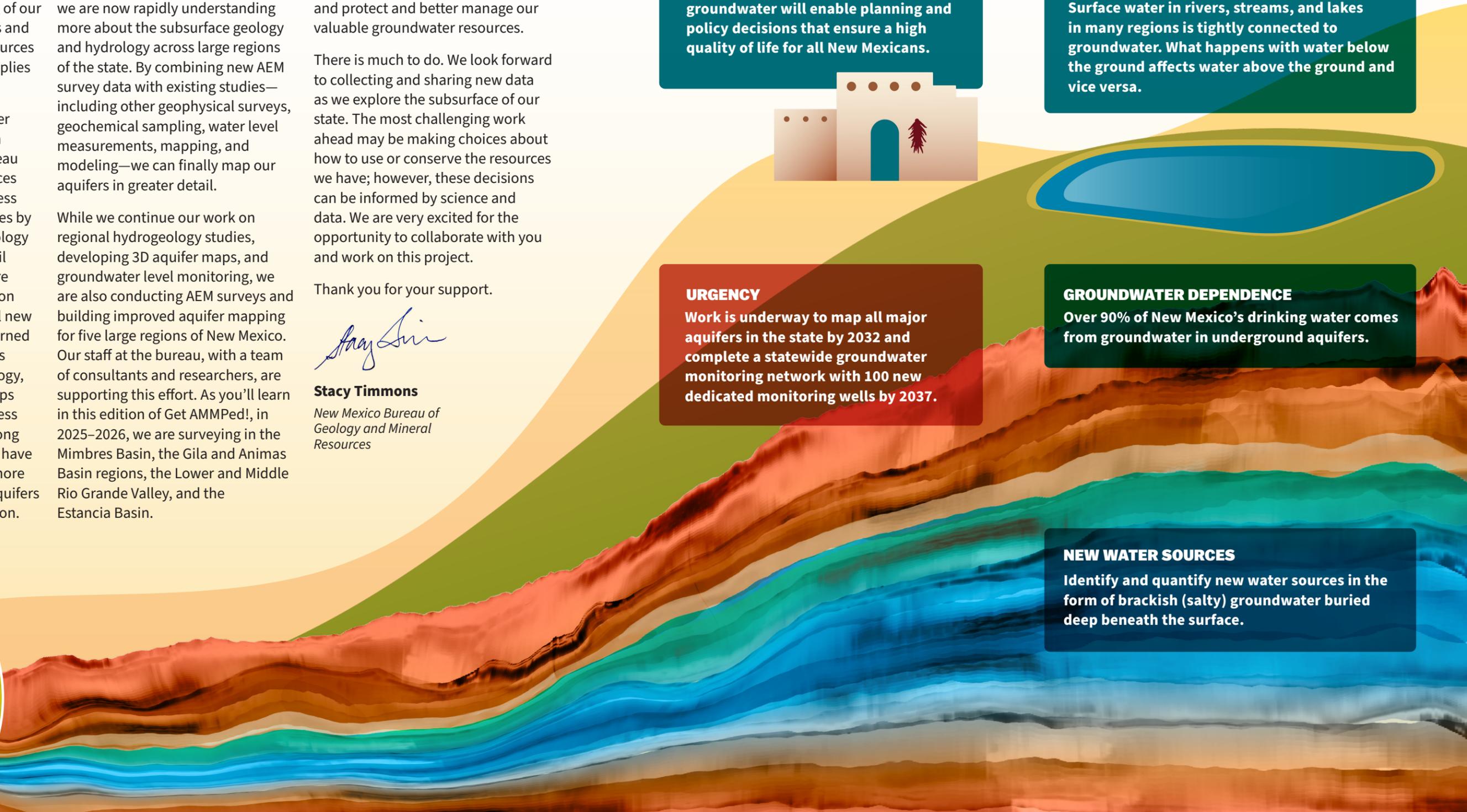
Work is underway to map all major aquifers in the state by 2032 and complete a statewide groundwater monitoring network with 100 new dedicated monitoring wells by 2037.

