



CONDOR EARTH TUNNELS AND WINE CAVES

CONDOR EARTH provides technical support for the construction of underground works. Depending on specific project needs, this support can include:

- Project feasibility studies
- Site subsurface investigations
- Design services
- Construction management
 - Serving as the owner's technical representative or Construction Manager
 - Technical review of contractor's methods
- Field engineering
 - Design optimization based on field observation
 - Field observations of geologic conditions to determine the applicability of the design
 - Confirm that ground supports and water seepage mitigation measures adequate and in the right place
- Quality assurance
 - Focusing on client's goals and objectives for the finished project
- Materials testing and special inspection
- Program coordination with team consultants and contractors

Additionally, Condor provides general geologic, geotechnical and geostructural engineering support as needed:

- Geotechnical reports for winery structures, tanks, retaining walls, slopes, portal and cut/cover structures
- Geohazards investigations
- Soil anchors, tie-backs, rock bolts and shotcrete wall design
- Water storage reservoir dams, embankments and liner design
- Storm water compliance
- Water Availability Analysis

QUALIFICATIONS

Condor is a leader in geotechnical/geological evaluation and geostructural design of small and medium sized tunnel projects, including numerous tunnels and wine caves in the Napa/Sonoma Valley, Central Coast, and Sierra Foothills regions. With approximately 50 employees in five California offices, Condor is a diversified, multidisciplinary organization with the capability to provide a variety of earth and environmental science, engineering, mapping, GIS, materials testing and special inspection, construction management and monitoring services to private and public sector clients. Condor's experience includes evaluating geological hazards; geotechnical foundation, slope cut/cover and tunneling conditions; tunnel liner, shaft, rehabilitation and portal design; tunnel construction management; and materials testing. Our clients include the agricultural, mining, and construction industries; water resources managers and developers; educational and health institutions; and federal, state, and local governmental agencies. A partial list of Condor's tunnel projects is included in Table 1.

Project Personnel

CONDOR assigns experienced professionals to meet the technical and management requirements for completing project work in a competent and cost effective manner. Depending on the project scope, the following lead professionals will conduct the work with the support of staff and associate engineers, field technicians, computer-aided drafting, word processing and accounting personnel as needed.

Scott W. Lewis, PG, CEG – Principal Engineering Geologist, Principal Tunneling Consultant. Mr. Lewis has over 30 years of experience in geologic investigations and construction/repair of tunnels, structural foundations, landslides, slope stability, dam sites, and other geologic hazards. He has served as the project manager and/or principal investigator on over 300 tunnel feasibility and construction projects. His specialty is in feasibility and conceptual design, coordinating and performing field investigations, tunnel evaluation, construction plans and specifications preparation, and construction management and supervision.

Andrew S. Kositsky, PE, GE – Senior Civil/Geotechnical Engineer. Mr. Kositsky serves as Condor's lead Design and Geotechnical Engineer for tunnel, wine cave, dam, retaining wall and shoring projects. He is responsible for preparing Geostructural Design Submittals and Geotechnical Engineering Studies. He has over 25 years of experience in geotechnical investigations, foundations, slope stabilizations, tunnel and shotcrete wall designs, and related work. Mr. Kositsky provides engineering and peer review services for wine cave projects throughout California and elsewhere.

John H. Dailey, PE, GE, QSP/D – Civil and Geotechnical Engineer. Mr. Dailey has over 40 years of experience in geotechnical engineering and provides geotechnical services for design and construction. His typical assignments include directing explorations of soil, bedrock, and groundwater conditions beneath sites; evaluating site conditions, evaluating geologic hazards and mitigation options, evaluating design of foundation systems; designing shotcrete retaining walls and tunnel liners, and directing construction monitoring. He provides the geotechnical engineering for a wide variety of projects, including wine caves, irrigation canals and tunnels, office buildings, public schools, residential developments, landslide repairs, and solid waste landfills.

Kyle V. White, PG, CEG – Associate Tunnel Geologist/Certified Engineering Geologist. Mr. White serves as associate tunnel geologist and certified engineering geologist for Condor and is responsible for overseeing and/or performing tunnel logging and mapping, construction management as resident engineer representative and performs and/or schedules for inspection for general conformance with project specifications. Mr. White also provides peer review and supervises junior staff.

Jon Ingram – Staff Geologist. Mr. Ingram serves as our staff geologist and is responsible for drilling coordination and logging, tunnel logging and mapping, and construction observations and inspections.

Olivia Hayden – Staff Engineer. Ms. Hayden serves as a Staff Engineer for Condor and assists in design services of tunnels, dams, wine caves, portals and shotcrete retaining walls.

Kim Tarantino – Senior Project Administrator/Coordinator. Ms. Tarantino serves as project administrator and coordinator for Condor and is responsible for assisting with client and project management, coordination of all aspects of project from submittals to design and field services, preparing documents for construction contracts, monitoring and tracking deadlines, and all aspects of administrative support from feasibility to construction management.

John Kennedy – Senior Technician/Special Inspector. Mr. Kennedy serves as Senior Technician and Special Inspector for Condor in construction phases of projects.

Gregg E. Korbin, Ph.D. – Geotechnical Consultant. Dr. Korbin is an associate geotechnical consultant that has worked together with Condor on numerous projects over the past 30 years and with Mr. Lewis over the past 35 years. He has extensive experience in the design and construction of underground works. Dr. Korbin provides oversight, technical analyses, design and peer review services.

Michael Gowring – Underground and Heavy Construction Consultant. Mr. Gowring is an associate consultant with over 40 years of underground and heavy construction experience. He has served as tunnel project manager for various construction companies. Mr. Gowring provides project constructability and cost estimate services.

