

**NAME****JAMES W. RIESTERER****TITLE****Geologist / Project Manager, Glorieta Geoscience Inc., Wyoming PG #3540, Texas PG #10244, Arizona PG #50912****EXPERIENCE SUMMARY**

More than 10 Years Experience encompassing the following areas:

- Geologic and Geomorphic mapping
- Sediment and water sampling
- Surveying using total station and high-precision GPS units
- Application of GIS to geohydrologic problems
- Well design and drilling supervision
- Pumping test design supervision and data analysis
- Groundwater modeling

**SELECTED PROJECT EXPERIENCE**

**Geomorphologist/Field Team Leader for canyon sediment investigations, Los Alamos National Laboratory:** Performed detailed geomorphic mapping, sediment characterization, and sediment sampling in Canyons around Los Alamos National Laboratory. Participated as both field team member and field team leader in mapping various reaches in Los Alamos Canyon, Pajarito Canyon, Rendija Canyon, Sandia Canyon, Mortandad Canyon, Cañada del Buey, Ancho Canyon, Chaquehui Canyon, Potrillo Canyon, Fence Canyon, Water Canyon, Canyon de Valle, and tributary drainages. Responsibilities include geomorphic mapping, completion of soil stratigraphic descriptions, collection and submittal of sediment samples for analysis, completion of surveys for topographic profiles and delineation of control points, and supervision of team members for radiological surveys, sample collection, and geomorphic characterization.

**Geologic Mapping, Nations Draw-Zuni Salt Lake area:** Geologic mapping and hydrogeologic analysis of Nations Draw-Zuni Salt Lake area. Field work included geologic mapping, analysis of geologic structures, sequence stratigraphic analysis of Cretaceous sediments, and supervising the drilling of monitoring wells. Field data were incorporated into a numeric model used to determine the effects of pumping at a proposed mine site on the lake.

**Hale Spring - Ruidoso Downs, NM:** Geologic mapping and hydrogeologic analysis of Hale Spring, city of Ruidoso Downs, NM. Conducted geologic mapping, water sampling, geochemical analyses, and climate analyses to determine source(s) of spring and causes of flow decline from spring. Project also involved evaluating alternative water supply sources for the city, and design and supervision of shallow (300 ft) and deep (680 ft) supply well construction.

**Groundwater exploration program, Rio Rancho:** Designed groundwater exploration program for the City of Rio Rancho that incorporated existing geologic, hydrologic, and remote sensing data, as well as additional fieldwork to create a GIS database of available information. The GIS database has been used to prioritize production well drilling locations by identifying target aquifers and geologic controls on aquifer continuity, productivity, and water quality. Data from project were subsequently incorporated into a water re-use/re-injection program for the City.

**Zuni Well Inventory:** Worked in conjunction with the Pueblo Department of Natural Resources to develop a database of wells on Tribal land. Performed video logs on selected wells to determine well condition, screen locations, and

potential for rehabilitation and future production. Conducted short term (<8 hour) and longer term (48-hour) pumping tests on selected wells. Collected samples for analysis of drinking water constituents and isotope geochemistry. Compiled data collected in the field into a GIS database.

**Zuni Spring Inventory:** Worked in conjunction with the Pueblo Department of Natural Resources to develop a database of springs on Tribal land. Performed original geologic mapping and analysis of geomorphic setting, collected GPS site coordinates of springs and related features, conducted flow measurements, collected water samples for isotope and general chemistry to evaluate recharge sources and source aquifers of springs on the Zuni Reservation. Worked with Tribal staff to design and implement long-term monitoring of spring flows. Compiled field GPS and geologic data into a GIS database used to produce regional and local maps.

**Municipal supply well design and drilling supervision:** 2000 to present - Supervised drilling and completion of two 2000+ feet deep municipal supply wells near Taos, NM. Designed and supervised construction of 2000, 2500 and 3000 feet deep municipal supply wells for the City of Rio Rancho. Designed exploratory drilling program for City of Socorro, supervised construction of 1200 feet deep exploratory well and 1000 feet deep production well. Designed and supervised drilling and completion of 300 feet deep and 680 feet deep municipal supply wells for the City of Ruidoso Downs. Designed exploratory drilling program for the Alcalde Mutual Domestic Water Consumer's Association and supervised drilling of 1500 feet deep exploratory well and 1400 ft production well.