### GROUNDWATER DEPENDENCE

Over 90% of New Mexico’s drinking water comes from groundwater in underground aquifers.

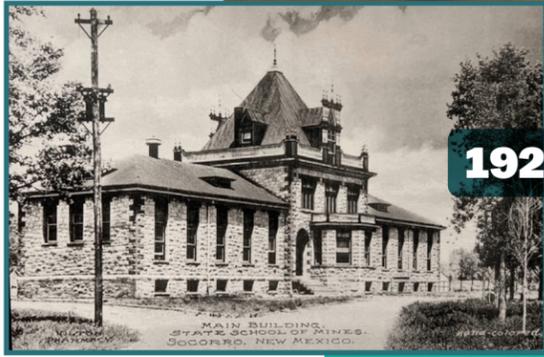
### NEW WATER SOURCES

Identify and quantify new water sources in the form of brackish (salty) groundwater buried deep beneath the surface.



**New Mexico Bureau of Geology and Mineral Resources established.**

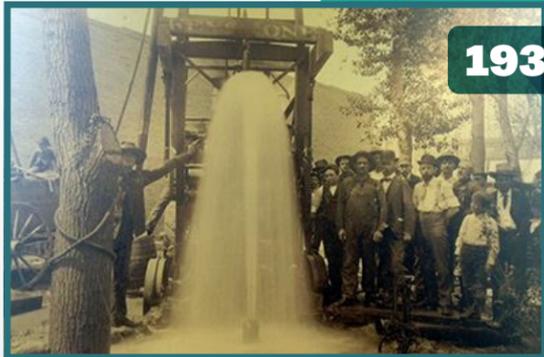
Photo credit: NMBGMR



**1927**

**State of New Mexico begins regulating groundwater in response to groundwater pumping in the Roswell area.**

Photo credit: Historical Society for Southeast New Mexico



**1931**

**Aquifer Mapping Program (AMP) created at the bureau, receiving a one-year state appropriation of \$300,000 to conduct aquifer studies across the state. This funding eventually became recurring, with some variations from year to year. State funding was also supplemented by grants to support regional studies.**

Photo credit: NMBGMR



**2006**

**Healy Collaborative Groundwater Level Monitoring Network launched to measure and manage New Mexico's groundwater resources.**

Photo credit: Monica Rakovan, NMBGMR



**2016**

# AMMP TIMELINE

## REGIONAL AND STATEWIDE HYDROGEOLOGY PROJECTS

**2005**  
Santa Fe Area / Española Basin Aquifer Mapping

**2006**  
Southern Sacramento Mountains

**2009**  
Tularosa Basin

**2011**  
Southern Taos Valley

**2012**  
San Juan Basin

**2015**  
Statewide Regional Brackish Water Assessments

**2018**  
Sunshine Valley

**2019**  
Salt Basin

**2020**  
High Plains Groundwater Mapping

**2020**  
Mimbres Basin

**2023**  
Rio Arriba County

**2024**  
Middle Rio Grande San Acacia Reach

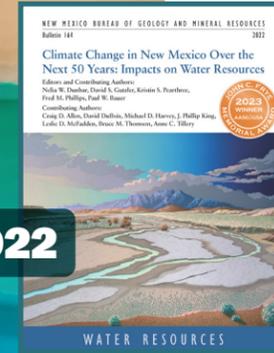
**2025**  
Mimbres Basin, Estancia Basin, Middle Rio Grande Region, Lower Rio Grande Region, Gila-Animas Aquifer Characterization with Airborne Electromagnetic Surveys

**2019**



**Water Data Act passes, establishing the Water Data Initiative, which is created to provide New Mexicans with accessible and crucial water data for management and planning.**

**2022**



**Award-winning collaborative publication produced by the bureau with state experts describing impacts of climate change on water in New Mexico over the next 50 years.**

