

**BLAINE T. REELY, PHD, PE**

**Education** Ph.D., Civil Engineering, Oklahoma State University, 1992.  
 M.S., Civil Engineering, University of Arizona, 1985.  
 B.S., Geological Engineering, University of Arizona, 1980.

**Registrations/Affiliations**

Licensed Civil Engineer in AZ, CA, CO, IL, KS, MS, NV, NM, OK, OR, and TX  
 Registered Geological Engineer in Arizona.

**Biographical Summary**

Dr. Reely is a Civil Engineer and Hydrologist with over 30-years of professional experience. He has worked in both the public and private sectors. His private sector experience includes staff and management positions with mining, natural resources, and construction companies. In the public sector, he has held positions in municipal government. Supplementing his corporate and government experience, he has served as an industry consultant, working primarily with municipalities, public and private water companies, irrigation districts, electric utility companies, wastewater treatment agencies, solid waste management companies, oil and gas producers, mining companies and agricultural producers. His areas of expertise include project management, engineering design and analysis, site characterization, numerical modeling of hydrologic and hydraulic systems, design of water and wastewater systems, and the application of optimization methodologies to water and wastewater operations. His experience and expertise have been utilized on numerous occasions in litigation matters, where Dr. Reely has served as an expert witness in local, state, and federal courts. He has authored numerous professional papers and frequently makes presentations to his peers at meetings of professional societies.

**Experience**

2002 to Present

**Monsoon Consultants**

**Western United States**

*Principal*

Primary focus is in the areas of civil engineering and hydrology. Areas of responsibility include project management, design and engineering analysis. Specific areas of expertise include public works, hydrology, hydrogeology, hydraulics, water systems design / engineering / operations. Dr. Reely has worked with many municipalities and public works authorities throughout Oklahoma, as well as the western United States, providing public works and water resources engineering expertise in areas including Water Supply; Water Infrastructure; Flood Control; Water / Wastewater Treatment; Energy Efficiency; Water/Wastewater Systems Optimization and related areas of professional engineering practice. He has served as the City Engineer for numerous communities within Oklahoma under a contract basis, for communities that were too small to maintain a full time City Engineer. He currently serves as City Engineer for the City of Perry and works regularly with Tonkawa, Kingfisher, Watonga, Fairview, Okeene and Waynoka.

In addition to the more traditional areas of practice summarized above, Dr. Reely has unique experience in the development and implementation of cost reduction strategies for water utilities. His research is in the area of applied optimization to water utility operations. He is the principal developer of the Water Resources Energy Management System (WREMS) which has been used to analyze and optimize water utility operations worldwide. Dr. Reely is a frequent speaker at technical meetings and has published numerous papers in the areas of water utility operational analyses and energy cost savings strategy implementation.

- 1992 to 2000      **Envirotech Companies**      **International**  
*President and CEO*  
 Started Envirotech as a consulting engineering and environmental services firm. Primary role was to provide leadership to division managers and development of new business. His principal area of technical expertise was in the area of water and wastewater utility operations and systems optimization. Dr. Reely served as project manager on numerous demand-side energy management projects for water and wastewater utilities throughout the US and internationally. In support of his energy management research, he led the software development team which produced the Water Resources Energy Management System (WREMS). This software has been used successfully to help many water and wastewater agencies with identifying opportunities for significant energy demand reductions and significant energy cost savings.
- 1988 to 1992      **City of Enid**      **Enid, Oklahoma**  
*Director of Public Services*  
 Managed an annual \$11 million operating and capital improvements budget while leading seven municipal operating departments. Assembled an ambitious, loyal, management team. Together we created and implemented numerous programs and services resulting in substantially improved public opinion, reversing the declining trend previously experienced. All achievements were made in a “zero-growth” budget environment and were funded internally through innovation, increased efficiency, and employee motivation. Our departments received numerous meritorious awards from federal, state, and public interest groups as a direct result of the achievements made under my leadership. This position required excellent communication and negotiation skills demanding interaction between elected officials, bureaucrats, contractors, public, and employees of varying skill levels.
- 1986 to 1988      **Howard, Needles, Tammen, and Bergendoff**      **Kansas City, Missouri**  
*Project Manager*  
 Managed the design and construction of numerous public works and transportation projects, including airport runways and taxiways; interstate highways; turnpikes; and commercial buildings. This position required management of creative teams comprised of architects, engineers, designers, technicians, and construction personnel. Individual project budgets (design and construction) ranged from \$2 million to \$65 million.
- 1984 to 1986      **Desert Earth Engineering**      **Tucson, Arizona**  
*Project Engineer*  
 Responsible for designing and implementing site investigation projects to define subsurface conditions in advance of site development. Relied on field and laboratory data to assess site conditions and develop foundation design recommendations for architects and structural engineers. Projects included airports, commercial buildings, dams, water storage reservoirs, residential developments, and mining operations.
- 1984 to 1980      **Texasgulf, Inc.**      **Golden, Colorado**  
*Project Engineer*  
 Initially a team member and eventually team manager within the minerals exploration division. Responsible for designing and supervising the implementation of multi-faceted surface and subsurface exploration programs to assess the presence and economic viability of metallic occurrences within North America. Managed several expeditions, which varied in length from 3 months to 1 year, with budgets ranging from \$0.3 million to \$1.5 million. Team members included engineers, scientists, technicians, economists, and business/legal support.

