



## **Appendix C**

Curriculum Vitae of  
Thomas M. Johnson, P.G.  
List of Publications, and List of Cases  
Involving Expert Testimony

## ARCADIS

### Education

PhD program (Non-Degree ABD), Geology, University of Illinois, Champaign-Urbana, 1976-1986

MS, Geology, University of Wisconsin, Madison, 1976

MS, Water Resources Management, University of Wisconsin, Madison, 1975

BA, Geology, Augustana College, Illinois, 1972

### Years of Experience

Total – 37

### Professional Registrations

Professional Geologist, CA  
No. 4286

Certified Hydrogeologist, CA  
No. 317

Professional Geologist, IL  
No. 196-000926

Professional Geologist, WI  
No. 1286-13

Registered Geologist, AZ  
No. 31899

Certified Geologist, IN  
No. 547

Professional Geologist: PA  
No. PG-003073-G

Professional Hydrogeologist:  
American Institute of  
Hydrology

Professional Geologist:  
American Institute of  
Professional Geologists

### Professional Associations

National Ground Water Assoc.,  
Assoc. of Ground Water  
Scientists and Engineers

California Groundwater  
Resources Association

CA GRA Contemporary Issues  
Groundwater Council

American Institute of Hydrology  
American Institute of  
Professional Geologists

Geological Society of America  
Northern CA Geological Society

UW-Madison, Department of  
Geoscience Advisory Board

## Thomas M. Johnson, PG, CHG

Executive Vice President / Technical Director  
Principal Hydrogeologist and Quality Director

Mr. Johnson is Executive Vice President, Technical Director, and Principal Hydrogeologist for ARCADIS. He directs environmental contamination investigation and remediation projects and is Director of ARCADIS' Environment Expert Services Practice and Quality Program. Mr. Johnson has extensive expertise in hydrogeology and groundwater flow, contaminant fate and transport, and risk assessment. He is also an expert in subsurface vapor migration, modeling of groundwater flow and contaminant transport, and evaluating remedial technologies for soil and groundwater contamination.

Mr. Johnson has 37 years of consulting and research experience involving investigation and remediation of environmental contamination. He has directed and managed hundreds of projects involving environmental contamination. At the Illinois State Geological Survey, prior to joining ARCADIS, Mr. Johnson conducted research for 11 years on groundwater contamination resulting from the disposal of solid wastes, hazardous chemical wastes, and low-level radioactive waste. Major areas of expertise include hydrogeology and groundwater flow-system evaluation, vadose-zone processes, soil gas and vapor migration, environmental site investigation and remediation, computer modeling of water movement and contaminant transport, aerial photography interpretation, risk assessment, regulatory interaction, and cost allocation for environmental remediation. Mr. Johnson has published numerous articles and reports on these topics.

Mr. Johnson has provided expert testimony in both state and federal courts and in alternative dispute resolution hearings in numerous cases involving environmental contamination and water resources. He has served multiple terms on the Board of Directors and has served as Board Chairman for the National Ground Water Association, Association of Ground Water Scientists and Engineers. Mr. Johnson has also served on the Board of Directors and is Past-President of the California Groundwater Resources Association. He served for 10 years on the editorial review board for the journal *Groundwater Monitoring and Remediation*. He has been appointed to National Academy of Sciences/National Research Council panels to evaluate state and local groundwater protection programs for the U.S. Environmental Protection Agency (USEPA), and to assess innovative technology decision-making programs for the U.S. Department of Energy (USDOE). He also lectures extensively throughout the United States and internationally on groundwater contamination and



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

remedial actions for various universities, state and federal agencies, and organizations such as the National Ground Water Association. He has also been an invited instructor and lecturer at numerous seminars on environmental contamination, groundwater flow, and hydrogeology.

His professional interests and areas of expertise include:

- Groundwater flow system and water supply evaluation
- Evaluation of contaminant migration resulting from disposal of hazardous chemical wastes, petroleum hydrocarbons, solid wastes, and radioactive wastes
- Environmental monitoring and sampling techniques
- Unsaturated/vadose-zone water, soil gas and vapor movement, and contaminant migration
- Computer modeling of water flow, vapor movement, and contaminant migration
- Remote sensing and aerial photograph interpretation
- Environmental and human health risk assessment
- Evaluation and implementation of remedial actions for soil and groundwater contamination
- Cost evaluation and environmental cost allocation.

