SAN LUIS OBISPO COUNTY

LAS PILITAS QUARRY PROJECT
CONDITIONAL USE PERMIT AND RECLAMATION PLAN

PROPOSAL

AUGUST | 2010

Lead Agency
San Luis Obispo County, Department of Planning and Building

BENCHMARK RESOURCES

SAN LUIS OBISPO COUNTY

LAS PILITAS QUARRY PROJECT
CONDITIONAL USE PERMIT AND RECLAMATION PLAN

PROPOSAL

AUGUST | 2010

Lead Agency
San Luis Obispo County, Department of Planning and Building
976 Osos Street, Room 300, San Luis Obispo, California 93408-2040

Preparer
Benchmark Resources
4990 Hillsdale Circle, Suite 400, El Dorado Hills, California 95762

CONTENTS

1.0 INTRODUCTION 1

2.0 PERSONNEL AND EXPERIENCE 2

2.1 Benchmark Resources Team Overview 2

2.2 Key EIR Team Members 4

2.2.1 Benchmark Resources Team Members 4

2.2.2 Subconsultants 6

2.2.3 Other Staff and Office Facilities 9

2.3 Example Projects/Work Samples 10

3.0 COORDINATION 11

4.0 TASKS, TIMETABLE, AND COST ESTIMATE 12

4.1 Tasks 12

4.2 Timetable 25

4.3 Cost Estimate 26

5.0 OBJECTIVITY 26

6.0 INDEMNIFICATION AND CERTIFICATES OF INSURANCE 26

TABLES

Table 1 Key EIR Team Personnel
Table 2 Benchmark Resources Lead Agency References
Table 3 Issues, Approach, and Assumptions of Environmental Evaluations

FIGURES

Figure 1 Representative Statewide Mining Experience
Figure 2 EIR Team Roles and Duties

LIST OF APPENDICES

Appendix A-1 Benchmark Resources Resumes
Appendix A-2 Subcontractor Resumes
Appendix B Representative Mine EIRs Summary Descriptions
Appendix C Las Pilitas Quarry Preliminary Schedule
Appendix D Cost Estimate

PROPOSAL

1.0 INTRODUCTION

Benchmark Resources is a multi-disciplinary environmental planning firm specializing in environmental analysis and permitting services, specifically as they relate to mining and associated environmental resources and projects. Our primary areas of expertise include resource and land use planning, public participation and lead agency staffing services, environmental impact analysis, environmental monitoring and compliance, mitigation monitoring, and mining and reclamation planning. The manner in which we complete these services benefits the common interests of both agencies we serve and various industries. Our philosophy for this work is to reach permitting solutions through public-private collaboration and professional participation.

As a specialized planning and environmental consulting firm that is focused on mineral resources, the environmental consequences of mining, and compliance with the SMARA and other applicable statutes and regulations, Benchmark Resources has a proven history of preparing successful environmental impact evaluations, preparing and reviewing permitting applications and reclamation plans, and assisting agency staff in application processing for all types of mining applications throughout California. We have prepared environmental impact evaluations under the CEQA on precious metal, industrial minerals, and aggregate mines, including some of California's largest and most controversial mining projects.

Benchmark Resources staff have been assisting public agencies at the federal, state, county, city, and local levels fulfill their EIR documentation and processing needs for

over 30 years. Our relationships span over 60 agencies statewide, with ongoing service in nearly 40 counties (see Figure 1, Representative Statewide Mining Experience). Our staff is led by senior-level individuals with long-term experience in mine and reclamation permitting, environmental resources, regulatory compliance, and project development. We thoroughly understand the objectives of agency staff and decision-makers and our role in assisting them. The Benchmark Resources staff has an extensive record of success for the preparation of environmental documentation on mining projects, which are typically "high profile" projects that are often challenged by opponents. We pride ourselves in providing agency confidence in the permitting process through the consistency and reliability of our work. In addition, our experience supporting Lead Agencies in completing as many as 150 SMARA inspections annually provides insight into the feasibility of conditions of approval and mitigation measures.

Benchmark Resources is comprised of staff that are highly regarded experts in CEQA compliance and mineral resource planning. The Key EIR Project Director and Principal, Bruce Steubing and David Brown, have over 40 years of cumulative experience working in the environmental planning business. Bruce Steubing, who will serve as the Project Director on this EIR, is an environmental land use attorney with over 16 years of experience. Resumes are provided in Appendix A-1, Benchmark Resources Resumes.

2.0 PERSONNEL AND EXPERIENCE

2.1 Benchmark Resources Team Overview

The preparation of an EIR for a hardrock aggregate mining operation of this magnitude is a complex task. Consequently, the EIR must address a broad range of concerns, each at a level of analysis commensurate with the anticipated severity of impacts and the likelihood of occurrence. Benchmark Resources has extensive experience with the environmental issues involved in mining projects, environmental review documentation, and compliance with the California Surface Mining and Reclamation Act (SMARA). Our experience with the anticipated "hot button" issues of greenhouse gases and air quality in general, hydrology, traffic, aesthetics, and biology resulting from the Project will facilitate our ability to "hit the ground running" if selected as the EIR consultant. Benchmark Resources is committed to assisting County staff throughout the EIR process to ensure consistency with the requirements of all applicable state law, specifically CEQA and SMARA, and preparing legally defensible environmental documents to the Planning Commission and Board of Supervisors.

Benchmark Resources' objective is to assist San Luis Obispo County (County) with the preparation of an Environmental Impact Report (EIR) that complies with the California

Environmental Quality Act (CEQA), and meets local and regional planning policy requirements. Benchmark Resources seeks to prepare, by contract with the County, an EIR that meets the legal requirements of a complete, adequate, unbiased, and objective document that evaluates the proposed Las Pilitas Quarry Project (Project). The function of the EIR will be to serve as an informational document for the Project proponent, for the public, and for County decision-makers.

Benchmark Resources has organized a team of managers and technical support to conduct the range of tasks necessary for the Las Pilitas Quarry Project. Given that our specialty and practice focus are mining projects, we use the services of subcontractors experienced in mining issues and with whom we have long-term established relationships. With a few exceptions, we have maintained this approach for the Las Pilitas Quarry Project and utilized predominately the same subcontractors that performed technical evaluations for most of the environmental documents prepared by our Benchmark Resources team.

We are confident in the ability and experience level of our staff and subcontractor technical experts to prepare industry standard technical studies and provide peer reviews of studies and plans submitted by the Applicant that will withstand the test of public scrutiny that typically accompanies mining EIRs. Table 1, Key EIR Team Personnel, provides the name of the firm and primary contact for the Project.

TABLE 1
KEY EIR TEAM PERSONNEL

Firm	Primary Contact
Benchmark Resources	Bruce Steubing
EMKO Environmental (Hydrology)	Andrew Kopania
Golder Associates (Geotechnical and Air Quality)	Ken Haskell (Geotechnical) Brian Patterson (Air Quality)
Bollard Acoustical Consultants (Noise)	Paul Bollard
Peters Engineering (Traffic/Public Safety)	Dave Peters
Berryman Ecological (Biological Resources)	Ellen Berryman
Analytical Environmental Services (Cultural Resources)	Melinda McCrary

2.2 Key EIR Team Members

Benchmark Resources will provide the lead role in EIR preparation, and will assure CEQA compliance and technical adequacy of the EIR. Our staff members have worked together in the same or similar roles for other mining EIRs and EISs. Figure 2, EIR Team Roles and Duties, is an organization chart showing key team members and their responsibilities. The organization chart provides the specific responsibilities of the key personnel along with the anticipated total effort, expressed in percentages of effort to be provided by each member of the Project team. A summary on each of the Benchmark Resources key team members is provided below.

2.2.1 Benchmark Resources Team Members

Bruce Steubing – Project Director

Mr. Steubing, a Principal of Benchmark Resources, has over 16 years of experience as an attorney and Project Director, specializing in the preparation and processing of environmental documents and lead agency staff services. He is responsible for the preparation and approval of countless environmental documents (EISs and EIRs) for large, complex, and controversial projects. These projects have resulted in experience in a wide range of development projects including mining, oil pipelines, industrial, commercial and residential developments. Mr. Steubing manage projects requiring preparation of technical documents, development of mine plans, and formulation of strategies for legal, environmental, and permitting compliance. He is Benchmark Resources' specialist in regulatory compliance and permitting for mineral resource development acting as contracted lead agency planning staff.

As Project Director for the preparation of the EIR, Mr. Steubing will oversee every aspect of the Project with his typical tasks and duties including, but are not limited to:

- Main County contact and overall director of EIR program and strategy development
- Review and become familiar with planning and environmental documentation, maps, and other aspects of the Las Pilitas Quarry Project;
- Coordinate with County Staff in the organization of field trips and workshops for public and decision-makers;

- Contact and coordinate with subcontractors and County Staff for necessary environmental baseline and peer review of Applicant prepared technical evaluations;
- Primary contributing author/editor of the Administrative Draft and Draft EIR, consistent with State law, San Luis Obispo County requirements, and any other governing law;
- Development and refining of mitigation measures for the Project as provided by County Departments and other agencies;
- Review agency and public comments received on Draft EIR and primary author/editor of the Administrative Final EIR and Final EIR Response to Comment;
- Participate in meetings with County Staff and Applicant; and
- Attend and present EIR at public meetings.

Andrew White – Project Manager

Mr. White has prepared and reviewed numerous environmental documents on a variety of complex and difficult mining projects. He has managed projects requiring preparation of technical documents, mine and reclamation plans, permitting and environmental documentation, and performed Lead Agency permitting, as well as environmental and land use assistance throughout the state. He has also developed expertise in CEQA issues through previous employment at the California State Resources Agency where his regulatory knowledge was applied to updates of the CEQA Guidelines.

As Project Manager for the preparation of the EIR, Mr. White will be involved in all aspects of the Project assisting the Project Director, including:

- Review of and familiarity with Applicant-supplied technical documents, Project Description, Reclamation Plan and applicable County policies;
- Assist in coordination with technical subconsultants and County staff in preparation of technical evaluations;
- Contributing author/ editor of the Administrative Draft and Draft EIR and review of subcontractor-prepared EIR sections
- Review and agency and public comments on Draft EIR and assist in drafting of response to comments for Final EIR;

- Assist in preparing for and attending meetings and hearings; and
- Quality control and manager for word processing and document production/preparation.

David Brown – Principal

Mr. Brown, a Principal of Benchmark Resources, is recognized as a statewide leader in mining consulting, with extensive experience in SMARA, CEQA and NEPA, including almost every type of mining operation (e.g., hardrock quarry, off-channel, surface, in-stream, etc.) in the state. Mr. Brown has been involved with mining projects for more than 25 years and with land use planning for nearly 30 years. He has worked on more than 300 mining projects and has prepared mining documents for more than 40 jurisdictions in California.

As Principal, Mr. Brown will oversee work to be completed by our senior in-house team and technical specialists. He will review the Project Description and Reclamation Plan, take an advisory role in the preparation of the Administrative Draft and Draft EIR, participate in meetings with County staff, and assist County staff with other project management support, as needed by the County.

2.2.2 Subconsultants

Environmental support work for this Project would be prepared by a team of individuals that is highly experienced in the preparation of CEQA environmental impact documentation for mining projects. Subcontractors with which we choose to work are experienced professionals familiar with local environmental conditions. Our team is actively involved in preparing environmental evaluations for other lead agencies and is familiar with working together in preparing such work in an efficient, timely, and technically supportive manner. Subcontractor resumes are provided in Appendix A-2, Subcontractor Resumes.

Traffic

Peters Engineering is a multi-discipline firm that has provided various traffic-related engineering services in California and other western states for about 10 years. Peters Engineering is fully staffed with services including municipal engineering, civil engineering, traffic and transportation engineering, and site facilities engineering. Peters Engineering has proven excellence and success in Federal, State, and Local Agency approved transportation projects that require

multi-agency coordination, design schedules, and budget restraints. Peters Engineering has conducted numerous traffic reports in various jurisdictions in the central valley and Sacramento for mining operations and related traffic and circulation sections of the EIRs.

In addition to the experience discussed above, Peters Engineering has participated in the following projects:

- **Traffic Analysis:** Proposed Autozone Development, Broad Street and Orcutt Road (San Luis Obispo, CA);
- **Traffic Signal Design:** Intersection of Broad Street and Orcutt Road (San Luis Obispo, CA); and
- **Traffic Signal Design:** Intersection of Los Osos Valley Road and South Bay Boulevard (Los Osos, CA).

Hydrology and Water Quality

EMKO Environmental, lead by Dr. Andrew Kopania and principal of EMKO Environmental, will be the lead Hydrologist for the Las Pilitas Quarry EIR. Dr. Kopania has over 20 years of experience in project management, regulatory agency interaction, and hydrology studies. He holds a doctorate degree in Environmental Science and Engineering, specializing in groundwater. Dr. Kopania is also a California Professional Geologist and a California Certified Hydrogeologist. His project experience includes detailed groundwater studies for aggregate mining projects and for contaminant studies. Mining-related studies included water resource evaluations, monitoring of site groundwater conditions, compliance with waste discharge requirements and other regulatory permit conditions, and evaluation of potential impacts for CEQA analyses. These mining-related studies include existing and proposed hardrock quarries in Madera, Fresno, Lake, Sacramento, Santa Cruz, San Benito, Monterey, and Imperial Counties. Dr. Kopania has worked with the Central Coast RWQCB and was the lead Hydrologist for the Chevron San Ardo Pipeline EIR, located north of the Las Pilitas project.

Geology and Soils and Air Quality

Golder Associates is a global leader in the fields of geotechnical and environmental impacts studies, conducting hundreds of studies, bankable documents, designs, community consultation, construction supervision and

major geotechnical and environmental impact investigations in mining conditions around the world. Golder Associates strives to bring innovative solutions with service that is seamless and extends over the life of the mine. Golder focuses on a team approach and provides continuity with long-standing, experienced staff. By building an understanding of their clients' needs and of the specific environments in which they operate, Golder developed integrated global teams with unique expertise offering Ore Evaluation Services, Sustainable Development Practices, Mine Waste and Environmental Management, Rock Mechanics, and Waste Technology Solutions. In particular to California, Golder Associates has prepared geotechnical and environmental evaluations, blasting practice reviews, soil and seismic analysis for some of California largest or most complex mining sites.

Golder has extensive experience managing and conducting environmental impact assessments in support of EIRs and EISs, including air quality assessments, air dispersion modeling, human health risk assessments, emissions inventories, permitting, data management, regulatory review, and visibility analyses. Golder has recently worked on mine-related EIR air quality impact assessments in California include existing and greenfield projects in Fresno, Nevada, Merced, Lake, and Shasta counties.

