

Professional Curriculum Vitae  
Gennaro Gerald Marino, Ph.D., P.E., D.GE

Exhibit 18

September, 2016

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**Education**

- Ph.D. University of Illinois at Urbana-Champaign, 1985  
Civil (Geotechnical) Engineering
- M.S. Rutgers University, 1975  
Civil (Soil Mechanics and Foundations) Engineering
- B.S. University of Dayton, 1972  
Civil Engineering

**Honors and Professional Credentials**

Civil and Environmental Engineering Alumni Association Distinguished Alumnus Award from the University of Illinois, 2015

American Bar Association (ABA), Expert Witness Committee, Chairman of Civil Engineering Subcommittee, 2014 to present

Geo-Diplomate Award from ASCE, 2013

Registered Professional Engineer in Alabama, Arkansas, Colorado, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, Wyoming, and National Accreditation.

Central Illinois Civil Engineer of the Year, American Society of Civil Engineers, 2011

Semi-Finalist for the Regional Outstanding Civil Engineering Achievement Award, American Society of Civil Engineers, 2010

Elected Member of the Geotechnical Advisory Committee for the Illinois Mine Subsidence Insurance Fund, 2008-2011

Chairman and Founder of Geotechnical Engineering Division, American Society of Surface Mining and Reclamation to 2003

Selected onto the Board of Consultants by the National Academy of Science for the study of Slurry Impoundment Failures, 2001

Selected by the U.S. Bureau of Mines to be an In-House Geotechnical Consultant at the

Minneapolis Research Center

Selected to a National Committee on Training of adjustors, contractors and engineers on reconstruction technologies for earthquake damage

Member on American Standard for Testing of Materials Committee on Soil and Rock (D18)

Registered Professional Engineer with the National Council of Examiners for Engineering and Surveying

Engineering Open House Award for Development of a Foundation Retrofit Methodology

Member of Society of Mining Engineers, American Society of Civil Engineers, American Society of Testing Materials, National Association of County Engineers

## **Professional Experience**

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|---------------|--|
| 7/97-Present  | President and Senior Geotechnical/Civil Engineer for Marino Engineering Associates, Inc., Urbana, Illinois |
| 1985-Present  | Expert Witness on numerous Geotechnical/ Civil Engineering subjects  |
| 1/80 to 7/97  | Geotechnical and Civil Engineering Consultant (research and practice)                                      |
| 1/88 to 5/93  | Consultant to the Civil Engineering Department at the University of Illinois                               |
| 3/86 to 3/88  | In-House Geotechnical Consultant on U.S. Bureau of Mines research projects                                 |
| 6/85 to 5/87  | Research Engineer and Principal Investigator in Civil Engineering at the University of Illinois            |
| 10/76 to 9/78 | Geotechnical Research Engineer, Ensco, Inc., Port Royal Rd, Springfield, VA 33100                          |
| 10/75 to 9/76 | Project Engineer, ECB Engineers, Inc., Broad St. Falls Church, VA 22000                                    |
| 6/74 to 10/75 | Soils Engineer, Haller and ShimeI Consulting Engineers, Leland Ave., Plainfield, NJ 07000                  |
| 1/73 to 8/73  | Soils Engineer, Joseph S. Ward and Assoc., Roseland Ave., Caldwell, NJ 07006                               |

## **Geotechnical Engineering Experience**

- Foundation feasibility studies and designs for various types of structures
- Foundation evaluation and design over shallow abandoned coal workings
- Field feasibility study and inspection of caissons for a high-rise building
- Analysis of ground conditions and construction difficulties for deep foundation projects
- Design and field supervision of grouting in soil and rock
- Evaluation of the cyclic or dynamic behavior of soils
- Slope stability and stabilization
- Pavement design
- Earth retaining system design
- Canal and berm seepage analysis
- Field mapping and analysis of ground conditions for rock excavations
- Field instrumentation work for underground openings
- Investigation of tunneling conditions and ground support in rock and soft ground
- Evaluation of the long-term stability of room and pillar mines
- Evaluation of mine permits for surface, room and pillar, and longwall mining
- Mine subsidence potential prediction
- Subsidence engineering investigations
- Evaluation of pipeline response to subsidence
- On-site supervision and inspection
- Laboratory testing

## **Forensic Engineering**

- Analysis of groundwater seepage
- Investigation of damage to earth retaining systems
- Investigation of earth and concrete dam failures
- Rock hardness evaluation
- Analysis of the ground effects on failed plastic and large diameter steel pipeline systems
- Investigation and evaluation of earthquake and ground vibration damage
- Investigation and evaluation of damage to structures from ground movement (e.g. settlement, frost, and heaving) and other causes
- Investigation of slope failures
- Evaluation of pavement failures
- Evaluation of stability of underground openings and mines
- Evaluation of subsidence damage from underground mines
- Evaluation of subsidence damage from salt mining
- Evaluation of mine backfilling or grouting conditions

## **Construction & Structural Analysis**

- Pre-bid analysis of ground conditions for installation of a slurry wall and a pipeline
- Evaluation of pipeline response to subsidence
- Foundation evaluation and design over shallow abandoned coal workings
- Estimation of subsidence damage cost from longwall mining
- Design of foundations to mitigate structural damage
- Repair methodology for earthquake damage
- Repair methodology for ground movement damage

## **Research Experience**

2013 Principal investigator of development of a sinkhole warning system under a building using TDR technology.

1993 Analytical modeling of the response of transmission pipelines to ground movement for the U.S. Bureau of Mines.

9/79 to 9/93 Involved as Technical Director in funded research on mine subsidence related projects. Most of this work is in cooperation with The University of Illinois. The scope of the projects range from analysis of: the short- and long-term stability of the mine structures and overburdens; the nature and magnitude of subsidence movements in the overburden and on the surface; the behavior of surface and underground structures to subsidence; subsidence damage prediction; design and implementation of abatement procedures against hazards from subsidence as well as development of advanced reconstruction procedures for homes damaged by subsidence.

10/76 to 9/78 As a Research Engineer involved in the evaluation of geophysical data for assessment of geologic and geotechnical site conditions. The geophysical data was collected from field test sites by using borehole radar and acoustic sensors.