## **General Experience and Qualifications**

### **Representative Experience – Industrial Chemicals**

Mr. Johnson has directed or managed more than 200 projects across the United States involving organic and inorganic chemicals. This includes multiple large projects involving soil and groundwater contamination by industrial solvents and associated chemical additives, such as 1,4-dioxane, as well as projects involving industrial metals, perchlorate, agricultural chemicals, and petroleum hydrocarbons. This work includes environmental remediation projects to address solvent releases at large industrial client sites, and investigation and remediation of solvent contamination at dry cleaning and petroleum sites. This work has involved extensive interaction with state regulatory agencies and USEPA.

Mr. Johnson has also provided litigation consulting and expert witness services since 1981 in numerous cases across the United States involving environmental contamination of soil and groundwater by organic, inorganic, and radioactive substances. This includes expert witness testimony at deposition in more than 50 cases and expert trial testimony in state and federal courts in more than 20 cases. These cases have included expert testimony regarding the nature, source, and timing



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

of environmental contamination; hydrogeology; groundwater flow; fate and transport of contaminants; costs and methods of environmental investigation and remediation; and impacts to water supply systems.

For more than 30 years, Mr. Johnson has lectured and published on the subject of environmental contamination investigation, monitoring, and remediation. He has lectured for the National Groundwater Association at multiple seminars for environmental professionals and regulatory agency staff in many states.

### **General Experience**

Project director and manager for environmental assessments, investigations, and remediation at sites throughout the United States involving soil and groundwater contamination by chlorinated organic solvents, petroleum hydrocarbons, metals, methyl tert-butyl ether (MtBE), perchlorate, radionuclides, polychlorinated biphenyls (PCBs), 1,4-dioxane, 1,2,3-trichloropropane, and other contaminants. This includes numerous sites with dense nonaqueous-phase liquid (DNAPL) and light NAPL (LNAPL).

Project management and direction of projects involving the full spectrum of state and federal environmental laws and regulations, including federal Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); National Pollutant Discharge Elimination System; Federal Insecticide, Fungicide, and Rodenticide Act; and U.S. Nuclear Regulatory Commission (USNRC) laws and regulations. Mr. Johnson also has extensive experience with the complex network of state regulatory agencies, laws and regulations in California, Wisconsin, Illinois, Indiana, Florida, Arizona, Washington, Hawaii, and numerous other states.

Directed comprehensive environmental assessments and human health and environmental risk assessments at multiple sites within the United States, including abandoned waste disposal sites, landfills, and chemical and radioactive waste disposal facilities.

Program director for one the first studies in the United States of MtBE releases at operating gasoline service stations. This study, in the Santa Clara Valley of northern California, evaluated hydrogeologic conditions and the occurrence of MtBE in soil and groundwater beneath 28 operating service stations.

Directed programs to assess potential sources of trichloroethylene (TCE) groundwater contamination at multiple site locations in the Silicon Valley area of northern California.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

These projects have included local and regional investigations to evaluate possible sources of TCE contamination from numerous electronics manufacturing facilities. Mr. Johnson also has performed site investigations and developed and implemented remediation activities to address soil and groundwater contaminated by volatile organic compounds (VOCS), petroleum hydrocarbons, metals, PCBs, perchlorate, MtBE, 1,2,3-trichloropropane, and other contaminants at sites throughout the United States.

Mr. Johnson has also served as an expert witness in numerous cases involving environmental contamination, providing testimony regarding hydrogeology; groundwater conditions; the nature, source, and timing of contamination, fate, and transport of contaminants; impacts to groundwater supplies and the selection and costs of remediation.

Special advisor to the USEPA for preparation of a Technical Enforcement Guidance Document to address groundwater monitoring for RCRA facilities.

Performed groundwater resource assessments and evaluations at locations throughout the United States, including studies of conjunctive use of surface water and groundwater, groundwater recharge, and groundwater well design and installation. He also has performed water resources evaluations, groundwater recharge studies, waste containment designs, monitoring leachate migration from sanitary landfills, natural resource inventories, and environmental impact studies.

Program director for USEPA and USNRC studies of landfill containment systems, including comprehensive laboratory, field, and computer studies of covers and liners for sanitary landfills, hazardous chemical disposal sites, and radioactive waste management facilities. He also has conducted hydrogeologic investigations for siting of sanitary and hazardous waste landfills in Illinois, California, and Georgia.

Designed and implemented groundwater monitoring systems and remediation programs for sites throughout the United States, including sites subject to federal CERCLA and RCRA regulations, and sites in multiple states with complex environmental regulations, such as California.

Lectures and presentations at professional meetings and university seminars and conferences in the United States and internationally. Lectured at University of California (UC) Berkeley, UC Davis, UC Riverside, Purdue University, University of Wisconsin, and the University of Alaska.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Technical co-author of the environmental law textbook, *Environmental Liability Allocation*, published from 2008 to 2012 by Thomson West.

