

PROFESSIONAL PROFILE

MARK R. ZAYATZ, M.S., CPG, CUSTP PRINCIPAL SENIOR PROJECT HYDROGEOLOGIST

EXPERIENCE SUMMARY:

Mr. Zayatz has both a Bachelor and Masters' degree in geology, is a Certified Professional Geologist (CPG) and Hydrogeologist, a Certified Underground Storage Tank Professional (CUSTP), and is the Principal / Vice President for Hydro-Logic Associates, Inc. (Hydro-Logic). He is the technical operations manager for the Brighton, Michigan office of Hydro-Logic. He has over 30 years of experience as a consulting geologist, hydrogeologist, client manager, environmental professional, and project manager, for contaminant investigation and remediation projects, water resource evaluation and management, land use planning and development, due-diligence, municipal or private water supply development, wastewater treatment, storm water evaluation, and pollution prevention projects. His professional experience ranges from the mining industry, the petroleum industry, industrial gas manufacturing industry, land use management, forest products, site development, the insurance industry, as well as public municipalities and entities.

His specific areas of consulting expertise include the general aspects of geology and hydrogeology; investigation and remediation of environmental contamination at industrial sites; leaking above ground or underground chemical storage tank sites; site evaluation, mine planning, and permit compliance monitoring; water resource evaluation and development; due-diligence investigation; baseline environmental assessment evaluations; brownfield evaluation and cleanup; risk-based corrective action (RBCA) evaluation and management; spill prevention audits and plans; regulatory compliance audits; special land use permitting issues; hazardous waste management; environmental site assessments; storm water site assessment and permitting; a senior technical resource; and expert testimony.

Mr. Zayatz has the necessary experience to provide a site-specific contaminant investigation, environmental site assessment, water resource evaluation, brownfield evaluation, due-diligence investigation, and risk assessment or compliance audit for most environmental related projects. In addition, he possesses experience in current geologic and hydrogeologic principles; most current remedial engineering technologies; drilling and sampling operations; "hardrock" and aggregate mining operations; surface and subsurface structural geology; RBCA assessment; and project regulatory closure.

EDUCATION AND PROFESSIONAL DEVELOPMENT:

EPA Risk Management Program
EPA / MDEQ Managing Chemical Risk Seminar
MDEQ P.A. 451 Part 201 MDEQ Workshops and Seminars
MDEQ P.A. 451 Part 213 MDEQ Workshops and Seminars
Project Management Training
Risk-Based Corrective Action (RBCA)
EPA / MDEQ Sampling Strategies and Statistical Applications Seminar
MDEQ Subdivision Rules Workshop
OSHA Training and Experience
MSHA Training and Experience

M.S., Geology, University of Alaska, Fairbanks - 1984
B.A., Geology, State University College of New York at Buffalo – 1981

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

CPG - American Institute of Professional Geologists
CPG - State of Alaska
CPG - State of Indiana
CPG - State of Pennsylvania
CUSTP - Certified Underground Storage Tank Professional
EP - Environmental Professional per 40 CFR Part 312
Member, American Institute of Professional Geologists, Michigan
Member, American Association of Petroleum Geologists
Member, A.A.P.G. Division of Environmental Geoscientists
Member, National Water Well Association and Association of Ground Water Scientists and Engineers

REPRESENTATIVE PROJECT EXPERIENCE:

SOIL AND GROUND WATER INVESTIGATION AND REMEDIATION

- **Petroleum, Mining Industry, Forest Products, and Insurance Industry Clients - Numerous States:** Client manager, project manager, project hydrogeologist, peer consultant, or senior technical consultant on over 200 soil and ground water site investigation projects in over 20 states. Many of these sites involved either leaking above ground or underground chemical storage tanks or contamination associated with industrial sites. Activities included the investigation, remediation, and safe regulatory closure of sites with the potential to contaminate public or private drinking water supplies. Remediation technologies utilized included air sparging, soil vapor extraction, in-situ passive and active bioremediation, pump and treat, bio-piling, and “point-source” excavation. Evaluated and remediated sites following state-specific closure requirements.
- **Mining Industry Clients - Numerous States:** Senior technical consultant involving typical contaminant investigation and remediation of current and former mining site properties prior to operation activities or redevelopment of the site.
- **Municipal Clients - Michigan:** Senior technical consultant involving soil, ground water, and surface water contaminant investigation and remediation of contaminated properties prior to redevelopment.
- **Industrial Gas, Forest Products and Mining Industry Clients - Michigan:** Client manager or project manager for the investigation, containment, and disposal of EPA listed hazardous and non-hazardous wastes. Directed all site investigation and permitting activities, including proper health and safety precautions, and coordinated proper disposal of the material.
- **Petroleum, Manufacturing, Mining, and Insurance Industry Clients - Numerous States:** Client manager, project manager, project hydrogeologist, or senior technical consultant for RBCA project evaluations. Completed tasks include the evaluation of identified site contaminants and on-site and off-site receptors, calculation of risk-based cleanup criteria for the site which would be protective of off-site properties and the identification of compliance monitoring points and a monitoring program which would be acceptable to the state regulatory agency.

- **Property Development Clients - Numerous States:** Senior technical consultant involving contaminant investigation and remediation for brownfield and other properties being developed as commercial sites. The potential for impact to on-site drinking water was investigated.
- **Insurance Industry Clients - Michigan:** Senior technical consultant providing project peer review and oversight for activities proposed by other consultants.