**2023**



**Bureau launches its Water Education Program to build greater awareness of critical water issues in New Mexico.**

Photo credit: Frank Sholedice, NMBGMR

**2024**



**Governor Michelle Lujan Grisham's 50-Year Water Action Plan includes improving groundwater mapping and a target of 100 new monitoring wells by 2037.**

**2025**



**Official launch of the bureau's Aquifer Mapping & Monitoring Program (AMMP), with expansion to 25 employees for all water programs and annual funding of \$1.15 million and nonrecurring funding of \$7.5 million for FY26.**

Photo credit: Frank Sholedice, NMBGMR

# PHASE ONE: AEM SURVEYS



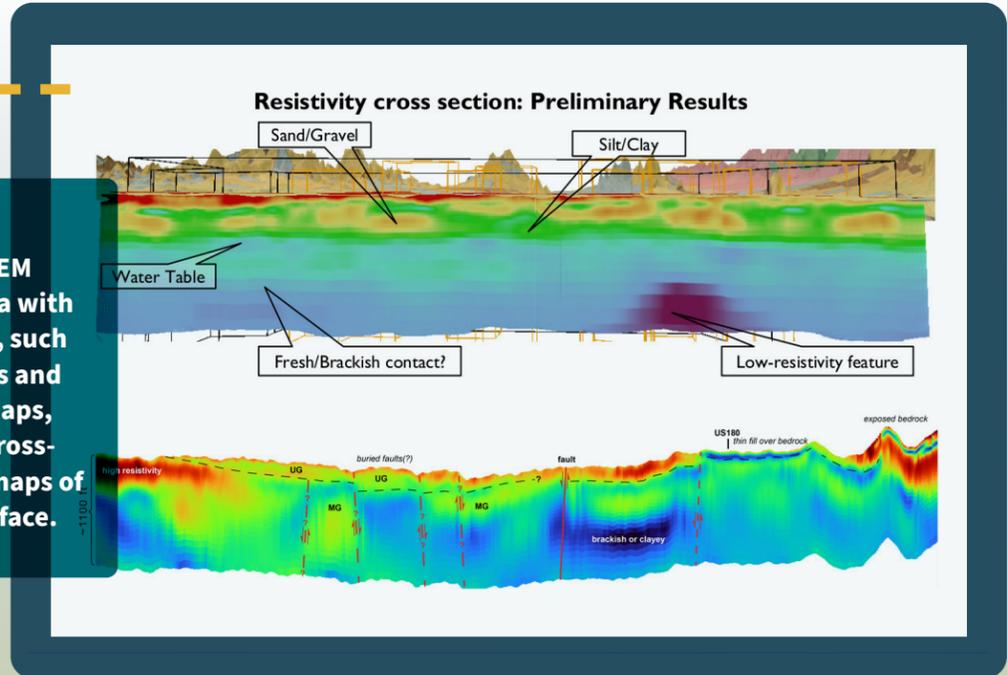
A new phase of data collection for AMMP uses airborne electromagnetic (AEM) surveys, which allow scientists to map large areas of New Mexico's subsurface from the air.

A specially trained pilot flies a helicopter towing a hoop in a series of transects.