Former Head of the Groundwater Section, Illinois State Geological Survey, where he directed field and laboratory research programs for USEPA, USNRC, and state agencies involving evaluation of waste disposal technologies and environmental impacts from the disposal of solid and hazardous wastes, radioactive wastes, petroleum wastes, and industrial wastes.

Appointed to serve on two National Academy of Sciences/National Research Council panels to evaluate state and local groundwater protection programs for the USEPA, and to assess innovative technology decision-making programs for the USDOE.

## **Representative Project Experience**

### **Chlorinated Solvents Experience**

Extensive experience involving industrial sites throughout the United States, including solvent manufacturing facilities, electronics manufacturing operations, dry cleaners, aerospace manufacturers, equipment manufacturing facilities, automobile manufacturing and repair operations, and other industrial facilities. Most of these facilities used chlorinated solvents and commonly used vapor degreasers during their operations spanning many decades from at least the 1940s to the 1980s. Mr. Johnson has served as project director and manager for environmental assessments, investigations, and remediation at sites throughout the United States. These projects have involved soil and groundwater contamination by chlorinated organic solvents, including tetrachloroethene (PCE), TCE, 1,1,1-trichloroethane, and solvent additives, such as 1,4-dioxane and other contaminants, and numerous sites with DNAPL and LNAPL.

This project experience includes evaluation, investigation, and remediation of chlorinated solvent contamination at industrial facilities and dry cleaner sites in California, Florida, Arizona, Massachusetts, Wisconsin, Illinois, New Jersey, North Carolina, and other states. Mr. Johnson has directed programs to assess multiple potential sources of TCE groundwater contamination at multiple locations in the Silicon Valley area of northern California. These projects included local and regional investigations to evaluate possible sources of PCE and TCE contamination from numerous electronics manufacturing facilities.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

### **Lead and Metals Experience**

Former Lead Battery Disposal Site, San Francisco Bay, CA – Investigation and remediation of large lead battery disposal site adjacent to San Francisco Bay. Project included investigation impacts of lead battery waste disposal primarily during the 1950s and 1960s to soil, sediments, groundwater, and biota. The remedy included off-site disposal of battery debris, lead-contaminated sediment, and biota (clams, mussels) containing hazardous levels of lead, zinc, chromium, and other metals. The final remedy consisted of dredging bay sediments and placing the sediments and lead-impacted soils into a lined and covered disposal cell along the bay shore.

Former Shooting Range, Sacramento, CA – Mr. Johnson provided expert services related to the evaluation of impacts from a former shooting range in an area of proposed residential development. The property was impacted by the widespread use of the property as a former shooting range for pistol, rifle, and black-powder. Work included review of site history, assessment of site investigation results, evaluation of alternative proposed remedial actions and costs to address lead-impacted soils, and review of regulatory requirements.

Former Battery Manufacturing Site, Los Angeles, CA – This project included expert review of site history and investigations of soil and groundwater at a former battery manufacturing site. Soil and groundwater were impacted by lead, zinc, chromium, and acid.

### **Petroleum and MtBE Experience**

#### **Upstream Petroleum**

Major Oil Company, San Joaquin Valley Oil Field, Kern County, CA – Mr. Johnson was retained by a major oil company to evaluate environmental impacts from upstream oil production in western Kern County, California. This project was related to litigation over impacts to groundwater from more than 80 years of oil production activities, and impacts from the discharge of more than a billion barrels of produced water (brine) to the environment. Work included assessment of hydrogeologic conditions, geophysical evaluation of production and disposal horizons, geochemical study of native water quality, evaluation of groundwater monitoring data from hundreds of monitoring wells, analysis of groundwater stable isotope data, evaluation of naturally occurring radioactive materials, calculations of produced water migration, assessment of impacts from deep-well injection of produced water, evaluation of remedial methods and costs to address oil-field impacts, and evaluation of alternative methods for dealing with produced water and oil field wastes. Litigation by nearby land owners



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

included claims for damages in amounts as high as \$10 billion. Mr. Johnson testified as an expert witness in multiple jury trials in the case in California Superior Court. Key issues in these trials included evaluation of naturally poor native water quality and claims of damages by the plaintiff related to oil field operations.

Oil Field Investigation and Remediation, Central Coast, California – ARCADIS was retained to define and remediate environmental impacts associated with oil production operations at the Guadalupe oil field, in a sensitive coastal ecosystem on the coast of California. Mr. Johnson provided technical direction for work conducted under the direction of the California Regional Water Quality Control Board, including site investigations of hydrogeologic conditions in an ecologically sensitive coastal sand dune environment and groundwater monitoring to assess impacts from oil field activities, including impacts from releases of petroleum diluents used to facilitate transport of petroleum through pipelines. Other work included groundwater modeling, evaluating and implementing remedial actions including in-situ remedial methods, phytoremediation, soil treatment, and groundwater remediation. Additional issues included evaluation of impacts to sensitive and endangered biota from oil field production and remediation activities. Finally, ARCADIS participated in a multi-agency and multi-party mediation to assess and resolve issues regarding environmental impacts at the site.

