

ALAN B. MUTCHNICK, RG, CEG
Director, Engineering Seismological Services
Associate Engineering Geologist, Project Manager



PROFESSION

Engineering Geologist

REGISTRATIONS

California - Professional Geologist

California - Certified Engineering Geologist

EDUCATION

B.S. in Geology, 1982, University of Tennessee

Post-Graduate Studies, 1987-1990, California State University at Los Angeles,

PROFESSIONAL EXPERIENCE

GMU Geotechnical, Inc.
(1986-Present)

Associate Engineering Geologist,
Director of Engineering
Seismological Services, Rancho
Santa Margarita, California

Western Laboratories
(1984-1986)

Soils Technician/Staff Geologist,
Gardena, California

PROFESSIONAL AFFILIATIONS

Association of Engineering Geologists

Geologic Society of America

South Coast Geological Society

International Society of Explosives Engineers

SUMMARY OF EXPERIENCE & QUALIFICATIONS

Mr. Mutchnick has over 25 years of experience as an engineering geologist and blasting and vibration consultant. He has served as the project manager on numerous geologic, geotechnical and blasting and vibration projects related to pipelines, reservoirs, tunnels, bridges, dams, water expansion facilities, parks, groundwater studies, mines and quarries, residential planned communities, custom lots, and commercial projects. Selected projects representative of Mr. Mutchnick's experience are subdivided into the following categories:

- Engineering Seismological Projects
 - Blast Consulting
 - Vibration Consulting and Monitoring
- Engineering Geologic Projects
 - Mines and Quarries
 - Evaluation of Geologic Hazards
- Geotechnical Projects
 - Master-Planned Communities
 - Residential Custom Lots
 - Major Roadways
 - Bridges
 - Commercial/Industrial Projects
 - Groundwater Studies
 - Public Works and Utility Projects
 - Seismic Refraction and Rippability Projects
- Expert Witness

ENGINEERING SEISMOLOGICAL PROJECTS

BLAST CONSULTING:

- All American Asphalt – Corona Quarry - Corona, CA: Blast consultant services ranging from assisting in developing blast plans to providing signature blast hole analysis for on-going blast operations at the quarry.
- Folsom Dam Phase I Safety of Dams Modification Project – Folsom, CA: Blast consultant for Foxfire Constructors, Inc. (sub-contractor to Kiewit Pacific Co.). Blast consulting services during the development of the blasting plan, reviewed blasting plan, and provided blast vibration monitoring services.
- Yuba County Water Agency, Narrows II Powerhouse Bypass Project – Yuba County, CA: Blast and vibration consultant for Mitchell Engineering Company. Project consisted of blasting hard rock during construction of a bypass tunnel. Provided consulting services during the design of the tunnel blast plans. Reviewed all blasting plans and blast operations including vibration monitoring of water district improvements during blasting.
- San Diego County Water Authority, Lake Hodges Pump House Shaft Excavation – Escondido, CA: Blast and vibration consultant for Mine Development and Engineering Corporation. Reviewed blasting plans, performed periodic blast vibration monitoring, and reviewed contractor's blast vibration records.
- San Diego County Water Authority's 5EII Pipeline Project - San Diego County, CA: Blasting and vibration consultant for Mine Development and Engineering Corporation. Reviewed blasting plans and performed blast vibration monitoring. Also performed pre-blast surveys.
- San Bernardino Tunnel Intake Reconstruction - Lake Silverwood, CA: Blasting and vibration consultant for Shank/Balfour Beatty. Reviewed blasting plans, performed blast vibration monitoring, and attended meetings with the California Department of Water Resources technical staff.
- San Diego County Water Authority's Specification No. 457 Project - San Diego County, CA: Blasting and vibration consultant for Roy E. Ladd, Inc. Performed pre-blast surveys, prepared a site-specific blasting plan, performed blast vibration monitoring and reviewed daily blasting plans.
- Riverside County Segment, Inland Feeder Project - Riverside County, CA: Blasting consultant for Metropolitan Water District of California during the design phase of the Inland Feeder Project. Attended design meetings and provided blasting and vibration specifications for the project.

- Henry J. Mills Filtration Plant Expansion No. 2 - Riverside County, CA: Blasting and vibration consultant for Metropolitan Water District of California during expansion of the Henry J. Mills Filtration Plant. Assisted in preparing the project blasting specifications, reviewed contractor's blasting plans, performed pre-blast surveys at MWD improvements, and performed blast vibration monitoring.

VIBRATION CONSULTING:

- San Diego Creek Channel Invert Repair Project – Irvine, CA: Vibration consultant for Shimmick Construction Company. Responsibilities included monitoring the driving of sheet pile along the channel sides to repair the channel invert.
- Hollyhills Storm Drain Project - Los Angeles, CA: Vibration consultant for Kiewit Pacific Company. Performed pre- and post-construction surveys of residential and commercial properties. Performed vibration monitoring during the driving of sheet piles. Attended homeowner's meetings to discuss the pre- and post-construction surveys and vibration monitoring program.
- Vibration consultant on numerous projects throughout Southern California for California Drilling & Blasting Company, Inc. Performed pre- and post-blast surveys, reviewed blasting plans, and performed blast vibration monitoring.
- Vibration consultant on several projects in Northern California for Foxfire Constructors, Inc. Performed pre- and post-blast surveys, reviewed blasting plans, and performed blast vibration monitoring.