## **PROJECT RELATED EXPERIENCE – WATER RESOURCES (PARTIAL LIST)**

### **Goleta Water District**

**Goleta, California**

Performed comprehensive energy audit to assess operating systems efficiencies and define opportunities for energy cost savings. Performed an analysis of system operations and developed recommendations for water supply well and booster pump station sequencing/scheduling. In addition, a detailed review of existing electric rate tariffs was performed and recommendations were made for modifications to the existing tariff portfolio to achieve reduced annual energy costs.

### **Calleguas Municipal Water District**

**Thousand Oaks, California**

Performed comprehensive energy audit and pumping plant performance testing to assess operating system efficiencies. Developed a software based “real-time” energy monitoring program which was integrated into the existing SCADA system to provide system operators queues in advance to adjust pump operation sequences to achieve energy cost savings. Provided system installation and start-up services to water district operations staff and provided post-installation training.

### **Pacific Gas & Electric**

**Northern California**

Managed two (2) Demand-Side Energy Management (DSM) projects which offered energy efficiency measures to PG&E water utility customers. The contracts were based on a “pay for performance” model which afforded the water utility customers the opportunity to receive payment for reductions in energy usage and peak demand reduction. The average customers who participated in the program achieved 15% savings annually from the pre-implementation baseline energy cost model. The projects involved performing comprehensive energy audits on each system, performing pump performance testing and evaluations, development of optimal operating strategies and O&M manuals for each system, and implementing energy savings measurement and verification audits on a quarterly basis for 3-years.

### **City of Ontario**

**Ontario, California**

Performed comprehensive energy cost reduction assessment to evaluate operating systems efficiencies and define opportunities for energy cost savings. Performed an analysis of system operations and developed recommendations for water supply well and booster pump station sequencing/scheduling. In addition, a detailed review of existing electric rate tariffs was performed and recommendations were made for modifications to the existing tariff portfolio to achieve reduced annual energy costs.

### **Mountain Water Company**

**Missoula, Montana**

Performed extensive site surveys and pumping plant performance testing to assess operating system efficiencies. Performed a comprehensive energy audit and evaluated a broad array of potentially viable energy efficiency measures based on technical and economic feasibility. Based on the results of the investigation, an energy management program which included both operational and capital investment measures was implemented. The implementation schedule was based on the projected “return on investment” and “payback period” for each measure. This project was a joint venture between the water agency and Montana Power Company with funding created from an initial grant from the utility and subsequently sustained from measured energy savings during the construction phase.

### **NRCS Doublecreek Flood Control Structure #2**

**Ramona, Oklahoma**

Performed detailed hydrologic / hydraulic modeling and geotechnical engineering as part of the design of improvement to three NRCS dams in Washington County, Oklahoma. Hydrologic and hydraulic models were developed using the NRCS TR-20 and SITES programs. Hydraulic modeling was performed using the HEC-RAS program. The design was developed in accordance with the recommendations established in the NRCS Supplemental Watershed Plan. Specific improvements included replacement of the existing conduit principal spillway with a new conduit spillway and inlet tower. In addition, the auxiliary spillways were widened. Toe drains and filter diagrams were incorporated into the renovated structure and a plunge basin

was designed. A design report, construction drawings, technical specifications, contract documents, and engineer's estimate comprise the project deliverables.