Biological Resources

Berryman Ecological is a small, woman-owned business owned by Ellen Berryman, a biologist and project manager. She has 25 years of professional biological experience in California. Her expertise is in identifying biological resource issues and developing and implementing conservation solutions. She has a well-rounded background in both the public and private sector with projects involving biological surveys and investigations, designing mitigation strategies, technical writing, NEPA and CEQA compliance, state and federal permitting, and habitat conservation planning.

As an independent consultant, Ms. Berryman has performed biological resource surveys and assessments for projects in many environmental settings throughout California. She has also prepared biological resource sections of CEQA documents for housing development, mining, and recreational projects.

Noise

Bollard Acoustical Consultants specialize in the preparation of noise analyses for the mining industry. In recent years, Paul Bollard has conducted noise and/or vibration analyses for over 50 mining-related projects. Many of these projects included CEQA level of analysis of impacts associated with new mining areas, or expansion of existing areas. Bollard Acoustical Consultants utilize state of the art noise and vibration-measurement equipment and software to quantify and assess impacts related to mining noise and/or vibration.

Cultural Resources

Analytical Environmental Services is a multidisciplinary consulting firm that specializes in environmental impact analysis and the preparation of compliance documentation. The AES cultural resources unit is comprised of specialists who meet the *Secretary of the Interior's Professional Qualification Standards* for archaeology, history, and architectural history. Our staff has an in-depth working knowledge of cultural resources standards, guidance, and regulations, including Section 106 of the National Historic Preservation Act (NHPA), the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), the California Public Resources Code (PRC), the Archaeological Resources Protection Act (ARPA), and the Native Graves Protection and Repatriation Act (NAGPRA).

Services provided by AES include background and archival research, cultural resource inventories, evaluation of cultural resources, archaeological site testing and data recovery, consultation with Native Americans, governmental agencies, and other interested parties, development of mitigation measures and treatment plans, laboratory processing and artifact analysis, and preparation of research designs, data recovery plans, and inadvertent discovery plans. AES has worked with Benchmark Resources on numerous cultural resource compliance projects for mining and mineral resource extraction projects, including the Power House Mine Project EIR, Lincoln Mine Permitting Project, and Empire Mine State Park Site Characterization and Remediation Project.

2.2.3 Other Staff and Office Facilities

In addition to the key individuals identified above, Benchmark Resources draws from a wealth of other on-staff experience. Staff members available to provide as-needed support for the Las Pilitas Quarry EIR include individuals with mine land reclamation

planning and implementation experience, experienced CEQA and NEPA specialists, and a technical writer and editor.

Benchmark Resources' El Dorado Hills office facilities were designed to meet all of the needs of project coordination and management. We employ state-of-the-art computers and maintain up-to-date software (Microsoft Office Suite, Microsoft Project, Adobe Acrobat, AutoCAD, ESRI ARC, Adobe Photoshop, and Adobe Illustrator). We send and receive Microsoft Word, PDF, tagged PDF, and other document formats daily. We are also fully AutoCAD- and GIS-capable.

Our support staff includes highly experienced professional Word Processing Specialists, an AutoCAD/GIS manager, graphic designer, and a Documents Manager, all with exceptional skill levels. This team takes pride in producing professionally written, edited, and organized documents with high-quality graphics.

2.3 Example Projects/Work Samples

Benchmark Resources staff has completed scores of environmental evaluations on mining projects over the past several years. Appendix B, Representative Mine EIRs Summary Descriptions, provides a summary of those Projects, key issues encountered/resolved, key staff (including subcontractors), and status of those projects. This should provide the County the confidence in Benchmark Resources' wide range of mining and resulting environmental issues and analysis by utilizing problem solving approaches and consistent team members and subcontractors who are experts in their field and mining situations.

Lead Agency contacts familiar with our relevant EIR work are provided in Table 2, Benchmark Resources Lead Agency References. Benchmark Resources understands well our role in providing an impartial, technically accurate and comprehensive EIR work products. Our professional understanding, ability to effectively coordinate with staff in a manner that does not unduly burden them and conflict with their other responsibilities, is essential. In addition, please contact any or all of our references, and inquire about our methods of operation in successfully negotiating the technical, political and other obstacles to keep the EIR process moving to completion in as cost effective and expedient manner as possible.

TABLE 2
BENCHMARK RESOURCES LEAD AGENCY REFERENCES

Lead Agency References
Briza Grace Sholars *Planner III* **559-262-4454** Fresno County Department of Public Works and Planning, Development Services Division 2220 Tulare Street, Sixth Floor Fresno, California 93721
Matthew Treber *Planner III* **559-675-7821** Madera County Resource Management Agency - Planning Dept. 2037 West Cleveland Avenue Madera, California 93637
Taven Kinison Brown *Senior Planner* **831-755-5173** Monterey County Planning Department 168 West Alisal, Second Floor Salinas, California 93901

3.0 COORDINATION

Benchmark Resources takes an active managerial approach to our EIR projects. This means that we make effective use of meetings, conference calls and email to get direction, resolve issues and report progress. We have budgeted for the meetings anticipated by the County for this Project. Such meetings and conference calls are typically preceded by an agenda from us, and a follow-up list of action items, responsibilities and timelines. Benchmark Resources, through its experience on similar mining projects, recommends monthly status conference calls or meetings to provide the County an update on current developments, information needs, and document development status.

Effective communication and coordination are key to management of an efficient EIR process. The team typically can involve many people (consultant team, planning staff and management, County Counsel, and sometimes applicant staff and counsel). Email, while immediate and relatively efficient, has limitations, primarily file size, and effective management of multiple versions of documents by numerous reviewers.

As a result, Benchmark Resources has begun using Microsoft Sharepoint for EIR projects, as it is a program that provides a singe-source website for transfer of all data, communication and document version control, at a single location. An example Sharepoint site for this project can be accessed with the information below:

Address: https://goto.resourcedesign.biz/sample

Login: resourcedesign/visitor
Password: new visitor *(please note the space between words)*

4.0 TASKS, TIMETABLE, AND COST ESTIMATES

4.1 Tasks

Based on the scope of work outlined in the Las Pilitas RFP and Benchmark Resources' experience on similar mining projects, we have developed a set of tasks that would provide the Las Pilitas Quarry Project with an environmental document that has analyzed all local and regional environmental issues in a consistent approach with other documents in the area. This approach, through the tasks outlined below, would illustrate the particular environmental impacts of the Las Pilitas Quarry Project while providing a baseline scenario, environmental analysis, and mitigation measures equivalent to the Project's identified potential and significant impacts. In the end, this will provide for a legally defensible environmental document that clearly identifies and addresses County policies, regulatory agency comments, and public concerns.

Given our firm's extensive mining project experience, the following tasks have been incorporated to outline Benchmark Resources' approach to the Las Pilitas Quarry Project:

- Task 1: Project Description, EIR Outline, and Style Guide;
- Task 2: Prepare Administrative Draft EIR;
- Task 3: Prepare Draft EIR;
- Task 4: Prepare Administrative Draft Final EIR;
- Task 5: Prepare Final EIR;
- Task 6: Meeting Attendance, Management, and Coordination;
- Task 7: Mitigation, Monitoring, and Reporting Program (MMRP); and
- Task 8: Findings.

Task 1 - Project Description, EIR Outline, and Style Guide

Draft Project Description

The purpose of this subtask is to prepare the draft project description based on the Applicant submitted CUP and Reclamation Plan Application adequate to meet CEQA requirements. Benchmark Resources will develop the following information for description:

- Regional and site specific location (including maps);
- Statement of Project need and objectives;
- Description of Project's technical and economic characteristics (including Project concept, phasing, facilities characteristics, construction, operation and closure); and
- Required permits and approvals.

Benchmark Resources will closely review all comments and responses received in relation to the NOP previously circulated by County, as well as the public scoping meeting.

In addition to development of a draft Project Description, these comments will further assist Benchmark Resources in determining the necessary scope for the Administrative Draft EIR. The draft EIR outline will include the following information:

- Environmental resource sections to be included for analysis;
- Thresholds of significance;
- Impact statements for issues identified for analysis;
- Cumulative project lists; and
- Alternatives identified for analysis.

EIR Outline and Style Guide

The EIR Outline and Style Guide will demonstrate Benchmark Resources' proposed organization of environmental topics and applicable appendices to the County, as well as its style/format recommendations for the EIR.

Task 2 - Prepare Administrative Draft EIR

Benchmark Resources will prepare an Administrative Draft EIR that complies with CEQA Guidelines and local land use procedures. Benchmark Resources will analyze the Project objectively and address all significant environmental issues in the EIR. The EIR will specifically address scoping concerns identified by Responsible and Trustee agencies, San Luis Obispo County Department of Planning and Building (and other applicable County departments), and the public. The EIR analysis will focus on establishing the existing Project baseline and degree of change that would occur if the Project were approved.

The objective of this task, which is broken up into seven key subtasks, is to conduct all required assessments and prepare mandatory EIR sections in conformance with the CEQA statute and CEQA Guidelines, as well as applicable County ordinances, and conventional protocols of the County and various agencies consistent with professional standards. Areas of investigation will include review of all CEQA-required subject matters, and potential impacts identified by the County and the responses to the NOP.

Review Public and Agency Comments

Benchmark Resources will closely review all comments and responses received in relation to the NOP circulated on behalf of the County, as well as the public scoping meeting. These comments will further assist Benchmark Resources in determining the necessary scope for the Administrative Draft EIR.

Environmental Analysis Approach

Resource evaluations or peer review of Applicant-submitted technical studies will be conducted for each resource area determined during scoping to have the potential to be adversely impacted by implementation of the Project.

The following EIR evaluations, at minimum, will be prepared for the Las Pilitas Quarry Project:

- Aesthetics;
- Agricultural Resources
- Air Quality (including potential greenhouse gas impacts);
- Biological Resources;
- Cultural Resources;

- Geology and Soils;
- Hazards and Hazardous Materials;
- Noise;
- Land Use;
- Transportation/Traffic;
- Water; and
- Mandatory Findings of Significance.

Existing conditions of the Project region and the specific Project site will be documented to establish a basis for a "with or without the project" comparison in the impact analysis for each resource (identified above) to be included in the detailed EIR analyses. Benchmark Resources will make the maximum use of existing data, whether in certified EIRs or existing agency, engineering, or scientific studies. As part of this Task, Benchmark Resources will incorporate the Applicant's technical studies to the extent appropriate. Special attention will be given to concerns discussed in letters received from various agencies after a review of the CUP Application and Reclamation Plan for the Project.

Direct, indirect, short-term and long-term impacts will be identified for each resource. Mitigation measures will be developed to avoid, minimize, rectify, reduce or compensate for the identified impacts. Table 3, Issues, Approach, and Assumptions of Environmental Evaluations, summarizes our approach to each specific resource analysis currently anticipated.

Thresholds of Significance, Impacts, and Mitigation Measures

Benchmark Resources will work with San Luis Obispo County regarding appropriate evaluation criteria for thresholds of significance. Typical sources for criteria include:

- Appendix G of the CEQA Guidelines;
- San Luis Obispo County General Plan and County Ordinances;
- Previously prepared EIRS, particularly recent EIRS and mining-related EIRs; and
- Thresholds established by Responsible and Trustee Agencies.

TABLE 3
LAS PILITAS QUARRY PROJECT
ISSUES, APPROACH, AND ASSUMPTIONS OF ENVIRONMENTAL EVALUATIONS

CEQA Categories	Baseline Studies				Impact Analyses			
	Site Conditions	*Data Gathering and Review*	*Products*	*Assumptions*	*Issues*	*Approach*	*Products*	*Assumptions*
AESTHETICS	Existing visual characteristics of site and region (central San Luis Obispo County) Visibility of site, quality of views from sensitive receptors, including: • State Route 58 • Residence to the southwest and the one along Goldie Lane Existing nighttime conditions	Review available planning documents and policies San Luis Obispo County General Plan and Zoning Ordinance Conduct one-day site reconnaissance Photographically document site from representative position on-site and from off-site sensitive receptors and viewsheds Document existing views toward site from surrounding areas	Aesthetic resource section, including: • Visual inventory map • Existing visual character assessment, • Assess visual quality criteria • Site photographs	Parts of the Project area and proposed facilities would be seen from off-site sensitive receptors, viewsheds, and roadways (including State Route 58) No nighttime operations proposed	Change to existing landforms/topography through lowering of existing topography and vegetation removal Facilities siting, scale of facilities and their view from surrounding sensitive receptors Views of the Project site from: • State Route 58 • Residence to the southwest and the one along Goldie Lane • Cumulative visual impact with adjacent Hanson Santa Margarita Quarry	Annotated site photographs from views of sensitive receptors to illustrate: • Lowering of existing topography and vegetation removal during and post mining operations • Facility locations and views from receptor locations Identify views from sensitive receptors and significant viewshed features affected	Aesthetic impacts/mitigation section, including: • Annotated photographs • Assessment of project visual compatibility with surrounding area • General Plan/Zoning consistency Mitigation focused primarily on minimizing impacts during operations through concurrent reclamation and visual screening	Design of mining and reclamation areas available in digital format (Civil 3D 2010)
AGRICULTURAL RESOURCES	Existing soil characteristics of site and region (central San Luis Obispo County) Existing land use on the Project site (livestock grazing and ranching activity)	Review available planning documents and policies San Luis Obispo County General Plan and Zoning Ordinance	Agricultural resources section, including: • Existing conditions • Evaluation criteria • Impact evaluations	County will assist in working with surrounding properties in terms of understanding current land use activities	Off-site transport of seed resulting in spread of weeds Creation of dust Impacts to on-site agricultural uses and neighboring agricultural operations	Identify and quantify expected impacts, including: • Existing agricultural uses • Incompatibility conflicts • Ordinance/policy consistency • Cumulative impacts	Agricultural Resources impacts/ mitigation section Mitigation focused primarily on dust and invasive weed control, as well as reclamation and reseeding requirements to facilitate return to existing land uses post-reclamation	Efficient data collection and coordination with County Agriculture Department
AIR QUALITY	Current sources of emissions Area meteorology Current non-attainment status of San Luis Obispo County Air Pollution Control District	Review latest five years of meteorological and air quality data from regional stations Review information from local stations and of San Luis Obispo County APCD Review existing source emission data Review topography maps	Air Quality baseline section, including: • Table of regional air quality data • San Luis Obispo County APCD, CARB, and NAAQS', source emissions table	Applicant can provide sufficient equipment and operations data to prepare baseline data for EIR air quality analysis Processing operations flow and mobile equipment inventory available from Applicant. Quantitative assessment of alternatives not required	Increases of non-attainment contaminants (ozone, PM_{10}, and $PM_{2.5}$) Conformity with Clean Air Plan Compliance with San Luis Obispo County APCD and NAAQS Impact Levels Location of nearby school and/or residences Greenhouse gas impact	Identify and quantify expected project emissions, including: • Stationary sources (processing equipment) • Fugitive sources (stockpiles, exposed soils) and • Mobile sources (haul trucks) • CO Hotspot	Air Quality impacts/mitigation section, including: • Discussion of air quality contaminant impacts, based on emissions inventory • Air pollutant emissions inventory table • Human health impacts • Discussion of greenhouse gas impacts • Cumulative impacts	Efficient coordination with San Luis Obispo County Public Health Department regarding Valley Fever and APCD regarding criteria pollutants and Greenhouse gas issues