For additional information please contact:

Scott W. Lewis, PG, CEG
Principal Engineering Geologist
Principal Tunneling Consultant

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CONDOR EARTH

Table 1

Selected Wine Cave and Tunnel Project Experience

| Client/Owner | Project | Services |
|---------------------------------------|---|--|
| Oakdale Irrigation District | Two-Mile Bar Tunnel | Bypass tunnel feasibility, site investigation and monitoring, design, contract documents, drawings, GBR, GDR, preliminary construction cost estimate, assist with contractor selection and evaluation, construction observation and management, special inspection and materials testing |
| Inglennook | Production Cave | Conceptual design, shotcrete wall design, tunnel geostructural design, permit support, construction monitoring and observations |
| South San Joaquin Irrigation District | Canyon Tunnel | Evaluation of hazard conditions, evaluate options, conceptual design, geologic drilling investigation, 60% design and construction cost estimate |
| Merced Irrigation District | Tunnel No. 1 Rehabilitation Project | Design engineering and cost estimating for rehabilitation work, hydraulic modeling |
| Mendocino Railway | Skunk Train Tunnel and Slope Repairs | Consultation, construction management, civil design |
| Ferrari-Carano Vineyards and Winery | Winery and Caves, Reservoir, Access Road, Portals, and Tunnel Extension | Project feasibility, geotechnical exploration and report, cave design, access road design, QA and consultation during construction, materials testing, wine cave expansion (PreVail) design and construction observations, materials testing |
| B Cellars | Wine Cave, Shaft and Portals | Project feasibility and consultation, cave and shotcrete wall design, construction observations |
| Truckee Meadows Water Authority | Fleish Tunnel | Conceptual design, subsurface investigation, preliminary construction cost estimate, final design, construction observations |
| The Napa Valley Reserve | Wine Cave and Portals | Project feasibility, cave construction plans and consultation, portal design, cave bid documents, construction monitoring and management |
| Vineyard 29 | Winery, Caves and Portals | Project feasibility, cave and portal design, landslide hazard evaluation, geotechnical exploration and report, QA and construction monitoring, special inspection and materials testing |
| Stanford University | Stadium Tunnels | Site exploration, design analysis, plans and specifications, construction observation |
| Jarvis Vineyards | Underground Winery, Wine Caves, and Portals | Exploration, design, QA and construction monitoring, materials testing, construction management |
| Realm Cellars | Wine Cave, Water Storage Tunnel and Shotcrete Walls | Initial feasibility, conceptual design, geotechnical report, cave and portal design, site wall design and construction observation |

| Client/Owner | Project | Services |
|---|--|---|
| Stone Estate | Underground Art Gallery and Portals | Project feasibility, design, construction management, monitoring and consultation |
| City and County of San Francisco – Hetch Hetchy Water and Power | Tunnel and Slopes | Tunnel construction and slope shoring plans for Priest Reservoir Bypass Project, construction observation |
| Pacific Gas and Electric Company | Caribou 2 Tunnel and Shaft | Conceptual design and preliminary cost estimate for new tunnel and shaft bypass of existing penstock |
| East Bay Regional Park District – Black Diamond Mines | Underground Mining Museum | Exploration, surveying, design, construction monitoring, materials testing for historic mine stabilization |
| Continuum Estate | Water Storage Tunnel | Tunnel design and construction observations |
| Staglin Family Vineyards | Underground Winery, Caves, and Portals | Pre-construction site evaluation, site exploration, design, geotechnical report for cut/cover, QA and design consultation during construction |
| Oakdale Irrigation District | Canal, Tunnels and Shafts | Repair and improvements evaluation, rehabilitation project design and construction documents, construction management, special inspection and materials testing |
| Stanford Linear Accelerator Center | Tunnel | Site exploration, preliminary design report |
| Schramsberg | Wine Cave | Stability evaluation and rehabilitation design of existing historic ca. 1860's wine cave, construction observation |
| Brassfield Estate Winery | Wine Cave, Portals and Elevator Shaft | Project feasibility, site exploration, design, construction drawings, construction observation, materials testing and special inspection |
| Tri-Dam Project | Beardsley Afterbay Dam | Consultation, seepage investigation, documentation report, rehabilitation design, permitting support, rehabilitation construction bid documents, pre-construction and bid support services, construction management and observation |
| Bryant Family Vineyard | Winery, Caves, and Portals | Project feasibility, geotechnical exploration and report, cave and portal design, landslide hazard evaluation, QA and construction monitoring, materials testing |
| Screaming Eagle (El Retiro Ranch) | Winery, Cave, and Portals | Project feasibility, portal design, site exploration, geotechnical report, tunnel design consultation, construction observations and special inspection |
| St. Paul Travelers Insurance | Water Tunnel | Expert consultant regarding construction defect claim |
| Knights Bridge Winery | Wine Cave and Shotcrete Walls | Project feasibility, site exploration, design, permit submittal support, assist with contractor selection, construction observations during construction, materials testing |

| Client/Owner | Project | Services |
|---|--|---|
| U.S. Bureau of Reclamation | Tunnel and Chamber | Tunnel construction and slope shoring plans for American River Pump Station Project |
| San Diego Water Authority | Water Tunnel | Claim documentation tunnel mapping pertaining to TBM performance |
| Northern California Power Agency | Diversion Tunnels, Dams, Slopes | Performance evaluation, remediation recommendations, design, surveying, landslide investigation, construction monitoring |
| Stag's Leap Wine Cellars | Wine Caves, Portals, Slopes, Reservoir, Visitor Center | Pre-construction evaluation of tunnel conditions, geotechnical exploration and reports, design, QA and consultation during construction, materials testing, geotechnical report |
| South San Joaquin Irrigation District | Canal and Tunnels | Hazard analysis and repair/improvement evaluation of existing facilities, repairs design, construction observations |
| Gloria Ferrer | Wine Caves, Portals, and Winery Expansion | Portal, tunnel and cut/cover design, grading and utility plans, QA and consultation during construction, materials testing |
| Kathryn Hall Winery | Winery, Caves, and Portals | Project feasibility, cave design, geotechnical exploration and report, portal and retaining wall design, QA and consultation during construction |
| PlumpJack Winery/CADE | Wine Cave and Shotcrete Wall | Design analysis and report, construction drawings, consultation, and construction observation, special inspection |
| Girard Winery, Rudd Wines | Winery, Caves, Portals, and Shaft | Project feasibility, geotechnical exploration and reports, tunnel/shaft support design, QA and consultation during construction, materials testing |
| Leslie Rudd Investment Company, Rudd Winery | Elevator Shaft and Related Improvements | Project feasibility, design, construction observations, special inspections |
| Eisele Vineyards | Wine Caves | Evaluation of tunnel support requirements during construction, expansion feasibility |
| Tuolumne Utilities District | Diversion Tunnel, Dam | Exploration, geotechnical and civil conceptual design |
| von Strasser Winery | Wine Caves, Portals, and Reservoir | Pre-construction site evaluation, portal and reservoir design, hydrology study, construction monitoring, materials testing |
| Dierberg Vineyards | Winery, Cave, and Portals | Project feasibility, tunneling report, tunnel design, permitting and contractor selection assistance, consultation and construction oversight, shotcrete wall and portal design |
| O'Shaughnessy Vineyard | Winery, Caves, and Portals | Project feasibility, geotechnical exploration and report, tunnel/portal support design, QA and consultation during construction |
| Oakville Ranch Winery (Miner Family) | Wine Caves | Construction observations and ground support design |