**NRCS Doublecreek Flood Control Structure #3**

**Ramona, Oklahoma**

Performed detailed hydrologic / hydraulic modeling and geotechnical engineering as part of the design of improvement to three NRCS dams in Washington County, Oklahoma. Hydrologic and hydraulic models were developed using the NRCS TR-20 and SITES programs. Hydraulic modeling was performed using the HEC-RAS program. The design was developed in accordance with the recommendations established in the NRCS Supplemental Watershed Plan. Specific improvements included replacement of the existing conduit principal spillway with a new conduit spillway and inlet tower. In addition, the auxiliary spillways were widened. Toe drains and filter diagrams were incorporated into the renovated structure and a plunge basin was designed. A design report, construction drawings, technical specifications, contract documents, and engineer's estimate comprise the project deliverables.

**NRCS Doublecreek Flood Control Structure #5**

**Ramona, Oklahoma**

Performed detailed hydrologic / hydraulic modeling and geotechnical engineering as part of the design of improvement to three NRCS dams in Washington County, Oklahoma. Hydrologic and hydraulic models were developed using the NRCS TR-20 and SITES programs. Hydraulic modeling was performed using the HEC-RAS program. The design was developed in accordance with the recommendations established in the NRCS Supplemental Watershed Plan. Specific improvements included replacement of the existing conduit principal spillway with a new conduit spillway and inlet tower. In addition, the auxiliary spillways were widened. Toe drains and filter diagrams were incorporated into the renovated structure and a plunge basin was designed. A design report, construction drawings, technical specifications, contract documents, and engineer's estimate comprise the project deliverables.

**IBWC Amistad Dam Geotechnical Analysis**

**Del Rio, Texas**

Performed a geotechnical investigation of the dam abutments and downstream rock slopes to evaluate the rock slope stability of massive limestone escarpments. Rock instability, within the escarpments, adjacent to the dam and powerhouse, posed serious geo-hazards to the facilities and workers safety. The geotechnical analysis identified several feasible stabilization alternatives. The identified alternatives were compared utilizing a cost:benefit economic analysis using life cycle costs. A recommended alternative was established and a final rock slope stabilization design was developed

**NRCS Sandstone Creek Flood Control Structure #16A**

**Cheyenne, Oklahoma**

Conducted hydrologic and hydraulic analyses for the NRCS, contributing to the preparation of the Supplemental Watershed Plan for the referenced structure. Specific responsibilities included developing watershed hydrologic models using NRCS TR-20, SITES, and HEC-RAS software. Principal spillway hydrographs (PSH) were developed to establish the size of the principal spillway, which permitted a 10-day reservoir drawdown. In addition, the freeboard hydrograph (FBH) was developed to establish the top of the dam crest and the auxiliary spillway hydrograph (ASH) was developed to establish the geometry of the auxiliary spillway. Reservoir stage / discharge relationships were developed, utilizing bathymetric / topographic survey data and the magnitude of wave action was quantified to determine dam freeboard requirements. Dam breach analyses were performed under "Sunny Day" conditions, using HEC-RAS. The results of the hydrologic and hydraulic analyses were integrated into the Sandstone Creek #16A Supplemental Watershed Plan.

**NRCS Cobb Creek Flood Control Structure #2**

**Colony, Oklahoma**

Conducted hydrologic and hydraulic analyses for the NRCS, contributing to the preparation of the Supplemental Watershed Plan for the referenced structure. Specific responsibilities included developing watershed hydrologic models using NRCS TR-20, SITES, and HEC-RAS software. Principal spillway hydrographs (PSH) were developed to establish the size of the principal spillway, which permitted a 10-day reservoir drawdown. In addition, the freeboard hydrograph (FBH) was developed to establish the top of the dam crest and the auxiliary spillway hydrograph (ASH) was developed to establish the geometry of the auxiliary spillway. Reservoir stage / discharge relationships were developed, utilizing bathymetric /

topographic survey data and the magnitude of wave action was quantified to determine dam freeboard requirements. Dam breach analyses were performed under "Sunny Day" conditions, using HEC-RAS. The results of the hydrologic and hydraulic analyses were integrated into the Cobb Creek #2 Supplemental Watershed Plan.