## **Technical Training Activities**

- Researched and developed a detailed course for insurance adjusters on inspection and evaluation of earthquake damage claims.
- Instructor of workshop for architects: Approaching Earthquake Design and Damage Repair of Residential Structures, Jackson, Tennessee, 1992
- Developed "Research News" for the Illinois Mine Subsidence Fund. This is a periodic newsletter which was to disseminate research results in the area of mine subsidence.
- Developed general specifications for a number of advanced schemes for repairing mine subsidence damage in residential structures.
- Researched and developed a detailed course on repair of earthquake damage for insurance adjusters.
- Developed training course on logging Rock Core of Sedimentary Rocks.
- Developed workshop on Mine Subsidence, Damage and Remediation for Walmart, 2012

## **Published Books**

EARTHQUAKE DAMAGE: Inspection, Evaluation and Repair, 1997, L & J Publishing, Tucson, Arizona, 400 pp.

## **Professional Articles, Papers and Reports**

**Marino, G. G., 1977**, Acoustic- Geotechnical Correlations, Appendix C of FHWA Phase I Report titled, "Acoustic Sensing System for Mapping the Soil-Rock Interface and for Detecting and Identifying Objects Under a Water Table", ENSCO, Inc. publication.

**Marino, G. G., 1977**, Bulletin of Geological, Geotechnical and Geophysical Data for the Proposed Forest Glen Station, FHWA Report, ENSCO publication, 34 pp.

**Rubin, L. A., Fowler, J., and Marino, G. G., 1978**, Application of Prototype Borehole Ground-Probing Radar at the Forest Glen Research Site, Conf. on Site Exploration in Rock for Underground Design and Construction, Washington, D. C., 33 pp.

**Fowler, J., Rubin, L. A., Marino, G. G., 1978**, A Study of Sensing Systems for Various Phases of Chemical Grouting: Task A Report, Prepared for Hayward Baker Company, ENSCO, Inc., 48 pp.

**Rubin, L. A., and Marino, G. G., 1978**, Recorded Signatures of Actual 'Exposed' Discontinuities, NSF Workshop on Future Challenges of Site Characterization, Illinois, 21 pp.

**Rubin, L. A., Fowler, J., and Marino, G. G., 1978**, Research in Subsurface Site Investigation by Ground-Probing Sensors -- Phase II -- Multiple Borehole Radar, NSF (Interim and Final) Report, 110 pp. plus appendices.

**Rubin, L. A., and Marino, G. G., 1978**, Engineering Geophysics Applied to Geotechnical Site Investigation; Presented 48th Ann. Meeting of Soc. Exp. Geophys., San Francisco, CA, Oct. 30, 1978.

**Marino, G. G., 1979**, Characterizations of Elastic Vibration in Saturated Soils, Appendix to FHWA Final Report titled, "Acoustic Sensing System for Mapping the Soil-Rock Interface and for Detecting and Identifying Objects Under a Water Table", ENSCO, Inc. publication, 25 pp.

**Mahar, J. W., Cording, E. J., Hunt, S. R., and Marino, G. G., 1979**, Phase I Subsidence Report, O'Fallon, Illinois, AMLRC Phase I Report, 42 pp.

**Marino, G. G., Mahar, J. W., Cording, E. J., Shively, J. E., and Lundin, T. K., 1980**, Mine Subsidence and Related Damage in O'Fallon, Illinois, AMLRC Phase II Report, 100 pp.

**Lundin, T. K., Marino, G. G., Wildanger, E. G., Mahar, J. W., and Leung, A. L., 1981**, Procedures for Responding to Hazardous Subsidence Induced Structural Damage Events, SRT Final Report: July 1980-June 1981, Prepared for the Illinois Abandoned Mined Lands Reclamation Council, Springfield, 128 pp.

**Mahar, J. W., and Marino, G. G., 1981**, Building Response and Mitigation Measures for Building Damages in Illinois, Proc. Workshop on Surface Subsidence Due to Underground Mining, West Virginia University, pp. 238-252.

**Gibson, R. D., and Marino, G. G., 1981**, Mine Subsidence Laur Case: DuQuoin, Illinois, Illinois Abandoned Mined Lands Council, 8 pp.

**Gibson, R. D., Schaefer, J., Mahar, J. W., and Marino, G. G. 1982**, Building Response and Mitigation Measures for Building Damage in Illinois: SSA - Final Report, Final Draft for Subsidence Service Agreement AML-CSWR-8104, 45 pp.

**Marino, G. G., Mahar, J. W., Dobbels, D. J., Kiesling, D. R., 1982**, Mine Subsidence and Related Structural Damage, Hegeler, Illinois, Phase I and II-Final Report, Final Draft for Mining Research Center, U. S. Bureau of Mines, Minneapolis, MN, 160 pp.

**Marino, G. G., and Mahar, J. W., 1984**, Response of Homes to Sag-Subsidence over Illinois Abandoned Coal Mines, Annual AIME Meeting in L.A., CA, 18 pp.

**Marino, G. G., and Mahar, J. W., 1985**, House Damage Criteria for Sag-Subsidence over Illinois Room and Pillar Mines, AIME Trans., 6 pp.

**Marino, G. G., 1985**, Subsidence Damaged Houses over Illinois Room and Pillar Mines, Ph.D. Thesis, University of Illinois at Urbana-Champaign, Urbana, IL 435 pp.

**Marino, G. G., and Cording, E. J., 1985**, Geotechnical Aspects of Subsidence over Room and Pillar Mines in Illinois, 4th Conf. on Ground Control in Mining, Morgantown, WV, 9 pp.

**Marino, G. G., and Devine, A., 1985**, Mine Subsidence and Structural Damage, Hegeler, Illinois, from July, 1981 to February 1982, USBM Report, 45 pp.

**Dobbels, D., Marino, G. G., and Mahar, J. W., 1985**, Mine Subsidence at the Pistor Residence, Belleville, Illinois, Report for Illinois Abandoned Mined Lands Reclamation Council, 50 pp.

**Marino, G. G., and Gamble, W. L., 1985**, Behavior and the Resulting Damage of Homes from Sag-Subsidence in Illinois, International Journal of Mining Engineering, 34 pp.

**Marino, G. G., and Mahar, J. W., 1985**, Subsidence Damaged Homes Over Room and Pillar Mines in Illinois, Report for Illinois Abandoned Mined Land Reclamation, Springfield, IL, 450 pp.