ENGINEERING GEOLOGIC PROJECTS

MINES AND QUARRIES:

- All American Asphalt Mining Study - Corona, CA: Providing on-going consultation, mapping and evaluation of geologic conditions for All American Asphalt with respect to stability of proposed road and bench alignments.
- Mission Gorge Quarry Slope Stability Evaluation – San Diego, CA: Geologic mapping and structural geologic analysis of geologic conditions with respect to slope stability for Superior Ready Mix.
- Elephant Hill Quarry Slope Stability Evaluation – Pomona, CA: Provided geologic consultation, mapping and evaluation with respect to slope stability of proposed quarry slopes for Aman Environmental Construction.

EVALUATION OF GEOLOGIC HAZARDS:

- Folsom Dam Phase II Safety of Dams Modification Project – Folsom, CA: Provided consultation, mapping and evaluation of geologic conditions with respect to drilling and blasting operations for Foxfire Constructors.
- Geologic Evaluation of Pump House Shaft Excavation - San Diego County Water Authority, Lake Hodges, Escondido, CA: Geologic mapping and evaluation of exposed rock conditions following shaft excavation blasts to help identify causes related to block-type rock failures.
- Geologic Site Assessment Pertaining to Rock Fall - Silverado Canyon Road, County of Orange, CA: Geologic site assessment following a rock fall event within a slope area located above Silverado Canyon Road. Investigation included field mapping of rock areas where future rock fall events could originate from.
- Debris Flow Analysis, Ortega Gateway – Rancho Mission Viejo, CA: Calculations and analysis of debris flow hazards affecting residential development. Also assisted with design of detention facilities to mitigate debris flow hazard.

GEOTECHNICAL PROJECTS

MASTER PLANNED COMMUNITIES:

- Rancho Santa Margarita, CA - Santa Margarita Company: Geotechnical investigation and mapping during grading for the planned community including roadways, lake, reservoirs, commercial, and residential development.
- Rancho Niguel, Laguna Niguel, CA - Buie Development Company: Geotechnical investigation and mapping during hillside grading project complex. Mitigated issues related to groundwater and landslides.
- Las Flores, Orange County, CA - RSM Management Company and Vintage Communities: Complete geologic services for residential hillside development including project management during grading.
- Ladera Ranch, Orange County, CA - DMB Ladera, LLC: Complete geologic and project management services for planned community including major hillside grading and landslide remediation.
- Coto de Caza, CA - Coto de Caza, Ltd. and Lennar Homes: Geotechnical investigation and mapping during hillside grading for several planning areas within the community involving groundwater and slope stability issues.

- Newport Coast, Newport Beach, Orange County, CA - Irvine Community Development Company: Geotechnical investigation, reporting, and project management for hillside grading projects within various planning areas addressing landslides and hard rock issues.
- Ortega Gateway Planned Community, Rancho Mission Viejo, CA - Rancho Mission Viejo Company: Geotechnical investigation and reporting for master-planned community. Addressed numerous issues including large-scale ancient landslides, liquefaction hazards, time-delayed settlement, shallow groundwater, debris flow potential, aggregate mining, existing infrastructure, and scour protection for the adjacent San Juan Creek.
- Crystal Cove, Newport Beach, Orange County, CA – Irvine Development Company: Geotechnical investigation, reporting, and project management during hillside grading for planned community including the remediation of several large ancient landslide complexes.

RESIDENTIAL CUSTOM LOTS:

- Various Custom Lot Projects in Covenant Hills - Ladera Ranch, CA: Geotechnical investigation and reporting of grading and construction of on-site improvements; includes design and construction of basements and subterranean garages.
- Various Custom Lot Projects in Crystal Cove Development - Newport Beach, CA: Geotechnical investigation and reporting of grading and construction of on-site improvements; includes design and construction of basements and subterranean garages.
- Guitterez Residence, Avenida La Cresta - Riverside County, CA: Geotechnical investigation and reporting for grading and construction of a custom home on a 5-acre property. Improvements include the main residence, guest house, pool, etc.

MAJOR ROADWAYS:

- Crown Valley Parkway – Ladera Ranch, Orange County, CA: Geotechnical investigation and mapping during grading for arterial roadway between Antonio Parkway and Crown Valley Bridge.
- Antonio Parkway – Rancho Santa Margarita, Las Flores, and Ladera Ranch, Orange County, CA: Geotechnical investigation, mapping and project management during multiple phases of grading and construction of Antonio Parkway.
- La Pata Avenue Extension – County of Orange to City of San Clemente, CA: Geologic investigation and interpretation of geologic information during preliminary design phases.