| Client/Owner | Project | Services |
|--|--|--|
| Vine Cliff Cellars | Winery and Caves | Stabilization and seepage remediation of historic winery and cave, new cave support design |
| Metropolitan Water District of Southern California | Water Tunnel | Pre-bid analysis of design alternatives |
| Halter Ranch | Winery, Cave, and Portals | Feasibility, tunnel design and report, development consultation, shotcrete wall design, construction observations |
| J. Fritz Winery | Winery and Caves | As-built evaluation and construction dispute arbitration |
| Sutter Home | Two Wineries, Wine Cave, and Reservoirs | Project feasibility, surveying, geotechnical exploration and reports, construction QC |
| Arkenstone Vineyard | Underground Winery | Tunnel, shaft and portal design, construction monitoring and consultation, materials testing and special inspection |
| South Tahoe Public Utilities District | Wastewater Tunnel | Feasibility study |
| Hartwell Vineyards | Winery, Caves, and Portals | Project feasibility, portal/retaining wall rock bolt design, and construction monitoring, tunnel QA |
| Alexander Valley Vineyards | Wine Caves | Exploration and project feasibility |
| Hans Fahden Winery | Wine Caves, Portals, Tasting Building, and Reservoir | Geotechnical recommendations for expansion of existing facilities, exploration, report and design, construction observations, update fire safety plans, portal and tunnel improvements |
| Saxum Vineyards | Underground Winery | Project feasibility, design consultation, site exploration, cave and shotcrete wall design, construction observations |
| Spring Mountain Vineyard | Wine Caves and Portals | Exploration, project feasibility, cave design, construction monitoring, materials testing |
| Calera Wine Company | Wine Cave, Portal, Cut/Cover | Project feasibility, site exploration, geotechnical report, design, construction management, construction observations |
| Cuvaison Winery | Wine Caves and Portals | Tunnel stability verification during construction per County requirement |
| Silverado Vineyards | Wine Caves | Project feasibility and design |
| Seavey Vineyards | Winery and Caves | Site evaluation of development alternatives, geotechnical exploration and report, construction monitoring |
| Confidential | Wine Caves | Expert witness regarding construction dispute |
| Byington Winery | Wine Caves and Portals | Project feasibility, site exploration, design, geotechnical report, QA and construction monitoring |

| Client/Owner | Project | Services |
|--|---|---|
| Villa Amorosa-Sattui Winery | Winery, Caves, Portals, Dam, Water Tower, and Warehouse | Exploration, portal design, dam safety recommendations, site exploration, geotechnical report, foundations, construction monitoring |
| Buena Vista Winery | Wine Cave, Water Storage Tunnel | Rehabilitation of ca. 1850's wine cave, ground support and tunnel design, and construction observations |
| Confidential | Wine Caves | Evaluation of structural stability of two existing caves as part of ownership transition |
| Placer County Water Agency | Diversion Tunnel | Evaluation of tunnel leakage, design recommendations |
| Jackson Family Wines | Wine Cave and Portals | Project feasibility, site exploration for multiple projects |
| Kautz Ironstone Vineyards | Wine Cave and Dam | Materials testing, exploration, design review, construction monitoring |
| Sierra Constructors | Hydropower Tunnels, Dams | Performance evaluation and remediation recommendations |
| U.S. Dept. Interior – Office of Surface Mining | Underground Mine: Hazard Abatement | Surface and underground survey and design/repair consultation for collapsed historic mine openings and shafts |
| Green and Red Vineyard | Winery, Caves, and Portals | Project feasibility, geotechnical exploration and report, QA and design consultation during construction |
| Wender Partners | Winery and Caves | Project feasibility |
| Dancing Hares Winery | Winery, Caves, and Portals | Project feasibility, geotechnical exploration and report, cave and portal wall design, construction monitoring, and special inspection |
| Blankiet Vineyard | Winery, Caves, and Portals | Project feasibility, site exploration, geotechnical report, cave and portal design, construction monitoring, special inspection and materials testing |
| The Mobius Group | Wine Caves and Reservoir | Project feasibility |
| Stevenot Winery | Wine Caves | Project feasibility, cave design |
| Frazier Winery | Wine Caves and Portals | Project feasibility, geotechnical exploration, cave design, portal design, QA and consultation during construction |
| Martinelli Winery | Wine Caves | Project feasibility |
| Johnson/Nelson Estate | Wine Caves | Project feasibility, cave design, QA and consultation during construction |
| East Bay Regional Park District - Eureka Slope | Underground Mine | Survey and tunnel and shaft stability evaluation, design, construction QC |
| A. Rafanelli Winery | Wine Caves and Portals | Pre-construction site evaluation, grading plans, cave design, consultation during construction, material testing |
| Mark West Aggregates | Wine Caves | Project feasibility |