### **Mulatos Flood Control and Water Supply Dam**

**Sonora, Mexico**

Designed a retention storage dam in a remote area of Sonora, Mexico as part of a new mining development. The earthen and rock fill dam impounded a tributary of the Rio Mulatos. A watershed hydrologic model was developed using industry standard hydrologic methodologies for existing and future conditions. The hydrologic analysis included a characterization of the pre-development and post-development watershed conditions including watershed delineation, drainage area, hydraulic flow path, soil type, and land use analysis. These data were used to determine the watershed runoff; reservoir stage/storage, and stage/discharge relationships. The SCS curve numbers for present and future conditions using antecedent moisture conditions II for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour and PMF (using transposition method) storm events were used in developing the hydrologic model. A hydraulic model for the site was developed utilizing industry standard methodologies. Details for the principal spillway and the diversion conduit to its downstream point of discharge were designed.

### **Avra Valley Water Co-Op**

**Arizona**

Performed hydrogeologic investigation of the Avra Valley alluvial basin, in the vicinity of the Town of Marana, to determine the potential for sustainable water supplies for a public water supply well. Based on the results of the hydrologic investigation, was responsible for the selection a wellsite. Managed the design of a 1000-foot, 950 gallons per minute (gpm) well and storage tank facility. Developed construction drawings and technical specifications for the deep large-capacity public water supply well. Participated in the permitting process and provided on-site technical assistance during the aquifer testing and well construction activities.

### **Tohono O'Odham Nation**

**Arizona**

Performed a hydrogeologic investigation to determine the suitability of several sites, south of Tucson, Arizona that were being considered for development as a large gaming casino and convention center. Based on the results of the investigation, a site for the Casino Del Sol was selected and sites for two public water supply wells were identified. Designed two deep wells, each approximately 950 feet in depth, along with associated pressure and storage tank facilities. Assisted the Tohono O'Odham Nation with permitting and developing operating protocols for the water supply system. Developed construction drawings and technical specifications for the deep large-capacity public water supply well. Participated in the permitting process and provided on-site technical assistance during the aquifer testing and well construction activities.

### **Tohono O'Odham Nation**

**Arizona**

Performed a hydrogeologic investigation to identify the presence and quality of groundwater resources in the vicinity of the community of Why, Arizona, for a site being considered for the development as a small gaming casino. Based on the results of the investigation, a site for the casino well and sites for the supply well was identified. Managed the design of a deep well, approximately 1,150 feet in depth, along with associated pressure and storage tank facilities. Assisted the Tohono O'Odham Nation with permitting and developing operating protocols for the water supply system. Developed construction drawings and technical specifications for the deep large-capacity public water supply well. Participated in the permitting process and provided on-site technical assistance during the aquifer testing and well construction activities. Also provided design services for a water treatment facility that was required for the removal of arsenic.

### **City of Watonga**

**Oklahoma**

Performed a hydrogeologic investigation to determine the suitability of multiple sites near the community of Watonga, Oklahoma that were being considered for development of a municipal water supply source. Based on the results of the investigation, sites for three public water supply wells were identified. Managed the designed of three shallow alluvial wells, each approximately 150 feet in depth, along with associated collection, booster pumping, chemical treatment, and storage tank facilities. Assisted the City of Watonga with permitting and developing operating protocols for the water supply system. Developed construction drawings and technical specifications for the public water supply wells. Participated in the permitting process and provided on-site technical assistance during the aquifer testing and well construction activities.

**City of Fairmont****Oklahoma**

Performed a feasibility study to evaluate alternatives for improving the water supply capacity and reliability of the Town of Fairmont public water supply system. The recommended improvement alternatives included mechanical and chemical rehabilitation of existing water supply wells and the installation of additional wells. Managed the well rehabilitation program that resulted in an increased water production capacity of approximately 100 percent. Also designed two additional water supply wells that were completed in fractured sandstone/shale bedrock. Developed construction drawings and technical specifications for the public water supply wells. Participated in the permitting process and provided on-site technical assistance during the aquifer testing and well construction activities.

**City of Enid****Oklahoma**

Evaluated available geologic, well log, pumping test, and well production data to determine long-term impacts to three source aquifers located in western Oklahoma. Led the development of an aquifer management program, which utilized linear programming techniques to optimize water production operations while simultaneously achieving aquifer management goals. The linked optimization – simulation model integrated LINDO, a commercially available optimization package with MODFLOW, a public domain finite difference ground water modeling package. Dr. Reely led the system installation and start-up services to municipal operations staff and provided post-installation training. Post-installation operations confirmed the recovery of the aquifer and resulted in an operational cost savings of approximately 27 percent.

