

STATEMENT OF QUALIFICATIONS

Kit H. Custis

Engineering Geologist, Hydrogeologist

Professional Experience

2006 – present Consulting Engineering Geologist and Hydrogeologist, Fair Oaks, CA
2008- present Engineering Geologist and Hydrogeologist, part-time, MBI-PMC, Rancho Cordova, CA
2007- present Senior Engineering Geologist, CA Dept. of Fish and Wildlife, retired annuitant (DFW)
2004-2006, Senior Engineering Geologist (Specialist), DOC-Office of Mine Reclamation (OMR)
1999-2004, Senior Engineering Geologist (Specialist), DOC-California Geological Survey (CGS)
1998, Engineering Geologist, Central Valley Regional Water Quality Control Board, Sacramento
1989-1998, Engineering Geologist, California Department of Conservation (DOC)
1988-1989, Engineering Geologist, Luhdorff and Scalmanini, Woodland, CA
1988, Hydrogeologist, Herzog Associates, Sacramento, CA
1984-1988, Sr. Engineering Geologist (Supervisory), California State Water Resources Control Board
1981-1983, Consulting Geologist, Los Angeles, CA
1980-1981, Engineering Geologist, Ertec Western, Inc., Long Beach, CA
1977-1979, Engineering Geologist, Foundation Engineering Co., Tarzana, CA

Education

B.S., Geology, 1977, California State University, Northridge, California
M.S., Geology, 1984, California State University, Northridge, California
Ph.D. program in Hydrologic Sciences, 1990-1997, University of California, Davis

Professional Licenses

California Professional Geologist, PG #3942
California Certified Engineering Geologist, EG #1219
California Certified Hydrogeologist, HG #254
Oregon Registered Geologist, G1099
Oregon Certified Engineering Geologist, E1099

Professional Experience

Thirty-eight years experience in engineering geology and hydrology, including ground water and surface water impacts, subterranean stream flow, ground water contamination, water resources, water rights, storm water pollution, fluvial studies of watersheds, mine reclamation, acid mine drainage, evaluation of slope stability, landslide hazards, seismic hazards, soil erosion, geophysical surveys. Work experience in both private consulting and government.

Projects included:

- Provided comments and recommendations for AquAlliance on the environmental documents and potential groundwater impacts from the 10-Year Long Term Transfer Program by the Bureau of Reclamation and San Luis & Delta Mendota Water Authority, on the Supplemental Water Supply Project by the Glen-Colusa Irrigation District, and on the WaterFix Project.

- For Michael Baker International (formerly PMC) I work part-time on mine reclamation and geologic elements of CEQA documents and Surface Mining and Reclamation Act (SMARA) mine reclamation plans and mine inspections. Projects included conducting annual SMARA inspections and FACE reviews for Santa Clara and Siskiyou Counties. CEQA preparation of Coldstream Specific Plan, Town of Truckee, California, for development of 178+ acre previous aggregate mining site; Omya Limestone mine, Lucerne Valley, CEQA preparation for a revised reclamation plan and preparation of the FACE. Provide local government agencies geotechnical review and comments on various development projects during the permitting process.
- As a retired annuitant at the California Department of Fish and Wildlife I work part-time on ground water issues related to water rights and 1600 permitting in California. Current and past projects include: Mammoth Creek, Big Sur River, Mojave River, North Gualala River, Shasta River, Salinas River, and various desert solar projects. Advise DFW on groundwater issue related to the Fish Springs, Black Rock and Fillmore Hatcheries, and Fish Slough in Owens Valley. Advise DFW regions on ground water contaminant issues related to property acquisitions for wildlife preserves. Testified for DFW at State Water Resource Control Board Water Rights hearings on Victor Valley Water Reclamation Authority's Mojave River diversion permit, the North Gualala Water Company subterranean stream channel determination, and El Sur Ranch on the Big Sur River appropriative water rights.
- Stephen G. Muir, Consulting Geologist and Geophysicist, provide consultant services on ground water contamination investigations and cleanups, storm water permits, risk assessments, and regulatory compliance. Various projects throughout the San Joaquin Valley.
- California Department of Conservation, Office of Mine Reclamation, served 10 years in OMR providing technical expertise to Local Agencies and the SMGB on stability of mine slopes and hydrology on mines throughout California. Provided technical training to lead agencies on mine slope stability assessment methods and regulatory requirements. Provided expert testimony at County Planning Commissions, County Board of Supervisors, and State Mining and Geology Board. Provided technical consulting on groundwater issues to Department of Fish and Wildlife through an inter-agency contract.
- California Geological Survey formerly Division of Mines and Geology, conducted engineering geology studies and regulatory reviews for projects throughout California. Work included evaluation of geologic and seismic hazards studies for hospitals and school sites, general plans and seismic safety elements. Senior technical lead on fluvial geomorphic studies in the north coast of California as part of the multi-agency North Coast Watershed Assessment Program. Prepared a report for the U.S. Environmental Protection Agency on the application of geophysical methods to acid mine drainage investigations. Prepared a remediation plan to abate acid mine drainage from the abandoned Spenceville copper mine for the DFW. Lectured at the DFW's Watershed Academy on landslide and fluvial issues related to protection of waterways including bank stability and channel restoration

methods.

