

**CHARLES R. LIVINGSTON, PG**

**EDUCATION / REGISTRATION / AFFILIATION**

B. S., Geology, Colorado State University, 1959

Registered Professional Geologist, Georgia (Current)  
Registered Professional Geologist, Tennessee (Expired)  
Registered Professional Geologist, North Carolina (Expired)  
Registered Professional Geologist, California (Expired)  
Certified Engineering Geologist, California (Expired)  
Registered Professional Engineer, Colorado (Expired)

Member, Association of Engineering Geologists

**PROFESSIONAL EXPERIENCE**

Over 35 years' experience in performing and managing geologic, geotechnical, and environmental projects throughout the United States, Canada, and the Bahamas. This work included the following: geologic / geotechnical investigations for civil projects ranging from subdivisions to skyscrapers to roads and bridges to industrial facilities; material investigations for construction aggregate; investigations for coal and various industrial minerals including fullers earth, kaolin and heavy minerals; geologic investigations for nuclear power plants, water-supply dams and various hydroelectric facilities including dams, tunnels, power plants and pipelines; the inspection (a safety evaluation) of major dams throughout the western United States for a U.S. government agency; offshore investigations; RCRA and CERCLA site investigations: underground storage tank investigations; solid waste studies; contaminant delineation; remediation design; construction / remediation supervision; and, expert witness testimony in court cases concerning geologic matters.

**RELEVANT PROJECT EXPERIENCE**

**Hazardous/Toxic Waste/RCRA/CERCLA Investigations** - Performed and managed hazardous / toxic waste / RCRA / CERCLA investigations. This included a project (6) at the former Raritan Arsenal near Edison, New Jersey. The project involved preparation of the work plan for installation of soil borings and monitoring wells (for a sampling program) and directing field operations. Potential hazards / contaminants included live ammunition, mustard gas, red fuming nitric acid, potassium cyanide, arsenic, cadmium, chromium, lead, selenium, and mustard by-product. A more recent project (7) is a state superfund site near Beavercreek, Ohio (just east of Dayton) involving chlorinated solvents. (Note: Numbers in parentheses refer to employment. See Employment History at the bottom of page 3.)

**Underground Storage Tanks (USTs)** -- This work has included the following: site characterization (drilling / sampling, mapping), delineation of contamination, installation of monitoring wells, evaluation of remediation options, preparation of corrective action plan (CAP), liaison with regulatory agencies and supervision of corrective action. (6)

**Solid Waste Studies** - Managed investigations for over 20 solid waste facilities throughout Georgia. Tasks included geologic mapping, soil characterization, design and installation of groundwater monitoring wells, evaluation of groundwater conditions, formulation of landfill design parameters and report preparation. (5)

**Groundwater Investigations** - - Performed and managed groundwater investigations on numerous projects throughout the U.S. Project tasks included geologic mapping, drilling/site characterization, determination of groundwater flow directions, contaminant delineation (where applicable) and evaluation. (1-7)

**Dams/Hydro Facilities** - - Performed a geologic investigation for the Sweetwater Hydroelectric project in western Colorado. Included in this project were five dams ranging in height from 60 to 230 feet, 4 miles of tunnel, 13 miles of conduit, two penstocks, two power plants, and various other appurtenant structures. (1)

Performed a geologic investigation for a municipal water-supply dam in Peachtree City, Georgia. Supervision of drilling, pressure testing, and preparation of design documents relative to foundation preparation and treatment. (4)

Performed a geologic investigation for a 230-foot-high earth and rockfill water-supply dam (Buttonrock Dam) for the City of Longmont, Colorado. In addition to the dam, the project included a 900-foot-long tunnel and various other appurtenant features. (2)

Performed a geologic investigation of a pumped storage project in western Colorado. The project included a 200-foot-high earthfill dam, penstocks and a power plant. (1)

Located the aggregate source for the Richard B. Russell Dam on the Savannah River near Elberton, Georgia. This dam (a \$620 million project), which was constructed by the U.S. Army Corps of Engineers, is of both concrete and earthfill composition. Over 2 million tons of aggregate were obtained from the quarry. (4)

Performed safety evaluation inspections for the U.S. Bureau of Reclamation on fourteen major dams in western states from Nebraska to California. Dams inspected during this work included Grand Coulee Dam on the Columbia River in Washington, and San Luis Dam in California. The earthfill San Luis Dam has a structural height of 382 feet, a crest length of 18,600 feet and an embankment volume of 77,663,000 cubic yards. (4)

**Nuclear Power Generation** - Conducted and supervised geologic investigations for nuclear power plants at Baxley, GA (Georgia Power Co.); Dothan, AL (Alabama Power Co.); Parr, SC which is just north of Columbia (South Carolina Gas & Electric Co.); Glen Rose, Texas (TXU Electric); North Anna, VA (Virginia Electric & Power Co.); and Oswego, NY (Niagra Mohawk Power Co.). (3)

**Offshore Projects** – - Conducted a geologic investigation at an island in the Arctic Ocean three miles offshore from Prudhoe Bay, Alaska (proposed shiploading terminal) prior to construction of the Alaska Pipeline. (3)

Performed a subsurface investigation for an off-shore oil-unloading platform in 150 feet of water at the Bay of Fundy in St. John, New Brunswick, Canada. (3)

Supervised grouting of oil an refinery foundation at Freeport, Grand Bahama Island off the coast of Florida. (3)

**Mineral / Material Investigations** - Performed a mineral potential investigation on 480,000 acres in Georgia and Alabama for the Union Camp Paper Company. (4)

Delineated the locations of rock containing deleterious minerals on fifty miles of logging roads north of Cleveland, Tennessee for the U.S. Forest Service. (4)

Performed investigations relative to sand and gravel (Georgia) and coal (Kentucky, West Virginia and Tennessee) for the Internal Revenue Service. (4)

Investigation and expert witness testimony for the U.S. Department of Justice on projects involving granite (Elberton, GA), heavy minerals (Waycross, GA) and coal (Birmingham, Alabama). (4)

**Civil Projects** - Conducted a geologic / geotechnical investigation at Disney World in Orlando, Florida before the public knew there was going to be a Disney World. The principal emphasis was on determining soil and rock bearing capacities and the depth to rock and the groundwater table, and on locating and delineating sinkholes / cavities in the carbonate rock. (3)

Conducted geologic / geotechnical investigations for roads and bridges in Peachtree City, Georgia (a new town development). (4)

Supervised construction activities relative to dam foundation preparation and placement of embankment materials in Port Hudson, Louisiana and Macon, Georgia (3), and caisson installation in Atlanta, Georgia ((3) and in Denver, Fort Collins and Canyon City, Colorado (2) .

**EMPLOYMENT HISTORY** - (1) Van Sickle Associates in Denver, CO (May 1960 to June 1963); (2) Kal Zeff & Associates in Denver, CO; (July 1963 to January 1967); (3) Dames & Moore in Atlanta, GA, (February 1967 to January 1973; (4) Self-employed Consulting Geologist in Atlanta, GA (February 1973 to September 1990); (5) Moreland Altobelli in Atlanta, GA (October 1990 to March 1992); (6) Lowe Engineers in Atlanta, GA (April 1992 to March 1994); (7) Self-employed consulting geologist in Atlanta, GA (April 1994 to present).