Multiple Pipeline Releases, California – ARCADIS represented a major pipeline operator in responding to pipeline ruptures and petroleum releases at locations throughout the western United States. Mr. Johnson has worked on pipeline release projects involving crude oil and other petroleum products at multiple sites in California. This work has included emergency response activities, remedial investigations, ecological assessment and mitigation, and site remediation involving multiple state and federal regulatory agencies. Mr. Johnson has also provided expert testimony regarding the timing and sources of petroleum releases from multiple pipelines.

### **Refinery/Terminal Experience**

Petroleum Refinery, San Francisco Bay, CA – In this litigation project, Mr. Johnson and his staff evaluated releases of petroleum hydrocarbons and other chemicals since 1914 at a large refinery on San Francisco Bay. This included studies of refinery history and operations by multiple owners and operators, and evaluation of sources of contamination related to ship loading and unloading, handling, piping, processing, and storage of crude oil and petroleum products. Mr. Johnson provided expert testimony regarding sources and timing of contamination, volumes of petroleum released to the environment, and methods for remediation.





**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Petroleum Refinery, Bakersfield, CA – This litigation case involved releases of petroleum products and MtBE from a refinery and associated distribution terminal adjacent to a mixed commercial, industrial, and residential area. MtBE was detected in water supply wells serving the residential area. Mr. Johnson was retained by the former refinery owner to assess environmental impacts from the refinery and the occurrence and migration of MtBE in soil and groundwater. Using historical groundwater flow data, groundwater quality data, and the relative distribution of petroleum hydrocarbons and MtBE, Mr. Johnson provided expert testimony regarding sources and timing of contamination at the site and impacts to off-site wells.

Petroleum Terminal, Los Angeles, CA – Mr. Johnson represented a major oil company in litigation with a nearby landowner involving the petroleum and MtBE contamination associated with a major petroleum distribution terminal. Primary issues included sources, occurrence, and extent of contamination; effectiveness of remedial actions; and regulatory oversight.

#### **Service Station / MtBE Experience**

Confidential Client, United States – Mr. Johnson has represented a major oil company involved with litigation over environmental impacts of MtBE releases from service stations at hundreds of locations in several states. This work has included evaluation of sources and timing of MtBE impacts to groundwater from service stations operated by a large number of parties at multiple locations, and potential impacts to public water supplies. Additional work has included evaluation of remedial technologies for MtBE contamination and assessment of natural attenuation mechanisms for MtBE.

Merced, CA – Mr. Johnson represented a joint defense group of multiple major oil companies in litigation involving multiple service stations. The primary issues involved the occurrence and extent of MtBE contamination, possible impacts to public water supplies, effectiveness of remedial actions, and regulatory oversight. Mr. Johnson provided expert testimony in California Superior Court during a five-month jury trial.

Multiple Gasoline Service Stations, CA, NV, OR, WA – Mr. Johnson was retained by a major oil company to represent them in a large arbitration involving environmental claims regarding the exchange of more than 250 service stations with another major oil company. The arbitration was conducted by JAMS in San Francisco and involved more than 10 hearings over a two-year period before three former federal judges. Each arbitration hearing involved four to six sites, with issues including the timing and sources of contamination by petroleum hydrocarbons and MtBE. Mr. Johnson prepared expert reports for each site and provided expert testimony in each arbitration hearing.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Multiple Gasoline Service Stations, Northern California – A major oil company retained Mr. Johnson to represent them in arbitration with another oil company to evaluate relative contributions of petroleum hydrocarbons and MtBE in soil and groundwater at several service stations in the San Francisco Bay area. Mr. Johnson assisted the client in developing a strategy to allocate responsibility for MtBE and petroleum impacts and provided expert testimony in the arbitration hearing.

MtBE Groundwater Vulnerability Pilot Study, California – Mr. Johnson was program manager for one of the first studies in the United States of MtBE releases at operating gasoline service stations. This study, funded by the Santa Clara Valley Water District, evaluated hydrogeologic conditions and the occurrence of MtBE in soil and groundwater beneath 28 operating service stations. The study provided valuable information to industry and regulatory agencies regarding the effectiveness of recently upgraded petroleum piping and containment systems at operating service stations.

