ARMAND RUBY

Armand specializes in water quality issues, particularly those relating to stormwater monitoring and management, watershed-based analysis, surface water and sediment quality monitoring and assessment, and water quality impacts assessment. He is known for development of innovative analytical approaches to water quality problems.

SUMMARY OF EXPERIENCE/QUALIFICATIONS:

30 years of experience in the field of environmental science, featuring:

- A reputation for effective facilitation, skillful problem-solving, strong analytical abilities, and production of high quality work products.
- Excellent oral and written communications skills; extensive writing, editing, and public speaking experience, for both technical and non-technical audiences.
- Extensive experience with both professional and volunteer working groups.
- In-depth knowledge of federal and state water quality regulations.
- A diverse range of experience in various environmental disciplines.

Primary areas of expertise/current activity:

- Surface Water Quality Assessment/Monitoring
- Sediment Quality Assessment/Monitoring
- Watershed Analysis/Assessment/Management
- Stormwater Monitoring/Data Analysis/Management
- Environmental Impact Assessment
- Regulatory Compliance/Permitting Assistance

Additional areas of expertise/past activity:

- Wetlands Evaluations
- Hazardous Waste Management
- Air Quality/Atmospheric Deposition

In addition to his professional consulting work, Armand is active in community service, serving on non-profit agency boards and in various other volunteer roles. He is currently on the Board of Directors of the Coastal Watershed Council, and serves as Chair of the Science and Monitoring Subcommittee for CASQA.

Current/Recent Representative Consulting Projects

- **Caltrans Stormwater Program, Contract 43A0208**. Senior advisor on statewide stormwater services consulting contract, as subcontractor to Mactec. Responsible for reviewing guidance documents, sampling and analysis plans, and study reports for various projects including the Cache Creek Mercury Study, the Stevens Creek (Santa Clara County) Study, the Roadside Vegetated Treatment System (RVTS) study, the Open/Gap-Graded Asphalt (Porous Pavement Study, the Long Term Discharge Characterization Study, and the revision of the Caltrans Stormwater Monitoring Protocols Guidance Manuals.
- **Contra Costa Clean Water Program (CCCWP)**. Provide consulting on stormwater and related water quality issues for county-wide program, under subcontract to Brown and Caldwell. Contribute to regulatory review and analysis of proposed regulations, including the Municipal Regional Stormwater Permit, especially regarding pesticides and toxicity issues.
- **California Stormwater Quality Association (CASQA).** Research, investigation and compilation of ongoing pyrethroids water and sediment quality monitoring in state of California for CASQA's Pesticides Subcommittee.
- **Regulatory Assistance, County of Sacramento Stormwater Program.** Analyze and prepare comments for Sacramento County on TMDLs and other regulatory issues. Provide technical assistance on stormwater runoff quality issues, including detention basin sediment monitoring and management.
- **Quarry Lake Water Quality Study, Los Altos Hills.** Water quality investigation of San Francisco Peninsula lake occupying site of former rock quarry to assess suitability of lake water for potential drinking water use.
- **Review and Analysis of LTMAP Data, San Francisquito Creek Watershed.** Compiled, organized and analyzed all water quality data produced by the Long Term Monitoring and Assessment Plan from four creeks within the San Francisquito Creek watershed from 2001-2006, presented analysis and interpretation of results and recommended modifications to the program.
- **Coordinator, Diazinon/Toxicity Work Group, Clean Estuary Partnership (CEP), San Francisco Bay/Estuary.** Coordinated/facilitated the CEP's Diazinon/Toxicity Work Group, supporting implementation of the Water Quality Attainment Strategy for Diazinon and Pesticide-Related Toxicity in Bay Area Urban Creeks. Developed a regional urban creeks monitoring plan and oversaw implementation of same in 2005. Analyzed urban creek data, including water and sediment chemistry and toxicity test results, and produced comprehensive report.
- **Yolo Bypass Watershed Planning Project.** Senior technical advisor for CalFed grant-funded project to develop a comprehensive water quality management plan for the Yolo Bypass. Organized, facilitated and coordinated stakeholder advisory group for the project.
- **Discharge Characterization Project, Sacramento Stormwater Program.** Performed statistical characterization of discharges, including development of regression equations relating runoff quality to hydrological factors, coupled with continuous simulation modeling to produce an updated assessment of mass loadings from urban runoff discharges. Results are separated by wet and dry weather, urban drainage area, and major receiving water destination.