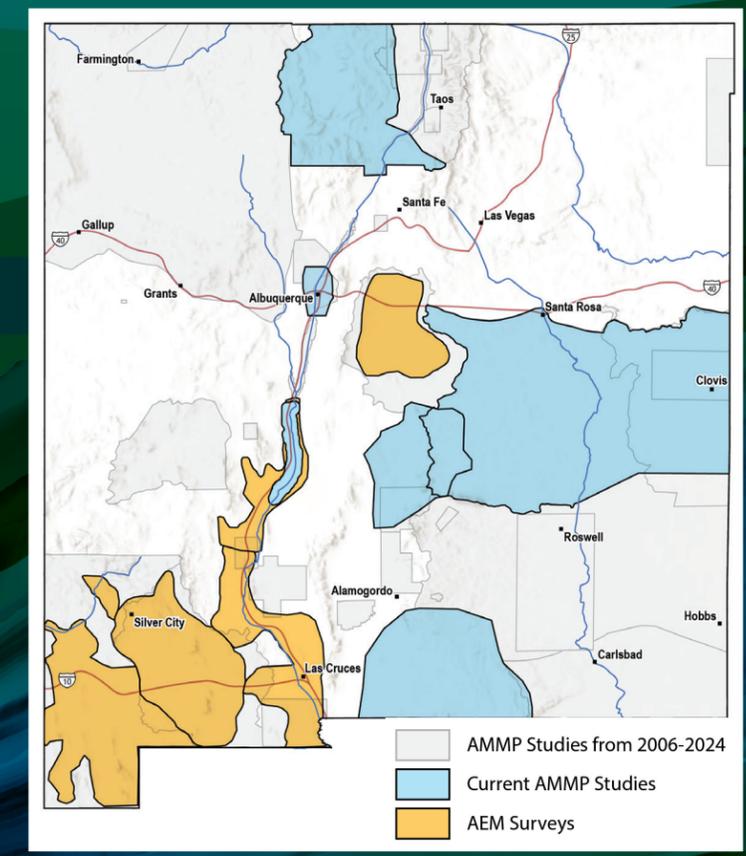
The hoop emits a non-invasive electromagnetic signal into the subsurface. A receiver on the hoop then measures the signal's "echo," showing the electrical resistivity of different materials beneath the ground.

Measuring electrical resistivity helps determine the location of fresh and brackish (salty) water in the subsurface.

Geologists combine AEM survey data with other data, such as well logs and geologic maps, to create cross-sectional maps of the subsurface.



These maps and cross sections can be used to identify ideal locations for water wells and aquifer recharge projects and improve management of water resources.



## HELI GOOD DATA: MAPPING GROUNDWATER ACROSS NEW MEXICO

On a crisp December morning at the Municipal Airport in Deming, New Mexico, community leaders and stakeholders gathered to learn about a new collaboration between AMMP and the State of New Mexico to map groundwater across the state using airborne electromagnetic (AEM) surveys.

“As New Mexicans, we all have a deep understanding that our water resources are foundational,” said State Representative Nathan Small. “They’re the limit to sort of what is possible, but they’re also the way forward.”

Conversations centered water as foundational to life in New Mexico and essential for its continued flourishing into the future.

Deming Mayor Michele Shillito highlighted the role reliable water data plays in supporting local economies, while Priscilla Lucero, executive director of the Southwest New Mexico Council of Governments, stressed the importance of reliable water supplies for agriculture, particularly the production of a staple ingredient in New Mexican cuisine—chile.

Photo credit:  
Alison Elder, NMBGMR

“OUR FUTURE  
DEPENDS ON  
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CONTINUE TO  
ACCURATELY  
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AND MANAGE  
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GROUNDWATER.”

Speakers recognized New Mexico as an early leader in managing groundwater, noting it as one of the first states in the nation to regulate use, emphasizing that recent technologies like AEM surveys can help with challenges arising from warming temperatures and intensified drought.

“It’s even more critical that we proactively take advantage of this emerging technology,” Lloyd Valentine of the Office of the State Engineer said. “Our future depends on our ability to continue to accurately monitor and manage the state’s groundwater.”

The partnership between the state and the Aquifer Mapping & Monitoring Program (AMMP), facilitated by the New Mexico Bureau of Geology and Mineral Resources, aims to collect AEM data to inform a way forward for New Mexico.

“Other states have suffered from loss of agricultural industries, experienced subsidence with irreparable consequences, and experienced things such as saltwater intrusions,” said Valentine. “All caused by over-pumping of aquifers.”

AEM data collection complements decades of geological data gathered by the bureau and other state agencies. These surveys allow hydrogeologists and groundwater managers to connect the dots between widely spaced data points, creating a more complete picture of New Mexico’s subsurface geology to better measure groundwater quantity and quality and identify new sources.