**Marino, G. G., and Funkhouser, M., 1986**, Final Report on Mine Subsidence of the District 11 State Police Headquarters, Maryville, Illinois, Report for the Illinois Abandoned Mined Lands Reclamation Council, 50 pp.

**Marino, G. G., 1986**, Interactions between Building and Subsidence Movements, Second Workshop on Mine Subsidence at West Virginia University.

**Marino, G. G., 1986**, Long-Term Stability of Overburden Above Room and Pillar Mines, AIME Annual Meeting in St. Louis, MO.

**Marino, G. G., Mahar, J. W., Powell, L. R., and Thill, R. E., 1986**, Ground Subsidence and Structural Damage Over an Abandoned Room-and-Pillar Coal Mine at Hegeler, IL, Bureau of Mines Information Circular, IC Report 9072, 24 pp.

**Marino, G. G., 1987**, Residential Handbook of Abatement and Reconstruction, Provisional Copy, Published by the Illinois Mine Subsidence Insurance Fund, Chicago, IL, 170 pp.

**Marino, G. G., 1988**, Analysis of the Initial Collapse of the Overburden over Longwall Panels Using Subsidence Data, 7th Int. Conf. on Ground Control in Mining, West Virginia University.

**Marino, G. G., Mahar, J. W., and Murphy, E., 1988**, Developments in Advanced Reconstruction Methodologies for Subsidence-Damaged Homes, ASCE Spring Convention, Nashville, TN.

**Marino, G. G., 1988**, Long-Term Stability of Overburden Above Room and Pillar Mines in Illinois, Progress Report to U.S. Bureau of Mines, Minneapolis, MN, 46 pp.

**Marino, G. G., and Bauer, R. A., 1989**, Behavior of Abandoned Room and Pillar Mines in Illinois, SME Annual Spring Convention, Las Vegas, NV, 11 pp.

**Marino, G. G., and Bauer, R. A., 1989**, Behavior of Abandoned Room and Pillar Mines in Illinois, Int'l Journal of Mining and Geological Engineering, 11 pp.

**Marino, G. G., and Gamble, W. L., 1990**, Repair and Strengthening of Subsidence Damaged Concrete Block Foundation Walls, Proceedings of the Fifth North American Masonry Conference, Urbana, IL, 12 pp.

**Marino, G. G., 1990**, Engineering Ethics in Education, Proceedings of the ASCE 1990 National Forum on Education and Continuing Development for the Civil Engineer, Las Vegas, NV, 7 pp.

**Marino, G. G., 1990**, Subsidence Damage and Remedies, AEG Subsidence Symposium, Pittsburgh, PA, 15 pp.

**Marino, G. G., 1990**, Progressive Failure of the V-Day Mine and a Comparison With Other Similar Failures in Illinois, 9th Int'l Conference on Ground Control in Mining, Morgantown, WV.

**Marino, G. G., 1991**, Foundation Design in a Subsidence Prone Area in Indiana, Proceedings of the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago IL, 11 pp.

**Marino, G. G., Gamble, W. L., and Hardesty, B. M., 1991**, A Retrofit Technique for Residential Foundations Damaged by Mine Subsidence, Proceedings of the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago IL.

**Marino, G. G., 1991**, Developing Technical Training Programs, Proceedings of the 1991 Frontiers in Education Conference, Purdue University, West Lafayette IN, 5 pp.

**Marino, G. G., 1991**, Earthquake Damage Inspection and Evaluation Course for Residential Structures, Course pack and materials for Allstate Insurance Company, 149 pp.

**Marino, G. G., Gamble, W. L., and Force, D. W., 1992**, Testing of Vertical Steel Straps on Block Columns: Analysis of Results, Report to the Illinois Mine Subsidence Insurance Fund, 36 pp.

**Marino, G. G., and Gamble, W. L., 1992**, Cracked Block Test Walls Retrofitted with Epoxied Steel Straps: Stiffness, Deformation, and Strength Analysis, Report to the Illinois Mine Subsidence Insurance Fund, 47 pp.

**Marino, G. G., and Gamble, W. L., 1992**, Bending Tests on Walls with Epoxy-filled Cracks: Analysis of Results, Report to the Illinois Mine Subsidence Insurance Fund, 74 pp.

**Marino, G. G., 1992**, An Overview of the Geologic and Geotechnical Conditions in U.S. Coal Regions with Major Producing Underground Mines, Report to Midwestern Gas Transmission, Channahon, IL, 36 pp.

**Marino, G. G., 1992**, Innovative Repair of Subsidence Damage, Third Workshop on Surface Subsidence Due to Underground Mining, Morgantown WV, 7 pp.

**Marino, G. G., and Gamble, W. L., 1992**, Bending of Retrofitted Test Foundation Walls, Conference on Composite Construction II, Engineering Foundation Conferences, Potosi, MO, 16 pp.

**Marino, G. G., Bennett, W. R., and Gamble, W. L., 1992**, Experimentation of Advanced Tilt Correction Methodology at West Frankfort IL, Report to the Illinois Mine Subsidence Insurance Fund, 33 pp.

**Marino, G. G., and Gamble, W. L., 1992**, Cracked Concrete Test Walls Retrofitted with Epoxied Steel Straps: Stiffness, Deformation, and Strength Analysis, Report to the Illinois Mine Subsidence Insurance Fund, 47 pp.

**Marino, G. G., 1992**, "Reinforcing Block Foundation Walls", Masonry Construction Magazine, pp.185-7.

**Marino, G. G., Hardesty, B. M., and Gamble, W. L., 1992**, The Response to Longwall Subsidence of Cracked Block Test Foundations Retrofitted with Steel Straps, West Frankfort, Illinois, Report to the Illinois Mine Subsidence Insurance Fund, 94 pp.

**Marino, G. G., and Gamble, W. L., 1992**, Testing of Cracked Wide Concrete Beams Retrofitted with Steel Straps: Analysis of Results, Report to the Illinois Mine Subsidence Insurance Fund, 55 pp.

**Marino, G. G., 1992**, Approaching Earthquake Design and Repair of Residential Structures, National Earthquake Training Conference and Seismic Product Exhibit, Masonry Institute of Tennessee, Jackson, TN, Nov. 9-12, 1992, 41 pp.

**Marino, G. G., and Gamble, W. L., 1993**, A One Year Update of the Response of the Test Foundations to Longwall Subsidence, West Frankfort, IL., Report to The Illinois Mine Subsidence Insurance Fund.

