

ROBERT D. STRODE, M.S., C.I.H.
Certified Industrial Hygienist

EDUCATION

M.S. Microbiology, Colorado State University, 1985

B.S. Microbiology, Colorado State University, 1977

Continuing Education

Noise Control Engineering, AIHA-RMS, 2002

Guidelines for the Assessment of Microbiological Contamination, AIHA, 2002

Strategies for Conducting Meaningful Microbial Investigations, AmIAQC, 2000

New Approach to Eliminating IAQ Problems, TSI, 2000

Toxicology for the Health and Safety Professional, AIHA-RMS, 2000

Indoor Air Quality, TSI, 1999

Evaluating and Retrofitting Local Exhaust Systems, AIHA-RMS, 1999

Effective Practices in Ergonomics, RMEC/OSHA, 1998

Aerosol Sampling: Principles and Practice, AIHA-RMS, 1998

OSHA Process Safety Management Standard, AIHCE, 1998

OSHA Inspection Protocol, AIHCE, 1996

Risk Assessment Methods for Hazardous Waste Sites, AIHCE, 1996

Practical Engineering for Indoor Air Quality, ASHRAE, 1995

Indoor Air Quality and Indoor Air Measurements, TSI, 1995

Industrial Hygiene Management, AIHCE, 1994

Indoor Air Quality Symposium, AIHCE, 1994

Specialty Sampling Methods, AIHCE, 1993

Occupational and Environmental Monitoring at Hazardous Waste Sites, AIHCE, 1993

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Radon Technology for Mitigators, Western Regional Training Center, 1991

Evaluating and Troubleshooting Ventilation Systems, AIHCE, 1991

Legal Aspects of Industrial Hygiene, AIHCE, 1991

Assessing Bioaerosols in the Workplace Environment - ACGIH, AIHCE, 1991

Asbestos Project Designer Training, Since 1991

Asbestos Abatement Worker/Supervisor Training, Since 1988

OSHA 8 Hour Refresher Training, Since 1988

OSHA 8 Hour Supervisor Training, Since 1987

Principles of Respiratory Protection, RMS AIHA Fall Technical Conference, 1985

Basic Radiation Hazard Control, IIOSH, 1984

Management and Disposal of Hazardous and Chemical Wastes, Baker Chemical, 1984

Q.A. in the Analytical Laboratory, Rocky Mountain Conference, 1983

Hewlett Packard Gas Chromatography/Practical GC Trouble Shooting, 1983

Numerous IAQ and microbiology-related conferences and presentations, 1985 to Present

EXPERIENCE

Robert D. Strode is responsible for technical review and direction for all industrial hygiene projects and for design, implementation, and report generation of exposure and risk assessments. He provides expert witness and litigation support for exposure and risk assessments related to chemical, physical and biological agents. He conducts indoor air quality (IAQ) investigations for industrial, commercial, recreational, and residential environments; with an emphasis on the recognition, evaluation and control of exposures and health impacts from vapor infiltration, due to soil and groundwater contamination, and from biological (bacterial and fungal) contamination. He is responsible for oversight and management of asbestos and lead paint issues for national developers and multifamily housing investment firms, including program management and review and critique of asbestos and lead paint surveys, design specifications, and operations and maintenance programs.

Prior Experience

Owner of Canyon Environmental Consulting.

Mr. Strode performed IAQ investigation and expert testimony in industrial, commercial, recreational, and residential environments; specializing in recognition, evaluation, and control of health impacts from volatile organic compound (VOC) vapor infiltration and biological contamination. Projects included development and generation of exposure and risk assessments, oversight and management of asbestos and lead paint issues for national multifamily housing investment company, including review and critique of asbestos and lead paint surveys, design specifications, and operations and maintenance programs. Conducted environmental, industrial hygiene and health and safety program, and compliance audits, including management system audits and OSHA compliance audits at power generation facilities for occupational safety, emergency response, and SARA Title III compliance. Handled data management and interpretation; development and implementation of quality control and quality assurance protocols for environmental and industrial hygiene data verification. Developed and reviewed OSHA based site-specific and corporate-level health and safety plans (HASPs) for hazardous site activities for public and private sector clients, including USAFC, DOD and DOE facilities.

Principal Scientist and Office Manager, Roux Associates, Inc.

Mr. Strode was responsible for review and management of environmental consulting professionals in the Denver, CO and Concord, CA offices, including engineers, geologists, hydrologists, environmental scientists, and support personnel with annual revenues in excess of two million dollars.

Provided developments, consultation and expert testimony services for IAQ investigations involving airborne agents, including volatile organic compounds (VOCs) bioaerosols, and other chemical and physical agents. Developed and generated exposure and risk assessments for multi-site CERCLA-based remedial investigations and remedial action feasibility studies. Developed and implemented analytical data management protocols for environmental risk assessment to automate laboratory data transfers, produce report ready tables, and perform quantitative risk assessment calculations. Developed and implemented CERCLA work and project plan documents, field support, analysis activities, and standard operational procedures. Managed laboratory and data validation of chemical and physical parameters for CERCLA multi-site RI/FS program, involving Level II through Level V analyses. He was the corporate level CIH and Office Health and Safety Manager. Handled OSHA compliance testing and audits for manufacturing and service industries and development and review of health and safety plans for hazardous waste site activities.

Certified Industrial Hygienist and Environmental Consultant, Chemistry & Industrial Hygiene, Inc.