### **Superfund/CERCLA and State Superfund Experience**

#### **Multiple CERCLA Superfund Sites – California, Illinois, Florida**

Mr. Johnson has directed and managed multiple projects at federal Superfund sites in multiple states, including California, Illinois, and Florida. This includes assessment of remedial investigations, risk assessment, feasibility studies, and remedial actions for chlorinated solvents in soil and groundwater, such as the Intersil-Siemens Site, the Gencorp-Aerojet Superfund Site, the San Fernando Valley Superfund site, the San Bernardino Superfund Site, and the San Gabriel Valley Superfund Site in California; the Acme Solvents Superfund Site in Illinois; and the Reeves Superfund Site in Florida.

#### **PCB Disposal Sites, Bloomington, IN**

Mr. Johnson represented USEPA and the U.S. Department of Justice in litigation involving Westinghouse Corporation and the disposal of wastes containing PCBs at multiple locations in the Bloomington, Indiana, area. PCB-containing liquids and solid wastes were placed in landfills and other locations during the 1950s to the 1970s in an area of highly permeable and weathered karst limestone. Sampling of soil, sediment, groundwater, and surface water indicate extensive occurrence of PCBs in soils, surface water, and groundwater. The primary concern was the occurrence of highly permeable karst limestone, containing large fissures, sinkholes, and caves, which facilitated the movement of PCBs into groundwater and to sediments, springs, and nearby surface water. Mr. Johnson provided expert testimony regarding the occurrence of PCBs in the environment and methods to contain PCB-contaminated



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

soil and groundwater. The work included evaluating groundwater/surface-water interaction, delineating the extent of PCB contamination of sediment, determining the extent of groundwater and surface-water quality impacts, and evaluating groundwater recharge and waste isolation.

#### **Former Radioactive Material Processing Facility – West Chicago, IL**

Expert hydrogeologist for the State of Illinois in assessment of hydrogeologic conditions and investigation of radioactive thorium, radium, and uranium releases during the 1930s to 1950s at a former chemical processing plant located in a residential area. The investigation focused on shallow and deep groundwater flow patterns, groundwater/surface-water interaction, natural attenuation processes for radionuclides in soil and groundwater, and possible migration to nearby water supply wells. Additional issues included the off-site use of radioactive fill material from the plant at locations throughout the residential community. Mr. Johnson provided expert testimony in Illinois Superior Court regarding hydrogeologic conditions, the occurrence and extent of radionuclide migration in soil and groundwater, and the effectiveness of proposed remedial measures.

#### **Hazardous Chemical and Radioactive Waste Disposal Sites – Illinois**

Mr. Johnson served as expert hydrogeologist and program manager for the State of Illinois Department of Nuclear Safety, USEPA, and the Illinois Environmental Protection Agency to evaluate possible releases of hazardous chemical wastes and radioactive wastes from chemical waste landfills and low-level radioactive waste disposal sites in Illinois. This included a comprehensive study of the failure mechanisms resulting in the migration of chemical wastes from the Wilsonville, Illinois, Hazardous Waste Disposal site. Following extensive litigation, courts ruled that the more than 86,000 containers of wastes at the state-permitted Wilsonville disposal site be excavated and removed from the site to another, more secure facility. During the approximate two-year waste excavation and removal process, Mr. Johnson directed a USEPA-funded program to investigate the nature of chemical releases from the facility and the failure mechanisms that enabled chemical migration in groundwater from the site.

Other such sites include assessment of releases of radioactive materials from the state-permitted Sheffield Low-Level Radioactive Waste Disposal Site, in Princeton, Illinois. On behalf of the Illinois Department of Nuclear Safety, Mr. Johnson evaluated hydrogeologic conditions and the migration of radioactive tritium, cesium, and other chemicals in groundwater at the site. Studies showed that the emplacement of wastes in unsaturated soils was not sufficient to prevent radionuclide migration from the site.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Further studies directed by Mr. Johnson and funded by the USNRC confirmed that improvements were needed to waste containment systems, including covers and liners, to isolate radioactive wastes.

## **Sanitary Landfill Experience**

### **Evaluation of Sanitary Landfills – Illinois**

Mr. Johnson directed a research program at the Illinois State Geological Survey to evaluate the performance of sanitary landfills and other waste disposal sites in Illinois. This program included field studies of existing sanitary landfills in various hydrogeologic settings throughout the state to evaluate whether contaminants from the landfill were being released to the environment. This included site investigations and groundwater monitoring at multiple landfill sites to determine whether landfill leachate had impacted the underlying soil and groundwater. Mr. Johnson also was one of the first researchers in the United States to study the migration of landfill leachate through the unsaturated (vadose) zone beneath sanitary landfills. Mr. Johnson was also the principal investigator for the USEPA and USNRC research programs to assess the performance of covers and liners for landfill sites. He has published many articles regarding this research.