CEQA Categories	Baseline Studies				Impact Analyses			
	Site Conditions	*Data Gathering and Review*	*Products*	*Assumptions*	*Issues*	*Approach*	*Products*	*Assumptions*
					Dust generation Valley Fever occurrence	• Greenhouse Gas • Health Risk Assessment	Mitigation focused primarily on process technologies and dust control measures to reduce PM_{10} and reduce potential Valley Fever risk	
BIOLOGICAL RESOURCES	Sensitive plant communities Wetlands Known and potential special status species General habitat condition and value Wildlife movement	Peer review Applicant-submitted Sensitive Species and Habitat Survey (LFR 2009) Review CNDBB and other state databases, previous EIRs or biological assessments, regional conservation plans, and other existing pertinent literature and studies Conduct field review, emphasizing: • Type and quality of vegetation communities and wetlands , and • Habitat suitability for and potential for occurrence of sensitive species	Peer review of Applicant-submitted Sensitive Species and Habitat Survey (LFR 2009) Biology baseline section, including: • Description and quantification of habitat, wetlands, and vegetation communities • Description of sensitive plant and wildlife species known or potentially occurring onsite, and likelihood of occurrence • Site vegetation/habitat map and map providing locations of special status species. These maps will rely on GIS data from the LFR (2009) report, revised as necessary based on information from field review. Any new geographic information gathered during field review will be provided in appropriate format as specified in the RFP.	Data available is sufficient to prepare baseline for EIR Electronically mapped geographic information prepared by LFR (2009) will be provided in ArcGis format.	Loss of unique or special status species or their habitats (at least five plant species and one wildlife species known to be present, and additional species potentially present) Reduction in the extant, diversity, or quality of native or other important vegetation (at least four sensitive plant communities) Riparian and wetland impacts Native oak trees Introduction of barriers to wildlife movement Need for Streambed Alteration Agreement, Regional Water Quality Control Board compliance, and potential Clean Water Act permitting	Utilize existing project information, and additional information obtained through field review and research, to assess project related impacts to biological resources. Prepare biology impact section of EIR, addressing issues identified in the Initial Study, and any other biological issues that arise and are necessary for CEQA compliance. Designate impacts as significant or insignificant pursuant to CEQA. Also address impacts of alternatives. Prepare detailed mitigation measures for biology section of EIR, addressing both primary and secondary impacts. Incorporate measures from Sensitive Species and Habitat Survey (LFR 2009) as appropriate.	Biology impact/mitigation section, including: • Impact table, with acreage of vegetation loss by type • Discussion of biological impacts and level of significance • Mitigation measures designed to reduce likelihood and/or magnitude of impacts to below significance • Any geographic information prepared for the impact/mitigation section will be provided in appropriate format as a .SHP file, with all appropriate metadata as specified in the RFP.	• Wetland delineation will not be required • Permitting activities are excluded from this scope of work but the types of permits necessary will be discussed in EIR • Project base map(s), boundaries, and project design will be provided in ArcGis format

CEQA Categories	Baseline Studies				Impact Analyses			
	Site Conditions	*Data Gathering and Review*	*Products*	*Assumptions*	*Issues*	*Approach*	*Products*	*Assumptions*
CULTURAL RESOURCES	Archaeological (Native American) resources Eligibility for the National Register under the National Historic Preservation Act Section 106 of the National Historic Preservation Act	Peer review Applicant-submitted Archaeological Surface Survey (Heritage Discoveries 2009) Contact archaeological center Complete walkover survey	Peer review of Applicant-submitted Archaeological Surface Survey (Heritage Discoveries 2009) Cultural baseline section, including: existing resources map, existing resources inventory, history	Data available is sufficient to prepare baseline for EIR	Direct and indirect effects on archaeological (Native American) resources Compliance with the National Historic Preservation Act	Utilize Project Description/ mapping to assess direct effects on cultural resources	Cultural impact/mitigation section, including: discussion of direct and indirect cultural impacts, if appropriate, discussion of effects on Native American values	No sub-surface investigation necessary Consultation with appropriate Native American tribes unnecessary
GEOLOGY AND SOILS	Slope stability Regional seismic and geologic conditions Naturally Occurring Asbestos Potential contaminated or unstable soils Waste Water Disposal	Peer review Applicant-submitted Engineering Geology Investigation (GeoSolutions 2009) and General Blasting Plan (Gasch & Associates 2009) Geological Evaluation for Naturally Occurring Asbestos Blasting and Vibration Analysis Geologic Investigation and Slope Stability Analysis	Peer review of Applicant-submitted Engineering Geology Investigation (GeoSolutions 2009) and General Blasting Plan (Gasch & Associates 2009) Baseline section identifying the geology, soils, and seismicity	Sampling of geology or soils will not be required Slope stability analysis and drilling logs/data available for review	Ground rupture or shaking Slope Stability Blasting and Vibration and potential impacts on State Water Project Pipeline Erosion or Sedimentation Exposure to contaminated soils or toxic minerals	Utilize mining and reclamation plan to assess potential slope stability, blasting, or vibration hazards Assess and map potential for upset conditions and contamination	Geology and soils impacts/ mitigation section, including: • Identifying potential hazards as a result of ground disturbance and/or upset conditions • Surface drainage • Placement of stockpiles to minimize impacts and to protect water/biological resources • Soil erosion and topsoil reserves	Geology and soils impacts/mitigation section does not reveal fatal design or reclamation flaws resulting in project redesign and/or delay
HAZARDS AND HAZARDOUS MATERIALS	Potential exposure of groundwater Run-off of hazardous materials and contamination of waterways Transportation, use, and disposal of hazardous materials Wildland fires	One-day site reconnaissance to assess the site Account for hazardous materials used in existing processing and equipment, storage tanks, and transportation of hazardous materials	Hazardous Materials baseline section, including: summary table of information obtained, site map, location of known hazardous materials	The Hazardous Materials baseline will document any existing on-site hazardous materials/waste as they apply to human issues (not aquatic animals or other wildlife) Collection of soil or groundwater samples or analytical laboratory testing is not required Off-site fueling	Storage and handling of hazardous materials Compliance with State, Federal, and local Environmental Health Requirements, and General Plan policies Potential impacts to groundwater and surface waters Valley Fever occurrence Accidental release of hazardous materials near sensitive receptors	Evaluate Applicant-supplied Spill Prevention Plan to identify hazardous materials Identify storage, handling and disposal methods Utilize information from hydrology assessments in conjunction with storage/ handling/disposal information to evaluate likelihood of project-related environmental impairment of soil, surface water, or groundwater	Hazardous Materials impacts/mitigation section, including: • Discussion of types of impacts and likelihood of occurrence • Daily inspections for leakage • Blasting • Best management practices Incorporate mitigation measures provided on pages 18 and 19 of the Revised Initial Study	The Hazardous Materials impacts/ mitigation section will discuss hazardous materials/ wastes as they apply to physical environmental impacts

CEQA Categories	Baseline Studies				Impact Analyses			
	Site Conditions	*Data Gathering and Review*	*Products*	*Assumptions*	*Issues*	*Approach*	*Products*	*Assumptions*
NOISE	Sensitive receptors Existing sources of noise	Peer review Applicant-submitted Noise Analysis (David Dubbink Associates 2010) Conduct one-day area reconnaissance Measure noise levels to determine noise generating activities and frequency of activities in vicinity	Noise baseline section, including summary of existing conditions and ambient noise levels on-site	Access available to nearby sensitive receptors and noise sources No nighttime operations proposed	Compliance with Standards of San Luis Obispo County General Plan and Zoning Ordinance Processing and hauling noise level effects on existing ambient condition and sensitive receptors	Utilize baseline inventory information and project description process information in conjunction with professional judgment to qualitatively assess noise effects on receptors Assess compliance with regulations	Noise impacts/mitigation section including: compliance status information	David Dubbink Associates (2010) adequately evaluates baseline conditions on Project impacts
POPULATION AND HOUSING	The Project site is rural in nature	Review CEQA Appendix F to determine Project energy consumption Review existing energy regulations	Population and Housing baseline section, which would be limited to Initial Study Question 9(d) (on page 23 of the Revised Initial Study)	No additional evaluation beyond use of fuel and energy will be required	Energy consumption	Compare the project's energy consumption to the ability of the energy provider to be able to deliver that power Identification and discussion of feasible mitigation measures, if any, which could be included in the project to reduce energy consumption and promote energy conservation to the extent feasible.	Impact statement regarding energy use	No additional evaluations beyond energy use will be required
RECREATION	The Salinas River Trail crosses through the southwest corner of the Project site.	Review of County Trails Maps Coordination with County Parks Department	Baseline discussion of Salinas River Trail	Maps and data are made readily available	Salinas River Trail alignment	Determine whether Project impacts on the Salinas River Trail are significant	Impact statement and potential mitigation regarding Project impacts on the Salinas River Trail	Efficient data collection and coordination with County Parks Department
TRANSPORTATION/ CIRCULATION	Existing network – capacity and physical condition Current 24-hour and peak volumes Current level of service (LOS) Road safety	Peer review Applicant-submitted Traffic Impact Study (TPG Consulting 2009) and Sight Distance Evaluation (TPG Consulting 2009) Review existing Caltrans and County data Identify existing LOS on roads to be used by mine traffic Quantify amount of project-related truck traffic, relying on estimates from the Applicant	Peer review of Applicant-submitted Traffic Impact Study (TPG Consulting 2009) and Sight Distance Evaluation (TPG Consulting 2009) Transportation/Circulation baseline section, including: Traffic volume table, summary of current capacity, condition and requirements for existing network, traffic or turn	Applicant-submitted technical reports (TPG 2009) adequately describe baseline conditions and proposed project impacts	Trip generation; projected ADTs Expected level of service Traffic safety Impacts to road structure	Utilize project description and baseline inventory information to estimate expected ADTs Qualitatively assess effects on local and regional traffic circulation, roads, and LOS Qualitatively assess safety associated operation and movement of employees on local network	Transportation/Circulation impacts/mitigation section, including: identification of intersections where LOS is expected to substantially deteriorate Traffic safety analysis	Project truck traffic could damage existing road surfaces resulting in maintenance agreement, reconstruction, and signalization of road segments and/or intersections

CEQA Categories	Baseline Studies				Impact Analyses			
	Site Conditions	*Data Gathering and Review*	*Products*	*Assumptions*	*Issues*	*Approach*	*Products*	*Assumptions*
			movement counts not required					
WATER	Existing regional groundwater and surface water quantity/quality Identify existing groundwater table and flow in site vicinity Groundwater/surface water interaction Meteorological conditions Recharge areas Existing area site wells and/or springs	Peer review Applicant-submitted Drainage Calculations (Tartaglia Engineering 2009) Review additional available State, local agency and Applicant data Contact area knowledge base (RWQCB hydrologists) Obtain and review logs and completion reports for onsite wells Identify other wells within 1-mile radius Measure water levels in onsite wells Collect water-quality samples from 2 onsite wells, spring/pond, and river for analysis of metals and general minerals	Peer review of Applicant-submitted Drainage Calculations (Tartaglia Engineering 2009) Hydrogeology/ Groundwater Quality baseline section, including: existing meteorological conditions, surface water occurrence and water quality, groundwater occurrence and water quality, available water supply and project water demand, groundwater potentiometric map (if applicable), surface water drainage map, well and spring map, and hydrogeologic cross-sections Identification of data gaps: water quality/quantity issues not discussed and/or considered significant by existing studies	Existing data are available and adequate (i.e., complete and accurate) to define the baseline and allow evaluation of surface and groundwater occurrence, and quantity Groundwater modeling not required County will obtain DWR well log reports for wells within 1-mile of site Collection of surface water and groundwater samples, and analytical laboratory testing is required to define baseline conditions Applicant will provide data on well construction (including well logs), pumping rates, and current usage Applicant will provide documentation of estimated project water demand	Degradation of surface or groundwater quality Depletion of groundwater supplies, including interference with groundwater users and recharge Alteration of surface water drainage patterns and acceleration of erosion/ sedimentation Changes in surface water flow patterns and volume of runoff Changes in discharge from springs Increases in evaporative loss	Assess mine design, and operational processes for effects on surface and groundwater quality based on new lab data for baseline conditions Utilize Applicant-provided data to assess direct impacts to surface drainage patterns, and possible attendant impacts to erosion/ sedimentation Assess effects of mine design on groundwater availability, changes in recharge, spring flow, and evaporative losses Project description does not include washing of material	Hydrology/Water Quality impacts/mitigation section, including: discussion of surface and groundwater monitoring requirements Mitigation focused on project design and process technologies	Applicant stormwater & drainage studies are consistent with standards of practice and provide results consistent with regulatory guidance (e.g. 25-yr and 100-yr storm events) Project water demand limited to dust control
LAND USE	Current site and area land uses Current County site and area land use designations Williamson Act and Important Farmlands designation	Identify current vicinity land use designations	Land Use baseline section, including: • Discussion of designated area land uses • Summary of actual type and intensity of area development • Map of land use designations in site vicinity	None	Intensity of development Consistency with Project's General Plan and Zoning designations Effect on surrounding land uses	Assess actual proposed intensity of development with development allowed Assess proposed use for consistency with policies of the County General Plan and Zoning Ordinance Utilize project description/ mapping in conjunction with Land Use baseline inventory information to qualitatively assess whether the operation could impact other area operations or land owners	Land Use impacts/mitigation section, including: discussion of development type, intensity and consistency	None

All impacts and mitigation measures will be clearly identified, and address all applicable environmental issues and thresholds of significance. All proposed mitigation measures will be drafted in the form of permit conditions that can be inserted into the County's standard Conditions of Approval. Additionally, a Summary of Impacts and Mitigation Measures will be prepared and included as part of the Administrative Draft EIR.

Cumulative Impacts, Mandatory Findings, and Project Alternatives

Benchmark Resources will prepare sections on cumulative impacts, mandatory findings of significance, and assess Project alternatives. Benchmark Resources prefers to evaluate at least four alternatives, as we believe that four alternatives present a reasonable range of alternatives for a mining project. While the specific alternatives will depend on the results of significant impacts that are identified in the resource evaluations, the alternatives may include:

- The No Project Alternative (mandated by CEQA);
- The Alternative Site Location(s)(reduces site-specific impacts on a range of issues and may include alternative alluvial site and alternative hard rock alternative);
- The Reduced Production Alternative (reduces traffic, air quality and noise impacts); or
- The Reduced Footprint Alternative (reduces the length of time of the Project and may avoid certain resource identified in the resource evaluations).

Actual alternatives evaluated will be developed based on the significant environmental impacts identified and alternatives that would reduce or avoid those impacts.