**Marino, G. G., 1993**, Response of House Foundations During The Loma Prieta Earthquake, Third International Conference on Case Histories in Geotechnical Engineering, St. Louis, MO, June 1-6, 5 pp.

**Marino, G. G., 1993**, Response of Pipeline to Mine Subsidence: Development of Modeling Procedures, Progress Report Nos. 1, 2 and 3, U.S. Bureau of Mines, Denver Research Center, 31pp.

**List, D. F., Schotsch, J. G., and Marino, G. G., 1994**, Remote Sensing of Abandoned Mine Works Using Downhole Radio Imaging Techniques, International Conference, ASSMR, Pittsburgh, PA.

**Marino, G. G., Patel K. A., and Carr P. H., 1995**, Deep Mine Backfilling at the Wabash Valley Correctional Institution, Carlisle, Indiana. 12th Annual Meeting of the American Society for Surface Mining and Reclamation, Gillette, WY, 15 pp.

**Marino, G. G., 1996**, Releveling and Behavior of Strap Retrofitted Damaged Test Foundations Exposed to Mine Subsidence, 13th Annual Meeting of the American Society for Surface Mining and Reclamation, Knoxville, TN.

**Marino, G. G., 1997**, Releveling and Behavior of Strap Retrofitted Damage Test Foundations Exposed to Mine Subsidence, ASCE Journal of Geotechnical and Geoenvironmental Engineering, September, 1997.

**Marino, G. G., 1997**, The Siting of a Prison Complex above an Abandoned Underground Coal Mine, 14<sup>th</sup> Annual National Meeting of the American Society for Surface Mining and Reclamation, Austin, TX. Also published in ASCE Geotechnical Journal, October, 1998, Vol. 124 No. 10.

**Marino, G. G., Patel K. A., and Carr P. H., 1997**, Mine Backfilling to Limit Surface Subsidence- A Case History, Vol. 106, A 95-184, September-December 1997, Transactions of the Institution of Mining and Metallurgy.

**Mahar, J. W., Marino, G. G., Murphy, E. and Farnetti, J., 1998**, Subsidence Resistant Repair of a Block Basement, 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, MO.

**Marino, G. G. and Choi, S. H., 1998**, The Effect of Softening on the Bearing Capacity of Mine Floors, 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, MO.

**Marino, G. G. and Mahar, J. W., 1999**, Absolute Horizontal and Vertical Movements Measured from a Sag Subsidence, Third National Conference of the Geo-Institute of ASCE, Urbana-Champaign, IL.

**Marino, G. G., 1999**, Salt Mine Subsidence and Associated Damage: A Case History, 16<sup>th</sup> Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, AZ.

**Mahar, J. W. and Marino, G. G., 1999**, Long Term Subsidence Movements and Behavior of Subsidence- Damaged Structures, 16th Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, AZ.

**Marino, G. G. and Choi, S. H., 1999**, Softening Effects on the Bearing Capacity of Mine Floors, ASCE Journal of Geotechnical and Geoenvironmental Engineering, December 1999, 12 pp.

**Marino, G. G. and Gamal, M., 2000**, Protection Measures Against Mine Subsidence Taken at a Building Site, 17th Annual National Meeting of the American Society for Surface Mining and Reclamation, Tampa, FL.

**Marino, G. G. and Lumsden, S., 2000**, Site Development Over an Abandoned Coal Mine, Mining Engineering Magazine, October.

**Marino, G. G., 2001**, Long-Term Stability of an Indiana Coal Mine, 18<sup>th</sup> Annual National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico.

**Marino, G. G., 2001**, Road Subgrade Properties of Loessal Soil in the Memphis Area, Proceedings of the 81<sup>st</sup> Annual Meeting of the Transportation Research Board, Washington, D.C.

**Marino, G. G., 2002**, A Subsidence Engineering Investigation at the Wildlife Prairie Park, 19<sup>th</sup> Annual National Meeting of the American Society for Surface Mining and Reclamation, Lexington, KY.

**Marino, G. G. and Widup, Z. R., 2003**, Borehole Radar Determines Solid Coal and Mined-out Areas for a Construction Site, 88<sup>th</sup> Annual Meeting of the Society for Mining, Metallurgy, and Exploration, Denver, CO.

**Marino, G. G. and Maksoud-Abdel, M. G., 2004**, Effect of Clay Mineralogy on Subgrade Properties of Loessal Soil, 5th International Conference at Cairo University, Egypt.

**Marino, G. G. and Maksoud-Abdel, M. G., 2005**, Protection Measures Against Mine Subsidence Taken at a Building Site, ASCE Journal of Materials in Civil Engineering Special Edition on Advances in Physico-chemical Stabilization of Geomaterials.

**Marino, G. G., Mahar, J. W. and Moon, J. S., 2006**, Compaction and Engineering Properties of a Weathered Rock Roadway Fill, ASCE 4<sup>th</sup> International Engineering & Construction Conference, Los Angeles, CA.

**Marino, G. G. and Gamal, M., 2007**, The Interrelationship of Design and Constructability of Soft Clay Slopes: A Case History, 18<sup>th</sup> Engineering Mechanics Division Conference of the ASCE, Blacksburg, VA.

**Marino, G. G., Gamal, M., and Malyala, V., 2008**, Empirical Correlations of Longwall Subsidence Data for the Illinois Coal Basin, 6<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, Arlington, VA.

**Marino, G. G., Maksoud-Abdel, M. G., and Mahar, J. W., 2008**, Numerical Analysis of the Effect of Swelling Rock on Reinforced Concrete Piers, Inaugural International Conference of the Engineering Mechanics Institute, Minneapolis, Minnesota.

**Maksoud-Abdel, M. G., Barenberg, J. E., and Marino, G. G., 2008**, A Proposed New Method for Roughness Quantification of Concrete Joints and Cracks, Inaugural International Conference of the Engineering Mechanics Institute, Minneapolis, Minnesota.

**Marino, G. G., 2008**, Developers Should Investigate Site for Old Coal Mines, published in Midwest Real Estate News, p. 21-22.

**Marino, G. G., 2008**, Undermined: Land Development Over Coal Mines, Sustainable Land Development Today, Volume 4, Issue 7, July/August 2008, p. 30-33.

**Marino, G. G., Gamal, M., Malyala, V., 2009**, Failure Analysis of a Construction Landfill, The Electronic Journal of Geotechnical Engineering, [www.ejge.com](http://www.ejge.com), Volume 14, Bundle C.

