



Steven B. Stansfield

Current Position

Sr. Project
Geologist/Hydrogeologist

Profession

Geology, Hydrogeology

Years' Experience

27+

Joined MM&A

1990

Education

BS – Geological Sciences,
Virginia Polytechnic Institute
and State University,
Blacksburg, VA

Professional Registrations

PG – TN

Registered Member of the
Society for Mining,
Metallurgy, and Exploration
(SME) of AIME

OSHA Health & Safety

OSHA Refresher

MSHA Part 48 Hazard
Training

Roadway Worker
Protection/eRailSafe

Affiliations

Association of Ground Water
Scientists and Engineers
(Division of
the National Ground Water
Association)

Summary of Experience

Mr. Stansfield conducts hydrogeologic investigations related to mining hydrology, landfill evaluation, industrial contamination, and investigations involved in litigation. He has directed numerous field investigations, and authored or co-authored hundreds of reports related to geologic and hydrogeologic matters. He is often involved in using statistical applications to determine regulatory groundwater compliance for solid waste and industrial landfills, surface water applications, and mine water discharge. Results of many investigations are utilized in engineering design applications, including, but not limited to landfill cap design, and disposal and handling of material likely to create adverse environmental conditions.

Significant Projects

- > **Appalachian Coalfields:** Involved in many investigations related to alleged impacts to ground and surface water regimes due to mining and slurry injection activities, most of which were involved in litigation.
- > **Appalachian Coalfields:** Conducted baseline/background investigations as part of probable hydrologic consequences (PHC) associated with pre-mining activities. Field tasks included monitoring well installation; baseline potentiometric levels and water sampling; stream flow monitoring; and water user inventory. Assess potential for during and post-mining impacts.
- > **West Virginia/Southwest Virginia/Eastern Kentucky:** Conducted coal reserve and mineability evaluations for numerous properties in the Appalachian region.
- > **Ohio:** Oversee an extensive field program at a former Army Ammunition Plant. The program consisted of drilling numerous holes via Sonic technology; installation of monitoring wells in each of those boreholes; well development; and the collection, containerization, and sampling of Investigative Derived Waste (water and soil).
- > **Alabama:** Managed a field exploration program for an aggregate mine expansion; data used for geotechnical considerations and mine planning.
- > **Northern West Virginia and Southwestern Virginia:** Extensively involved in permit applications of landfills. Oversaw all field related activities that included core logging, monitoring well installation, monitoring program, aquifer testing, water sampling, and interpretation of results. Performed a due-diligence for a prospective buyer to purchase an industrial landfill facility and convert it to a solid waste facility.
- > **Northern and Northeastern West Virginia:** Managed all field activities related to landfill closure plan that included monitoring well installation, soil collection for geotechnical analysis, and water and landfill gas sampling. Involved in report preparation that addressed assessment of groundwater impact and landfill gas migration.
- > **Southern West Virginia:** Oversight of field project involving the drilling and installation of Injection Wells for the collection and injection of impacted surface waters into abandoned deep mine workings. Field work also included the installation of a mine dewatering well, injection well water acceptance tests, and oversight of construction of water collection and conveyance systems.

Significant Projects (continued)

- > **Eastern Kentucky:** Conducted baseline surface water sampling as well as oversaw a field drilling program to conduct a site evaluation for potential environmental impact associated with the construction of a proposed prison complex located on a reclaimed mine site.
- > **Southwest Virginia:** Performed hydrologic investigations for landfill closures, including preparation of monitoring plans and statistical analyses. Oversaw all groundwater monitoring activities and report preparation. Performed successful alternate source demonstrations, corrective action plans, and corrective action monitoring plans; and communicated with regulatory agencies. Performed evaluations to request termination of post-closure care for industrial and solid waste landfill facilities to determine impact of termination to human health and the environment.
- > **Southern West Virginia:** Oversaw numerous field activities related to the permit application for a 10,000 ton per-day private sanitary landfill. Involved in geologic and hydrogeologic analyses of the site.
- > **Southwest Virginia:** Planned, coordinated, and reported on potential environmental impacts of a proposed four-lane highway system. This included identification of earthen material with the potential to cause adverse environmental conditions.
- > **Southwest Virginia / Southern West Virginia:** Involved in all aspects of field investigations, data evaluation, and reporting in matters related to water well and surface water claims involved in litigation due to alleged mining impact.
- > **Virginia, West Virginia, Tennessee:** Managed numerous groundwater and surface water sampling activities at landfills, mining sites, underground storage tank sites, and industrial facilities.
- > **West Virginia:** Involved in numerous projects involving mine permitting, some incorporating large acreage areas and numerous residential locations. Prepared probable hydrologic consequences and hydrologic reclamation plans, as well as long-term monitoring plans. Permits included various mining types, including deep, surface, and auger, and often involved multiple coal seams.
- > **Eastern/Northern Tennessee:** Conducted Phase I Environmental Site Assessments per ASTM E1527-94 standards. Also conducted site characterization, and implemented a monitoring and enhanced bioremediation program for an industrial facility underlain by a fractured bedrock aquifer. Involved in comprehensive Remedial Investigation/Feasibility Study and Risk Assessment.
- > **Eastern Kentucky/Southern West Virginia:** Conducted hydrogeologic and geotechnical investigations of deep mine advancement beneath stream valleys with shallow overburden.
- > **Southwest Virginia/Southern West Virginia:** Conducted pre-mining evaluations into the probable hydrogeologic consequences of mining near residential water wells and surface streams.
- > **Alabama:** Conducted an investigation into the potential cause of groundwater inflow into an active deep mine, and predicted potential future inflows with mine advancement
- > **Appalachian Region:** Collected and evaluated hundreds of ground and surface water samples throughout the region for various entities and causes. Groundwater samples collected from monitoring wells, residential water wells, springs, and mine discharges.

