

APRIL JEAN TAFOYA
Geologist, Glorieta Geoscience Inc.

**EXPERIENCE
SUMMARY**

8 Years of Experience Encompassing the Following Areas:

- Water resource and conservation planning for municipal, commercial, agricultural, and community water systems
- Working with federal, state and local governmental authorities utilizing spatial data, asset management and dynamic databases to inform government policy, technical decisions, and settlement compliance
- Water right abstracting, research and evaluation; Pre-purchase due diligence
- Hydrogeologic project design, investigation, data analysis and oversight
- Data management, collection, inventory, and processing satellite, LiDAR, field collected, and historical resource data/metadata for spatial and statistical analysis, and map and model production for academic, municipal, tribal, and federal agencies and private stakeholders to inform business and policy
- Drilling oversight, lithologic description of cuttings, evaluation of geophysical logs, and preparation of geologic cross sections for well siting; pumping test oversight and data analysis for groundwater production wells
- Application of ArcGIS and ArcScene to geologic, hydrologic, resource conservation and environmental analysis
- General and isotopic geochemistry data analysis to evaluate water quality, recharge to groundwater systems, and natural vs. anthropogenic signatures
- Multi-format presentation of research and technical reports; narrow to broad audiences; interdisciplinary approach to collaboration
- Production and implementation of laboratory and GIS training materials by producing protocol manuals with safety/procedural graphics
- Engagement of resource stakeholders in personal meetings and group presentations to collect data, confirm data accuracy, and provide database guidance and training materials

**SELECTED
PROJECT
EXPERIENCE**

Town of Red River, Taos County, NM (2014 - present)

Abstracted Town water rights, designed NMOSE metering plan, negotiated the municipal/commercial water rights management and accounting contract, oversight of water diversion and water right allocation management. Authored NMOSE accepted Groundwater Return Flow Credit Plan and Water Conservation Plan. Water Trust Board application oversight for water system improvement funding. Preparation and project management of the Water Asset Management Plan (WAMP), WAMP spatial database and training materials. Development of a utility rate analysis. Acts as on-call hydrogeologist and water right specialist.

Glorieta 2.0 Inc., Santa Fe County, NM (2014 - present)

Water right abstracting, management, and completion of Proof of Beneficial Use survey. Monitors regional water levels, production, and facility demand to design a well field management and conservation plan. Oversight of drilling and well completion, and pump test evaluation; includes preparation of geologic cross sections, lithologic descriptions of cuttings and analysis of geophysical data. Analysis of water quality data, production and monitoring wells, and NPDES permit. Acts as on-call hydrogeologist, environmental compliance and water right specialist.



Viriden Valley Dynamic Spatial Database (2016 - present)

Preparation of an interactive dynamic database required by a Federal court order. Participation in the Globe Equity Technical Committee and Settlement Technical Committee as a technical expert for the New Mexico decree parties. Water right abstracting, and map production utilizing historic aerial photos, satellite and remote sensing data for irrigated lands in New Mexico. Dynamic spatial database design and development allowing parties varying degrees of access to spatial data layers with extensive attribute tables, and the ability to produce maps illustrating information required to develop plans and reports on resource use through time. Database developed utilizing ESRI ArcGIS (online, web application and desktop), research, field investigations, mapping, and stakeholder meetings.

Village of Taos Ski Valley, Taos County, NM (2014 - present)

Design of snowpack sampling plan and analysis of piezometer data for recharge evaluation of the spring system and completion of a local meteoric water line for the Taos Mountain area utilizing stable isotope and tritium data. Analysis of potentiometric surface variation for development plans and basin hydrology research. Processed basin wide LiDAR, survey and satellite data for use in multiple environmental and hydrologic projects; production of training material for use of the datasets. Preparation of SWPPP for Hwy 150 construction project and USFS Water Clause for compliance with federal and state regulations.

Eldorado Area Water & Sanitation District (EAWSD), NM (2014 - present)

Authored the NMOSE accepted EAWSD Water Conservation Plan. Analysis of general chemistry, and tritium and stable isotope data to evaluate local and regional recharge. Oversight of drilling and well completion, and pump test evaluation; includes preparation of geologic cross sections and lithologic descriptions of cuttings. Supports on-call hydrogeologist.