**Soquel Creek Water District****California**

Performed extensive site surveys and pumping plant performance testing to assess operating systems efficiencies. Evaluated available geologic, well log, pumping test, and energy demand data to assess water production and supply impacts to the coastal alluvial and bedrock aquifers. Based on the results of the investigation, an aquifer management program, which utilized linear programming techniques to optimize water production operations while simultaneously achieving aquifer management goals, was implemented. Project was done as a joint venture between the water agency and Pacific Gas & Electric, with funding created from measured energy savings. Provided system installation and start-up services to water district operations staff and provided post-installation training. Post-installation measurement and verification of energy savings confirmed a 15 percent reduction from the baseline energy costs.

**Water Authority of Jordan****Hashemite Kingdom of Jordan**

Evaluated available geologic, well log, pumping test, and energy demand data to assess water production and supply inefficiencies. Performed extensive site surveys and pumping plant performance testing to assess systems efficiencies. Based on the results of the investigation, a water resource development strategy and operating templates were developed to efficiently meet customer water demands and minimize operational costs. Developed monitoring protocols and provided training to Water Authority operations staff. Project funding was partially secured through the U.S. Agency for International Development.

**PROFESSIONAL PAPERS AND PUBLICATIONS:**

A Linked Optimization-Simulation Aquifer Management Model, Oklahoma State University, 1992. Ph.D. Dissertation.

Energy Efficiency Study for the Mountain Water Company, Missoula, Montana, presented at the Montana Section of the American Water Works Association (AWWA) 1996 Conference, Missoula, Montana.

Synopsis of EPA Wellhead Demonstration Project Conducted for the Town of Roosevelt, presented at the Watershed Success in Region 6 Conference, New Orleans, Louisiana, Summer of 1995.

The Importance of Energy Efficiency in a Deregulated World, presented at the Association of California Water Agencies (ACWA) 1994 Conference, Monterey, California.

Aquifer Management and Wellhead Protection in North-Central Oklahoma, presented at the following conferences:

- EPA Wellhead Protection Tools for Local Governments, Dallas, Texas, 1989; New Orleans, Louisiana, 1990; and Oklahoma City, Oklahoma, 1991.
- Oklahoma Conference on Protection of Waterwells from Pollution.
- Oklahoma Governors Conference.
- A Wellhead Protection in the Western United States.

Optimization of a Municipal Groundwater Production System in North-Central Oklahoma, presented at the International Symposium on Groundwater, Nashville, Tennessee, 1992.

The Water Resource Energy Management System (WREMS): Linking Data Management and Operational Optimization, forthcoming in Annals of Operations Research, 1996.

A Heuristic for Minimizing Monthly Demand Charges in Daily Water Pumping Schedules, proceedings of the 1996 Annual Meeting of the Decision Sciences Institute, 1996.

Using Optimization in Municipal Aquifer Management: A Feasibility Study, proceedings of the 1992 Annual Meeting of the Decision Sciences Institute, 1992.

### **Partial List of Litigation Matters in which Expert Testimony was Provided**

Testimony: Oklahoma Water Resources Board (OWRB) Administration Hearing re: Application of Charles M. Rowe Revocable Trust for a Permit to use Surface or Stream Water No. 2003-018, OklahomaRanch.com, LLC, Carter County, Oklahoma. Hearing Date: 12/05/2003.

Deposition and Testimony: Wright Dam & Reservoir, Caddo County, Oklahoma; Teddy Neal Helderman, Denny Lee Hight and Jana Harris Hight, Plaintiffs v. Hinton Economic Development Authority and Danny Wright, Defendants, District Court of Caddo County, Oklahoma, Case No. CJ-2003-53. Hearing Date: N/A

Testimony: Oklahoma Water Resources Board (OWRB) Administration Hearing re: Application for Regular Permit to Use Groundwater No. 2003-543, Lee W. Young, Logan County, Oklahoma. Hearing Date: N/A

Deposition & Testimony: Western Beltway, Sections 7B, 8 and 9, Clark County, Nevada; Meadow Valley Contractors, Inc. v Clark County, Nevada, Private Arbitration: Hearing Date: N/A

Deposition: The Town of Rush Springs, Rush Springs Municipal Authority, Plaintiffs v. Alvin R. Jung, P.E. d/b/a Landmark Engineering, Defendant, District Court of Grady County, Oklahoma, Case No. CJ-2003-158. Hearing Date: N/A

Testimony: Oklahoma Water Resources Board (OWRB) Administration Hearing re: Application for Regular Permit to Use Groundwater No. 2005-526, Kremlin - Hillsdale Rural Water District No..1, Garfield County, Oklahoma. Hearing Date: 8/17/2005

Deposition: Rancho Sahuarita Aquatic Complex Failure; Zurich North America Company v. Patio Pools of Tucson, Inc., Private Arbitration. Hearing Date: 12/11/2006.