## **Perchlorate Experience**

### **Sacramento Area Superfund Site – California**

Mr. Johnson and ARCADIS have provided expert consulting and site investigation and remediation services to a major aerospace manufacturer at a USEPA Superfund site in the Sacramento area involving soil and groundwater contamination by perchlorate and chlorinated VOCs, including TCE and PCE, resulting from industrial activities and waste disposal from the 1950s to the 1980s. Mr. Johnson and ARCADIS evaluated contaminant source locations and plume migration and developed remedial plans to address perchlorate and VOC migration in groundwater and impacts to public water supply wells. ARCADIS also conducted critical evaluations of alternative sources of perchlorate in the environment, including natural sources, such as perchlorate formed during chlorination of public water supplies, historical sources of perchlorate from nitrate fertilizers, and natural sources of perchlorate in arid environments. ARCADIS evaluated alternative remedial actions and conducted computer modeling of groundwater flow and perchlorate migration to evaluate the timing and sources of contamination and possible impacts to off-site public water supply wells. Mr. Johnson provided expert testimony on multiple related toxic tort litigation cases in California Superior Court and provided expert testimony in California regulatory hearings regarding water resource allocation.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

### **Southern California Superfund Site**

Mr. Johnson has provided expert consulting services to the U.S. Department of Defense regarding a USEPA Superfund site in southern California involving soil and groundwater contamination by perchlorate and chlorinated VOCs. Mr. Johnson and ARCADIS have evaluated sources of contamination related to historical aerospace and fireworks manufacturing operations, and possible military use in World War II. These sources included wastes from solvent degreasers used at the site from the 1950s to the 1980s. This work included evaluation of plume migration and remedial plans to address perchlorate and VOC impacts to public water supply wells. ARCADIS also evaluated alternative sources of perchlorate from nitrate fertilizers and natural sources of perchlorate in arid environments.

### **Perchlorate Remediation**

Technology Overview Document – Perchlorate: Overview of Issues, Status, and Remedial Options, prepared by the Interstate Technology & Regulatory Council, Perchlorate Team, September 2005. Team member.

### **National Aeronautics and Space Administration (NASA) – Cape Canaveral, FL**

ARCADIS served as a primary contractor for NASA at Cape Canaveral to investigate and remediate environmental impacts resulting from the United States space program. This work has included investigation and evaluation of possible impacts by VOCs and perchlorate on soil and groundwater. ARCADIS has assisted NASA, under the technical direction of Mr. Johnson, in assessing the impacts of contamination and devising remedial action plans.

### **Groundwater Resource and Water Supply Experience**

#### **Water Rights Evaluation – Sacramento, CA**

Evaluation of groundwater flow and surface water-groundwater interaction in the American River, Sacramento, California. Mr. Johnson provided testimony to the California State Water Resources Control Board regarding surface water-groundwater interaction at a hearing involving water rights claims and disputes between multiple parties.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

### **Recharge and Surface Water-Groundwater Interaction – San Diego County, CA**

Assessment of surface water conditions, groundwater flow, recharge, and water quality impacts in large groundwater basin at U.S. Marine Corps Base – Camp Pendleton from 1940-2008. This included evaluation of historical stream flow and groundwater levels and assessment of impacts of urbanization, agricultural land use, and military site use on surface water and groundwater quality. Mr. Johnson provided expert testimony in Los Angeles Federal Court for the clients, Eastern Municipal Water District and Rancho California Water District.

### **Groundwater Basin Assessment - Santa Clara Valley, CA**

Evaluation of hydrogeology, groundwater conditions, surface water-groundwater conjunctive use, and groundwater recharge in the southern Santa Clara Valley. This included study of groundwater basin boundaries and interaction with adjacent groundwater basins for the Santa Clara Valley Water District. Mr. Johnson provided expert testimony on these subjects in California Superior Court.

### **Litigation Support and Expert Testimony**

Mr. Johnson has served as an expert witness in numerous litigation cases involving a wide range of issues related to environmental contamination and remediation and groundwater resources. He has testified in state and federal court on multiple occasions in both bench and jury trials, and has testified in arbitration and mediation hearings and in legislative and regulatory agency hearings. He has represented public- and private-sector clients and has worked with law firms throughout the United States. Areas of expert testimony have included the nature, sources, and timing of environmental impacts to soil and groundwater, hydrogeologic conditions and groundwater flow, water balance, remedial investigations, evaluation and costs of remedial actions, computer modeling of groundwater flow and contaminant migration, aerial photograph interpretation, vadose zone contaminant migration, vapor intrusion, human health and environmental risk assessment, and regulatory interaction. A list of cases in which Mr. Johnson has provided expert testimony follows, with information regarding the client, a case citation, and the client law firm(s).