The Pueblo of Zuni, NM (2014 - present)

Provides technical and legal support to the Pueblo of Zuni for protection of the endangered Zuni Bluehead Sucker and habitat conservation in the NMOSE administrative proceedings of City of Gallup's application for 5000 acre-ft/yr of groundwater diversion; production of geologic cross sections, groundwater model evaluation, and preparation of expert reports and deposition exhibits. Production of maps and analysis of spatial data for administrative use in the Zuni River Adjudication.

The Pueblo of Sandia, NM (2017 - present)

Provides technical and legal support to the Pueblo of Sandia for NMOSE administrative proceedings for conservation of the Pueblos Rio Grande riparian area, water rights and agriculture; water right abstracting, spatial data analysis, map production and MRGCD operations.

Bonds Ranch (2015 - 2017)

Provided technical and legal support by completing a field verified well inventory of 49 wells on a 1200+ acre ranch and water right abstracting. Submission of an affidavit of expert opinion for use in NMOSE administrative proceedings. Oversight of drilling, 48-hr. pumping test, and data analysis in the Tertiary Ogallala aquifer to analyze production capacity and regional effects on declared water rights.

Santa Fe County Water Service Agreements (2015 - 2017)

Review of Water Service Agreement/Water Delivery (WSA) contracts entered into by Santa Fe County, including records research with the Santa Fe County Clerk, County Utility Division, and Santa Fe County Land Use. Contract terms analyzed with respect to water commitment and service charges. Design and development of a WSA attribute matrix and preparation of letters to each WSA entity identifying current status of commitment, amount owed and any actions needed.



National Pecan (2015 - 2016)

Assessment of water quality, water use, hydrologic and agronomic related conditions as a pre-purchase due diligence investigation in Cochise County, Arizona.

Wedding Cake Ranch (2015)

Oversight and data analysis of pumping tests on five irrigation/stock wells in a fractured sandstone aquifer to analyze production capacity. Abstracted declared water rights for each well, preparation of NMOSE water right applications.

Los Alamos National Laboratory (2014 - 2015)

Geomorphic mapping, sediment characterization, and sediment volume analysis utilizing field collected spatial data in Canyons around Los Alamos National Laboratory (LANL) for contaminant transport tracking. Participated as a field team member in mapping various reaches in Pueblo Canyon and Sandia Canyon. Completion of courses required for LANL Sediment Sampler Training Matrix.

EDUCATIONAL EXPERIENCE**University of New Mexico, Diagenesis Laboratory, Albuquerque, NM (2010 - 2012):**

- Groundwater monitoring, subsurface flow analysis, geologic mapping, biological assessment, water contamination and contaminant transport analysis.
- Field site plan development and collection of hydrologic, geologic and/or biological samples. Water sample preparation; analysis of major, minor, trace elements and stable isotope analysis.
- CO₂ source location and persistence, analysis of river incision and local hydrologic head variations via radiogenic (U-Th series) dating.
- Interdisciplinary approach to collaboration (local, regional, international) for multiple NSF funded research proposals.
- Maintained standards for class 100 clean room preparation and MC-ICPMS analysis within Radiogenic Isotope Laboratory.
- Advanced use of industry-standard software packages such as ArcGIS, Access, GeoChemist's Workbench, Adobe Illustrator and Photoshop, Microsoft Office Suite; basic use of R, MatLab and WEAP.

University of New Mexico, Miller Laboratory of Insect Systematics, Albuquerque, NM (2008 - 2010):

- Wet lab molecular biology on hundreds of specimens; complete processing including collection, cataloguing, DNA extraction, polymerase chain reaction, sequencing, data editing and reporting.
- Sourced funding for exploratory research; created successful NSF grant proposals.
- Implemented laboratory training procedure by producing user friendly, protocol manuals with graphics and safety/procedural explanations.
- Utilized morphology and systematics to describe and document a new species of subterranean diving beetle.
- Versed in systematic classification and scientific illustration.