Complete and Submit Administrative Draft EIR

The purpose of this task is to assemble the information developed during baseline inventories and impact analyses/mitigation described above into an Administrative Draft for review by County staff. Benchmark Resources will submit 10 copies of the Administrative Draft EIR to County staff for review.

Deliverables

Benchmark Resources will provide the County with:

- Administrative Draft EIR:
  - Four (4) hardcopies in three-ring binders; and
  - One (1) CD-ROM copy in original format.

Task 3 - Prepare Draft EIR

Benchmark Resources staff will review the County's comments on the Administrative Draft EIR and advance the EIR from a corrected draft to a public draft stage. The Draft EIR documents will be prepared in a manner acceptable to San Luis Obispo County for circulation to other public agencies, the general public, and any other interested parties for public review. Benchmark Resources, in conjunction with the County, will distribute the Draft EIR to the State Clearinghouse (15 copies), applicable agencies, and interested public.

Deliverables

Benchmark Resources will provide the County with:

- Draft EIR:
  - Five (5) copies with appendices (in three-ring binders);
  - Fifteen (15) bound copies with appendices included as a CD-ROM in an envelope;
  - Twenty-five (25) CD-ROM copies in searchable PDF format;
  - Ten (10) separately-bound copies of appendices;
  - One (1) electronic copy in original format; and
  - One (1) copy in an HTML or other acceptable web-friendly format.

Task 4 - Prepare Administrative Final EIR

Under this task, the EIR will be advanced from a public draft to a draft final stage, by developing a Response to Comments. Other goals of this task are to develop a Project summary describing how the Project has been modified since the release of the Draft EIR, errata section to describe revisions, and an addendum providing any additional

studies or data that elaborates on the Draft EIR. The following subtasks will be performed in formulating the Final EIR:

- Review public and agency comment on Draft EIR;
- Respond to all written comments on the Draft EIR; and
- Submit Administrative Draft Final EIR to the County.

Deliverables

Benchmark Resources will provide the County with:

- Administrative Final EIR:
  - Two (2) copies in three-ring binders;
  - Two (2) bound copies; and
  - One (1) CD-ROM including appendices.

Task 5 - Prepare Final EIR

After receiving San Luis Obispo County comments on the Administrative Draft Final EIR, Benchmark Resources will prepare the final version of the Response to Comments Final EIR. The following subtasks will be performed in preparing the Final EIR:

- Incorporate County comments on the Administrative Draft Final EIR;
- Finalize Errata Section; and
- Finalize Responses to Comments.

Deliverables

Benchmark Resources will provide the County with:

- Final EIR:
  - Five (5) copies with appendices (in three-ring binders);
  - Twenty-five (25) bound copies with appendices included as a CD-ROM in an envelope;
  - Twenty-five (25) CD-ROM copies in searchable PDF format;
  - Fifteen (15) separately-bound copies of appendices;

- One (1) electronic copy in original format; and
- One (1) CD-ROM in original format of the Draft and Final EIR, mitigation monitoring program, and appendices.

Task 6 - Meeting Attendance, Management, and Coordination

The purpose of this task is to ensure the County that Benchmark Resources will attend public hearings and public workshops to provide support for the EIR findings and recommendations.

The scope of work includes Benchmark Resources attendance at the kick-off meeting, five (5) staff meetings, and up to four (4) public hearings before the Planning Commission and/or Board of Supervisors, if the document is appealed. Benchmark Resources will prepare a presentation outlining key parts of the environmental analysis and will answer questions posed by the Planning Commission and/or the Board of Supervisors.

In addition, Benchmark Resources will closely coordinate with County staff to ensure that the County is aware of key issues and project developments. This will be done through e-mail, telephone calls, and use of the Project's Sharepoint site.

Task 7 - Mitigation, Monitoring and Reporting Program

Benchmark Resources will prepare a Mitigation Monitoring and Reporting Program (MMRP) that will be submitted with the Administrative Final EIR. This MMRP will consist of a separate list of all proposed mitigation measures. Each mitigation measure will be individually addressed. For each mitigation measure, Benchmark Resources will provide:

- A brief discussion of the monitoring required;
- List the parties responsible for implementation;
- Provide compliance timing; and
- Provide a field for compliance status.

Deliverables

Benchmark Resources will provide the County with:

- Five (5) bound copies;
- One (1) unbound copy;
- One (1) CD-ROM copy in searchable PDF format; and
- One (1) CD-ROM copy in original format.

Task 8 - Findings

The purpose of this task is to prepare findings of fact and statement of overriding consideration (if necessary) as required by CEQA statute, case law, and guidelines. Benchmark Resources will draft findings of fact and statement of overriding consideration (if applicable) and submit them to the County for review and comment. After reviewing the County's comments and revisions, Benchmark Resources will finalize the findings of fact and a statement of overriding consideration (if needed) for public hearings and inclusion with the County Staff Report.

4.2 Timetable

Benchmark Resources has the capabilities and experience to complete the EIR process in a time-efficient manner, as we specialize in mining EIRs and can dispense of the learning curve common for such projects. Our knowledge of mining, the current "hot button" environmental issues in the region, and the EIR process also provides the advantage of anticipating issues and readily accommodating Project modifications or other changes with the least possible impact to the overall schedule. Assuming that the Applicant-prepared technical evaluations are adequate, we believe that the Draft EIR can be prepared and circulated within 6 months of contract issuance. In terms of tasks not under our control, the Final EIR and hearing process will largely be a result of the complexity of the issues raised in the Draft EIR and the controversy of the Project. Assuming a moderate amount of controversy, we anticipate that the Final EIR and hearing process would take about 6 months after close of the comment period of the Draft EIR. Overall, we believe the process should take about 12 to 14 months from contract initiation until filing of the Notice of Determination. Please see Appendix C, Las Pilitas Quarry Preliminary Schedule.

4.3 Cost Estimate

Our Cost Estimate is based on our understanding of the Project and what is required to analyze a greenfield hardrock mining operation and prepare an EIR that will hold up against public scrutiny. Our initial budget provides for the following tasks:

- Task 1: Project Description, EIR Outline, and Style Guide;
- Task 2: Prepare Administrative Draft EIR;
- Task 3: Prepare Draft EIR;
- Task 4: Prepare Administrative Draft Final EIR;
- Task 5: Prepare Final EIR;
- Task 6: Meeting Attendance, Management, and Coordination;
- Task 7: Mitigation, Monitoring, and Reporting Program (MMRP); and
- Task 8: Findings.

We have not proposed a detailed method of dealing with any changed circumstances that may arise, but are amenable to including a contingency in the budget.

5.0 OBJECTIVITY

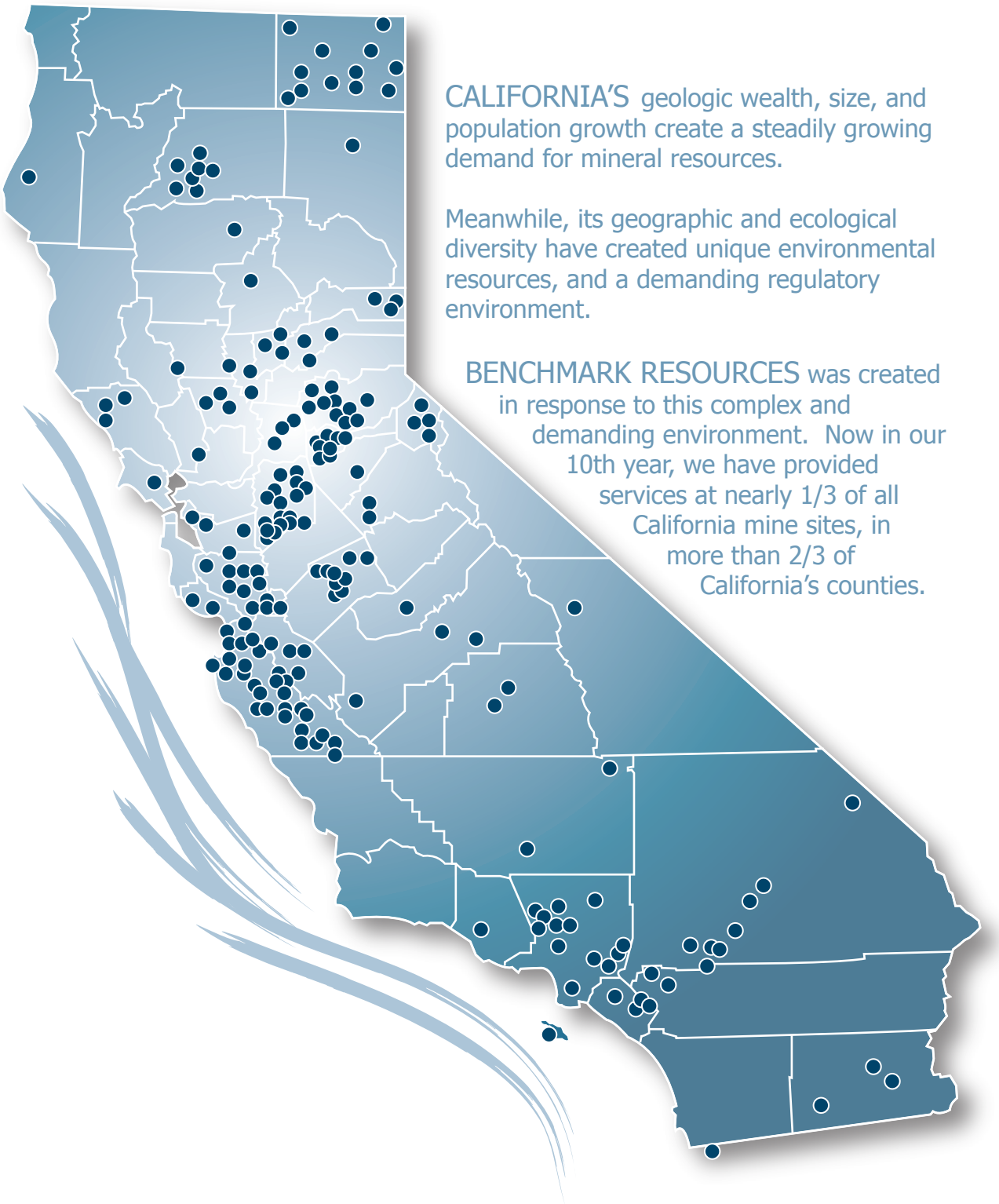
Benchmark Resources has recent or ongoing contracts with over 40 California Lead Agencies. Our ability to cooperatively work with all parties is a hallmark of our success throughout the state. Our success in completing EIRs is directly related to the depth of understanding that comes from not only completing environmental analysis, but from assisting County's in reclamation planning and inspecting for regulatory compliance and facilitating closure and post-closure monitoring.

Benchmark Resources, its subconsultants, or participating personnel, have not been employed by or provided professional services to the Applicant.

6.0 INDEMNIFICATION AND CERTIFICATES OF INSURANCE

Benchmark Resources has reviewed the County's requirements for indemnification and insurance for the Las Pilitas RFP and is capable to meet its requirements.

FIGURES



CALIFORNIA'S geologic wealth, size, and population growth create a steadily growing demand for mineral resources.

Meanwhile, its geographic and ecological diversity have created unique environmental resources, and a demanding regulatory environment.

BENCHMARK RESOURCES was created in response to this complex and demanding environment. Now in our 10th year, we have provided services at nearly 1/3 of all California mine sites, in more than 2/3 of California's counties.

Figure 1
Representative Statewide Mining Experience

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PLANNING AND BUILDING

BRUCE STEUBING
EIR Project Director and Principal

- Main County contact and overall director of EIR program and strategy development
- Review and become familiar with planning and environmental documentation, maps, and other aspects of the Las Pilitas Quarry Project;
- Coordinate with County Staff in EIR preparation and project implementation;
- Contact and coordinate with subcontractors and County Staff for necessary environmental baseline and peer review of Applicant-prepared technical evaluations;
- Primary contributing author/editor of the Administrative Draft and Draft EIR, consistent with State law, San Luis Obispo County requirements, and any other governing law;
- Development and refining of mitigation measures for the Project as provided by County Departments and other agencies;
- Review agency and public comments received on Draft EIR and primary author/editor of the Administrative Final EIR and Final EIR Response to Comment;
- Participate in meetings with County Staff and Applicant;
- Attend and present EIR at public meetings; and
- Anticipated level of effort: 30%

ANDREW WHITE
Project Manager

- Review of and familiarity with Applicant-supplied technical documents, Project Description, Reclamation Plan and applicable County policies;
- Assist in coordination with technical subconsultants and County staff in preparation of technical evaluations;
- Contributing author/editor of the Administrative Draft and Draft EIR and review of subcontractor-prepared EIR sections;
- Review and agency and public comments on Draft EIR and assist in drafting of response to comments for Final EIR;
- Assist in preparing for and attending meetings, workshops, and hearings;
- Word processing and document production and preparation manager;
- Quality control; and
- Anticipated level of effort: 20%

DAVID BROWN
Principal

- Advisory role in preparation of the Draft and Final EIR;
- Advising role in strategy and issue-identification and resolution;
- Quality control; and
- Anticipated level of effort: <5%

TECHNICAL TEAM

Golder Associates
Geotechnical, Geology, Soils, and Air Quality

- Peer review Geologic Investigation and Slope Stability technical study, if applicable;
- Assist in relevant EIR sections (Air Quality & Geology and Soils) impact analysis;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: 15%

Analytical Environmental Services
Cultural Resources

- Peer review Cultural/Historical Resources technical study, if applicable;
- Assist in relevant EIR section impact analysis;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: <5%

Bollard Acoustical Consultants
Noise and Vibration

- Peer review Noise Analysis Report, if applicable;
- Assist in Noise EIR section impact analysis;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: <5%

EMKO Environmental
Hydrology

- Peer review technical study regarding hydrology and groundwater, if applicable;
- Assist in preparing technical analysis of hydrology and water quality;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: 5%

Berryman Consulting
Biological Resources

- Peer review technical study regarding biology, wetlands, and trees;
- Assist in preparing technical analsyis of Biological Resources EIR section;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: 10%

Peters Engineering
Traffic

- Peer-review of TIS and Site Distance technical reports;
- Assist in formatting of technical analysis in relevant EIR section;
- Assist with responses to comments for relevant EIR section; and
- Assist in preparing applicable mitigation measures;
- Anticipated level of effort: 10%

Figure 2
EIR Team Roles and Duties

APPENDICES

APPENDIX A-1

BENCHMARK RESOURCES RESUMES

QUALIFICATIONS SUMMARY

Mr. Steubing has over 16 years experience as an attorney and Project Director, specializing in the preparation and processing of environmental documents.

Responsible for the preparation of countless environmental documents (EISs and EIRs) for large, complex, and controversial projects. Experience in a wide range of development projects including mining, oil pipeline, industrial, commercial and residential developments. Manage projects requiring preparation of technical documents, development of mine plans, and formulation of strategies for legal, environmental, and permitting compliance. Specialist in regulatory compliance and permitting for mineral resource development.