| Client/Owner | Project | Services |
|--|-----------------------------------|--|
| Azalea Springs Vineyards | Winery and Caves | Project feasibility, preliminary design, geotechnical exploration and report |
| Palmaz Winery | Underground Winery and Caves | Project feasibility, landslide hazard evaluation |
| Sloan Winery | Wine Cave and Portals | Project feasibility, geotechnical exploration and report for cut/cover, portal design, construction monitoring |
| Terra Valentine Winery | Winery and Caves | Geohazards evaluation, geotechnical report, construction monitoring |
| Neyers Vineyards | Wine Cave and Portals | Project feasibility, tunnel and portal design |
| Rutherford Hill Winery | Wine Cave | Tunnel liner remediation design, construction monitoring and testing |
| Nutter Cellar | Wine Cave | Project feasibility, tunnel and portal design |
| Rojas Vineyards | Wine Cave | Project feasibility |
| Indian Spring Vineyards | Reservoir | Evaluation of seepage impacts |
| Harris Cellar | Wine Cave | Project feasibility |
| Dalle Valle Vineyards | Wine Cave | Project feasibility |
| Neiman Cellar | Wine Cave | Project feasibility |
| S. Anderson Vineyards/Cliff Lede Vineyards | Wine Cave and Portal | Tunnel remediation evaluation and design, cave expansion design, site hazard and geotechnical exploration and reports, QA and consultation during construction |
| Jericho Canyon Vineyards | Wine Cave | Project feasibility, tunnel design |
| Flora Springs Winery | Wine Cave and Portal | Cave expansion feasibility, site exploration, tunnel and portal design, dewatering recommendations, QA and consultation during construction |
| Middletown Farms | Winery and Cave | Project feasibility, site exploration |
| Wattle Creek Winery | Winery and Cave | Project feasibility |
| Cosentino Winery | Wine Cave, Office, and Pond | Design consultation, geotechnical study, safety evaluation of existing dam |
| Broll Mountain Vineyards | Winery and Cave | Project feasibility |
| Anomaly Vineyards | Winery | Design consultation for cut/cover structure |
| Tom Eddy Winery | Winery, Cave, Portals, and Shaft | Project feasibility, site exploration, geotechnical report, tunnel/portal/shaft design, materials testing |
| Stagecoach Vineyards | Winery and Cave | Project feasibility |
| Robert Young Estate Winery | Cave, Portals, and Elevator Shaft | Project feasibility, site exploration, underground design, portal design, QA and consultation during construction |
| Lynch Valley Winery | Winery and Cave | Project feasibility |
| Stoller Winery, OR | Wine Cave | Design consultation for project in Oregon |
| Narrow Gate Vineyards | Wine Cave | Portal support design |

| Client/Owner | Project | Services |
|---|---|--|
| Chalone Wine Group | Winery and Cave | Project feasibility |
| Rancho Encantado Winery | Winery and Cave | Project feasibility |
| Lynmar Winery | Winery, Cave, and Portals | Project feasibility, cave and portal/ retaining wall design, cave bid documents, tunnel design, consultation during construction, materials testing, and special inspections |
| Ladera Winery | Winery, Cave, and Portals | Project feasibility, site exploration, geotechnical report, underground design, QA and consultation during construction, special inspections |
| Poliza Vineyards | Wine Cave | Evaluation of as-built conditions |
| Calaveras Cement | Tunnel and Shaft | Project feasibility |
| Confidential | Underground Hydropower Plant | Site evaluation, pressure tunnel and tunnel plug design recommendations |
| Roy Estate | Winery and Cave | Project feasibility |
| La Jota Winery | Wine Cave and Portals | Project feasibility, site exploration, geotechnical report, cave and portal design, QA and construction monitoring |
| Darioush Winery | Wine Cave | Project feasibility and preliminary design |
| Arroyo Creek Vineyards | Wine Cave | Project feasibility and preliminary design |
| Piccetti Family Vineyards | Winery and Cave | Project feasibility |
| Keever Vineyards | Winery and Cave | Project feasibility, and site exploration, geotechnical report, cave and portal design, cave bid documents, QA and consultation during construction, construction monitoring, special inspection |
| Phelan Vineyards | Wine Cave and Portal | Portal design, QA and construction monitoring |
| Twisted Oak Winery | Winery and Cave | Project feasibility and preliminary design, repair design consultation |
| McMinn Estate | Private Cave and Portals | Cave and portal design, geotechnical exploration and report, QA and construction monitoring |
| East Bay Regional Park District-G Right | Underground Mining Museum, Access Shaft | Feasibility, surveying, preliminary design of historic mine improvements |
| Annapura Winery | Winery and Cave | Project feasibility and preliminary design |
| Dotzler Winery | Winery and Cave | Project feasibility and preliminary design |
| Capay Valley Vineyards | Winery and Cave | Project feasibility |
| Gallo of Sonoma | Winery and Cave | Project feasibility, evaluation report |
| Pillar Rock Winery | Winery and Cave | Project feasibility and landslide hazard analysis, geotechnical exploration and report |
| Bidwell Creek Winery | Winery and Cave | Project feasibility |
| Simi Winery | Winery and Cave | Project feasibility |