BRIDGES:

- Crown Valley Bridge – Rancho Mission Viejo, Orange County, CA: Geotechnical observation of foundation construction, including excavation of large-diameter shafts for bent construction.
- Antonio Wildlife Crossing Bridge Phases I and II - Ladera Ranch, Orange County, CA: Geotechnical observation of foundation construction, including excavation of large-diameter shafts for bent construction.

COMMERCIAL/INDUSTRIAL:

- Holy Trinity Church - Ladera Ranch, CA: Project management for geotechnical design and construction phases of Holy Trinity Church.
- CR&R Expansion Project - Rancho Mission Viejo, CA: Geotechnical investigation and project management for the expansion of the CR&R site. Geotechnical studies addressed suitability of subsurface materials to improvements.

PARKS AND SPORTSPARKS:

- Avendale Village Club – Ladera Ranch, CA: Project Manager – Geotechnical design and construction for clubhouse, swimming pool, tennis courts, tot lots, asphalt drives and parking lots, hardscape, and associated improvements.
- Terra Grande Park Site – Talega, CA: Project Manager – Geotechnical design and construction for recreation building, ballfields, MSE walls, asphalt drives and parking lots, hardscape, and associated improvements.
- Cox Sportspark – Ladera Ranch, CA: Project Manager – Geotechnical design and construction for sportspark complex with ballfields, snack bar/restroom building, asphalt drives and parking lots, hardscape, and associated improvements.
- Canyon Club Recreation Site – Crystal Cove, CA: Project Manager – Geotechnical design and construction of a recreation complex, including a clubhouse, swimming pool, tennis and basketball courts, asphalt drives and parking lots, hardscape, and associated improvements.
- Reef Point Park Site – Crystal Cove, CA: Project Manager – Geotechnical design and construction for restroom building, basketball court, play areas, asphalt drives and parking lots, hardscape, and associated improvements.
- Central Park – Rancho Santa Margarita, CA: Project Manager – Geotechnical design and construction of park improvements including a restroom building, tennis and roller hockey courts, asphalt drives and parking lots, hardscape, and associated improvements.

GROUNDWATER STUDIES:

- Mission Viejo Golf Course Groundwater Studies – Mission Viejo, Orange County, CA: Evaluation of shallow groundwater conditions and its impact to a proposed lake facility and for installing a utility crossing under an active creek area.
- Groundwater Study for San Juan Creek Revetment – Rancho Mission Viejo, Orange County, CA: Excavated numerous borings and test pits to observe groundwater levels adjacent to San Juan Creek. Groundwater data was utilized for design of revetment system which included jet grouting and soil cement.

MISCELLANEOUS PUBLIC WORKS AND UTILITY:

- KMEP Jet Fuel Line Relocation, PA-1 – Kinder Morgan Energy Partners, Orange County, CA: Geotechnical investigation for relocation of existing jet fuel line within Planning Area 1 of Rancho Mission Viejo.
- KMEP Jet Fuel Line Relocation, Ortega Highway – Kinder Morgan Energy Partners, Orange County, CA: Geotechnical services for jack-and-bore relocation of existing jet fuel line below Ortega Highway.
- Cellular Sites at Ladera Ranch – RMV Telecom, Orange County, CA: Geotechnical investigation and project management during design and construction of cellular sites.

SEISMIC REFRACTION AND RIPPABILITY PROJECTS:

- Murrieta Hills Rippability Study – Pulte Homes, Murrieta, CA: Seismic refraction and rippability study to evaluate granitic rock in area of proposed housing development.
- Elephant Hill Rippability Study – Centex Homes, Pomona, CA: Seismic refraction and rippability study to evaluate volcanic rock in area of proposed housing development.
- Hwy. 395 Rippability Study - Mono County, CA: Seismic refraction and rippability study to evaluate glacial till and volcanic rock in area of proposed roadway.
- Helix Water District Rippability Study – San Diego, CA: Seismic refraction and rippability study to evaluate granitic rock for expansion of water district facilities.

MISCELLANEOUS EVALUATIONS OF GEOLOGIC HAZARDS PROJECTS

- Geologic Site Assessment Pertaining to Rock Fall - Silverado Canyon Road, County of Orange, CA: Geologic site assessment following a rock fall event within a slope area located above Silverado Canyon Road. Investigation included field mapping of rock areas where future rock fall events could originate from.

- Geologic Evaluation of Pump House Shaft Excavation - San Diego County Water Authority, Lake Hodges, Escondido, CA: Geologic mapping and evaluation of exposed rock conditions following shaft excavation blasts to help identify causes related to block-type rock failures.
- Debris Flow Analysis, Ortega Gateway – Rancho Mission Viejo, CA: Calculations and analysis of debris flow hazards affecting residential development. Also assisted with design of detention facilities to mitigate debris flow hazard.

EXPERT WITNESS

Expert Witness for Jones & Beardsley – 2007 to 2008: Blasting Damage Complaint, Sherwood Land Development, Thousand Oaks, California.

Expert Witness for Lee, Hernandez, et al. – 2008 to 2009: Blasting Damage Complaint, Terravita Home Construction, Henderson, Nevada.