David McSherry, a former Deming area farmer and current Public Works Director for the City of Deming, referenced a 1918 U.S. Geological Survey (USGS) report documenting wells in the area pumping 1,000 gallons per minute less than three feet beneath the surface. Today, the wells are completely dry.

Whirring overhead, a helicopter with a 1,500-pound hoop suspended beneath it, returned from a morning AEM survey flight.

“You can write all the plans you want sitting in the office, but you need the data from this survey, from this helicopter,” McSherry said. “We and our neighbors have been mining water for a long time, and it’s the lifeblood of our community. Finding where the sources are and new sources and different sources and different methods of utilizing—this is very important to us.”

AEM surveys began in five regions of New Mexico in November 2025: the Mimbres Basin, the Gila and Animas Basin regions, the Lower and Middle Rio Grande Valley, and the Estancia Basin.

Helicopters are equipped with specialized instruments capable of measuring down to about 1,600 feet beneath the ground. Flying at about 55 miles per hour, highly trained pilots follow strict safety protocols, operating only during favorable weather conditions. Because AEM surveys can only collect data with winds below 15 miles per hour, AMMP teams are gathering as much data as possible before spring winds begin.

Photo credit:  
Alison Elder, NMBGMR

As contractors rushed to refuel the helicopter for another flight, Jared Abraham of Aqua Geo Frameworks explained the technical details and safety protocols of AEM surveys. While a hoop suspended mid air from a helicopter may be startling to first-time viewers, Abraham compares it to a giant metal detector attached to a GPS system that records changes in the subsurface. Flight paths are carefully planned to avoid buildings, roads, and populated areas both for safety reasons and because metal in pipes, wires, and homes can interfere with the hoop's ability to image the subsurface.

“The real key of why we even do these electromagnetic surveys is we’re getting a data point about every one-hundred feet,” said Abraham. “If you think about traditional methods, which are typically drilling, there is no conceivable way to drill every hundred feet. So we’re filling in a very dense image or picture of the Earth between control points. The control points are the well logs that the state engineer has been collecting, the geologic investigations that the state has been doing, that USGS has done, and that other consulting groups have done over the years. We’re actually filling in the pieces in between, building an image between control points.”

The images produced are valuable for many applications, including identifying locations for new wells and aquifer recharge sites. Bureau of Geology representatives and contractors closed out the day by sharing preliminary images and answering questions about how the data can help municipalities and water managers across the state.

During closing remarks, Representative Small invited the group to consider whether current efforts are sufficient and what more can be done to support the collection of vital data.

“We’re doing something that I’ve never seen in this state before,” Small said, urging that, “We must put our money where New Mexicans know it needs to be, and that’s in our water future. And in understanding what we have with water, here and now.”

Helicopter rotors began to whirl again, as a pilot brought the helicopter to a low hover over the ground. With the sun now high in the sky, a neon-vested technician reattached the hoop to the helicopter before it lifted off for another round of data collection, the scene carrying a sense of both excitement and urgency.

**“ THE REAL KEY OF WHY WE EVEN DO THESE ELECTROMAGNETIC SURVEYS IS WE’RE GETTING A DATA POINT ABOUT EVERY ONE-HUNDRED FEET. ”**

Photo credit: David Supé,  
Mountain Air Helicopters

## FUTURE VISION AND NEEDS

There is broad consensus among our state’s leadership that a better understanding of our groundwater resources is essential to protecting New Mexico’s future. The governor’s 50-Year Water Action Plan outlines a comprehensive framework to secure and protect existing water resources while also characterizing and developing new resources to support local communities. We can do this while also exploring alternative groundwater resources, such as brackish groundwater for desalination. The plan tasks the Bureau of Geology with building a modern monitoring program for the state’s aquifers over the next decade.