| Client/Owner | Project | Services |
|-------------------------|--|---|
| LSS Winery | Winery and Cave | Project feasibility, site exploration |
| Christensen Estate | Underground Residence | Project feasibility, site exploration, instrumentation, preliminary design |
| Saracina Vineyards | Wine Cave | Evaluation of structural stability of existing cave |
| Bruno Cellars | Wine Cave | Stability evaluation of existing cave |
| Ehlers Estate | Winery and Cave | Project feasibility and preliminary design, site exploration, geotechnical report, cave bid documents, construction observation |
| Clark-Claudon Vineyards | Wine Cave | Project feasibility, site exploration |
| Niebaum-Coppola | Wine Cave Portal | Site exploration, portal geotechnical report |
| Renteria Wines | Winery, Cave, and Portals | Project feasibility and design, site exploration, geotechnical report, construction observations and consultation, and special inspection |
| Smith Winery | Wine Cave | Site exploration, portal geotechnical report and design, QA/QC and special inspection |
| Grandstrom Estate | Wine Cave | Project feasibility, design consultation |
| Carlston Family | Private Cave | Project feasibility, design report, plans and specifications, construction monitoring and QA/QC |
| Del Dotto Vineyards | Winery and Cave | Site exploration, geotechnical report, cave feasibility |
| Oakford Vineyards | Winery and Cave | Project feasibility and preliminary design, geotechnical study |
| Snowden Vineyards | Winery and Cave | Project feasibility |
| Bravante Vineyards | Winery and Cave | Site exploration, landslide hazard analysis and report, geotechnical report, preliminary cave design, construction observation |
| Adams Vineyards | Wine Cave | As-built construction evaluation |
| Phillips Winery | Winery and Cave | Project feasibility, site exploration and geotechnical report, portal/retaining wall design |
| Roncone Vineyards, AZ | Wine Cave | Project feasibility for project in Arizona |
| Freeman Winery | Cave Portal | Site exploration, geotechnical report and design, construction monitoring and QA/QC |
| James Family | Tunneled Garage and Shaft | Feasibility consultation and permitting assistance, site exploration, analysis, and underground design |
| Gargiulo Winery | Winery, Cave, Barrel Cellar, Ag Storage Barn and Residence | Design consultation, geotechnical exploration and report, portal/retaining wall design, construction observation |
| Kenzo Winery | Winery and Cave | Design consultation, geohazards evaluation and report, site exploration, geotechnical report, portal/retaining wall design |
| Raven Oaks Winery | Winery and Cave | Project feasibility, preliminary cave design |

| Client/Owner | Project | Services |
|--|--|--|
| Boeschen Vineyards | Underground Winery and Portal | Design consultation and consultation during construction, cave support design, geotechnical study, portal design |
| Freemark Abbey (JFWI) | Wine Cave | Project feasibility, conceptual design |
| A.V. Investors | Winery and Cave | Project feasibility |
| Six Sigma Ranch and Vineyards | Winery, Cave, and Portal | Site exploration, geotechnical report and portal/retaining wall design, special inspection |
| Bull Family | Private Cave and Portal | Project feasibility, design recommendations and consultation during construction |
| Phelps Vineyards | Winery | Shotcrete retaining wall design, special inspection |
| Fleming Winery | Winery, Cave, and Portals | Project feasibility, design consultation, site exploration, geotechnical report, tunnel and portal design, construction observations, and special inspection |
| Vineyard 7 & 8 | Winery, Cave, and Portals | Design, construction observations and consultation, and special inspection |
| Kongsgaard | Winery and Cave | Project feasibility |
| Oakdale Irrigation District | Cape Horn Water Tunnel | Evaluation of historic tunnel conditions and rehabilitation design, plans and specifications, construction management |
| Richard Family | Tunneled Garage | Project feasibility |
| Deister Family | Private Cave | Project feasibility |
| Pine Ridge Winery | Wine Cave | Tunnel support remediation and rehabilitation consultation |
| Gainey Vineyard | Wine Cave and Portals | Project feasibility, design and report, construction management consultation |
| Ehren Jordan Wine Cellars/ Failla Wines | Underground Winery, Cave, and Portals | Cave and portal/site shotcrete wall value engineering and design, construction monitoring, special inspection |
| Frog Hollow | Wine Cave | Repair feasibility |
| Stocker Estate | Private Cave | Project feasibility |
| Skipstone Ranch | Underground Winery | Project feasibility |
| North Winery | Wine Cave and Portals | Project feasibility, design, geotechnical report, construction consultation |
| Fountain Grove Round Barn | Wine Cave, Portals, and Elevator Shaft | Project feasibility, site exploration, design analysis and report, construction drawings |
| Lindstrom Winery | Underground Winery | Project feasibility, design consultation, contractor selection assistance |
| Lookout Ridge Winery | Wine Cave and Portals | Evaluation of existing conditions |
| East Bay Regional Park District- Black Diamond Mines | Underground Mine Tour Route | Site evaluation, route selection, ground control measures, design, and construction cost estimate |

| Client/Owner | Project | Services |
|--------------------------------|------------------------------------|--|
| Merced Irrigation District | Water Tunnel | Rehabilitation and improvement evaluation |
| Chappellet Winery | Wine Cave | Project feasibility and preliminary design |
| Sage Hill Vineyards | Winery, Cave, and Portals | Project feasibility, design, landslide hazard analysis, geotechnical exploration and report, construction consultation |
| Somerston Winery | Winery and Cave | Project feasibility, preliminary tunnel design, site exploration, geologic hazard study, geotechnical report |
| Meadowood Resort | Hospitality Cave, Drainage Tunnel | Project feasibility and preliminary design, rehabilitation of historic tunnel |
| Nemerever Residence and Winery | Wine Cave and Portal | Project feasibility, tunnel design, site exploration, portal design, construction observations and special inspection |
| Charlie Havill Winery | Wine Cave | Project feasibility and preliminary design |
| Olney Wine Caves | Wine Cave and Portal | Project feasibility, tunnel design, site exploration, portal design, construction observations and special inspection |
| Heitz Wine Cellars | Wine Cave | Project feasibility and preliminary design, site exploration |
| Confidential | Wine Cave and Portal | Expert services for construction litigation case |
| Chehalem Winery, OR | Wine Cave and Portals | Project feasibility, tunnel design, consultation, construction management |
| Cimarossa Winery | Winery and Cave | Project feasibility and tunnel and portal design, geotechnical report, construction management |
| Maldonado Winery | Wine Cave and Portal | Site exploration, geotechnical report, portal design, tunnel design consultation, special inspection |
| One True Vine | Wine Cave | Project feasibility |
| Drum Canyon Vineyards | Wine Cave, Portals, and Shaft | Project feasibility, tunnel design and report |
| Barnett Winery | Wine Cave and Portals | Geotechnical report, portal and tunnel design, construction observations |
| Pina Cellars | Wine Cave | Project feasibility and preliminary design consultation |
| Confidential | Winery and Cave | Project feasibility, preliminary design consultation, cave and shotcrete wall design, construction consultation and observations |
| Confidential | Wine Cave | Expert service for construction litigation case |
| Quady North, OR | Wine Cave and Portals | Project feasibility, tunnel design and report, construction management |
| Confidential | Underground Storage Facility | Design, plans and specifications for tunnel rehabilitation |
| Confidential | Underground Music/Concert Facility | Project feasibility and preliminary construction cost estimate |