**Marino, G. G. and Mahar, J.W., 2009**, Building Damage from Thawing of Frozen Soil, 14<sup>th</sup> Intermountain Conference on the Environment & 42<sup>nd</sup> Engineering Geology and Geotechnical Engineering Symposium, November 5, 2009.

**Marino, G. G. and Gautam, B., 2010**, Mine Subsidence Damage during Construction of Medical Center and Remedial Measures Taken, 10<sup>th</sup> Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, August 3-5, 2010 and Electronic Journal of Geotechnical Engineering, Volume 16, June 2011.

**Marino, G. G. and Osouli, A., 2010**, The Influence of Softening on the Mine Floor Bearing Capacity: A Case History, 10<sup>th</sup> Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, August 3-5, 2010.

**Marino, G. G. and Osouli, A., 2011**, Failure Investigation of Olympic-Sized Swimming Pool, International Conference on Sustainable Design and Construction, March 23-25, 2011.

**Marino, G. G. and Osouli, A., 2012**, The Influence of Softening on the Mine Floor Bearing Capacity: A Case History. Journal of Geotechnical and Geoenvironmental Engineering.

**Marino, G.G. and Osouli, A., 2012**, Analysis of Subsidence and Resulting Damage Over an Area for 3 Decades. 6th Congress on Forensic Engineering Conference, San Francisco, CA

**Marino, G.G. and Osouli, A., 2013**, Bank Instability Problems Associated With the Riverside Construction. 7th international conference on Case Histories in Geotechnical Engineering, Chicago, IL

**Marino, G.G., Tutumluer, E., Elgendy, M.M., and Armaghani, B., 2013**, Evaluation of As-Built Airfield Hangar Slab Capacity under Wide Body Aircraft, *Electronic Journal of Geotechnical Engineering*, Volume 18 [2013], Bundle G.

**Marino, G.G., Armaghani, B., and Gautam, B., 2013**, Stability Analyses and Remediation of Two Mined-Out Coal Seams Adjacent to a Building, 32<sup>nd</sup> International Conference on Ground Control in Mining, Morgantown, WV, July 30, 2013.

**Marino, G.G., 2013**, Traits to Dig for in an Engineering Expert, *ABA Expert Witness Newsletter*, Volume 1, January 2014.

**Marino, G.G., Osouli, A., 2014**, Large Fill Shrinkage and Instrumentation Along a Levee Enlargement, 2014 Geo-Congress: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, February 23, 2014.

**Marino, G.G., Armaghani, B., Posluszny, G., 2014**, Group Behavior of a Deep Foundation in Swelling Rock, *Geohazards in Transportation*, Lexington, KY, August 5-7, 2014.

**Marino, G.G., Armaghani, B., Posluszny, G., 2014**, Progressive Mine Instability and Subsidence Response: A Case Study, *Electronic Journal of Geotechnical Engineering*, Volume 20 [2015], Bundle 11.

**Marino, G.G., 2015**, Effective Resolution of Construction and Environmental Cases, *ABA Expert Witness Newsletter*, Volume 10, March, 2015.

**Marino, G.G., Osouli, A., Zamiran, S. et al, 2016**, Performance of a Pier Group Foundation in Swelling Rock, *Geotechnical and Geological Engineering Journal*, September, 2016.

## **Professional Presentations**

- 1981 *Building Response and Mitigation Measures for Building Damages in Illinois* at a workshop for surface subsidence due to underground mining in West Virginia.
- 1984 *Response of Homes to Sag-Subsidence over Illinois Abandoned Coal Mines* at the Annual AIME Meeting in Los Angeles, California.
- 1984 *Mine Subsidence and Damage State Briefing* at the Illinois State Capitol Building in Springfield, Illinois.
- 1985 *Geotechnical Aspects of Subsidence over Room and Pillar Mines in Illinois* at the 4th Conference on Ground Control in Mining in Morgantown, West Virginia.
- 1986 *Interactions between Building and Subsidence Movements* at the 2nd Workshop on Mine Subsidence at the West Virginia University in Morgantown, West Virginia.
- 1986 *Long-term Stability of Overburden above Room and Pillar Mines* at the AIME Annual Meeting in St. Louis, Missouri.
- 1988 *Analysis of the Initial Collapse of the Overburden over Longwall panels Using Subsidence Data* at the 7th International Conference on Ground Control in Mining at the West Virginia University in Morgantown, West Virginia.
- 1988 *Developments in Advanced Reconstruction Methodologies for Subsidence-Damaged Homes* at the

- ASCE Spring Convention in Nashville, Tennessee.
- 1989 *Behavior of Abandoned Room and Pillar Mines in Illinois* at the SME Annual Spring Convention in Las Vegas, Nevada.
- 1990 *Engineering Ethics in Education* at the ASCE 1990 National Forum on Education and Continuing Development for the Civil Engineer in Las Vegas, Nevada.
- 1990 *Subsidence Damage and Remedies* at the AEG Subsidence Symposium in Pittsburgh, Pennsylvania.
- 1990 *Progressive Failure of the V-Day Mine and a Comparison with Other Similar Failures in Illinois* at the 9th International Conference on Ground Control in Mining, Morgantown, West Virginia.
- 1991 Presented a one day workshop for Allstate for insurance adjusters on the inspection and evaluation of earthquake damage claims, Northern California.
- 1991 *Foundation Design in a Subsidence Prone Area in Indiana* at the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago, Illinois.
- 1991 *A Retrofit Technique for Residential Foundations Damaged by Mine Subsidence* at the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago, Illinois.
- 1991 *Developing Technical Training Programs* at the 1991 Frontiers in Education Conference at Purdue University, West Lafayette, Indiana.
- 1992 *Innovative Repair of Subsidence Damage* at the Third Workshop on Surface Subsidence Due to Underground Mining, Morgantown, West Virginia.
- 1992 Bending of Retrofitted Test Foundation Walls at the Conference on Composite Construction II, Engineering Foundation Conferences, Potosi, Missouri.
- 1992 *Approaching Earthquake Design and Repair of Residential Structures* at the National Earthquake Training Conference and Seismic Product Exhibit by the Masonry Institute of Tennessee, Jackson, Tennessee.
- 1993 *Response of House Foundations During the Loma Preita Earthquake* at the Third International Conference on Case Histories in Geotechnical Engineering, St. Louis, Missouri.
- 1994 *Remote Sensing of Abandoned Mine Works Using Downhole Radio Imaging Techniques* at the American Society for Surface Mining and Reclamation International Conference, Pittsburgh, Pennsylvania.
- 1995 *Deep Mine Backfilling at the Wabash Valley Correctional Institution in Carlisle, Indiana* at the 12th Annual Meeting of the American Society for Surface Mining and Reclamation, Gillette, Wyoming.
- 1996 *Releveling and Behavior of Strap Retrofitted Damaged Test Foundations Exposed to Mine*