Robert Strode handled IAQ investigations and reports related to occupational and environmental exposures, commonly referred to as sick building syndrome (SBS) or building related illness (BRI). Focused on biological/microbial agents including IAQ investigations for school districts with identification of biological, chemical and physical agents, including metals, asbestos, thermophilic bacteria, molds, particulates and VOCs. He conducted risk and exposure assessments, including retrospective exposure assessments, human health risk assessments, and pathway analysis for various projects, including remedial decisions at a former chemical weapons facility, and litigation support for workers exposed to solvent and dioxins/furans at a herbicide (Agent Orange) production facility. He was responsible for specification and review of analysis methods utilizing EPA, ASTM, NIOSH, and OSHA methods for identification and quantification of chemical and physical agents. Mr. Strode directed and reviewed the work of other industrial hygienists, performed OSHA and health and safety compliance audits and health and safety program development. He developed and implemented project plan documents, field support and analysis activities, standard operational procedures, and other management phases. Developed lead and asbestos abatement project specifications, performed abatement air monitoring, project supervision, and O&M programs.

Robert Strode was the training instructor for OSHA compliance (e.g., HAZWOPER) and general industrial hygiene to outside clients and for third party training providers. He conducted industrial hygiene investigations including sampling and analysis for metal fumes and dusts, organic vapors, and respirable crystalline silica, and provided on-site hazardous waste site industrial hygiene and health and safety supervision for cleanup projects, including removal of nerve agent at a former chemical weapons plant.

Senior Inorganic Chemist, C.C. Johnson & Malhotra, P.C., 1987-1988

Developed standard operating procedures, designed special analytical services (SAS) protocols, and project planning documents for CERCLA and RCRA investigations. He was involved in the operation and management of on-site remedial support laboratories and performance of environmental analyses to direct remedial activities. Managed/supervised inorganic data validation group for United States Environmental Protection Agency (US EPA) contract laboratory program (CLP) RAS and SAS analyses. Served as Regional Health and Safety Officer.

Quality Control/Laboratory Manager, CSMRI-Analytica, Inc.,

Principal in the conversion of a geochemical laboratory to an environmental/industrial hygiene laboratory. Contract US EPA CLP Inorganic RAS and SAS analyses and American Industrial Hygiene Association (AIHA), Center for Disease Control (CDC) and Colorado State Water Quality program certifications during tenure as laboratory manager. Implemented setup and operation of instrumentation including ICP, AA, GFAA, Hydride AA, CVAA, IC, ISE, XRF and XRD. Experienced in use of EPA solid waste, EPA, water and waste, EPA CLP, ASTM, NIOSH, and other standard environmental and industrial hygiene protocol. Industrial hygiene field activities included air monitoring for metals, dusts, asbestos, and other contaminants and supervision of OSHA compliance activities.

Analyst/Laboratory Supervisor, Fred C. Hart Associates

Team member of chemists and technicians responsible for receipt, preparation, analysis and extract shipment of high concentration of industrial waste-site samples as part of EPA/NEIC enforcement actions in Denver, Colorado. Inorganic methods development and principal QA analyst for metals analyses. Developed waste disposal SOPs for organic and inorganic high concentration laboratory wastes encompassing waste reduction, packaging, shipping and disposal, in conformance to RCRA/DOT and other applicable regulations. Co-authored EPA/CLP Inorganics High Concentration Analysis Protocol (SOW 285).

PAPERS AND PRESENTATIONS

R.D. Strode and M. Itell. "Handling and Disposal of Hazardous Waste/Site Cleanup," presented at Clean Air, Clean Water, Clean Business Workshop sponsored by The National Center for Preventative Law and The National Federation of Independent Business, October 1992

R.D. Strode and J.O. Rasmuson. "Retrospective TCDD Exposure and Health Risk Assessment of 2,4,5-T and 2,4-D (Agent Orange) Production Workers" presented to Colorado Hazardous Waste Management Society Annual Conference, October 1991.

J.O. Rasmuson, R.D. Strode and D.M. Larson. "Evaluation of Accuracy and Precision of Individual TCDD Exposure and Health Risk Assessment of 2,4,5-T and 2,4-D (Agent Orange) Production Workers." Presented to Colorado Hazardous Waste Management Society Annual Conference, October 1991.

R.D. Strode and J.O. Rasmuson. "Assessment of Asbestos Contamination as a Result of Fire Damage to a Condominium Building," presented to American Industrial Hygiene Conference, Orlando, Florida, May 1990.

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R.D. Strode, W.J. Berning and R.A. Cheatham. "Establishment of a Field Sample Preparation Laboratory Based Upon Data Quality Objectives for a CERCLA Mine Tailing Site." in proceedings of the HMCRI Conference, New Orleans, Louisiana, April 1989.

R.D. Strode. "Impact of Data Quality Objectives on Field Sampling Plans," U.S. EPA-OSWER/APWA Joint Conference on Water Testing and Quality Assurance July 1988.

R.D. Strode. "Handling & Disposal of Hazardous Waste in a Containment Facility," presented to American Chemical Society Meeting, April 1984.

J.H. Lowry, J.O. Rasmuson, E. Bour, R.D. Strode, J. Redenbarger. "Analysis of High Hazard Samples for 'Total' Metals," U.S. EPA Inorganic Contract Laboratory Program Inorganic Analysis Caucus, 1983.

R.D. Strode. "Accumulation of Lead by *Pseudomonas maltophilia* and *Azotobacter* species," Master of Science Thesis, Department of Microbiology, Colorado State University, December, 1985.

AFFILIATIONS AND CERTIFICATIONS

Certified in Comprehensive Practice by American Board of Industrial Hygiene Since 1990

American Industrial Hygiene Association, National Chapter

American Industrial Hygiene Association – Rocky Mountain Section (Current Board Member – and Chairman of the Education Committee)

American Academy of Industrial Hygiene

American Indoor Air Quality Council