| Client/Owner | Project | Services |
|-------------------------------|--|--|
| Presqu'île Winery | Wine Cave, Shaft and Shotcrete Wall | Project feasibility, site exploration, design, construction plans, construction consultation and observations |
| Cornell Winery | Wine Cave and Portals | Tunnel design consultation, tunnel construction plans, shotcrete wall design |
| Scully Winery | Winery and Cave | Project feasibility and preliminary design |
| M. T. Bottles | Winery and Cave | Project feasibility |
| Stanford University | Practice Gym Access Tunnel | Design, plans and specifications for tunnel permitting and construction, construction observations |
| Castlevale Winery | Winery and Cave | Project feasibility, geohazard study |
| Continuum Winery | Winery and Cave, Portals, Water Storage Tunnel, Access Roads | Project feasibility, site exploration, geotechnical report, cave and portal design, construction observations |
| Fossanova Vineyard | Winery and Cave | Project feasibility, site exploration |
| Feathered Horse Winery | Cave and Shotcrete Walls | Project feasibility, geotechnical engineering, design, construction plans, construction observations, special inspection and materials testing |
| Wright Winery | Underground Winery | Project feasibility and preliminary design |
| Hill House Estate | Private Cave and Portals | Site exploration, design reports, construction plans, construction observations, special inspection and materials testing |
| Vineyard 22 | Underground Winery | Project feasibility and preliminary design |
| Tri-Dam Hydroelectric Project | Shaft Rehabilitation | Site investigation and repairs recommendations |
| Bremer Family Winery | Wine Cave and Portals | Technical advisor and construction management |
| Badger Mountain, WA | Wine Cave | Project feasibility, preliminary design report |
| Oakville Grade Winery | Winery, Wine Cave and Portals | Project feasibility, site exploration, geotechnical report, preliminary cave design, construction observations |
| Tri-Dam Hydroelectric Project | Tulloch Powerhouse Unit 3 Shoring | Contractor's temporary shoring design engineering and construction observations |
| Knez Winery | Wine Cave | Project consultation for cut/cover barrel room |
| Placer County Water Agency | Ragsdale Water Tunnel | Rehabilitation evaluation, drawings and specifications, construction management |
| Harlan Estate | Wine Cave | Improvements consultation and engineering |
| U.S. Office of Surface Mining | Mine Hazard Abatement | Exploration, design and construction observations for abandoned underground mine hazards |
| Beemiller and Associates | Wine Cave | Project feasibility and conceptual design |
| Krupp Brothers Estates | Wine Cave | Project feasibility |
| Morlet Wines | Abandoned Wine Cave | Site investigation |

| Client/Owner | Project | Services |
|-------------------------------|--------------------------------|--|
| Bibliowitz | Wine Cave | Project feasibility |
| Confidential | Landslide | Temporary and permanent repairs |
| Epoch Estate Winery | Wine Cave and Portals | Project feasibility, site exploration, geotechnical report, design |
| Araujo Estate | Wine Cave | Existing cave improvements recommendations |
| Castillo de Amorosa | Wine Cave and Portal | Site investigation, geotechnical report, design, construction management, construction observations |
| Hernandez Estate | Private Cave | Project feasibility |
| Kitoko Vineyard | Winery and Cave | Project feasibility, site exploration, design |
| McEvoy Ranch | Winery and Cave | Project feasibility, site exploration, preliminary design |
| Odette Winery | Wine Cave and Shotcrete Walls | Rehabilitation of existing wine cave, project consultation, site exploration, design, construction observations |
| Black Diamond Mine | Hazel Atlas Portal | Project consultation, engineering and design |
| Allen Land Design | Personal Use Tunnel | Project feasibility |
| Araujo Estate/Axiom Engineers | Wine Cave | Rehabilitation of existing wine cave, project consultation |
| Cairdean Vineyards | Wine Cave and Portals | Site investigation, geotechnical report, cave and shotcrete wall design, construction observations |
| Davis Residence | Shotcrete Wall and Cave | Site investigation, geotechnical report, shotcrete wall and cave design, construction observations |
| Hamel Family Winery | Wine Cave and Portals | Site investigation, geotechnical report, cave and shotcrete wall design, construction observations |
| Mihalcheon Residence | Garage Tunnel | Project feasibility and consultation |
| Oak Mountain Winery | Wine Cave and Portals | Project feasibility and conceptual design, geohazards study, cave and shotcrete wall design, construction observations |
| One Rincon Hill | Shoring | Temporary shoring design |
| Black Diamond Mine | B North | Underground mine stabilization |
| L'Aventure Winery | Wine Cave and Portals | Site investigation, geotechnical report, cave and shotcrete wall design, engineering services during construction |
| Placer County Water Agency | Pulp Mill Tunnel | Rehabilitation evaluation of existing tunnel |
| Black Diamond Mine | Retreat Mine | Evaluation of conditions, consultation and design, construction observations |
| Chateau 15 | Wine Cave and Portals | Site investigation, geotechnical report, design, construction observations |
| Fournier Residence | Private Cave, Shaft and Portal | Site investigation, geotechnical report, design, construction observations |