PROPERTY TRANSACTION ASSESSMENT

- **Attorneys, Lending Institutions, Developers and Builders, and Industrial Clients - Numerous States:** Client manager, senior technical advisor, or project manager for over 300 phase I or II environmental site assessments in over 25 states. Projects were completed according to the ASTM standard.
- **Mining Industry Clients - Numerous States:** Client manager, senior technical advisor, or project manager for over 100 pre-purchase Phase I and II Environmental Site Assessments at sand & gravel, limestone, and “hardrock” mining operations with and without asphalt and concrete plants, in over 10 states. Projects were completed according to the ASTM standard and the scope was modified in many cases according to the clients’ needs. State specific regulations were followed. Recommendations for addition work, cleanup, and compliance costs were estimated and provided to the client, as requested.
- **Manufacturing and Industrial Clients - Numerous States:** Client manager, senior technical advisor, or project manager for over 25 pre-purchase due-diligence investigations in over 10 states, covering over 50 project sites. Projects were completed according to the ASTM standard and the scope was modified in many cases according to the clients’ needs. State specific regulations were also followed.
- **Developers and Builders, and Commercial Clients - Michigan:** Client manager, senior technical advisor, or project manager for pre-purchase “baseline environmental assessments” (BEAs) and brownfield site assessments in Michigan. Projects were completed according to the Michigan Department of Environmental Quality (MDEQ) standard.

WATER SUPPLY EVALUATION AND DEVELOPMENT

- **Residential, Commercial, Industrial, and Recreational Development Clients - Michigan:** Project manager, project hydrogeologist, or senior technical consultant for over 50 private, industrial or municipal water supply projects. Met all applicable federal, state, and local health department project requirements, including the completion of a Wellhead Protection Area Delineation, as necessary. Directed site investigation and background activities necessary to evaluate, make recommendations, design and complete water supply wellfield sites. Provided necessary data, project findings, and professional opinions to all regulating agencies.

- **Residential and Commercial Development Clients - Michigan:** Project manager, project hydrogeologist, or senior technical consultant for the evaluation of development sites thought to have its water supply impacted by off-site contaminated properties. Directed site investigation and background activities necessary to evaluate the issues and provide professional opinions.
- **Mining Industry Clients – Arizona, Oklahoma, Ohio, Texas:** Project manager, project hydrogeologist, or senior technical consultant for 5 industrial water supply projects. Met all applicable federal, state, and local health department project requirements, as necessary. Directed site investigation and background activities necessary to evaluate, make recommendations, design and complete water supply wellfield sites. Provided necessary data, project findings, and professional opinions to client and all regulating agencies.

MINE PERMITTING, DEVELOPMENT AND COMPLIANCE

- **Mining Industry Clients – Arizona, Michigan, Oklahoma, Texas:** Project geologist, hydrogeologist, or senior technical consultant assisting clients in the evaluation and permitting or (re)permitting of existing and potential new mining sites. Included the completion of baseline ground water conditions, preparation and submittal of ground water monitoring reports, and presentation, public hearing, regulatory discussion, and meeting support.

STORM WATER SITE EVALUATION

- **Residential, Commercial, and Industrial Clients - Numerous States:** Project manager, project hydrogeologist, or senior technical consultant for over 250 private, commercial or industrial storm water site assessment projects for sites in over 40 states. Met all applicable federal, state, and local health department project requirements. Site investigation and sampling, regulatory advice, review and assistance with state-specific storm water permits, Notice of Intent (NOIs), and Storm Water Pollution Prevention Plans (SWPPP) were completed, as necessary.

REGULATORY COMPLIANCE

- **Manufacturing Industry and Forest Products Clients - Numerous States:** Client manager, project manager and team member performing regulatory compliance audits for corrugated box plants, air separation, industrial gases, metal coatings facilities. Included investigation of air emissions, waste water, storm water, spill prevention, hazardous waste disposition, underground and above ground storage tanks, system and operations permitting issues, and industrial process management. Cost-saving, process improvement, and waste minimization ideas were discussed.
- **Petroleum Industry Client - Michigan:** Project manager and team member performing a pre-purchase assessment and a regulatory compliance review for a gas fractionation and storage, pipeline, and terminal facility. Issues that were investigated included air emissions, waste water, storm water, hazardous waste disposition, underground and above ground storage tanks, regulatory permitting issues, and industrial process management.

- **Manufacturing, Forest Products, and Mining Industry Clients - Numerous States:** Project manager and team member performing the assessment and completion of over 200 individual Storm Water Pollution Prevention Plans (SWPPP) and / or Spill Prevention and Countermeasure Control (SPCC) Plans for sites in over 40 states. Assisted the facility in corrective action measures, as necessary.

WASTEWATER TREATMENT PLANT SITE EVALUATION AND DEVELOPMENT

- **Residential and Commercial Development Clients - Michigan:** Project manager, project hydrogeologist, or senior technical consultant for private or municipal wastewater treatment plant or individual septic development projects. The largest project investigated will be able to provide service to the population of an entire Michigan Township. Met all applicable federal, state, and local health department project requirements. Provided necessary data, project findings, and professional opinions to all regulating agencies.

STORAGE TANK MANAGEMENT AND CLEANUP

- **Insurance Industry and Private Residential Clients - Michigan:** Project manager for the assessment, remediation, and regulatory closure of petroleum product spills that resulted in contaminated soils and materials, and petroleum hydrocarbon vapors both inside and outside of private residences. Emergency response activities were performed at all residences.
- **Residential, Commercial, and Industrial Clients - Numerous States:** Project manager for the assessment, removal, remediation, and regulatory closure of out-of-service underground and aboveground storage tanks.

EXPERT WITNESS AND TESTIMONY

- **Industrial Clients and Attorneys - Michigan:** Expert testimony and project support as a technical resource and / or as an expert witness during pre-litigation meetings, public hearings, and trial. Provided technical support through both the collection of meaningful data and public presentation of the findings.