Years of Professional Experience: 14

Recent Projects	Responsibilities	Areas of Emphasis
• Chevron San Ardo to Coalinga Heated Oil Pipeline Project EIR • Kings River Sand and Gravel EIR • Jesse Morrow Mountain EIR • Madera Quarry EIR • Jaxon Enterprises EIR	• Coordination with County Staff & Subconsultants • Agency and Public Scoping • Application & Technical Report Review • EIR Section Preparation • Hearing Presentation	• Project Description • Biological Resources • Cultural Resources • Williamson Act • Alternatives

EDUCATION

J.D., Vermont Law School, South Royalton, Vermont, 1994
B.A., Political Science, University of California, Santa Barbara, 1990

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals
California Bar Association
California Construction and Industrial Materials Association (CalCIMA)

REPRESENTATIVE EXPERIENCE

CONSTRUCTION AGGREGATES PROJECTS

Aggregate Mine
San Benito County

Prepared Reclamation Plan revision and negotiated with California Department of Fish and Game regarding 1603 Streambed Alteration Agreement.

Aggregate Mine
Sutter County

Preparation of reclamation plan, use permit application, and technical evaluations for a mine expansion.

Aggregate Quarry
Monterey County

Project Manager for development of hard rock mine for crushed aggregate. Supervised implementation of exploratory drilling program, preparation of technical studies, aerial photography and mapping of the site. Assisted in the preparation of the mine and reclamation plans.

Arroyo Seco
Monterey County

Consultant for strategic planning and applications preparation for various surface waters permits and endangered species permits.

Concrete Batch Plant
Monterey County

Project Manager for concrete batch plant and ancillary facilities application.

Foster Farms Sand Removal Project
Merced County

Preparation of a Reclamation Plan and Financial Assurance Cost Estimate for a new sand removal Project.

F.W. Aggregates
Inyo County

Preparation of a Reclamation Plan and Financial Assurance Cost Estimate for a vested mining operation.

Gray Rocks Quarry
Shasta County

Assisted with mine planning, reclamation and natural resource compliance issues for continued operation of 800,000 tons per year limestone quarry.

Hardrock Quarry
Sacramento County

Resource evaluation of hardrock reserves for a new greenfield quarry. In addition, significant environmental investigation analysis in preparation of an Application Package, including a Project Description, Reclamation Plan and technical studies.

Jesse Morrow Mountain
Fresno County

Preparation of a Reclamation Plan for a 100-year greenfield hardrock quarry. The Project proposed the removal of approximately 200 million tons of material and envisioned a return to the sites existing use of open space and grazing.

Merced River Aggregates
Merced County

Investigation of community concerns regarding offsite flooding near the site and preparation of a revised Reclamation Plan.

Moody Flats Quarry
Shasta County

Application Package, including Project Description and Reclamation Plan, and Environmental Assessment preparation and submittal for a new hardrock quarry near Shasta Dam.

Quinto Ranch
Merced County

Application Package, including Project Description and Reclamation Plan, preparation and submittal for a new alluvial mine near the California Aqueduct. The Reclamation Plan envisioned a post-mining land use of a conservation easement for kit fox habitat.

Santa Cruz Sand Plant
Santa Cruz County

Preparation of a habitat conservation plan for the California Red Legged Frog, including negotiation and meetings with the U.S. Fish and Wildlife Service.

Snelling Tailings Project
Merced County

Staff services and preparation of the EIR for a new dredge tailing removal operation located directly adjacent to a small community.

Soda Lake
Santa Cruz County

Project Manager for natural resource permitting (404 Permit, 401 Certification, and Streambed Alteration Permit) for 50-year expansion of tailings facility.

Stevens Creek Quarry
Santa Clara County

Reclamation Plan Amendment and Financial Assurance Cost Estimate for an existing hardrock quarry.

Stillwell Project
Tulare County

Deputy Project Manager for preparation of Mine and Reclamation Plans, and an EIR for development of an aggregate quarry.

Truckee Quarry
Nevada County

Conducted a Conditional Use Permit and SMARA compliance audit for a required 5-year review of conditions of approval compliance.

INDUSTRIAL AND PRECIOUS MINERALS PROJECTS

Sutter Gold Mine
Amador County

Condition of approval and mitigation monitoring for an existing gold mine.

OTHER PROJECTS

Cajalco Associates
Riverside County

Prepared a CEQA compliance letter report for a residential development project located within natural resource area.

California Car Wash
City of Woodland

Managed Conditional Use Permit compliance for a car wash.

Chevron San Ardo to Coalinga Heated Oil Pipeline Project
Monterey and Fresno Counties

Project Director for a 97±-mile heated oil pipeline from Southern Monterey County to Western Fresno County.

Horseshoe Lake
City of Chico

Project Manager for an Initial Study supporting a negative declaration for a remediation and clean-up project in Bidwell Park.

Palmdale Constraints Analysis
Los Angeles County

Initial site constraints assessment for potential development of a greenfield quarry, including biological resource investigation, land use analysis, and cultural resources investigation.

Empire Mine State Historic Park
Nevada County

Program EIR for hazardous materials characterization and remediation at Empire Mine State Historic Park

LEAD AGENCY SERVICES

Black Diamond Aggregates Merced County	Staff services and preparation of an Initial Study for expansion of an existing aggregate operation below groundwater level.
Fitch No. 2 Modoc County	Contract Planner for a mine expansion project. Prepared Initial Study and processed application.
Hogsback Quarry Modoc County	Contract Planner for a greenfield mine project. Prepared Initial Study, Staff Report, and Findings. Reviewed EIR and processed application through the Planning Commission and Board of Approval process.
Jaxon Quarry Merced County	Review of Reclamation Plan and preparation of the Environmental Impact Report for an aggregate mine expansion.
Jesse Morrow Mountain Quarry Fresno County	Project Director for the preparation of an EIR for a greenfield project.
Kings River Sand & Gravel Project Fresno County	Project Director for the preparation of a supplemental DIR for a previously evaluated mining project.
Madera Quarry Madera County	Project Director for the review of a Reclamation Plan and Use Permit, and preparation of an EIR for a greenfield mine project.
Mineral Resource Policies Merced County	Project Manager for the preparation of mineral resource policies and accompanying environmental documentation.

QUALIFICATIONS SUMMARY

Mr. White has assisted in the preparation of CEQA documents that included Initial Studies, Negative Declarations, Reclamation Plans, and Environmental Impact Reports for over 6 years as a Project Manager.

He has managed projects requiring preparation of technical documents, development of mine plans, and formulation of strategies for legal, environmental and permitting compliance. Management of these projects has included environmental analysis, coordination with County officials, Applicants, and subconsultants, preparation of administrative records, and project presentations before the Planning Commission.

Years of Professional Experience: 5

Recent Projects	Responsibilities	Areas of Emphasis
• Teichert Quarry EIR • Patterson Sand and Gravel EIR • Jesse Morrow Mountain EIR • Madera Ranch EIR • Jaxon Enterprises EIR	• Coordination with County Staff & Subconsultants • Agency and Public Scoping • Application & Technical Report Review • EIR Section Preparation • Hearing Presentation	• Aesthetics & Visual Resources • Agricultural Resources • Air Quality • Land Use & Planning • Noise • Traffic & Transportation

EDUCATION

J.D., McGeorge School of Law, 2004
B.A., Law & Society, University of California, Santa Barbara, 2001

PROFESSIONAL AFFILIATIONS

Sacramento County Bar Association, Environmental Law Section
Construction Materials Association of California
California Construction and Industrial Materials Association (CalCIMA)

REPRESENTATIVE EXPERIENCE

CONSTRUCTION AGGREGATES PROJECTS

Austin Creek
Sonoma County

Prepared the Spill Prevention Control and Countermeasure Plan and mitigation compliance table. Assisted in preparing response to Department of Conservation's comments on the Reclamation Plan.

Bixby Quarry
San Benito County

Revised the reclamation plan and initial study.

Boca Quarry
Nevada County

Preparation of a Project Description and Reclamation Plan for use in processing of a Use Permit and Reclamation Plan Application for an existing hardrock quarry.

Butte Sand and Gravel
Sutter County

Preparation of a Project Description, Reclamation Plan, and Draft Initial Study, including associated environmental studies, for use in processing of a Use Permit and Reclamation Plan Application for an existing hardrock quarry.

Diamond Quarry
El Dorado County

Preparation of a Reclamation Plan and presentation before the State Mining and Geology Board for an existing hardrock mine.

F.W. Aggregates
Inyo County

Preparation of a Reclamation Plan and Financial Assurance Cost Estimate for a vested mining operation.

Hardrock Quarry
Sacramento County

Resource evaluation of hardrock reserves for a new greenfield quarry. In addition, significant environmental investigation analysis in preparation of an Application Package, including a Project Description, Reclamation Plan and technical studies.

Hidden Canyon
Monterey County

Assisted in processing the use permit and reclamation plan application.

Merced River Aggregates
Merced County

Investigation of community concerns regarding offsite flooding near the site and preparation of a revised Reclamation Plan.

Nelson Hill Quarry
Solano County

Preparation of a Reclamation Plan, Financial Assurance Cost Estimate, and draft Initial Study for an existing hardrock quarry. Also conducted the annual Conditional Use Permit Compliance Monitoring for the site.

Ostrom Road Quarry
Yuba County

Preparation of a Project Description, Reclamation Plan, and environmental assessment for use in processing of a Use Permit and Reclamation Plan Application for a new alluvial mine site.

Quinto Ranch
Merced County

Application Package, including Project Description and Reclamation Plan, preparation and submittal for a new alluvial mine near the California Aqueduct. The Reclamation Plan envisioned a post-mining land use of a conservation easement for kit fox habitat.

Williams Quarry
San Benito County

Preparation of a Project Description, Reclamation Plan, and Draft Initial Study, including associated environmental studies, for use in processing of a Use Permit and Reclamation Plan Application for an existing hardrock quarry.

INDUSTRIAL AND PRECIOUS MINERALS PROJECTS

Sutter Gold Mine
Amador County

Condition of approval and mitigation monitoring for an existing gold mine.

OTHER PROJECTS

Carson Hill Market Study
Calaveras County

Market analysis of waste rock sales from an old gold mine.

Palmdale Constraints Analysis
Los Angeles County

Initial site constraints assessment for potential development of a greenfield quarry, including biological resource investigation, land use analysis, and cultural resources investigation.

LEAD AGENCY SERVICES

Bernie Wade Project
Merced County

Contract Planner for preparation of a Mitigation Negative Declaration for a greenfield dredge tailings mine project. Critiqued the project description and reclamation plan submitted by the Applicant and currently preparing the mitigated negative declaration. Will assist in the preparation of the staff report and findings.

Black Diamond Aggregates
Merced County

Staff services and preparation of an Initial Study for expansion of an existing aggregate operation below groundwater level.

Chapin 33 Mine
Merced County

Contract Planner for review of environmental documents for a greenfield alluvial mine project, including the Draft and Final EIRs. Critiqued the Administrative Draft EIR and will assist in the preparation of the staff report and findings.

Hogsback Quarry
Modoc County

Prepared the administrative record for a greenfield mine project.

Jaxon Enterprises
Merced County

Assisted in preparing response to comments to a Draft EIR. Prepared the staff report, mitigation and monitoring plan, findings and resolution.

Jesse Morrow Mountain Project
Fresno County

EIR Project Coordinator for a new greenfield hardrock mine project involving review of the Draft EIR, preparation of the administrative record, and coordination with the EIR preparer, County staff, and the Applicant.

Kings River Project
Fresno County

EIR Project Coordinator for an existing alluvial mine involving the review of the Supplemental DEIR, preparation of the administrative record, and coordination with the EIR preparer, County staff, and the Applicant.

Madera Ranch Quarry
Madera County

As EIR preparer, prepared the hazard, biology, and alternative sections, as well as, assisting in and reviewing the development of various other sections of the Draft EIR. Assisted in the preparation of the response to comments to the Draft EIR, prepared the mitigation and monitoring plan, and conducted the presentation for the Project before the Planning Commission.

Patterson Sand and Gravel
Placer County

As the EIR preparer for an existing alluvial mine operation, currently preparing the response to comments to the Draft EIR and will assist in the preparation of the staff report, findings and mitigation and monitoring plan.

Ranchwood Adrian Mine
Merced County

Contract Planner for preparation of a Mitigation Negative Declaration for an existing alluvial mine site. Critiqued the project description and reclamation plan submitted by the Applicant and prepared an Initial Study. Will assist in the preparation of the staff report and findings.

Snelling Tailings Project
Merced County

Staff services and preparation of the EIR for a new dredge tailing removal operation located directly adjacent to a small community.

Teichert Quarry
Sacramento County

As the EIR preparer for a greenfield hardrock quarry, prepared the revised Notice of Preparation for the Draft EIR and reviewed the Applicant's operational statement and reclamation plan. Have coordinated with the County and subconsultants to begin preparation of the environmental analysis and begun preparation of the project description.

davidbrown
principal

QUALIFICATIONS SUMMARY

Twenty years' experience as a multi-disciplinary environmental planner, specializing in the acquisition of federal, State, and local agency land use permits and other entitlements. Project Manager and primary author of environmental documents (EISs and EIRs) on large, complex and controversial projects.

Experienced in a wide-range of development projects including general industrial uses, solid waste landfills, mining, transmission lines, and commercial and residential developments. Managed projects requiring preparation of technical documents, development of design plans and development of strategies for permitting and environmental compliance. Specialist in documentation, regulatory compliance and permitting for mineral resource development.

Years of Professional Experience: 26

Recent Projects	Responsibilities	Areas of Emphasis
• Stevens Creek Quarry Reclamation Plan Amendment • SMARA Annual Mine Inspections • Otay Valley Rock Reclamation Plan Amendment • Homestake Tailings Impoundment Facility Application Package and Reclamation Plan Amendment • Carmelita Project Application Package and Initial Environmental Assessment • Teichert Quarry EIR	• Contracts • SMARA/Reclamation Plans • Resource Investigations • Quarry and Reclamation Plan Development • Application Development & Technical Report Review • Meeting and Hearing Presentations	• Early Environmental Assessment and Constraints Analysis • Quarry and Reclamation Plan Design • Project and Operations Description • Reclamation Planning • Aesthetics & Visual Resources • Hydrology & Water Quality

EDUCATION

M.S., Geography, University of California, Riverside, 1984.
B.S., Geography, University of California, Riverside, 1980.