| Client/Owner | Project | Services |
|----------------------------------|---|---|
| Mayacamas Vineyards | Wine Cave and Portal | Project consultation, preliminary design |
| Mountain Peak Vineyards | Winery, Cave and Shotcrete Walls | Site investigation, geotechnical report, cave and shotcrete wall design |
| Ramey Wine Cellars | Wine Cave and Portal | Site investigation, feasibility report, hydrogeology study, permitting support |
| Sinegal Estate Winery | Wine Cave and Shotcrete Walls | Site investigation, landslide hazard evaluation, geotechnical report, cave and shotcrete wall design, construction observations |
| Whitehall Lane Winery | Wine Cave and Portal | Initial feasibility |
| Arbuckle Winery | Wine Cave | Project feasibility |
| Confidential | Underground Art Gallery | Project feasibility and preliminary design |
| Chapin Vineyards | Winery and Cave | Project feasibility and landslide hazard assessment |
| Yountville Hill Winery | Underground Winery, Shafts, Shotcrete Walls, Tasting Room | Project feasibility and preliminary design |
| AS Vineyards | Wine Cave | Project feasibility |
| Roth Winery | Wine Cave and Portals | Site exploration, geotechnical report, design, construction observations |
| Starfield Vineyards | Wine Cave | Project feasibility |
| Fort Ross Winery | Wine Cave | Initial feasibility |
| Black Diamond Mine | Big Stairs | Project feasibility, design, engineering and construction monitoring |
| Sierra Railroad | Railtown Access Tunnel and Shaft | Project feasibility and preliminary design |
| von Strasser Highway 29 | Wine Cave and Shotcrete Wall | Project feasibility and conceptual design |
| Vintage Oakville Cross Residence | Shaft and Shotcrete Wall | Feasibility, design and construction observations |
| Woolls Ranch | Shotcrete Walls | Site investigation, geotechnical report, design, construction monitoring |
| Rice Residence | Wine Cave | Initial feasibility |
| Villa Aix Vineyards | Wine Cave | Initial feasibility, geotechnical report, design |
| Darms Lane Winery | Wine Cave and Portals | Initial feasibility, conceptual design, site investigation |
| The Hilt Winery | Winery | Initial consultation, wine cave and shoring, site investigation, geotechnical report, debris flow mitigation |
| Denton Residence | Tunneled Garage | Geotechnical report, preliminary design |
| Perch | Private Use Cave and Cellar | Initial feasibility, geotechnical report, cave and portal design, engineering and construction observations, materials testing |

| Client/Owner | Project | Services |
|---|---|---|
| Promise Wines | Wine Cave | Initial feasibility, site investigation |
| Few and Far Between | Wine Cave | Initial consultation, geotechnical investigation, preliminary design, geohazards analysis |
| Hacienda de las Flores | Wine Cave | Initial feasibility |
| Ciminelli Winery | Wine Cave | Initial feasibility |
| Aloft Winery | Wine Cave and Portals | Initial feasibility, site investigation, geotechnical and geohazards report, tunnel design consultation |
| Saggio Hills Resort and Residences | Tunnel and Shotcrete Walls | Initial feasibility, geotechnical report, cave and portal design, retaining wall design |
| Teucer Winery | Wine Cave and Portals, Water Storage Tunnel | Project consultation, cave and shotcrete wall design, site investigation and tunnel design, construction observations |
| Silver Cloud Winery | Shotcrete Walls | Geotechnical report, design, construction observations |
| Hard Six Winery | Wine Cave | Initial feasibility, preliminary design |
| Twain Harte Lake Association | Multiple Arch Concrete Dam | Emergency repairs investigation, design, construction observations and management |
| Twain Harte Community Services District | Pipeline | Rock slope stabilization investigation, repairs design, construction observations |
| Napa Gateway | Winery | Geotechnical investigation, geohazard investigation |
| Le Mélange | Wine Cave | Feasibility consultation |
| Henderson Residence | Tunneled Garage | Feasibility consultation |
| The Vineyard House Winery | Wine Cave and Portals | Feasibility and conceptual design |
| Italics Winery | Wine Cave and Shotcrete Walls | Construction consultation, design, materials testing and special inspection |
| The Culinary Institute of America – Greystone | Storage Caves and Retaining Walls | Geotechnical investigation, design, consultation |
| Meadowood Lane Winery | Access Road and Water Tanks | Geotechnical investigation, design, inspection |
| Oakdale Irrigation District | Canal Segment 4 Long Term Repairs | Evaluation of conditions, assessment of findings, conceptual design, 100% design and construction bid documents, pre-construction and bid support services, construction management, observation and inspection |
| Top Shed Vineyards | Wine Cave Completion | Design cave and shotcrete wall, update geotechnical report, engineering and construction services |
| Tri-Dam Project | Tulloch Lake | Reservoir rim landslide: Site hazard evaluation and consultation |

| Client/Owner | Project | Services |
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| Tri-Dam Project | Tulloch Dam Spillway | Emergency mitigation support, design, short-term repair construction observation, long-term repair design concepts, 50% preliminary design, construction cost estimate, litigation support |
| Northern California Power Agency | North Fork Tunnel | Evaluation and recommendations, repair design, construction monitoring, materials testing |
| Dragonfly Investment Group | Black Mountain – Spring Tunnel | Evaluate existing conditions of tunnel, recommendations and design |
| Umbra Winery, TX | Wine Cave | Initial consultation, conceptual design |
| Gandona Winery | Winery Expansion | Project feasibility |
| Sisterdale Vineyards, TX | Wine Cave | Initial consultation, conceptual design |
| Modesto Irrigation District | Various Tunnels | Initial evaluation of current conditions |
| Anderson's Conn Valley Vineyards | Wine Cave and Portals | Evaluation of existing conditions, repairs design, construction bidding assistance |
| Calaveras County Water District | White Pines Dam | Annual inspection, instrumentation evaluation, repair recommendations |
| Chateau de Montrichard | Winery and Cave | Project feasibility |
| Schramsberg Winery | Historic Cave | Emergency repairs design and construction observations, annual repair maintenance support |
| Shutters Winery | Wine Cave | Initial consultation, conceptual design, geotechnical engineering study, design cave and shotcrete retaining wall |
| Oakville Winery | Winery and Cave | Initial consultation, geohazards analysis, water availability analysis |
| Tuolumne Utilities District | O'Neil Tunnel | Initial consultation, hazard evaluation, site investigation |
| Antelope Valley Ranch | Cheese Aging Cave | Initial consultation, conceptual design |
| Kitoko Vineyard | Winery and Cave | Initial consultation, conceptual design, geotechnical and engineering design |
| Vine Cliff Winery | Cave Abandonment | Initial consultation, evaluation of conditions, project feasibility, design of remedial measures, cave abandonment engineering services |
| KB Home | Mine Hazard Abatement | Mine closure (backfill with cellular grout) design and construction observations |
| Glen Cove | Shotcrete, Pier and Conventional Retaining Walls | Consultation, site exploration, geotechnical report and engineering design, construction observations |
| Greenfield Residence | Shotcrete and MSE Retaining Walls | Consultation, site exploration, geotechnical report and engineering design |
| Tri-Dam Project | Access Roads | Emergency repairs including bypass, embankment and retaining wall design and construction observations |