- Subsidence* at the 13th Annual Meeting of the American Society for Surface Mining and Reclamation, Knoxville, Tennessee.
- 1997 *The Siting of a Prison Complex above an Abandoned Underground Coal Mine* at the 14th Annual National Meeting of the American Society for Surface Mining and Reclamation, Austin, Texas.
- 1998 *Subsidence Resistant Repair of a Block Basement* at the 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, Missouri.
- 1998 *The Effect of Softening on the Bearing Capacity of Mine Floors* at the 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, Missouri.
- 1999 *Absolute Horizontal and Vertical Movements Measured from a Sag Subsidence* at the 3rd National Conference of the Geo-Institute of ASCE, Urbana-Champaign, Illinois.
- 1999 *Salt Mine Subsidence and Associated Damage: A Case History* at the 16th Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, Arizona.
- 1999 *Long Term Subsidence Movements and Behavior of Subsidence- Damaged Structures* at the 16th Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, Arizona.
- 2000 *Protection Measures Against Mine Subsidence Taken at a Building Site* at the 17th Annual National Meeting of the American Society for Surface Mining and Reclamation, Tampa, Florida.
- 2001 *Long-Term Stability of an Indiana Coal Mine* at the 18th Annual National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico.
- 2001 *Road Subgrade Properties of Loessal Soil in the Memphis Area* at the 81st Annual Meeting of the Transportation Research Board, Washington, D.C.
- 2002 *A Subsidence Engineering Investigation at the Wildlife Prairie Park* at the 19th Annual National Meeting of the American Society for Surface Mining and Reclamation, Lexington, Kentucky.
- 2003 *Borehole Radar Determines Solid Coal and Mined-out Areas for a Construction Site* at the 88th Annual Meeting of the Society for Mining, Metallurgy, and Exploration, Denver, Colorado.
- 2006 *Compaction and Engineering Properties of a Weathered Rock Roadway Fill* at the 4th International ASCE Engineering & Construction Conference, Los Angeles, California.
- 2007 *The Interrelationship of Design and Constructability of Soft Clay Slopes: A Case History* at the 18th Engineering Mechanics Division Conference of the ASCE, Blacksburg, Virginia.
- 2010 *Mine Subsidence Damage during Construction of Medical Center and Remedial Measures Taken* at the 10th Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Columbus, Ohio.
- 2010 *The Influence of Softening on the Mine Floor Bearing Capacity: A Case History* 10th Annual

Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Columbus, Ohio.

- 2011 *Failure Investigation of Olympic-Sized Swimming Pool* at the International Conference on Sustainable Design and Construction, Kansas City, Missouri.
- 2011 *Mine Subsidence Engineering: An Overview* at the 11th Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Chattanooga, Tennessee.
- 2011 *What Architects Need To Know About Mine Subsidence* at the AIA Southern Illinois Product Showcase and Meeting, Southern Illinois University, Carbondale, Illinois.
- 2012 *Coal Mine Subsidence: Myths, Facts & Solutions* at the Boonville-Warrick Public Library (sponsored by the Museum of the Coal Industry in Lynnville, Indiana), Boonville, Indiana.
- 2012 Presented a one-day workshop on mine subsidence and associated damage and remediation for Walmart Stores, Inc., Bentonville, Arkansas.
- 2012 *Grouting of Mine Voids at the Proposed Site of Elementary School* for the National Association of Abandoned Mine Land Programs, Des Moines, Iowa.
- 2012 *What Structural Engineers Should Know About Building above Mines* for the Structural Engineers Association of Ohio, Cincinnati, Ohio.
- 2012 *What Structural Engineers Should Know About Building Above Mines* for the Structural Engineers Association of Ohio, Columbus, Ohio.
- 2012 *Analysis of Subsidence and Resulting Damage Over an Area for 3 Decades* at the 6th Congress on Forensic Engineering Conference, San Francisco, California.
- 2013 *Mine Stabilization at an Elementary School Site in Gillespie, Illinois* at the February American Society of Civil Engineers Luncheon (ASCE), Champaign, Illinois.
- 2013 *Mine Subsidence Engineering - An Overview* at the 11th Annual Summer Technical Conference, Fairmont State University Campus, Fairmont, West Virginia.
- 2013 *Mine Subsidence Engineering - An Overview* at the June American Society of Civil Engineers Luncheon, Peoria, Illinois.
- 2013 *Stability Analyses and Remediation of Two Mined-Out Coal Seams Adjacent to a Building* at the 32nd International Conference on Ground Control in Mining, Morgantown, West Virginia.
- 2013 *Mine Stability and Subsidence of a Retirement Facility* at the 13<sup>th</sup> Annual Joint Forum: Geohazards Impacting Transportation in Appalachia & Interstate Technical Group on Abandoned Underground Mines, Harrisonburg, Virginia.
- 2013 *Mine Subsidence Engineering: Cause, Response and Mitigation* at IDOT Central Office Building luncheon, Springfield, Illinois.
- 2014 *Mine Subsidence Engineering: an Overview* at Indiana Department of Transportation (INDOT), Indianapolis, Indiana.
- 2014 *Group Behavior of a Deep Foundation in Swelling Rock* at the 14<sup>th</sup> Annual Geohazards Technical

Forum: Geohazards Impacting Transportation in Appalachia, Lexington, Kentucky.