The state legislature is providing critical resources to the bureau, enabling us to expand programs and accelerate data acquisition. With sustainable funding, we can continue our crucial work using AEM, along with other complementary data, to map and model the remaining major aquifers in the state.

AMMP’s work is supported with a \$1.15 million recurring budget at the Bureau of Geology, with a one-year, nonrecurring budget of \$7.5 million for new data collection and contract support. To support the work of characterizing aquifers and establishing

a dedicated groundwater monitoring network, AMMP is working to secure further long-term and annual funding. Recurring funding is vital for supporting staff, building models, interpreting new data, and managing numerous regional projects. Nonrecurring funding is requested annually from the state to support larger one-time expenses such as AEM surveys, consultant support for data compilation and modeling, data management, and drilling exploration wells to help confirm basin characterization and establish the new long-term groundwater monitoring program.

Each year, the New Mexico Bureau of Geology develops a budget plan that is incorporated into the overall New Mexico Tech budget, and submitted under the New Mexico Higher Education Department. For state fiscal year 2027, our budget request includes \$1 million to support AMMP staffing needs, and \$22 million in nonrecurring funding for water programs and new data collection. We plan to continue AEM surveys and other land-based geophysical surveys to cover even more regions of the state.

We aim to provide the most useful and relevant aquifer information for a variety of water management and water planning challenges in New Mexico. We appreciate hearing from our stakeholders and value your ongoing support. To follow our work, visit us online!

**Thank you for your support and interest in water in New Mexico!**

Photo credit:  
Dominic Leblanc, Skytem



[GEOINFO.NMT.EDU/RESOURCES/WATER/AMP/HOME.HTML](https://GEOINFO.NMT.EDU/RESOURCES/WATER/AMP/HOME.HTML)

# GET INVOLVED!

**The Healy Collaborative Groundwater Monitoring Network is a free well-monitoring service that helps communities and individuals measure changes in water depth.**

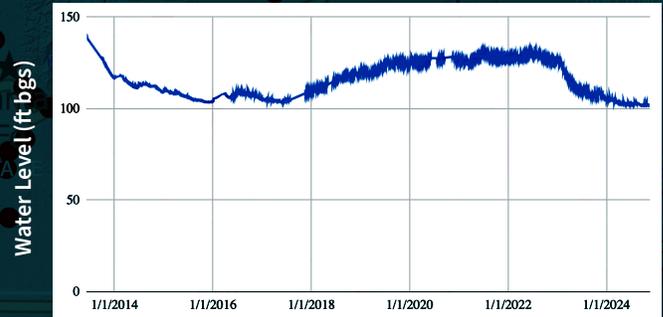
Thanks to support from the Healy Foundation, the Bureau of Geology can equip suitable wells with continuous monitoring devices or measure groundwater levels manually on an annual basis.

A well owner or operator can submit accurate water level measurements to the bureau database, making the data publicly available.



[geoinfo.nmt.edu/resources/water/cgmn/](https://geoinfo.nmt.edu/resources/water/cgmn/)

Water Level (feet below ground surface)  
vs. Measurement Date



Measurement Date

After a significant drop in the Village of Magdalena's water supply well level, they joined the Healy Collaborative Groundwater Monitoring Network, and now use up-to-date water level measurements to make water management decisions.

## Why participate?

- Measure how much water is in your well.
- Track water level trends over time.
- Make informed pumping decisions.
- Pinpoint how different water uses influence your water supply.
- Identify faulty equipment and leaks.
- Contribute to data-driven water management and planning that protects our water future.
- It's FREE!!...so why not?

## Do you want water data?

The Water Data Initiative is a multi-agency group convened by the Bureau of Geology working to improve water data availability for management and planning in New Mexico.



[newmexicowaterdata.org](https://newmexicowaterdata.org)



**Visit our website  
for more  
information.**



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The New Mexico Bureau of Geology and Mineral Resources is a research and service division of the New Mexico Institute of Mining and Technology

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David Supé, Mountain Air Helicopters