PROFESSIONAL AFFILIATIONS

American Society for Surface Mining and Reclamation
California Construction and Industrial Materials Association (CalCIMA)

REPRESENTATIVE EXPERIENCE

CONSTRUCTION AGGREGATES PROJECTS

Arroyo Seco Monterey County	Consultant for strategic planning and applications preparation for various surface waters permits and endangered species permits.
Diamond Quarry El Dorado County	Preparation of a Reclamation Plan and presentation before the State Mining and Geology Board for an existing hardrock mine.
Dumbarton Quarry Alameda County	Development of necessary tasks for closure of the Dumbarton Quarry. This included coordination with the East Bay Regional Parks District to prepare a closure plan that included reclamation of the site to a lake and park.
Foster Farms Sand Removal Project Merced County	Preparation of a Reclamation Plan and Financial Assurance Cost Estimate for a new sand removal Project.
F.W. Aggregates Inyo County	Preparation of a Reclamation Plan and Financial Assurance Cost Estimate for a vested mining operation.
Hardrock Aggregate Quarry Monterey County	Project Manager for development of hard rock mine for crushed aggregate. Prepared mine and reclamation plans and EIR.
Hardrock Quarry Sacramento County	Resource evaluation of hardrock reserves for a new greenfield quarry. In addition, significant environmental investigation analysis in preparation of an Application Package, including a Project Description, Reclamation Plan and technical studies.
Jesse Morrow Mountain Fresno County	Preparation of a Reclamation Plan for a 100-year greenfield hardrock quarry. The Project proposed the removal of approximately 200 million tons of material and envisioned a return to the sites existing use of open space and grazing.
Kaweah River Rock Tulare County	Reclamation Plan development for regional aggregate operation designed to convert to water management facility as post-reclamation land use.
M&T Chico Ranch EIR Butte County	Project Manager for preparation of an EIR for new development of 30-year off-channel aggregate mining operation processing up to 275,000 cubic yards annually.
Martis Plant City of Truckee	Preparation of application mining and reclamation plans to increase depth of mining for operation serving Truckee-Tahoe area.
Merced River Aggregates Merced County	Investigation of community concerns regarding offsite flooding near the site and preparation of a revised Reclamation Plan.
Moody Flats Quarry Shasta County	Application Package, including Project Description and Reclamation Plan, and Environmental Assessment preparation and submittal for a new hardrock quarry near Shasta Dam.

Nelson Hill Quarry
Solano County

Preparation of a Reclamation Plan, Financial Assurance Cost Estimate, and draft Initial Study for an existing hardrock quarry. Also conducted the annual Conditional Use Permit Compliance Monitoring for the site.

Quinto Ranch
Merced County

Application Package, including Project Description and Reclamation Plan, preparation and submittal for a new alluvial mine near the California Aqueduct. The Reclamation Plan envisioned a post-mining land use of a conservation easement for kit fox habitat.

Santa Cruz Sand Plant
Santa Cruz County

Preparation of a habitat conservation plan for the California Red Legged Frog, including negotiation and meetings with the U.S. Fish and Wildlife Service.

Soda Lake
Santa Cruz County

Project Manager for natural resource permitting (404 Permit, 401 Certification, and Streambed Alteration Permit) for 50-year expansion of tailings facility.

Stillwell Project
Tulare County

Project Manager for preparation of mine and reclamation plans and an EIR for development of a new quarry and offsite raw aggregate transport to existing processing plant.

Truckee Quarry
Nevada County

Conducted a Conditional Use Permit and SMARA compliance audit for a required 5-year review of conditions of approval compliance.

Van Duzen River Ranch
Humboldt County

Cumulative impact analysis of sustained yield for in-stream aggregate production.

Vernalis Quarry
San Joaquin County

Preparation of initial site plans, Project Description, Reclamation Plan, and all necessary County Application Forms for submittal of a Conditional Use Permit Application for a greenfield hardrock aggregate quarry.

Williams Quarry
San Benito County

Land use planning, reserves estimates, visual resource attenuation, and related investigations leading to use permit and reclamation plan applications for sand quarry.

INDUSTRIAL AND PRECIOUS MINERALS PROJECTS

America Mine
San Bernardino County

Managed permitting and preliminary design services for a large exploration drilling program, and for the construction and operation of a new open pit heap leach gold mine on a 1,355-acre site. Provided permitting services for preparation and processing of major federal, State, and County permits including Permit to Operate/Mining and Reclamation Plan, Authority to Construct, and Waste Discharge Order. Managed engineering services for preliminary mine plan design.

Arctic Canyon/Cushenbury Quarry
San Bernardino County

Project Manager and primary author for a 400-acre expansion to a high quality limestone mine. Mine quarries will provide 60 years of reserves to the existing mine. Key environmental issues included addressing impacts and revegetation for federally listed carbonate endemic plant species.

Castle Mountain Mine Expansion
San Bernardino County

Project Manager for EIS/EIR for 550-acre expansion to the third largest gold mine in California. Project would extend mine life by 10 years, create additional mine pits, heap leach pads, and incorporate pit backfilling. Final expanded project will mine 145 million tons of overburden and process 71 million tons of ore.

Castle Mountain Mine 69kV Power Line
San Bernardino County

EA for BLM for a 20-mile power line in the East Mojave National Scenic Area. Prepared detailed evaluation impacts of alternatives, including an underground cable.

Castle Mountain Project
San Bernardino County

Prepared a joint EIR/EIS and other environmental documentation for permitting a highly controversial 30-million ton open pit heap leach gold mine on 2,700 acres in the East Mojave National Scenic Area (a proposed national park) in San Bernardino County, California. Authored and edited all environmental documentation. Devised and implemented strategies for document preparation and satisfied coalition of opposing environmental groups.

Egenhoff Barite Mine
Tuolumne County

Feasibility assessment and strategic planning for permitting of high quality barite reserves.

Falkenbury Quarry
Shasta County

Reclamation planning for 50-year development of shale reserves used for production of cement.

Gray Rocks Quarry
Shasta County

Various mine planning and permitting tasks leading to Reclamation Plan approval for continued operation of 800,000 ton per year limestone quarry used for cement production.

Gray Rocks South Drilling Program
Shasta County

Development of use permit, reclamation plan applications, and endangered species permit for exploration drilling program in sensitive habitat.

Mesquite Mine Biological Assessment
Imperial County

Managed preparation and processing of a Biological Assessment for Section 7 consultation with the U.S. Fish and Wildlife Service for the ongoing impacts to the threatened desert tortoise from an existing operating 5,000-acre open pit mine.

Monolith
Kern County

Project Manager for planning and preparation of site evaluations leading to updating of reclamation plan and financial assurance for limestone and silica quarries used for production of cement.

S&V Properties
Inyo County

Project Manager for mineral reserves assessment, environmental investigations, mine planning and permit application development for cinder mine.

Stevens Creek Quarry
Santa Clara County

Reclamation Plan Amendment and Financial Assurance Cost Estimate for an existing hardrock quarry.

Sutter Gold Mine
Amador County

Condition of approval and mitigation monitoring for an existing gold mine.

OTHER PROJECTS

Avenue 7
Madera County

Land use assessment and environmental evaluations for expansion of arterial roadway.

Carson Hill Market Study
Calaveras County

Market analysis of waste rock sales from an old gold mine.

Gray Rocks 2081
Shasta County

Endangered species assessment, permit application development, mitigation planning, and responsible agency negotiations for permit under California Endangered Species Act pertaining to long-term development of limestone quarry.

Leona Quarry
City of Oakland

Mineral reserves assessment and market analysis for support of EIR converting hard rock quarry to residential development.

Los Angeles County Sanitation District
Imperial County

Project Manager for comprehensive biological mitigation compliance program supporting construction and operation of regional waste-by-rail landfill.

Market Resource Investigation
Sacramento County

Market analysis of currently permitted aggregate reserves and future aggregate demand in the County. In addition, review of appropriate literature was conducted to identify areas of the County that may contain aggregate reserves for future permitting.

Mesquite Regional Landfill
Imperial County

Endangered species, 404, 1603 and other permitting tasks for a 600-million ton 100-year waste-by-rail landfill accepting up to 20,000 tons per day of municipal solid waste. The Landfill overlaps the Mesquite mine and would use mine waste rock and heap leach pad areas.

Palmdale Constraints Analysis
Los Angeles County

Initial site constraints assessment for potential development of a greenfield quarry, including biological resource investigation, land use analysis, and cultural resources investigation.

LEAD AGENCY SERVICES

Aggregate Resource Management Plan
Glenn County

Project Manager for preparation of county-wide plan for management of aggregate resource development, and CEQA support.

Annual SMARA Mine Inspections

Contracted to provide SMARA services to complete annual inspections and perform financial assurance verification:

- Alameda County (6 mine operations)
- Alpine County (4 mine operations)
- Amador County (23 mine operations)
- City of Redding (2 mine operations)
- El Dorado County (14 mine operations)
- Los Angeles County (14 mine operations)
- Merced County (22 mine operations)
- Monterey County (14 mine operations)

- San Joaquin County (27 mine operations)
- Santa Clara County (9 mine operations)

Cache Creek Aggregates
Yolo County

Project Manager for EIR addressing off-channel mining permit for seven mine quarries covering 360 acres, and processing of up to 1,000,000 million tons per year. Project included mining to depths of up to 75 feet using a dragline below the water table. Planned reclamation is to a combination of uses including open water, agriculture, pasture and habitat. Key environmental issues included noise, pit river capture from Cache Creek, PM_{10} generation, aesthetics, and potential water quality impacts.

Eland Construction
Amador County

Preparation of a Reclamation Plan for a material stockpiling site that used the material for fill in bypass construction project.

Handley Ranch
Monterey County

Project Manager for EIR on new hardrock quarry proposed as 100-year operation.

Shamrock Materials
Sonoma County

Project Manager for preparation of initial study evaluating environmental impacts of in-stream mining in the Russian River.

SMARA Compliance Support
El Dorado County

Provide regulatory support to County Counsel regarding compliance of 14 county mines with state mine reclamation law.

Technical Support for Mine Permit Processing
El Dorado County

Provide technical review of existing and proposed mine operations for compliance with SMARA, CEQA and local ordinances.

Teichert Esparto
Yolo County

Project Manager for EIR for 30-year off-channel mining permit for a single 148-acre mine quarry, and for processing of up to 1.2 million tons per year. Project included mining to depths of up to 150 feet using dry pit (scraper) and wet pit (dredge) mining methods. Planned reclamation is to open water and wildlife habitat. Key environmental issues included potential pit river capture from Cache Creek, loss of prime agricultural soils, PM10 generation, and potential water quality impacts.

Teichert Quarry
Sacramento County

Project Manager for EIR on large hardrock quarry supplying Sacramento region.

Teichert Woodland EIR
Yolo County

Project Manager for EIR for long-term (30-year) mining permit for 3 mine quarries on 283 acres, processing of up to 1.2 million tons/year and mining to depths of approximately 50 feet. Both dry pit and wet pit mining methods would be used with reclamation to agriculture, open water and wildlife habitat. Key environmental issues included loss of agricultural soils, potential water quality impacts, PM_{10} generation, aesthetics, and potential to increase Bird Air Strike Hazard for aviation.

Unnamed Quarry
Lassen County

Expert witness for litigation support involving illegal sale of construction minerals without reclamation plan approval.

US Gypsum
Imperial County

Project Manager for EIR evaluating multi-faceted expansion plans for wallboard manufacturing facility, associated gypsum quarry, and groundwater impact.

APPENDIX A-2

SUBCONTRACTOR RESUMES

PETERS ENGINEERING

PETERS ENGINEERING GROUP
A California Corporation

55 Shaw Avenue, Suite 220
Clovis, California 93612

Phone (559) 299-1544
Fax (559) 299-1722

David Peters, PE, TE, PTOE
Principal Engineer

Fields of Special Competence	Municipal Engineering / Public Works Roadway Design / Traffic Engineering Construction Administration
Education	BS/Civil Engineering California State University, Fresno/1990
Registration	Professional Civil Engineer/CA Professional Traffic Engineer/CA Professional Traffic Operations Engineer/ITE Class A General Engineering Contractor/CA
Professional Affiliations	Institute of Transportation Engineers American Society of Civil Engineers

Mr. Peters has over 17 years of experience as a civil engineer and currently serves as a principal-in-charge and/or project manager on various transportation and traffic engineering projects.

Related Experience

Teichert Quarry Traffic Impact Study, Sacramento, CA. Project manager for traffic analysis related to proposed mining operations. Project included coordination with County and Caltrans staff.

RMC Pacific Mining Site EIR, Lemon Cove, CA. Prepared transportation section of an EIR for RMC Lonestar mining plant expansion including definitions of impacts and proposed mitigation to a state highway. Project included close coordination with Caltrans staff.

US Gypsum Mining Site, El Centro, CA. Project manager for traffic analysis related to an expansion of mining operations. Project included coordination with City, County and Caltrans staff.

RMC Pacific Vernalis Mining Site, Vernalis, CA. Project manager for traffic analysis related to proposed and existing gravel mining operations. Project included coordination with County and Caltrans staff.

RMC Pacific Jesse Morrow Mountain Mining Site, Sanger, CA. Project manager for traffic analysis related to proposed gravel mining operation. Project included coordination with County and Caltrans staff.

Granite Rock Mining Site, El Centro, CA. Project manager for traffic analysis related to proposed mining site modifications. Project included coordination with County and Caltrans staff.

North Fork Village Traffic Impact Study, Madera County, CA. Project manager for traffic analysis of new urban village consisting of 6,000 single family homes, commercial, industrial and school development. Traffic analysis was part of an EIR prepared for the entire project.

David Peters, PE

Highway 99 Rest Stop Traffic Analysis, Chowchilla, CA. Project manager for traffic analysis which evaluated potential impacts resulting from a proposed rest stop and commercial development in Chowchilla, CA. Project included traffic and geometric analysis of six alternatives for reconstruction of an existing interchange.

Baldwin Contracting Company Hallwood Mining Site EIR, Yuba County, CA. Prepared transportation / circulation section of an EIR for mining plant expansion including definitions of impacts and proposed mitigation to a state highway. Project included coordination with Caltrans staff.

Northwest Reno Wal-Mart Traffic Analysis, Reno, NV. Project manager for traffic analysis and public presentation of findings for a proposed 220,000 square foot retail facility.

Fresno Juvenile Detention Facility, Fresno, CA. Project manager for traffic analysis of seven proposed facility sites. Facility consisted of a 160 acre self supported site.

Spring Creek Debris Dam Assessment Project, United States Bureau of Reclamation. Responsible for analysis of traffic impacts of borrow haul trucks to and from the site.

Mono Wind Casino Traffic Analysis, Auberry, CA. Principal-in-Charge for traffic analysis related to proposed casino expansion. Project included coordination with County and Caltrans staff.

City of Fresno Intelligent Transportation Systems (ITS) Implementation, Fresno, CA. Project manager for implementation of the City's first intelligent transportation system including coordination of dozens of traffic signals, installation of fiber optic communication system and construction of downtown traffic operations center.