### **Selected Publications in Last 10 Years**

Zuckerman, T.I., T.J. Bois and T.M. Johnson. 2007, 2008, 2009, 2010, 2011, 2012. *Environmental Liability Allocation: Law and Practice*. Thomson West Publishers, Environmental Law Series, St. Paul, MN. 1260 pp.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Nichols, E.M., T.M. Johnson, S.T Potter. 2011. Modeling: The Need for Transparency. Association for Environmental Health and Sciences (AEHS) 21st Annual Meeting and West Coast Conference on Soils, Sediments and Water, San Diego, CA. March 15.

Johnson, T.M. and J.S. Seyfried. 2006. Forensic Investigation of Sources of Perchlorate in Water-Supply Wells: A Case Study. National Groundwater Association, Western Focus Conference, San Francisco, CA. Abstracts. May 2006.

Seyfried, J.S. and T.M. Johnson. 2006. Investigation of Perchlorate-Containing Fertilizer and Other Potential Sources of Perchlorate Detected in Water Supply Wells - A Case Study: California Groundwater Resources Association Perchlorate Symposium, Santa Clara, CA. Abstracts. January 2006.

Johnson, T.M. 2003. Forensic Evaluation of Contamination by Solvents Originating from Coatings Used in Public Water Supply Storage and Distribution Facilities: International Society of Environmental Forensics, San Diego, CA, Abstracts. November 2003.

Johnson, T.M. 2003. Forensic Evaluation of Contaminant Sources and Migration in a Regional Superfund Site: Univ. of California-Water Resources Center, California Groundwater Resources Association of California Biennial Meeting, Anaheim, CA, Abstracts. October 2003.

Johnson, T.M. and E. Nichols. 2002. Environmental litigation involving public water supply systems: Forensic evaluation of contamination of groundwater by volatile organic solvents originating from historical coating and lining of public water supply storage and distribution facilities: National Ground Water Association Conference, Litigation, Ethics, and Public Awareness, Washington, D.C., Abstracts with Program, August 2002.

Johnson, T.M. 2002. Litigation in paradise: The case of the disconnected UST, National Ground Water Association Conference, Litigation, Ethics, and Public Awareness, Washington, D.C., Abstracts with Program, August 2002.

### **Presentations**

"From ASR to CPR: California Groundwater Issues and Legislative Activities," Industrial Environmental Coalition of Orange County, Orange, California

"Litigation in Paradise: The Case of the Disconnected UST and the Role of the Hydrogeologist as an Expert Witness in Environmental Litigation" California





**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

Groundwater Resources Association, San Joaquin Valley Branch Meeting, Fresno, California

"MtBE – Impacts and Remediation" California Ground Water Association, Annual Meeting Seminar, Monterey, California.

"Environmental Sampling Techniques: Implications for Cost Allocation Litigation," Los Angeles County Bar Association, Environmental Law Section Seminar, Los Angeles, California.

"Litigation and Expert Witness Services," Groundwater Resources Association of California, Oakland, California.

"Environmental Remediation: New Technologies and Old Limitations," Purdue University School of Civil Engineering and the Environmental Science and Engineering Institute (ESEI) at Purdue, West Lafayette, Indiana.

"Innovative In Situ Environmental Remediation Technologies: Recent Developments." Keynote Address at Groundwater Studies, Tools, and Technology Symposium, Groundwater Division of The Water Management Association of Ohio, Columbus, Ohio.

"Innovative In Situ Environmental Remediation Technologies – Recent Developments," Environmental Clean Up: Litigation, Legislation and Technological Innovation Conference, sponsored by The Bar Association of San Francisco, California.

"The Role of the Expert Witness in Environmental Litigation," Florida Air and Waste Management Association Annual Meeting, Sandestin, Florida.

"Groundwater Hydrology: Theory, Monitoring and Remediation," University of California at Davis - Extension, Continuing Course Series.

"Site Assessment and Remediation," University of California at Berkeley - Extension, Continuing Course Series.

"Unsaturated Zone Monitoring and Remedial Actions," University of California at Davis -Extension, Continuing Course Series.

"Corrective Actions for Containing and Controlling Groundwater Contamination," National Ground Water Association, Continuing Course Series.





**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

"Theory and Practice of Groundwater Monitoring and Sampling," National Groundwater Association, Continuing Short Course Series.

"Groundwater Pollution Remedial Actions," University of California at Davis Extension, Continuing Seminar Series.

"Groundwater Monitoring," USEPA Seminar: Transport of Viruses and Organics in the Subsurface, Ada, Oklahoma.