- 2014 *Progressive Mine Instability and Subsidence Response: A Case Study* at National Association of Abandoned Mine Land Program (NAAML) 2014 Conference, Columbus, Ohio.
- 2014 *Mine Subsidence Engineering: an Overview* at Indiana Department of Natural Resources, Jasonville, Indiana.
- 2014 *Mine Subsidence Engineering: an Overview* at the Kentucky Engineering Center, Prestonsburg, Kentucky.
- 2014 *What Structural Engineers Should Know About Mine Subsidence* at the ISPE Structural Engineering Boot Camp, Springfield, Illinois.
- 2014 *Mine Subsidence Engineering: an Overview* at the Kentucky Engineering Center, Paducah, Kentucky.
- 2014 *Dealing with Construction over Sinkhole-Prone Karst Terrain*, at the November American Society of Civil Engineers (ASCE) Luncheon, South Bend, Indiana.
- 2015 *Mine Subsidence Engineering: an Overview* at the Illinois Mine Subsidence Insurance Fund, Caseyville, Illinois.
- 2015 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the February American Society of Civil Engineers (ASCE) Luncheon, Mechanicsburg, Pennsylvania.
- 2015 *Mine Subsidence Engineering: an Overview*, at the 2015 Illinois Society of Professional Engineers (ISPE) Convention, Lisle, Illinois.
- 2015 *Response of Petro Pipelines to Longwall Subsidence*, at the 2015 Annual Meeting of the Illinois Mining Institute (IMI), Marion, Illinois.
- 2015 *What Structural Engineers Should Know About Building Above Underground Mines*, at the Structural Engineers Association of Illinois 2015 Central Chapter Trade Show, Springfield, Illinois
- 2015 *Response of Petro Pipelines to Longwall Subsidence*, at the 15<sup>th</sup> Annual Technical Forum of Interstate Technical Group on Abandoned Underground Mines, Huntington, West Virginia.
- 2015 *Mine Subsidence Engineering: an Overview*, at Kinder Morgan, Houston, Texas.
- 2015 *Mine Subsidence Engineering: an Overview*, at the Missouri Department of Natural Resources, Jefferson City, Missouri.
- 2015 *Mine Subsidence Engineering: an Overview*, at the Society of Mining, Metallurgy, and Exploration (SME) September Meeting, Saint Louis, Missouri.
- 2015 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the 79<sup>th</sup> Annual Illinois Association of Highway Engineers Conference, Fairview Heights, Illinois.
- 2015 *What Structural Engineers Should Know About Building Above Underground Mines* at the Structural Engineering Institute of St. Louis' SEI Day, Saint Louis, Missouri

- 2015 *Mine Subsidence Engineering: an Overview*, at the Illinois Society of Professional Engineers – Central Illinois Chapter’s December Meeting, Decatur, Illinois
- 2016 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the Structural Engineer’s Association of Iowa January Meeting, Des Moines, Iowa
- 2016 *Mine Subsidence Engineering: Response, Damage, and Repair* at the Illinois Mine Subsidence Insurance Fund – Collinsville, Illinois
- 2016 *Dealing with Construction over a Subsidence-Prone Karst Terrain*, at the 16<sup>th</sup> Annual Technical Forum on Geohazards Impacting Transportation in Appalachia – Knoxville, Tennessee
- 2016 *Mine Subsidence Engineering: An Overview*, at the 2016 Pennsylvania Professional Engineers Conference – King of Prussia, PA
- 2016 *Dealing with Construction over a Subsidence-Prone Karst Terrain*, at the 2016 Pennsylvania Professional Engineers Conference – King of Prussia, PA

# **CURRICULUM VITAE**

## **MICKEL WIREMAN**

Prepared: December, 2016

### **EDUCATION**

Bachelor of Science, Geology, 1976, Western Michigan University, Kalamazoo, MI

Master of Science, Hydrogeology, 1987, Western Michigan University, Kalamazoo, MI

Post MS: Advanced Ground-Water Hydrology, Colorado School of Mines, Geochemistry of Ground-Water Systems (USGS advanced short course), numerous ground-water related classes and seminars on various aspects of hydrogeology, ground-water protection, remediation and management

### **PROFESSIONAL EMPLOYMENT RECORD**

2014 – present

#### **President – Granite Ridge Groundwater, LLC**

Provides scientific / technical consultation to a variety of clients

Active member of Sub-Committee on Groundwater (DOI Advisory Committee on Water Information)

Director – GWPC Ground Water Research and Education Foundation

Member – Western Michigan University Geosciences Department Advisory Council

Adjunct Instructor – Metropolitan State University, Global Water Concerns

Past consultant to The World Bank - Worked on hydrologic restoration project in lower Yangzi River basin and mine closure in Romania

Past President – US Chapter of International Association of Hydrogeologists

## Past Director – NGWA Science and Engineering Division

### 1987 to 2014

**National Ground-Water Expert, US EPA Region VIII.** Provided scientific and technical support to EPA programs (including Superfund, RCRA, Enforcement, NEPA and Water programs), other Federal agencies, International programs and ground-water protection / management programs in several western states. Extensive experience in hydrogeologic characterization and remediation of hardrock mine sites, hydrogeologic aspects of uranium mining and oil and gas development, hydrology of mountain watersheds, DNAPL sites, fractured rock settings, nutrients in ground water, ground-water monitoring, ground-water sensitivity / vulnerability assessments, source-water / wellhead protection. Position included working closely with policy makers, decision makers and attorneys.

**Teaching** – Currently teaching Basic Principles of Groundwater and Contaminant Transport for Ground- Water Protection Council. Has served as adjunct professor at Metropolitan State College in Denver where he taught a class in Contaminant hydrology. Founder and co-instructor of EPA class entitled Basic Principles of Hydrogeology and Contaminant Hydrology. This class was offered to State DEQ and Environmental protection staff and was delivered 12 times in eight states. He also teaches classes for the National Ground -Water Association and Geological Society of America. Has developed and taught workshops in Eastern Europe and Middle East.

**Expert testimony** - Has provided expert testimony numerous times in federal court, State court, State Water Quality Control Commission and State Water court and before the Nuclear Regulatory Commission. Cases involved water rights issues, violations of State and Federal environmental laws / permits and re-licensing of in-situ uranium mining operations.

**International Experience** – Has worked extensively in Eastern Europe (Estonia, Ukraine, Romania, and the Republic of Georgia), Russia, the Middle East (Oman, Bahrain and Iraq), and China as a Technical Expert with EPA Office of External Affairs, EPA Office of Research and Development, US AID and The World Bank.

### 1981-1986

Hydrogeologist, Leonard Rice Consulting Water Engineers, Inc. Responsible for ground-water geology studies including interpretation and evaluation of hydrogeologic systems, aquifer testing, water supply development, water well drilling, ground-water contamination and monitoring and western water rights. Duties required collection and analyses of data, report preparation and expert testimony.