Squaw Valley Road / SR89 Intersection Improvements, Placer County, CA: Project manager for preparation of pre-design report and PS&E associated with intersection improvements including signalization at the Squaw Valley Ski Resort entrance. Project included close coordination with Caltrans staff.

Five Traffic Signals, West Sacramento, CA. Responsible for traffic counts, levels-of-service analysis, signal design using Model 170 controller. Project involved relocation of SPRR crossing control devices. Resident engineer for construction of signals and intersection improvements.

Hewlett-Packard, Roseville, CA. Responsible for traffic counts, level-of-service analysis, signal design and layout using Model 170 controller, and development of interconnect plans. Served as resident engineer for construction of signal and intersection modifications.

Sacramento Master Control Project, Sacramento, CA. Project included interconnection of 200 traffic signals, installing CCTV traffic monitoring cameras, and design of a traffic operations center. Project included modifications of 86 existing traffic signals, and design of 10 new traffic signals.

PETERS ENGINEERING GROUP
A California Corporation

55 Shaw Avenue, Suite 220
Clovis, California 93612

Phone (559) 299-1544
Fax (559) 299-1722

John Rowland, PE, TE
Senior Transportation Engineer

Fields of Special Competence	Traffic Signal Design Traffic Impact Studies Geotechnical Engineering
Education	Bachelor of Science - Civil Engineering California State University, Fresno Graduate Courses University of California, Irvine
Registration	Professional Civil Engineer/CA Professional Traffic Engineer/CA
Professional Affiliations	American Society of Civil Engineers Tau Beta Pi Engineering Honor Society Institute of Transportation Engineers - Local

Mr. Rowland has over 17 years of experience in the fields of civil, traffic, and geotechnical engineering. He has served as a project manager for numerous commercial, industrial, residential, and public works projects.

Related Experience

Teichert Quarry Traffic Impact Study, Sacramento, CA. Project engineer for traffic analysis related to proposed mining operations. Project included coordination with County and Caltrans staff.

Kings River Sand and Gravel Plant Traffic Impact Study, Fresno County, CA. Project manager for traffic impact study for a proposed aggregate mining site.

Ostrom Road Quarry Traffic Impact Study, Yuba County, CA. Project manager for traffic impact study for a proposed aggregate mining site with asphalt concrete batch plant.

Jaxon Enterprises Mine and Reclamation Expansion Traffic Impact Study, Merced County, CA. Project manager for traffic impact study for a proposed aggregate mining site.

Madera Ranch Quarry Traffic Impact Study, Merced County, CA. Project manager for traffic impact study for a proposed aggregate mining site.

RMC Pacific Vernalis Mining Site, Vernalis, CA. Project engineer for traffic analysis related to proposed and existing gravel mining operations. Project included coordination with County and Caltrans staff.

Fashion Fair Mall Expansion Traffic Impact Study, City of Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for additions to Fashion Fair Mall on Shaw Avenue east of State Route 41.

The Commons at Figarden Traffic Impact Study, City of Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a large mixed-use development located on the Figarden Loop.

The Sikh Institute of Fresno Traffic Impact Study, City of Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a proposed Sikh worship center.

Golden Triangle Traffic Impact Study, City of Clovis, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a large mixed-use retail and office development southwest of Herndon and Clovis Avenues.

Clovis Unified School District Third Educational Center and State Center Community College District Campus Traffic Impact Study, City of Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a junior college, high school, and middle school proposed near the intersection of Willow and International Avenues.

Palm / Nees Office Building, Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for an office building located near the intersection of Palm and Nees Avenues.

Skypark Village Shopping Center, Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a proposed commercial development at Herndon and Blythe Avenues.

Herndon Plaza Office Complex Traffic Impact Study, Fresno, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a proposed office complex near the intersection of Herndon and Maple Avenues.

Traffic Impact Studies for Residential Tracts – Responsible for performing traffic analyses and preparing traffic impact study reports for dozens of residential tracts in the Fresno/Clovis area.

Target Shopping Center Traffic Impact Study, Hanford, CA: Responsible for performing traffic analyses and preparing traffic impact study report for a proposed shopping center near the existing Hanford Mall. Project included significant coordination with Caltrans.

First / Tulare Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals in conjunction with intersection widening for a capital improvement project.

Herndon / Hayes Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals as a part of a new school project. Ultimate configuration will include double left-turn lanes on each approach.

Herndon / Bryan Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals as a part of a new school project. Project included construction of the ultimate poles in interim locations to accommodate existing and future road configurations.

Clovis / California Traffic Signals and Striping, City of Fresno, CA: Responsible for design of new traffic signals and civil improvements to accommodate signals.

Fowler / Shields Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals.

Willow / International Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals for a proposed educational center. Project included review by City of Fresno, City of Clovis, and County of Fresno.

Roads 426 / 427 Traffic Signals and Driveway Widening, County of Madera, CA: Responsible for design of new traffic signals and civil improvements to accommodate signals.

Fruit / Browning Traffic Signals, County of Fresno, CA: Responsible for design of new traffic signals at an urban intersection.

Clovis / California Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals and striping improvements to accommodate signals.

Shaw Avenue / State Route 99 Traffic Signals, City of Fresno, CA: Responsible for design of new traffic signals and interconnect for two existing interchange ramp intersections.

Gettysburg / Villa Traffic Signal, City of Clovis, CA: Responsible for design of new traffic signal at an urban intersection.

Chinowth / Whitendale Traffic Signal, City of Visalia, CA: Responsible for design of new traffic signals and civil improvements to accommodate signals. Signals incorporated protected-permissive phasing.

EMKO ENVIRONMENTAL

Dr. Andrew A. Kopania, R.G., C.H.

Summary of Qualifications

Fifteen years of experience in subsurface investigation, hydrogeology, and environmental engineering, including computer modeling of contaminant fate and transport, expert witness services, investigation and remediation of contaminated soils and ground water, CERCLA RI/FS and RD/RA, and extensive experience in negotiations with state and federal agencies. Dr. Kopania has served as lead hydrogeologist, project manager, and technical advisor on a wide range of projects throughout California and North America.

Professional Experience

EMKO Environmental, Inc., El Dorado Hills, California (1995 to present), *President and Principal Hydrogeologist*
HYDRO-SEARCH, INC., Sacramento, California (1993 to 1996), *Senior Hydrogeologist/Environmental Engineer*
DAMES & MOORE, Sacramento, California (1989 - 1993), *Senior Hydrogeologist/Environmental Engineer*
UNIVERSITY OF CALIFORNIA, LOS ANGELES, Los Angeles, California (1987 - 1989), *Doctoral Research Associate*
UNION PACIFIC RESOURCES COMPANY, Englewood, Colorado (1983 - 1987), *Geologist*

Professional Affiliations

Association of Ground Water Scientists and Engineers

Education

D. Env., Environmental Science and Engineering, University of Los Angeles, Los Angeles, 1991. Dissertation title: *Geologic Heterogeneity and Ground-water Contamination: Guidelines for Determination of Significance to Investigation and Remediation*
M.S., Geology, University of Michigan, Ann Arbor, 1984
B.S., Geology, with Honors, University of California, Los Angeles, 1981, Phi Beta Kappa, Summa Cum Laude

Registration

California Registered Geologist, No. 4711
California Certified Hydrogeologist, No. 31

Accomplishments Since Forming *EMKO Environmental*

- **At a former Class I disposal site in southern California, a previous consultant had estimated total remediation costs of $74,000,000. Conducted a detailed hydrogeologic and fate & transport evaluation for the site. This detailed evaluation resulted in a No Further Action determination from both the RWQCB and DTSC, with no required remediation.**
- **Co-authored TI Waiver document for a DNAPL area at an EPA Region IX Superfund site. TI Waiver was granted by U.S. EPA, DTSC, and RWQCB.**
- **Obtained a RBCA closure at an airport rental car facility in Michigan with up to 860 ppb benzene remaining in groundwater.**
- **Obtained a RBCA closure at a former animal rendering facility in northern California with up to 6,800 ppb benzene remaining in groundwater.**
- **Documented asymptotic remediation performance at a former electronics manufacturing facility in northern California and received RWQCB approval for termination of active remediation. Developed an action plan for complete regulatory closure of the site within two years.**
- **Provided expert witness testimony for an $11,000,000 multiple RP litigation. Our client's final mediated settlement was less than $100,000.**
- **Conducted vadose zone modeling to document that site-related constituents in perched water beneath an active electronics manufacturing facility in northern California would not impact a deeper sole-source aquifer. Based on the modeling results, the DTSC and RWQCB withdrew the existing RAP, which required installation of a $1,000,000 pump-and-treat system, and have issued a revised No Further Action RAP.**
- **Developed a comprehensive, site-wide *in situ* groundwater remediation and NAPL containment/treatment approach at a RCRA wood-treating facility in Colorado to replace a proposed interim hydraulic containment system. The interim system was estimated to cost $2,000,000 to install and $200,000 to $500,000 per year to operate. The *in situ* system will cost less than $500,000 to install and under $50,000 per year to operate.**
- **Conducted a fate & transport evaluation to document that our client's groundwater remediation requirements had been met at a resorcinol manufacturing facility in Pennsylvania. This finding will eliminate annual O&M expenses of up to $750,000 per year.**
- **Developed an approach to fully decommission an offsite groundwater remediation system at an active CERCLA wood-treating site in northern California within four years of system startup. The two-mile long plume has reached the EPA remedial goals 27 years ahead of schedule.**
- **Designed an *in situ* groundwater bioremediation system and documented that it is treating PAHs from a creosote DNAPL.**

Project Experience

NPL/Superfund/RCRA

- **Senior hydrogeologist for evaluation of ground-water flow and plume migration from multiple Superfund sites with multiple PRPs in Santa Clara Valley, CA. The objective of this work was to identify data gaps, evaluate whether all PRPs had been identified, develop interim remedial options, and assess percent contribution to remediation costs for each PRP.**

- **Lead hydrogeologist and Project Manager for Remedial Design/Remedial Action at Koppers Co., Inc. Superfund site in Oroville, CA. Prepared preliminary statement of work in accordance**

with Record of Decision and Consent Decree, developed new ground-water monitoring program, conducted design of ground-water extraction system, designed DNAPL recovery system, performed soil leachability and degradation study, conducted hydraulic modeling to support bioremediation, and designed *in situ* groundwater bioremediation system. Interacted regularly with EPA, RWQCB, and DTSC as the client's project manager.

- **Lead hydrogeologist for State Superfund RI/FS project in Sacramento, CA. Developed sampling and monitoring program, conducted ground-water modeling, performed source evaluation, conducted aquifer tests, developed contaminant migration scenario, evaluated remedial measures, developed ground-water Interim Remedial Measure.**

- **Conducted hydrogeologic investigation, evaluation of impacts of maintenance operations and waste ponds at a railroad yard. Developed ground-water Interim Remedial Measure. Developed strategy for interaction with EPA when site placed on NPL as the Western Pacific Superfund site in Oroville, CA.**

- **Project Manager for groundwater remedial design at an active wood-treatment facility (J.H. Baxter Superfund site, Weed, CA). Scope included refining extent of contamination, investigating impacts in previously-unidentified deeper aquifer, developing focused Interim Remedial Measure, design of extraction system, upgrading and re-designing existing pilot treatment plant, and identifying and designing discharge alternatives. This work was conducted on a fast-track schedule to comply with the requirements of an EPA 106 Order.**

- **Evaluated groundwater remedial options at an active, RCRA-regulated, wood treating site in Denver, Colorado. Identified *in-situ* alternative to previously-approved pump-and-treat system and received regulatory approval to change the remedy. Designed and implemented pilot test that demonstrated the effectiveness of the alternative remedy.**

- **Assisted with development of work plan for Phase II RFI at an active wood-treating facility in Grenada, MS. Lead technical reviewer for RFI report at conclusion of field program.**

- **Evaluated the use of re-circulation wells for both dissolved-phase groundwater remediation and DNAPL collection at a RCRA facility in Montgomery, AL.**

- **Reviewed remediation plan for off-site collection and remediation of DNAPL and LNAPL at a RCRA facility in Charleston, SC.**

- **Conducted accelerated remedial investigation of a VOC plume sourced from a solvent manufacturing and distribution facility in Sunnyvale, CA. Detailed stratigraphic data was collected using CPT techniques and incorporated into a geostatistical evaluation to produce a 3-D rendering of the complex alluvial channels forming the aquifer. Comparison of chemical distributions and geostatistics was used to identify the extent of client's plume and identify numerous other sources in the region.**

Computer Modeling

- **Modeled the transport of chlorinated VOCs, aromatic VOCs, and MTBE in a tidally-influenced aquifer zone in the Port of Los Angeles to evaluate potential release to the ocean. Several feet of MTBE floating product was present in part of the modeled area. Codes used: MODFLOW, MT3D.**

- **Designed organic-contaminant, forced-gradient field tracer test at University of Waterloo's Borden field site (CFB Borden, Ontario, Canada). Identified flow fields, capture-zones, and predicted "plume" behavior, as seen in different monitoring points. Also evaluated the effect of this test on other field experiment "plumes" in the same aquifer. Codes used: RESSQ, USGS Method of Characteristics (MOC).**

- **Developed sensitivity analysis to identify likely sources for several discrete plumes beneath and adjacent to an active landfill in Modesto, California. Modeling results demonstrated that the largest impacts were from an offsite source. Designed groundwater extraction system that would contain the plume under the impacts of a seasonal reversal in gradient caused by variations in river flow and irrigation. Code used: MOC.**

- **Developed a groundwater flow and contaminant fate & transport model to predict the location of the leading edge of a plume at various times in the future at the U.C. Davis/DOE Laboratory for Energy and Health-related Research (LEHR), Davis, California. The model was developed to estimate the time at which various offsite wells may be impacted and to design the next phase of field investigation. Sampling data collected five years after the modeling was completed are very consistent with the model predictions regarding impacts to offsite wells. Codes used: MODFLOW and MT3D.**

- **Directed the development of a groundwater flow and contaminant fate & transport model to assist in remedial design and future investigations at a State Superfund site in Sacramento, CA. The model was used to design the extraction system for an interim groundwater remedy and to identify appropriate sampling locations for a comprehensive CPT/HP investigation program in a residential neighborhood. Codes used: MOC, MODFLOW, and MT3D.**

- **Developed a groundwater model to select the appropriate extraction-well locations and pumping rates for an interim groundwater remedy at a railyard in Oroville, CA. Codes used: RESSQ and MOC.**

- **Developed a comprehensive groundwater flow and contaminant fate & transport model to design a groundwater remedy to comply with the requirements of a Consent Decree at the Koppers Co., Inc. Superfund Site, Oroville, California. The modeling included a complicated hydrogeologic system with influences from two surface streams, a dipping bedrock surface, and seasonal releases to a major river. The model included six layers and covered an area of nearly 2,000 acres, resulting in over 80,000 nodes in the model. The model was used to design two separate extraction and treated water re-injection systems. It was also used to ensure that nearby industrial water usage would not reduce the capture zones of the remediation extraction wells. After three years of pumping, the mass in the offsite groundwater plume has been reduced by over 90%, resulting in a long-term shutdown of the treatment system. The remediation system performance indicates that the model is very accurate in predicting aquifer and plume behavior. Codes used: MODFLOW, MODPATH, and MT3D.**