- **Review and Analysis of Corporation Yard Stormwater Monitoring Program, City of Folsom.** Compiled, organized and assessed all data produced to date by the Corp Yard stormwater monitoring program, and provided recommendations for improvement of runoff quality and the monitoring protocols.
- **Review of Stormwater Monitoring Program, Santa Rosa.** Performed a review of the regional NPDES permit monitoring program for the City of Santa Rosa, one of the permittees. Assessed data collection methods and compared recent activities with standard practices for MS4s and with expressed preferences of Regional Water Quality Control Board staff.
- **Water Quality Attainment Strategy, Clean Estuary Partnership (CEP), San Francisco Bay/Estuary.** Developed a scope of work for preparation of a WQAS for Diazinon and Pesticide-Related Toxicity in SF Bay for the CEP .
- **Identification of Pollutants of Concern (POCs), San Bernardino County Stormwater Program.** Evaluated all available stormwater discharge and receiving water quality monitoring data, applicable regulations, local CWA Section 303(d) listings, and other factors related to the potential impacts of stormwater discharge constituents, and derived prioritized list of POCs.

Representative Projects with Larry Walker Associates

Prior to founding ARC, Armand worked for Larry Walker Associates, starting as a senior scientist in 1992 and ending as a vice president in 2004. During that time, Armand managed a wide range of projects throughout California. Examples include:

- **Caltrans Stormwater Program**. Managed production of the comprehensive *Guidance Manual: Stormwater Monitoring Protocols*. Oversaw development of the Caltrans Stormwater Database, including associated graphical user interface and related data analysis tools. Managed production of the comprehensive, statewide *Discharge Characterization Study Report*, as well as other statistical and data analysis projects. Oversaw annual report production for *Annual Data Summary*, *Three Year Action Plan* and other reports.
- **Yolo Bypass Watershed Planning Project**. Managed CalFed grant-funded project to develop a comprehensive plan for water quality management in the Yolo Bypass. Developed, facilitated and coordinated stakeholder advisory group (SAG). Oversaw design and implementation of watershed-wide monitoring program and QAPP, including monitoring for water and sediment chemistry and toxicity. Developed list of Pollutants of Concern with the SAG.
- **San Francisquito Creek Long Term Monitoring and Assessment Plan**. Co-author of a comprehensive plan to monitor and assess the physical, hydrological, chemical, biological and social attributes of the SF Creek watershed.
- **Calleguas Creek Watershed TMDL Development**. Oversaw Technical Tools team, responsible for water quality modeling, data management, and development of graphical user interface for the water quality model.
- **Calleguas Creek Characterization Study**. Managed planning and implementation of Surface Water Element of coordinated watershed monitoring program, involving water quality measurements of receiving waters and point and non-point source discharges, toxicity testing, and bioassessment.
- **Fresno-Clovis Storm Water Quality Monitoring Program**. Managed multi-year project involving monitoring of receiving waters, urban runoff, and detention

basin effectiveness. Directed data analysis projects involving comprehensive evaluations of detention basin pollutant removal effectiveness, and in-depth assessments of San Joaquin River spatial and temporal variability.

- **Sacramento NPDES Stormwater Permit Monitoring Program**. Managed multi-faceted project involving urban runoff discharge characterization and management, and special studies of BMP effectiveness. Developed statistically-based methods for discharge characterization and program effectiveness assessment. Developed constituent of concern (COC) identification and reduction programs. Oversaw comparative assessment of proprietary structural controls. Produced analysis of detention basin pollutant removal effectiveness.
- **Stormwater Mass Loading Analysis and Modeling**, San Bernardino County. Managed development and application of empirical model of pollutant loadings from urban runoff based on land uses within San Bernardino County.
- **Ventura County-wide Stormwater Quality Management Program**. Assisted in development of county-wide NPDES monitoring program, data analysis strategy, and Constituent of Concern (COC) Identification program.
- **Stormwater Monitoring and Research Agenda, California Stormwater Quality Association (CASQA)**. Helped develop comprehensive plan to provide strategic guidance in stormwater monitoring, research and data management, and presented agenda to CASQA (then called the Stormwater Task Force).
- **Demonstration of Gasoline Fueling Station Best Management Practices**, County of Sacramento. Oversaw design and implementation of monitoring program to characterize gasoline station runoff, identification of BMPs to reduce runoff pollutant loadings, and assessment of pollutant removal effectiveness.
- **Pollutant Loading Reduction Program**, City of Davis. Oversaw stormwater monitoring program, including monitoring plan review, storm tracking, and supervision of field and laboratory activities.
- **NPDES Stormwater Permit Applications, Part 2**: Cities of Bakersfield, Oxnard and Stockton, and County of Ventura. Designed monitoring programs to characterize urban runoff in compliance with NPDES permits and federal stormwater regulations.
- **Southport Sewage Collection and Treatment Facilities Focused EIR**, City of West Sacramento. Evaluated water quality impacts of proposed new sewage treatment facilities, including addition of large industrial source.
- **Effluent and Receiving Water Quality Assessments**, Sacramento County. Analyzed monitoring data to determine whether POTW effluent discharges cause or contribute to violations of receiving water quality objectives.

EDUCATION:

Master of Science, Zoology (Ecology), 1986, University of Connecticut, Storrs, CT
Master's Thesis: *The Effects of Acid and Aluminum on Rainbow Trout Embryos.*

Bachelor of Arts, Biology (Ecology Concentration), 1977, Cornell University, Ithaca, NY