- California Department of Parks and Recreation, Off-Highway Vehicle Division, while at CGS provided geotechnical expertise on erosion and sedimentation controls for trails and staging areas including assessment of storm water control measures.
- Luhdorff and Scalmanini, Woodland, as staff hydrogeologist conducted hydrogeologic evaluations of ground water resources and potential for ground water contamination, water well design, oversight of Sacramento Area Water Works Association groundwater monitoring program, and development and design of data base and computer mapping applications.
- Herzog Associates, Sacramento, as staff geologist conducted geotechnical studies for slope stability and landslide potential at hillside home sites in Napa Valley, Phase I site assessments for property transfers and ground water resource assessments.
- California State Water Resources Control Board and Central Valley Regional Water Quality Control Board, as a Senior Engineering Geologist developed a statewide ground water pollution management program, the AB1803 Follow-Up Program, which conducted investigations to find sources of known pollution of public drinking-water wells. As program director provided technical guidance for over fifty professional staff at the State and Regional Water Boards. At the Central Valley Regional Board case officer on 30 contaminated soil and groundwater site cleanups, prepared Waste Discharge Requirements and National Pollutant Discharge Elimination System permits, Monitoring and Reporting Programs and Cleanup and Abatement Orders.
- Earth Western, Long Beach, as staff engineering geologist conducted field mapping and site investigations for geologic and soils engineering studies in California, Arizona and Nevada. Projects include seismic and geologic hazard studies of major dams in Arizona, project geologist at Palos Verde Nuclear Project, MX missile project verification and aggregate resource studies in Nevada and Utah, and site geologist for hillside grading for Mission Viejo developments.
- Foundation Engineering, Inc., Tarzana, as staff engineering geologist conducted field mapping, subsurface investigations for geologic and soils engineering studies in the greater Los Angeles area. Projects included geotechnical studies for hillside home and tract development, assessment of slope stability and rock fall hazards, and Alquist-Priolo seismic safety studies.

Professional Affiliations

National Ground Water Association, Member
Association of Engineering Geologist, Member
California Groundwater Association, Member
American Geophysical Union, Member

Geological Society of America, Member
American Society of Civil Engineers, Associate Member

Papers and Publications

Custis, K., 2005-06, Slope Stability for Mined Lands, presentation as part of the Department of Conservation, Office of Mine Reclamation's Workshops for lead agency and mine operator staff on Preparation and Review of Reclamation Plans.

Fuller, M.S., Curless, J.M., Custis, K., and Purcell, M.G., 2004, Maps and GIS data for the Albion River Watershed, Mendocino County, California, Watershed Mapping Series, Map Set 8 CGS CD 2004-03 MAPS.

M.S. Fuller, W.D. Haydon, M.G. Purcell and K. Custis, 2002, GIS Data and Geologic Report for the Watershed Mapping Series, Map Set 5, Gualala River Watershed, Sonoma and Mendocino Counties, California, CGS CD 2002-08 MAPS.

Custis, Kit H., 2001, Digital Elevation Models: Uses and Challenges, in Managing California's Groundwater: *in* The Challenges of Quality and Quantity, 23rd Biennial Groundwater Conference and 10th Annual Meeting of the Groundwater Resources Association of California October 30-31, 2001, Radisson Hotel, Sacramento, California.

Custis, K, 1997, Seminar on Slope Stability Methods for Mined Lands, seminar for lead agency and OMR staff, Department of Conservation, Office of Mine Reclamation.

D.B. Levy, K.H. Custis, W.H. Casey and P.A. Rock, 1995, Geochemistry and physical limnology of an acidic pit lake, in Tailings and Mine Waste '96, A.A. Balkema, Rotterdam, pages 479-489.

D.B. Levy, K.H. Custis, W.H. Casey and P.A. Rock, 1997a, The Aqueous Geochemistry of the Abandoned Spenceville Copper Pit, Nevada County, California, Journal of Environmental Quality, Vol. 26, no. 1, January-February 1997, pages 233-243.

D.B. Levy, K.H. Custis, W.H. Casey and P.A. Rock, 1997, A comparison of metal attenuation in mine residue and overburden material from an abandoned copper mine, Applied Geochemistry, Vol. 12, No. 2, March 1997, pages 203-211.

Custis, Kit, 1994, Application of geophysics to acid mine drainage investigations, volume I — literature review and theoretical background, California Department of Conservation, Office of Mine Reclamation, 801 K Street, Sacramento, CA, 100p.

Custis, Kit, 1994, Application of geophysics to acid mine drainage investigations, volume II — site investigations, California Department of Conservation, Office of Mine Reclamation, 801 K Street, Sacramento, CA, 100p.

Custis, Kit, 1984, Geology and dike swarms of the Homer Mountain area, San Bernardino County,

California, unpublished MS Thesis, 168 pp.

Carlisle, D., Agyakawa, Y.N., and Custis, K., 1982, Hydrothermal Mineralization and Intermineral Intrusives Associated with Transverse Fractures in the Eastern Mojave, Desert, San Bernardino County, California, *in* Geology and Mineral Wealth of the California Transverse Ranges, South Coast Geological Society, pages 350-353.

Awards

State Mining and Geology Board, 2006, Recognition of Distinguished Service to the Office of Mine Reclamation.

Governor's Environmental and Leadership Award, 2002, Watershed Management, Spenceville Wildlife Area and Mine Reclamation, Nevada County, received along with DFG and DOC team members and Walker and Associates consultants, project consultant.

Department of Fish and Game, Director's Achievement Award, 2002, for Cleanup and Closure of Spenceville Mine Site.