| Client/Owner | Project | Services |
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| Signorello Winery | Winery Replacement, Wine Cave and Portals | Consultation, site exploration, design and permit submittal support, construction observations and materials testing |
| Tuolumne Utilities District | Lakewood Dam | Repairs design for flood-damaged dam and spillway |
| Various Dam Owners | Dam Inundation Studies | State-mandated potential flooding hazard analysis for existing dams |
| Confidential | Private Wine Cave | Initial consultation |
| Montage Healdsburg | Shotcrete Walls | Conceptual design, site exploration, geotechnical report, engineering design, construction monitoring and observation |
| Alexander Valley Vineyards | Wine Cave Expansion | Site exploration and reporting, engineering design, permit support |
| Tesson Vineyards | Underground Winery, Cave, Portals | Conceptual design, site exploration, feasibility and construction cost estimating |
| Lauper Residence | Residential Cave and Wildfire Refuge | Initial consultation and conceptual design, site exploration and report, engineering design, construction observation and testing |
| Farella Vineyards | Wine Cave and Portals | Initial consultation and conceptual design, water availability analysis |
| Harlan Estate | Site Development | Geotechnical engineering feasibility of site development, site exploration and geotechnical report |
| Booker Wines | Wine Cave, Portal and Shaft | Feasibility, conceptual design, cave and portal design, elevator shaft design, shotcrete wall design, construction observation |
| Stull Residence | Existing Residential Cave, Retaining Wall and Water Storage Tunnel | Fire damage assessment and engineering consultation during repairs and reconstruction |
| Colgin Cellars | Wine Cave and Portals | Initial consultation and conceptual design |
| White Rock Vineyards | Wine Cave and Water Availability Analyses | Initial consultation and conceptual design work for potential wine cave, water availability analyses |
| Walt Wines | Wine Cave and Shotcrete Wall | Site investigation, geostructural design |
| Chinatown Station, San Francisco MTA | Central Subway | Assisted contractor with differing site conditions claim |
| Cavedale LLC | Wine Cave | Forensic data compilation and analyses for permitting support |
| Toogood Winery | Wine Cave Evaluation | Evaluate structural condition of wine cave prior to property acquisition |
| Laujor Estate Winery | Wine Cave and Portals | Portal design and cave construction observations |
| Bergman Family Winery | Underground Winery and Cave | Feasibility, site exploration and report, design, construction observations, materials testing |

| Client/Owner | Project | Services |
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| Kramlich Residence | Residential Parking Tunnel | Feasibility, conceptual design, site exploration, design and permit support |
| Black Diamond Mines Regional Preserve | Coal Mine Exhibit | Consultation, excavation and ground support design, construction observations |
| Northern California Power Agency | Collierville Tunnel and Shafts | Consultation, ROV inspection observations of existing underground facilities |
| Alma Rosa Winery | Wine Cave | Initial consultation |
| Santa Cruz Big Trees Pacific Railway | Mission Hill Tunnel | Rehabilitation design for historic tunnel, construction observation |
| Constant Winery | Wine Cave | Initial consultation and feasibility evaluation |
| Jericho Canyon Winery | Wine Cave and Shaft | Cave expansion feasibility and conceptual design |
| Messier Wine Properties | Wine Cave | Consultation and conceptual design, site exploration |
| Morlet Family Vineyards | Wine Cave | Conceptual design and geologic assessment |
| Phelps Vineyards | Winery | Permanent shoring wall design and construction observation |
| Alexander Mountain Estates – Jackson Family Investments | Residential Tunnel | Site investigation, consultation and conceptual design |
| Oakdale Irrigation District | Tunnels 3, 4 and 8 | Evaluation, preliminary rehabilitation design, construction cost estimate |
| South San Joaquin Irrigation District | Woodward Dam | Evaluate options for spillway alternatives |
| Vice Versa Winery | Wine Cave and Portals | Feasibility, site exploration and report, geologic hazards evaluation and report, shotcrete wall and cave design |
| Daou Patrimony Winery | Wine Cave | Consultation |
| Kenefick Ranch Winery | Wine Cave | Consultation |
| Brouillard Winery | Wine Cave | Consultation |
| Marciano Estate | Wine Cave | Consultation and conceptual design |
| Petrified Forest Associates | Historical Tunnel | Evaluate conditions for potential rehabilitation |
| Justin Vineyards and Winery | Wine Caves | Evaluate conditions for potential rehabilitation |
| Private Client | Underground Garage and Vehicle Storage | Consultation and project feasibility |
| Modesto Irrigation District | Tunnels and Canals Rehabilitation | Consultation, evaluation and improvement recommendations and cost estimates |
| Private Client | Water Storage Tunnel | Consultation, site exploration and report, tunnel and portal design |
| Stotesbery Residence | Wildfire Refuge Tunnel | Site exploration, design, permitting and construction observation |