Testimony: Oklahoma Water Resources Board (OWRB) Administration Hearing re: Application to Amend Permit to Use Stream Water No. 2004-022, Randall R. Williams, Jackson County, Oklahoma No. 2004-022, . Hearing Date: 3/30/2007

Deposition/Testimony: Don Quarles, et al., Plaintiffs vs. United States of America, ex rel., Bureau of Indian Affairs, et al., Defendants, Case No. 00-CV-913-GKF-PJC in the United States District Court for the Northern District of Oklahoma. Date: 09/28/2007.

Deposition & Testimony: Washington / Buffalo Park Stormwater Drainage System; Apco Construction v. City of Las Vegas, Nevada, Private Arbitration. Hearing Date: 7/25/2008

Deposition & Testimony: Sloan Channel Stormwater Drainage System; Meadow Valley Contractors, Inc. v. Clark County, Nevada, Private Arbitration. Hearing Date: 10/14/2008

Deposition: Alamagordo; Johnson & Danley Construction Co., Inc. and Meadow Valley Contractors, Inc. v. The State of New Mexico, ex rel. New Mexico Department of Transportation f/k/a New Mexico State Highway and Transportation Department, Case No. D-1215-CV-200400169 in the Twelfth Judicial District Court of New Mexico. Hearing Date: N/A.

Deposition: City of Kingfisher Flooding; Michael Blair and Denise Blair, et. al., Plaintiffs v. Union Pacific Railroad Company, a Delaware Corporation, Defendant, Case No. CIV-08-360-M in the United States District Court for the Western District of Oklahoma. Hearing Date: N/A

State of Oklahoma v. Sumner, Town of Rush Springs; 6<sup>TH</sup> Judicial District Court of Grady County, Oklahoma; Case No. C-88-248; Hearing Date 12/4/2000. (Plaintiff Attorney Michael L. Darrah with Durbin, Larimore & Bialick.)

George Lynn Lowery & Michelle Lowery v. Clara E. Jones, d/b/a Jones Oil Co. and L.E. Jones Operating, Inc.; Case No. CJ-97-470 (Carter County, Oklahoma). Settled before trial. (Attorney Michael L. Darrah with Durbin, Larimore & Bialick.)

Willie and Carrie Taylor and Daniel N. Stiles v. Washington County re: flooding; District Court of Washington County; Case No. CJ-97-268; Hearing Date 06/28/1999. (Defendant Attorney David W. Lee with Lee & Gooch, P.C.)

Ernest Bowen and Mary Bowen v. Amoco Pipeline Company and Koch Industries, Inc. re: oilfield pollution; Case No. CIV-98-243-S; USDC, ED Oklahoma; Hearing Date N/A. (Plaintiff Attorney Michael L. Darrah with Durbin, Larimore & Bialick.)

Luker v. Board of County Commissioners of Greer County; District Court of Greer County re: surface damage resulting from County changing the natural water flow; Case No. CJ-97-35; Hearing Date N/A. (Plaintiff Attorney B. Christopher Wray with Duffy & Wray.)

The Rosa Lenora Gilliland Trust, Charles M. Gilliland and Billy L. Gilliland, Co-Trustees, Charles M. Gilliland, an individual, Billy L. Gilliland, an individual, Darla Hoffman, an individual, Johnny Wayne Gilliland, an individual, Jimmy Gilliland, an individual, and Teddy Gilliland, an individual, Plaintiffs, vs. The State of Oklahoma, ex rel Department of Transportation, and the City of Weatherford, a municipal corporation, Defendants re: flooding claim; Case No. CJ-97-20; District Court of Custer County, State of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Gordon H. Rowe III with Rowe & Rowe.)