Professional History

2017-Present

Sr. Project Geologist/Hydrogeologist

Marshall Miller & Associates, Inc. – Bluefield, Virginia

2012-2016

Sr. Geologist/Hydrogeologist

Cardno, Inc. – Bluefield, Virginia

2001-2012

Sr. Geologist/Hydrogeologist

Marshall Miller & Associates, Inc. – Bluefield, Virginia

Responsible for evaluation of landfill analytical data by statistical applications to determine regulatory compliance, and maintain close communication with regulatory agencies. Responsible for report writing and presentation in various fields, including, but not limited to: geologic evaluations; mining hydrologic studies (Probable Hydrologic Consequences and Hydrologic Reclamation Plans) and permitting; prediction of acid-mine drainage potential in mining and construction applications; monitoring plan design; ground and surface water potential impact studies and remediation; landfill applications; and industrial contamination. Coordinate various field projects, including, but not limited to: water user inventory; ground and surface water sampling; subsurface investigations; monitoring well installation; pumping tests; stream flow monitoring; water well/surface water loss complaints; delineation of petroleum-impacted soils; landfill investigations; management of drilling programs for aggregate mining. Several projects involved in litigation.

1993-2001

Project Geologist

Marshall Miller & Associates – Bluefield, Virginia

Extensively involved in completing annual reports for solid waste facilities including the evaluation of the monitoring regime, and determination and implementation of groundwater statistical methods. Responsibilities include coordination with clients, and reporting to regulatory agencies. Involved extensively with landfill permit applications including site characterization and closure reports, water sample collection, and in the collection of landfill gas samples and evaluation, along with mitigative measures for landfill gas migration. Also conducted groundwater sample collection and assessment of groundwater contaminants including causes, impact, and remedial alternatives at numerous industrial and privately-owned sites. Evaluated Probable Hydrologic Consequences for mining permits and conducted hydrogeologic/geotechnical studies for deep mining beneath shallow stream valley floors. Investigations into alleged water well and surface water impacts due to mining. Performed Phase I Environmental Site Assessments and CERCLA remedial investigations. Involved in numerous investigations of hydrologic impacts resulting from mining, including several studies in litigation. Have collected numerous surface and groundwater samples and measured stream flow rates for permit purposes.

1990-1993

Geologist

Marshall Miller & Associates – Bluefield, Virginia

Involved in numerous geologic studies including mapping of geological factors relating to coal reserves, mineability, and potential mining hazards. Responsible for planning and supervision of coal exploration programs and property evaluations in the Appalachian Region, with specific involvement in data collection and interpretation, correlation of coals in regional studies, and technical report writing and presentation. Responsible for geologic/geotechnical core logging, management of both core and rotary drill rigs, road construction, prospect permits and bond release requests, monitoring well installation, slug and packer testing, water sampling, and detailed joint analyses of rock outcrops. Also participated in coalbed methane desorption project studies

Professional History (continued)

Summer 1985, 1986

Assistant Geologist

Marshall Miller & Associates – Bluefield, Virginia

Assisted senior geologists in geologic core logging, mapping, coalbed methane desorption studies, and linear confirmation.

Publications & Presentations

- > "A Cost-Effective Approach to In Situ Bioremediation in Fractured Bedrock," The Ninth International In Situ and On-Site Bioremediation Symposium, Baltimore, Maryland, May 7-10, 2007.

Continuing Education

- > Northern Illinois University and Midwest GeoSciences Group Webinar: "Ethics for Geologists and Engineers, Realizations of Everyday Decisions and Common Behaviors", Bluefield, Virginia, February 2012.
- > ASCE Webinar: "Water Balance Modeling for Alternative Water Balance (ET) Covers", Bluefield, Virginia, April 2012.
- > NGWA Webinar (#829): "Ground Water Geochemistry and Isotopes: Do's and Dont's for Field Sampling and Analysis", Bluefield, Virginia, November 2009.
- > Air & Waste Management Association Webinar: "Geologic Sequestration Research Activities and EPA Regulations," Bluefield, Virginia, February 2008.
- > Introductory Statistics for Environmental Professionals, National Ground Water Association, St. Louis, Missouri, April 2006.
- > Accelerated Bioremediation with Slow Release Electron Donors and Electron Acceptors, Regenesys, Roanoke, Virginia, April 2005.
- > EPA Seminar on Monitored Natural Attenuation for Groundwater, Atlanta, Georgia, November 1998
- > West Virginia Mining Symposium, Charleston, West Virginia, January 1998.
- > Coal Mine Roof Rating Seminar, National Institute for Occupational Safety and Health, Sophia, West Virginia, September 1997.
- > Groundwater Statistics and Regulations, Colorado School of Mines, Atlanta, Georgia, March 1996.
- > Acid Mine Drainage Seminar, Flatwoods, West Virginia, September 1995.
- > Professional Designers/Engineers/Specifiers Seminar, Roanoke, Virginia, May 1995.
- > Preparation of Groundwater Protection Plans and Spill Prevention, Control, and Countermeasures Plans, Flatwoods, West Virginia, December 1994.
- > The Princeton Course "Groundwater Pollution and Hydrology," Princeton, New Jersey, February 1993.
- > Audit of Masters Level Course in Groundwater Hydrology, West Virginia College of Graduate Studies, Bluefield, West Virginia, 1993.