**Geologic Mapping of 1:24,000 Quadrangles, Bannock and Caribou Counties, ID:** Lead investigator/author for geologic mapping, structural analysis, and geologic history of the Bonneville Peak 1:24,000 quadrangle, Bannock and Caribou Counties Idaho. Performed detailed geologic mapping of structurally complex area with units ranging in age from preCambrian to Quaternary. Area mapped included abandoned copper mines with extensive azurite and malachite deposits. Contributed mapping and analysis to the adjacent Inkom Quadrangle in Bannock County, ID. Results were published as 1:24,000 geologic quadrangles by the Idaho Geological Survey.

**Geologic Mapping and Basin Characterization, British Columbia:** Lead investigator/author for basin analysis study which included 1:50,000 scale geologic mapping, stratigraphic analysis, geochemical characterization, and structural analysis of Cretaceous basin deposits in west-central British Columbia. Results of the study were published in several journals and as M.S. thesis.

## EDUCATION

M.S. Geology, Idaho State University, Pocatello, ID, 1998

B.A. Geology and Economics, Whitman College, Walla Walla, WA, 1996

## PROFESSIONAL DEVELOPMENT/ TRAINING

- Completion of all training required for LANL sediment sampling program
- Baroid IDP, 'Use of drilling fluids for Water Well Applications', short course
- National Ground Water Association, 'Design and Construction of Wells', short course

- National Ground Water Association, 'Analysis and Design of Aquifer Tests Including Slug Tests and Fracture Flow', short course
- OSHA 40 hour hazardous materials training
- Lorman Education Services, 'Water shortages and Desalination' short course
- Environmental Simulations Inc., 'Introduction to Groundwater Flow and Transport Modeling Using Groundwater Vistas' short course
- CLE International, 'New Mexico Water Law Superconference' 2-day seminar
- National Ground Water Association, 'Naturally Occurring Contaminants Conference, Arsenic, Radium, Radon, and Uranium', 2 day seminar

## SELECTED PUBLICATIONS

- Drakos, P., Lazarus, J., **Riesterer, J.**, White, B., Banet C., Hodgins, M., and Sandoval, J., 2004, Subsurface stratigraphy in the southern San Luis Basin, New Mexico *in* New Mexico Geological Society, 55<sup>th</sup> Field Conference Guidebook, p. 374-382.
- Drakos, P., Lazarus, J., White, B., Banet C., Hodgins, M., **Riesterer, J.**, and Sandoval, J., 2004, Hydrologic characteristics of basin-fill aquifers in the southern San Luis Basin, New Mexico *in* New Mexico Geological Society, 55<sup>th</sup> Field Conference Guidebook, p.391-404.
- Drakos, P., Sims, K., **Riesterer, J.**, Blusztajn, J., and Lazarus, J., 2004, Chemical and isotopic constraints on source-waters and connectivity of basin-fill aquifers in the southern San Luis Basin, New Mexico *in* New Mexico Geological Society, 55<sup>th</sup> Field Conference Guidebook, p.391-404.
- Riesterer, J.W.**, Mahoney, J.B., and Link, P.K., 1998, Re-examination of Late Albian-Cenomanian conglomerate in Churn Creek, Gang Ranch area, southern British Columbia; in Current Research, 1998-A Geological Survey of Canada, p. 165-174.
- Riesterer, J.W.**, Link, P.K., and Rodgers, D.W., 1998, Geology of the Bonneville Peak Quadrangle, Bannock County, SE Idaho; structural and stratigraphic implications in Geological Society of America, Rocky Mountain Section, 50th annual meeting, Abstracts with Programs, v. 30, no. 6, p. 35.
- Riesterer, J.W.**, 1998, Stratigraphy, structure, and geochemistry of the Churn Creek Basin, south central British Columbia: Evidence of a mid-Cretaceous link between the intermontane and insular superterranes, Idaho State University M.S. thesis, 133 p.
- Riesterer, J.W.**, Link, P.K., and Rodgers, D.W., 2000 Geological map of the Bonneville Peak quadrangle, Bannock and Caribou Counties, Idaho, Idaho Geological Survey
- Riesterer, J.W.**, Mahoney, J Brian, and Link, Paul Karl, 2001, The conglomerate of Churn Creek: Late Cretaceous basin evolution along the Insular/Intermontane superterrane boundary, southern British Columbia, Canadian Journal of Earth Sciences
- Riesterer, J.W.**, Drakos, P., Lazarus, J., and Chudnoff, M., 2006, Hydrogeology of Hale Spring and Evaluation of Declining Spring Discharge, Ruidoso Downs, New Mexico, *in* Land, L., Lueth, V., Raatz, W., Boston, P., and Love, D., eds. Caves and Karst of Southeastern New Mexico, New Mexico Geological Society Fifty-seventh Annual Field Conference Guidebook.