Applicant Michael S. Battles, Director, Oil and Gas Conservation Division, Oklahoma Corporation Commission (OCC) and Respondent J.J.S. & Company, Inc., d/b/a Parawax Corporation; Relief Sought: Contempt; Cause En No. 970-000155; ITN No. 97-21681; Re: Parawax Commercial Crude Reclaiming Facility; Hearing Date N/A. (Respondent Attorney Eric King with Gable & Gotwals.)

Jack E. Sanner v. Texaco Inc. re: oilfield pollution; Case No. CIV-97-527-R' U.S. District Court, Western District of Oklahoma; Hearing Date N/A. (Attorney Rob F. Robertson with Gable & Gotwals.)

Lula Mae Fox and Leslie A. Hall, Plaintiffs, vs. Ward Petroleum Corp., an Oklahoma Corporation, Defendant; Case No. CJ-93-1995 (BH); District Court of Cleveland County, State of Oklahoma; Hearing Date N/A. (Defendant Attorney Michael E. Smith with Barnes, Smith, Lewis & McCutcheon, P.C.)



Tom Hawkins and Vana Hawkins, Plaintiffs, vs. State of Oklahoma, ex rel., Oklahoma Department of Transportation and Jensen Construction Company, Defendants; District Court of Noble County, State of Oklahoma; Case No. CJ-97-81; Hearing Date N/A. (Plaintiff Attorney Derrin K. Hiatt with Burns, Baumert & Cummings, Ponca City, OK.)

Meinders vs. Texaco, Inc. re: oilfield pollution Case No., Court, and Hearing Date N/A. (Defendant Attorney Gable, Gotwals, Mock & Schwabe.)

Union Pacific Railroad (UPCC) vs. Sorrelles; Stephens County; Case No. and Hearing Date N/A. (Attorney Tom Armstrong & Associates - Tulsa.)

Evetts vs. Anson; Case No. CJ-96-94; District Court of Washita County, Oklahoma; Hearing Date N/A. (Plaintiff Attorney Michael L. Darrah with Durbin, Larimore & Bialick.)

Benjamin R. Stambaugh and Rita Stambaugh v. Bromar Oil Company, Southland Royalty Company, Meridian Oil Production, Inc., and Helmerick and Payne International Drilling Co.; Case No. CJ-95-74; District Court of Major County, State of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Bryce S. Kennedy with Beech, Edwards & Kennedy.)

Bethesda Boys Ranch, Inc., et al., v. Atlantic Richfield Company, et al.; Case No. CJ-95-106-B; Court and Hearing Date N/A. (Plaintiff Attorney Ronald Ricketts with Gable, Gotwals, Mock & Schwabe.)

Kenneth White and Kenny White, Plaintiffs, vs. The City of Lawton, a municipal corporation, and the Lawton Water Authority, a public trust re: flooding as a result of two (2) dams; Case Nos. CJ-93-19 and CJ-94-45; District Court of Cotton County, State of Oklahoma; Hearing Date 05/21/1998. (Plaintiff Attorneys R. Thomas Lay and James R. Barnett.)

John Aldrich and Barbara Aldrich, Plaintiffs, vs. Gomoco, Inc., an Oklahoma Corporation, Defendant, re: saltwater contamination; Case No. CJ-94-145H; District Court of Logan County, State of Oklahoma; Hearing Date N/A. (Defendant Attorney Larry D. Ottaway with Foliart, Huff, Ottaway and Caldwell.)

John Willard Brummett, Juanita Alberta Brummett, Harold Hubert Tracy, Trustee, Dorothy Jeanne Tracy, Trustee, and Carroll Dupre Moore, Plaintiffs, v. Texaco Inc., Texaco Exploration and Production Inc., and K.C. Resources, Inc. (a/k/a KC Resources, Inc.); Case No. CIV-94-961-A; United States District Court, Western District of Oklahoma; Hearing Date N/A. (Attorneys Doug Burns and Allan Devore.)

Hickmon v. Oryx Energy Company re: surface and groundwater pollution Case No. CIV-94-1529-T; United States District Court, Western District of Oklahoma; Hearing Date N/A. (Attorneys Doug Burns and DeVore Law Firm.)

Levitz Furniture Corporation v. API Enterprises, Inc. re: soil contamination; Case No. CIV-94-2145 C; United States District Court, Western District of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Allan DeVore with DeVore Law Firm.)

Edler vs. Mobil Oil Corporation re: contamination; Case No. CIV-931471R; United States District Court, Western District of Oklahoma; Hearing Date N/A. (Attorney Mort Tisdal with Cornell & Tisdal.)