EDUCATION

M.S., Earth & Planetary Science, Summa cum laude, University of New Mexico, 2010-2012

B.S., Environmental Science, University of New Mexico, Summa cum laude, 2008-2010

PROFESSIONAL DEVELOPMENT AND TRAINING

- Completion of courses required for LANL Sediment Sampler Training Matrix
- Completion of the Groundwater Pollution and Hydrology Course, Princeton Groundwater, Inc. (3.8 CEU's), September 21-25, 2015
- Adult CPR, AED and First Aid Certified (May 4, 2015)
- Completed New Mexico Ground Water Association, Driller Class (8 CEU's)
- Member of New Mexico Groundwater Association
- Maintains GGI website and social media accounts



**SELECTED
PUBLICATIONS &
PRESENTATIONS**

- 2018 **Tafoya, A.J.**, Drakos, P., Lazarus, J. GIS-based Dynamic Database for Water Rights Administration in the Gila River Valley, NM. National Groundwater Association, Groundwater Issues and Science Affecting Policy and Management in the Southwest, Multi-Jurisdictional, Integrated Water Management Session, Albuquerque, NM, USA (Feb. 27)
- 2013 Miller, Kelly B., **Jean, April**, Alarie, Yves, Hardy, Nate, and Gibson, Randy. "Phylogenetic Placement of North American Subterranean Diving Beetles and a Revised Classification of Hydroporini (Coleoptera: Dytiscidae), Arthropod Systematics & Phylogeny, 71(2):75-90. 2013.
- 2012 **Jean, April**, Nicole D. Telles, James R. Gibson, Dan Foley, and Kelly B. Miller. "Description of a New Genus and Species of Stygobiontic Diving Beetle (Coleoptera: Dytiscidae) from the Edwards-Trinity Aquifer System of Texas, USA." Coleopterists Bulletin, 66(2):105-110. 2012.
- 2012 **Tafoya, A.J.**, Crossey, L.J., Karlstrom, K.K., Kolomaznik, M., Polyak, V., Asmerom, Y., and Cox, C. Uranium-series dating of travertine from Soda Dam, New Mexico: Constructing a history of deposition, with implications for landscape evolution, paleohydrology and paleoclimatology. V. Geochemistry Symposium with International Participation, Dating Session, Pamukkale University, Denizli, Turkey (May 25)
- 2012 **Jimenez, G.**, Crossey, L.J., Karlstrom, K.K., Ricketts, J.W., **Tafoya, A.J.**, Anan, T., Mohammed, A. Reconstructing Quaternary Pluvial Episodes Using Travertines of Egypt's Western Desert. GSA 2012 Rocky Mountain Section, 64th Annual Meeting, T19, Terrestrial Carbonate Systems: Travertines, Lakes, Soils and Caves, Albuquerque, NM, USA (May 10)
- 2012 Mohammed, A., Crossey, L. J., Karlstrom, K. E., Kehew, A. E., **Tafoya, A.J.**, Jimenez, G., Ricketts, J. W., Anan, T., and Krishnamurthy, R.V. Hydrochemical Characteristics and Potential Tectonic Influences on Groundwater Quality of the Continental-Scale Nubian Sandstone Aquifer System (NSAS). GSA 2012 Rocky Mountain Section, 64th Annual Meeting, Hydrogeology Theme Sessions T4, T6 and T7, Posters, Albuquerque, NM, USA (May 10)
- 2011 Crossey, Laura J., Karlstrom, Karl E., Newell, Dennis L., Kooser, Ara, and **Tafoya, April**. "The La Madera Travertines, Rio Ojo Caliente, Northern New Mexico: Investigating the Linked System of CO₂-Rich Springs and Travertines as Neotectonic and Paleoclimate Indicators." New Mexico Geological Society Guidebook, 62nd Field Conference, Geology of the Tusas Mountains – Ojo Caliente, 2011, p.121-136
- 2010 **Tafoya, A.J.** Searching for Subterranean Arthropods: A Comparison Between the Edwards- Trinity Aquifer of Texas and the Karst Systems of New Mexico. Research Presentations; Earth and Planetary Sciences Department. UNM, Albuquerque, NM, USA (May 7)
- 2009 **Tafoya, A.J.** On predacious diving beetles (Dytiscidae): Phylogenetic analysis of relationships among members of the genera *Hygrotus* Stephens and *Coelambus* Thomson using molecular data. Section SysEB. ESA, Indianapolis, IN, USA (Dec. 14)
- 2009 Nearn, E.H., K.B. Miller, I.P. Swift, T.L. Grzymala, & **A.J. Tafoya**. On the longhorned beetles of the world: a phylogeny based on molecular data. SWBESA, Stillwater, OK, USA (Feb. 24)

