

APRIL JEAN TAFOYA
Geologist, Glorieta Geoscience Inc.

**EXPERIENCE
SUMMARY**

7 Years of Experience Encompassing the Following Areas:

- Water resource planning for municipal, commercial, agricultural, and community water systems
- Water right abstracting, research and evaluation; Pre-purchase due diligence
- Hydrogeologic project design, investigation, data analysis and oversight
- Processing satellite, LiDAR, field collected, and historical water resource data for spatial and statistical analysis, and map and model production
- 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 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

**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 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). Design and preparation of a utility rate analysis.

Glorieta 2.0 Inc., Santa Fe County, NM (2014 – present): Water right abstracting, management, and completion of Proof of Beneficial Use application and survey. Monitoring of regional water levels, production, and facility demand to design a well field management plan. Design and development of a water reuse plan including effluent irrigation. Use of geologic data for well siting.

Bonds Ranch (2015-present)

Legal assistance to Egolf + Ferlic + Day, LLC by completing a field verified well inventory of 49 wells and evaluation of 43 water right declarations, including historic water use research. Preparation of an affidavit of expert opinion for use in NMOSE administrative proceedings of a protested water right application. Supervised drilling of an irrigation well, and oversight and data analysis of a 48-hour pumping test in the Tertiary Ogallala aquifer to provide production capacity and regional effects on declared water rights.

Virden Valley Dynamic Database (2016-present)

Preparation of an interactive dynamic database required by an interstate 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 for the Gila Water Commissioner controlled irrigated lands in New Mexico.

Santa Fe County Water Service Agreements (2015-present)

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



commitment, amount owed and any actions needed. Results of research presented to the Santa Fe Board of County Commissioners.

Zuni Pueblo and Western Refining, Gallup G-22 Application, NM (2014 – present):

Retained by Zuni Pueblo and Western Refining to provide technical expertise to legal support teams for NMOSE administrative proceedings of City of Gallup's application for 5000 acre-ft/yr of groundwater pumping. Work includes production of geologic cross sections, groundwater model evaluation, and preparation of expert reports and deposition exhibits.

Eldorado Area Water and Sanitation District (EAWSD), Santa Fe County, 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; work includes preparation of geologic cross sections and lithologic descriptions of cuttings for 1000 ft municipal well.

Village of Taos Ski Valley, Taos County, NM (2014 – present): Project design and collection of snowpack sampling to analyze stable isotope and tritium data for recharge evaluation of the spring system and completion of a local meteoric water line for the Taos Mountain area. Preparation of SWPPP for Hwy 150 construction project and USFS Water Clause.

Ponderosa Dairy, NV (2016-present)

Water right management of a 10,000+ cow dairy; responsible for permitting and accounting for 4775 ac-ft of commercial, domestic and irrigation water rights, due diligence research for water right purchase, and development of scenarios for complex water right transfers under State Engineer Order 1197 to assess pumping impacts on Devils Hole.

Wedding Cake Ranch (2015)

Oversight and data analysis of three 48-hour and one 80-hour pumping tests on irrigation wells, and one 48-hour pumping test on a stock well in a fractured sandstone aquifer to provide production capacity in comparison with declared water rights for each well. Specific capacity, transmissivity, storage coefficient and hydraulic conductivity analyzed by applying the Cooper-Jacob and/or Theis methods. Water right applications.

Los Alamos National Laboratory (2014 – 2015): Geomorphic mapping, sediment characterization, and sediment volume analysis in Canyons around Los Alamos National Laboratory. Participated as a field team member in mapping various reaches in Pueblo Canyon and Sandia Canyon.

National Pecan (2015-2016)

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

Hollandia Litigation Support (2016-Current)

Evaluation and legal support regarding the use of Cs-Pb dating techniques utilized in a sediment loading litigation case.

University of New Mexico, Diagenesis Laboratory, Albuquerque, NM (2010 – 2012):

- Groundwater monitoring, shallow well installation, use of water level recorders, computation of gage height and water stage, well field modeling, hydrograph creation and comparison, subsurface flow, water contamination, biological assessment, geologic mapping and contaminant transport.

**EDUCATIONAL
EXPERIENCE**



- Site sample planning and field collection of water, rock and/or biologic samples. Water sample preparation, analysis of major, minor, and trace elements, pH, EC, alkalinity, total organic carbon, and stable isotope analysis.
- CO₂ source location and persistence, river incision and local hydrologic head variations through time via radiogenic (U-Th series) dating. Data analysis, technical reporting/presentation of results.
- 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.
- Use of morphology and systematics to describe and document the discovery of a new species of subterranean diving beetle.
- Versed in systematic classification and scientific illustration.

EDUCATION

M.S., Earth and Planetary Science (Hydrogeology), 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 (2 years)
- Completion of the 38-hour 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 8 CEU's with New Mexico Ground Water Association, Driller CEU Class
- Member of New Mexico Groundwater Association
- Maintains GGI website and social media accounts

SELECTED PUBLICATIONS

Jean, April, Crossey, Laura J., Karlstrom, Karl E., Polyak, Victor and Asmerom, Yemane. "Uranium-Series Geochronology and Stable Isotope Analysis of Travertine from Soda Dam, New Mexico: A Quaternary Record of Episodic Spring Discharge and River Incision in the Jemez Mountains Hydrothermal System." *in review*.

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

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.

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*, p. 121-136. 2011.