R.K.J. Farm Company and J.D. Brown vs. ARKLA, Inc. re: groundwater pollution and surface damages resulting from a saltwater spill; Case No. CJ-62-26; District Court of Washita County, State of Oklahoma; Hearing Date N/A. (Plaintiff Attorney H. Blanton Brown with H. Blanton Brown & Associates, P.C.)

DRD, Inc., Plaintiff, vs. Ray Cresap, an Individual, Kingfisher Construction Service Co., an Oklahoma Corporation, and Professional Engineering Services, Inc., an Oklahoma Corporation, re: soil instability beneath the Sonic facility parking lot in Kingfisher, Oklahoma; Case No. CJ-93-20; District Court of Kingfisher County, State of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Ronald Phelps.)

Carroll Walker v. Cross Timbers Production Company, et al. re: groundwater pollution; Case No. C-94-64; District Court of Major County, State of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Billy M. Croll with Linn & Neville.)

Larry Beck and Leona Beck v. Trigg Drilling Company, Inc., Dyco Petroleum Corp., Arkla, Inc., and Samson Resources Company re: surface and subsurface pollution; Case No. C-92-227; Court and Hearing Date N/A. (Plaintiff Attorney Stephen P. Friot with Spradling, Alpern, Friot & Gum.)

City of Durant vs. TBG re: wastewater land application; Court and Hearing Date N/A. (Attorney R. Thomas Lay with Kerr, Irvine, Rhodes & Ables.)

In the Matter of the Applicatin of Ron & Dan's Oil, Ltd., for Administrative Approval to Dispose of Fluids into the Tharp #1 Well Located 660 feet from the North and 660 feet from the East of the Northwest Quarter of Section 30, Township 17 North, Range 4 West, Logan County, Oklahoma; City of Crescent, Protestant; OCC Cause No. 24567; Hearing Date N/A. (Protestant Attorney R. Thomas Lay with Kerr, Irvine, Rhodes & Ables.)

Damron vs. Apache Corp. re: surface and subsurface pollution; Case No. CIV-92-1227-L; United States District Court, Western District of Oklahoma; Hearing Date N/A. (Plaintiff Attorney Greg McKenzie with McKenzie, Moffett, Elias & Books.)

### **International Project Experience (Countries outside the US)**

Jordan (Amman) – Operational Analysis of Regional Water Supply System

Germany (Berlin) – Managed Design – Build of “Yellow Submarine” motion-based simulator

Japan (Tokyo) - Managed Design – Build of “Yellow Submarine” motion-based simulator

Japan (Gifu) – Managed Design – Build of Aquatic Habitats & Exhibits for Commercial Aquarium

Argentina (Buenos Aries) - Managed Design – Build of Habitats & Exhibits for Zoological Garden

Poland (Krakow) - Managed Design – Build of Habitats & Exhibits for Commercial Shopping / Entertainment Center

Sri Lanka (Columbo) - Managed Design – Build of Habitats & Exhibits for Commercial Shopping / Entertainment Center

Thailand (Bankok) – Provided technical consultation to Government of Thailand regarding local groundwater recharge & recovery projects.

Portugal (Lisbon) - - Managed Design – Build of Habitats & Exhibits for Commercial Shopping / Entertainment Center

Canada (Vancouver) – Design & Project Development services for commercial / residential land development project.

### **Educational Experience**

University of Arizona, Tucson, AZ.: Lecturer, CE 407 “Issues in Professional Engineering Practice”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 584 “Lateral Support Systems”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 586 “Design & Analysis of Deep Foundations”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 336 “Water Resources Engineering”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 264 “Environmental Fluid Mechanics”

### **Engineering / Hydrologic Software Experience (Partial List)**

Microsoft Office

USGS MOD-FLOW

Microsoft Project

USGE MOD-PATH

AutoCAD

THWells

Autodesk Civil / Land Development

EPANet

AutoCAD Civil 3D

WaterCAD

Microsoft Office

NRCS TR-55

HEC-RAS

NRCS TR-20

HEC-HMS

NRCS SITES

## **Software Development Experience**

Water Resources Energy Management System (WREMS) – Managed the development of this software which is utilized for identifying “least cost” operational strategies for water utilities.

Hydraulically Balanced Irrigation System (HBIS) – Managed the development of this software which is utilized for identifying irrigation strategies for optimal delivery of water and nutrients to wood fiber products tree farms.