"Geologic Considerations in Hazardous Waste Disposal," Univ. of Wisconsin-Extension, Dept. of Engineering: Hazardous Waste Management Practices Institute, Madison, Wisconsin.

"Monitoring the Unsaturated Zone," Conference on Environmental Monitoring, sponsored by Geraghty and Miller, Inc., Arlington, Virginia.

"Groundwater Monitoring for Landfills," Univ. of Wisconsin-Extension, Dept. of Engineering: Sanitary Landfill Site Selection and Design Institute, Madison, Wisconsin.

"Interpretation of Groundwater Monitoring Data Collected in the Vicinity of Landfills" and "Monitoring in the Unsaturated Zone," National Council of the Paper Industry for Air and Stream Improvement, Technical Workshop: Groundwater Quality Monitoring at Land Disposal Sites, Chicago, Illinois.

"Groundwater Contamination -- Remedial Actions," University of Wisconsin-Extension, Dept. of Engineering: Groundwater Quality Protection Institute, Madison, Wisconsin.

"Field Investigative Procedures and Remedial Measures Related to Groundwater Contamination," Univ. of Wisconsin-Extension, Dept. of Engineering: Seminar for Wisconsin Department of Natural Resources, Madison, Wisconsin.

"Modeling of Moisture Movement Through Covers Designed to Limit Infiltration at Waste Disposal Sites," U.S. Nuclear Regulatory Commission, Symposium on Low-Level Radioactive Waste Disposal, Washington, DC.

"Waste Disposal and Groundwater Contamination," Minnesota Groundwater Association, Minneapolis, Minnesota.

"Hydrogeologic Investigations of Failure Mechanisms and Migration of Organic Chemicals at Wilsonville, Illinois," National Ground Water Association, National Symposium on Aquifer Restoration and Ground Water Monitoring, Columbus, Ohio.



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

“Groundwater Monitoring and Sampling Technology,” American Society for Testing and Materials (ASTM) Training Course Series.

### List of Expert Witness Testimony Cases Involving Deposition/Trial/Arbitration Testimony in Last 4 Years

Date	Case (Client(s) in bold)	Client Law Firm(s)
2011-2012	Zwulon Zelikowski, AAW Door, Inc.; and 13900 South Broadway, LLC v. <b>ConocoPhillips Company</b> , Unocal Corporation, et al.; Deposition	Hunton & Williams LLP, Los Angeles, CA; Glynn & Finley LLP, Walnut Creek, CA
2011-2012	City of Merced v. <b>Chevron U.S.A., Inc., ExxonMobil, and Shell Oil Company</b> : Deposition/Trial	Munger Tolles & Olson LLP, Latham & Watkins LLP, King & Spalding LLP; Sheppard Mullin, Richter & Hampton LLP
2011	<b>SEMA Construction, Inc.</b> v. City of Tustin, CA: Deposition/Trial	Musick, Peeler & Garrett LLP, Irvine, CA
2011	Hinds Investments et al. v. Gregory et al. ( <b>Cooper Industries</b> ): Deposition	Gordon & Rees LLP, San Diego, CA
2010	<b>Port LA Distribution Center</b> , et al. v. United National Insurance Company, Inc.: Deposition	Jones Day, San Francisco, CA
2009-2010	Robert C. Cook, Sr. v. <b>Shell Oil Company</b> , et al.: Deposition	Munger, Tolles & Olson, San Francisco, CA
2009-2003	City of Modesto v. <b>The Dow Chemical Co., et al. (Occidental Chemical Co.)</b> : Depositions/Trials	Barg, Coffin, Lewis & Trapp, San Francisco, CA; Filice Brown Eassa & McLeod LLP, Oakland, CA
2009-2004	Starrh and Starrh Cotton Growers v. <b>Aera Energy LLC</b> : Depositions/Trials	Munger, Tolles & Olson, Los Angeles, CA
2008	Great Oaks Water Co. v. <b>Santa Clara Valley Water District</b> : Deposition/Trial	Duane Morris LLP, San Francisco



**Thomas M. Johnson, PG, CHG**

Executive Vice President,  
Technical Director,  
Principal Hydrogeologist and  
Quality Director

<b>Date</b>	<b>Case (Client(s) in bold)</b>	<b>Client Law Firm(s)</b>
2008	Safety-Kleen Envirosystems Company vs. <b>London Market Insurers, et al.:</b> Deposition	Duane Morris LLP, San Francisco/Los Angeles, CA
2008-2007	U.S., et al. vs. <b>Eastern Municipal Water District, et al.:</b> Deposition/Trial	Bingham McCutchen, Los Angeles, CA