## **AFFILIATIONS**

Colorado Ground-Water Association

Geological Society of America  
National Ground Water Association  
International Association of Hydrogeologists – Past Chair US National Chapter  
Member of the Subcommittee on Ground Water – Advisory Committee on Water Information  
Member, Board of Directors, NGWA Science and Engineering Division  
Member – Board of Directors – Groundwater Research and Education Foundation (Ground Water Protection Council)

## **PUBLICATIONS**

2015 – Wireman, Mike, *Development and Implementation of a National Groundwater Monitoring Network*, Guest editorial - Groundwater Monitoring and Remediation, NGWA

2014, in press, Cowie, Rory, Williams, Mark W., Wireman, Mike, Runkle, Robert L., *Use of natural and artificial tracers to guide de targeted remediation effort in an acid mine drainage system, Colorado Rockies, USA*, Water 2013

2011, Mirtskhulava, Merab, Wireman, Mike, *Report of Findings –Evaluation of mining-related metals contamination and ecological and human health risks associated with manganese mining and processing in Chiatura, Georgia*

2011, Caruso, Brian S., Mirtskhulava, Merab, Wireman, Mike, Schroeder, William, Griffin, Susan, *Effects of Manganese Mining on Water Quality in the Caucasus Mountains, Republic of Georgia*, Mine Water and Environment, DOI 10.1007/s 10230-011-0163-3, 13p

2011, Wireman, M., Stover, B., *Hard-rock Mining and Water Resources*, Ground Water News and Views, Ground Water, NGWA

2011, Moore, J., Wireman, M., Carillo-Rivera, J.J., *Field Hydrogeology –A Guide for Site Investigations and Report Preparation*, CRC Press, Taylor and Francis Group

2010, Wireman, Mike., Griffin, S. Mirtskhulava, M., Schroeder, W., *Water Resources Characterization and Risk Assesment: Tchiatura mining district, Republic of Georgia*, Georgia Chemical Journal. V.10.N 4, P-23-29

2010, Moore, J., Wireman, M., LaMoreaux, P.E., Summers, P, *A Field Guide For Characterization And Evaluation Of Public Water Supply Springs*, US EPA, in preparation

2010, Kornilovich, B., Wireman, M., Caruso, B., Koshik, Y., *The Use of Permeable Reactive Barrier Against Contaminated Groundwater In Ukraine* ,Central European Journal of Occupational and Environmental Medicine 15(1-2)

2008, Penoyer, P., Rosenlieb, G, Noon, K., Wireman, M., Thackston, J., Recommendations for Retoration and Rehabilitation of Turbidity and Sediment Impacts to the Sylvan Pass Hydrologic System, National Park Service, Natural Resource Report NPS/NRPC/NRR – 2008/054, 44p.

2007, Wireman, Mike, United State Department of Agriculture, Forest Service, Technical guide to Managing Ground Water Resources, Wireman was one of several authors.

2005, Hermann, K., Wireman, Mike, editors, Aquatic Assessment of Willow Creek Watershed – US EPA Region 8

2002, Hazen, J.M., Williams, M.W., Stover, B. and Wireman, Mike, Characterization of Acid Mine Drainage Using A Combination Of Hydrometric, Chemical And Isotopic Analyses, Mary Murphy Mine, Colorado, Environmental Geochemistry and Health

2001, Wireman, Mike, Potential Water Quality Impacts of Hardrock Mining, Summer edition of Ground-Water Monitoring and Remediation, NGWA, Dublin, OH

2002, Wireman, Mike, Tracing Techniques, Section 5.7 in Moore, J.E., Field Hydrogeology - A guide for Site Investigations and Report Preparation, Lewis Publishers

2000, Wireman, Mike, Effects of Mining on Water Quality, Chapter 18, Hardock Mining and Chapter 19 Coal Mining, in Drinking Water From Forests and Grasslands, A Synthesis of the Scientific Literature, George E. Dissmeyer, Editor, USDA Forest Service, Southern Research Station, Asheville, North Carolina

2000, Wireman, Mike, South Platte Valley-Fill Aquifer, Chapter 5 - Colorado Ground-Water Atlas, Andrea Aiken, et.al, Editors, Colorado Ground-Water Association, Lakewood, CO

1999, Wireman, Mike, Wyoming Ground-Water Vulnerability Assessment Handbook: Volume I - Background, Model Development and Aquifer Sensitivity, University of Wyoming Spacial Data and Visualization Center

1999, Wireman, Mike, Wyoming Ground-Water Vulnerability Assessment Handbook: Volume II - Assessing Ground Water Vulnerability to pesticides, University of Wyoming Spacial Data and Visualization Center

1998, Wireman, Mike, Land Uses Which Affect Ground-Water Management - Greater Denver Area, USEPA

1997, Wireman, Mike, Determining the Risk to Public Water Supply Wells from Infective Microorganisms, NGWA Water Well Journal

1997, Wireman, Mike, Investigation of Hydrogeologic Mapping to Delineate protection Zones Around Springs, EPA/600/R-97/023, US EPA ORD, Cincinnati, OH

1997, Wireman, Mike, The Use of Ground Water Sensitivity Assessments for Purposes of the Ground Water Disinfection Rule, Ground- Water Monitoring Review, NGWA

1997, Wireman, Mike, Chalk Creek Project, Report on Results of Investigation – Mary Murphy Mine – Groundwater Hydrology Characterization Study, Chaffee County, CO, EPA Region VIII Headwaters Initiative Assistance Agreement No. MM998404-01-1

1995, Hearne, Glenn, Wireman, Mike, Campbell, Angus, Vulnerability of the Uppermost Aquifer to Contamination in the Greater Denver Area, Colorado, USGS WRI 92-4143

1989, Wireman, Mike, Bibliography of Geology and Ground Water Geology for the Denver Basin, Colorado, Colorado Division of Water Resources < Colorado Department of Natural Resources

1987, Wireman, Mike, Nitrate Pollution of Ground Water in Glacial Sediments Underlying a Fertigated Site, Master's Thesis, Western Michigan University, Kalamazoo, MI

1982, Wireman, Mike, Hydrogeology of the Western Upper Peninsula of Michigan, Western Michigan university Geology Department, EPA Underground Injection Control Program