- **Directed the development of a groundwater flow model to assess the effectiveness of the existing extraction system at a former wood-treating site in Nashua, NH. The model was also used to define the hydraulic impacts of various barrier (e.g. slurry wall) systems to contain a DNAPL plume, including the pumping required to maintain a pre-defined inward gradient. Code used: MODFLOW.**

- **Directed the development of a groundwater flow model to redefine the groundwater remediation system design submitted under a 106 Order at a wood-treating site in northern CA. The model verified the physical separation of the upper and lower aquifers and predicted the presence of a leaking well seal. The well seal was later confirmed to be leaking by conducting a tracer test. The model was subsequently used to evaluate the appropriate configuration of a physical barrier (i.e. slurry wall) to contain a DNAPL plume. The appropriate locations for dissolved-phase extraction wells outside of the barrier were selected using the model. In addition, the model was used to identify the necessary pumping rate to maintain an inward gradient into the barrier system. Based on the results of the model, the EPA modified the remedy in the ROD to include a slurry wall and reduce pumping requirements, resulting in a substantial reduction in O&M costs for the site. Codes used: MODFLOW and MODPATH.**

- **Conducted vadose-zone fate and transport modeling to assess the impact of contaminated soils on groundwater quality at a wood-treating site in northern CA. Both aqueous-phase and free-phase constituents were simulated to define soil cleanup criteria based on impacts to groundwater. The model verified that the timeframe of the groundwater remedy could be accelerated significantly if two areas of soil were addressed. In one area, DNAPL was potentially migrating downward toward the water table. Codes used: HELP, SWMS_2D (aqueous phase), and SWANFLOW (DNAPL).**

- **Developed a groundwater model to predict chemical concentrations at downgradient receptor locations for a former animal rendering site in southern CA. This information was developed in support of a risk assessment recommending no further action for the site. Code used: MOC.**

- **Developed a groundwater flow and contaminant fate & transport model to evaluate the source potential of various sites at an industrial park in southern California. The model was used to identify the most likely source location and the location of potentially-impacted downgradient properties. Based on the results of the modeling, the RWQCB issued a No Action letter for our client's site. Codes used: MODFLOW and MT3D.**

- **Conducted vadose-zone modeling to define the potential impact of perched-water contamination on a regional drinking-water aquifer at an active electronics manufacturing facility. The modeling is being conducted to support a No Action RAP. Code used: VLEACH2.**

- **Conducted analytical vadose-zone fate & transport simulations to define potenial groundwater impacts from chemical releases to surface soils in Kansas City, MO. This work was conducted in support of a risk assessment recommending no further action for the site.**

- **Conducted analytical groundwater fate & transport simulations in support of a risk-based corrective action (RBCA) closure report at a former tallow and soap manufacturing facility in northern CA.**

- **Conducted groundwater fate & transport modeling to predict chemical concentrations in groundwater downgradient of a jet engine maintenance facility in southern CA. This model was developed in support of a risk assessment. Code used: MOC.**

- **Directed groundwater modeling in support of remedial design at a former barite and selenite processing facility in central California. This modeling was conducted to identify the location and appropriate screened intervals for groundwater extraction wells. Code used: MODFLOW.**

- **Directed the development of a groundwater flow and contaminant fate & transport model at a major electronics facility in Palo Alto, CA. The hydrogeologic system included seven flow zones, with stratigraphic dips of up to 45 degrees. The model was used to evaluate the hydraulic separation between flow zones, develop additional investigation programs, and design two interim remedial groundwater measures.**

- **Conducted vadose-zone and groundwater modeling to evaluate the waste load assimilative capacity of site soils at a regional wastewater treatment facility in northern CA. Bio-solids from sludge stabilization basins are injected into the shallow soils of dedicated land disposal units. It was suspected that this land disposal was resulting in elevated nitrate and chloride levels in the groundwater. The vadose-zone model was used to identify various management options available to reduce infiltration and nitrogen transport, including depth of sludge injection and surface grading to enhance run-off of rainfall. The groundwater model and the vadose zone model also indicated that the dedicated land disposal units should not be a major contributor of nitrate and chloride to the aquifer. Subsequent investigation identified the nearby use of an old dry well as a septic-tank leach field. Codes used: FEMWATER and MOC.**

- **Assisted with development and reviewed results of vadose-zone transport model to assess the potential for VOCs in soils to groundwater at two sites in southern California. Code used: VLEACH2**

- **Developed approach to assess plume migration timing based on normalized mass of parent and daughter VOCs in ground water at a multiple-PRP electronics manufacturing area in northern CA.**

- **Conducted contaminant fate and transport evaluation of fuel leaks in surficial soil and basaltic aquifers on Oahu, HI.**

Landfill Services

- **Coordinated Air and Water SWATS at a former burn dump/landfill. Evaluated sources of gases present in an adjacent hotel. Conducted field monitoring to assess the extent of impacts. Developed mitigation and compliance program for addressing methane and VOCs present in soils and the hotel.**

- **Project Manager for ground-water remediation system at a private landfill in northern CA. Also completed Closure and Post-closure Maintenance Plan, Periodic Site Review and Report of Disposal Site Information (PSR-RDSI); prepared hydrogeologic summary report; performed ground-water modeling and contaminant transport evaluation; worked closely with Central**

Valley Regional Water Quality Control Board and California Integrated Waste Management Board.

- **At a former city burn dump/landfill in northern CA, evaluated data from detection monitoring program, interpreted ground-water flow patterns and interaction of multiple aquifers, designed verification monitoring program, evaluated verification monitoring data to determine extent of ground-water plume.**

- **Performed preliminary contaminant evaluation and developed expanded monitoring program to evaluate site hydrogeology at a grit and screenings landfill in northern CA.**

- **Review of existing data, evaluation of site geologic model, assessment of ground-water flow patterns in fractured bedrock, development of ground-water modeling parameters.**

- **Conducted ground-water modeling and contaminant transport evaluation for a closed landfill.**

- **Evaluated hydrogeology and designed ground-water tracer study in support of landfill siting study.**

- **Conducted hydrogeologic evaluation of bedrock aquifer for landfill expansion project in northern CA. Assessed extent of ground-water contamination from existing landfill area and evaluated effectiveness of existing mitigation measures, including recommendations for system improvements.**

Wastewater

- **Lead hydrogeologist for evaluation of solids disposal operations including sludge storage basins, dedicated land-disposal units, and grit and screenings landfill. Conducted aquifer tests, ground-water geochemical studies, and contaminant evaluation to determine rate and direction of ground-water flow, impact of operations on ground-water quality, and options for minimizing this impact. Conducted Article 5 Evaluation Monitoring Program and preliminary design of Corrective Action Program.**

Manufacturing/Distribution

- **Identified regulatory and closure requirements for sites with and without MTBE for client with multiple UST sites.**

- **Assisted in development of strategy for over 90 pesticide manufacturing and distribution facilities, including EDB manufacturing. Conducted a Designated Level Methodology evaluation to assess soil cleanup criteria under TPCA.**

- **Lead hydrogeologist for multi-million dollar RI/FS project related to soil and ground-water contamination. Managed and conducted aquifer tests, geochemical evaluations, ground-water and contaminant transport modeling, design of remedial measures, and studies related to the impact of geologic structure, including faults and fractures, on ground-water flow and contaminant migration and the presence of DNAPLs. Designed, implemented, and evaluated numerous ground-water Interim Remedial Measures.**

- **Provided review of historical data and developed recommendations for further investigation of an EDB release at a former pesticide and fertilizer manufacturing facility. Objective was to fast-track the remediation program so that site could be re-developed as soon as possible.**

- **Evaluated presence of vinyl chloride in groundwater to identify if the source was related to manufacturing or breakdown of other VOCs.**

- **Managed soil and groundwater evaluation of pesticide and gasoline additive manufacturing facilities. Designed sampling program, conducted statistical evaluation of data, performed aquifer tests, designed dewatering system.**

Expert Witness/Litigation Support

- **Expert witness in nuisance, trespass, and fraud litigation. Groundwater beneath plaintiff's commercial property is impacted by VOCs, MTBE, LNAPL, and refinery products, allegedly from several pipelines, off-site detergent and EDB manufacturing facilities, and an adjacent refinery. Developed technical approach to uniquely identify the source of each chemical constituent both in groundwater and in soils beneath pipelines. Assisted with development of allocation approach to determine damages. Presented facts at settlement conferences. Prepared letters on behalf of the property owner requesting regulatory relief from appropriate agencies.**

- **Expert witness for nuisance and trespass litigation involving lost sale of an office park in Sunnyvale, CA. Used chemical fingerprinting and timing of investigation data to define extent of plumes from multiple sources. Plume extents used to define which sources had impacted the downgradient plaintiff's property. Demonstrated that client's plume had not reached plaintiff's site and had not commingled with plumes from other sources.**

- **Provided expert technical services in support of insurance cost-recovery litigation at a former computer-chip manufacturing facility. Analyses included evaluation of the total mass of chemicals released, the timing of releases, and the method of release.**

- **Expert witness for insurance cost-recovery litigation at a former metals recycling facility with PCB contamination. Evaluated the total mass and timing of chemical releases to demonstrate that client was not illegally disposing of PCBs and that releases were sudden and accidental.**

- **Expert witness for property damage litigation at a former landfill site. Client's property includes a hotel adjacent to a former landfill. Gases from the landfill exceed public health criteria in and around the hotel, leading to a regulatory order that may result in the evacuation of the hotel. Evaluated past disposal practices, adjacent potential sources, actual risks, and remediation requirements to identify the responsible parties and quantify damages.**

- **Expert witness for CA AG's office for insurance cost recovery litigation at a Superfund site. Evaluating nature, source, and timing of off-site groundwater plume.**

- **Provided expert opinion regarding solvent and fuel plume migration. Suit involved multiple potential sources impacting downgradient commercial facility.**

- **Presented expert testimony at an ACL hearing regarding the extent of contamination, sources of contamination, and progress made toward remediation. Used chemical patterns and modeling to demonstrate presence of off-site source.**

- **Presented expert testimony and data interpretations at Agency hearings and settlement conferences for PRP allocation for gasoline and PCE contamination at a former truck stop. Data interpretation consisted of evaluation of different sources based on differences in petroleum products stored and estimation of timing of release based on extent of groundwater plume.**

- **Provided litigation support for insurance cost recovery litigation at a wood-treating facility. Performed data analysis, compiled records, and conducted site inspections for plaintiff's legal representatives.**

- **Provided litigation support for evaluation of off-site contamination. Demonstrated that multiple sources existed in the area and that the off-site plume originated from another upgradient source. Presented data and analysis at settlement conference.**

- **Conducted PRP allocation evaluation to assess remediation cost contribution related to ethylbenzene and EDB manufacturing operations.**

- **Managed third-party review of ground-water basin evaluation. Evaluated aquifer test data, salt-water intrusion potential, and developed estimate of safe yield.**

- **Provided expert technical services and third-party review related to definition and remediation of an Arsenic and Chromium plume at a former wood-treating site.**

- **Reviewed modeling results developed by plaintiff and assisted in development of defense.**

Remedial Design

- **Developed *in-situ* groundwater remediation system for fast-track remediation of an operating metal fabrication facility using VOCs. Remedial design approach will allow the property to be sold and continue operating while the remediation is completed. Remediation approach received rapid approval from RWQCB with only limited oversight requirements. Goal is to shut system down within one year and complete remedy by monitored natural attenuation.**

- **Identified *in-situ* groundwater remediation approach for off-site plume in Sunnyvale, CA in heavily developed commercial/industrial area. Previous efforts have demonstrated that pump-and-treat is not cost-effective in the complex alluvial aquifer and systems are difficult to install across multiple off-site properties and busy highways. The selected approach uses re-circulation wells that allow for cost-effective individual installations. Initial pilot test demonstrated 50% mass reduction in three months. Ability to implement this system prevented the RWQCB from issuing ACLs for violation of a CAO and resulted in a stay of the NOV.**

- **Managed the design of a ground-water remediation system for a landfill. The system included the removal of VOCs from ground water by air-stripping and agricultural use of the treated water.**

- **Conducted design of ground-water extraction and injection systems for on-site and off-site plumes at an EPA Superfund site. Treatment of the extracted ground water included air-stripping, carbon adsorption, and a fixed-film biological treatment unit.**

- **Developed Remedial Design and Remedial Action strategy for an electronics manufacturing facility. Five different plumes consisting of over 15 different organic chemicals are present at the site. The Remedial Design included a combination of soil-vapor and ground-water extraction. Due to the relatively low flow rates and high chemical loading rates, a central treatment system was constructed for all five well fields. An iterative approach to well installation, pumping, and treatment was developed to prevent the drilling of unnecessary wells and to reduce treatment plant capacity to remain within permitted discharge rates.**

- **Developed ground-water remediation strategy for Feasibility Study.**

- **Assessed impact of ground-water plume on construction dewatering operations.**

- **Managed design of multi-phase groundwater remediation system for an operating facility. Design included over 30 wells, free-product recovery, metals precipitation and organics removal. Well placement and infrastructure was designed to not interfere with existing operations at two operating plants.**

Water Resources Evaluation & Development

- **Conducted evaluation of water resources in a karstic limestone/marble aquifer. The evaluation is being conducted to: 1) define the source of turbidity in a spring used for city water supply, and 2) support an application to expand the limits of an existing limestone quarry. Work includes identifying the source and transport mechanism for sand within the marble that is reaching the spring, the occurrence of groundwater within the karstic system, installation of wells to evaluate groundwater conditions, and conducting tracer tests.**

- **Evaluated groundwater resource potential for master-planned residential community. Groundwater was being produced from a gravel aquifer in an area near several surface-water bodies, including sewage lagoons, man-made recreational and storm-water retention lakes, and natural streams and rivers. Estimated aquifer conditions and parameters from production-well data. Studied potential surface water-groundwater interactions based on changes in chemical parameters and estimated capture zones (cf. Well-head protection areas) for various supply-well configurations.**

- **Conducted water resource evaluations for EIR for a proposed paper recycling plant in northern CA. The water supply plan included obtaining groundwater from several wells to be completed within a gravel aquifer adjacent to a major river system. Analyzed aquifer test results, evaluated river-aquifer interaction, and estimated safe yield.**

Publications/Presentations

"Technical Impracticability Evaluation of Groundwater Restoration at Creosote-Impacted Site" in "Risk, Regulatory, and Monitoring Considerations: Remediation of Chlorinated and Recalcitrant Compounds" May 2000. With J. Abrahams and M. Tischuk.

"Natural Processes and Their Implications for Groundwater Remediation - A Case Study" presented by invitation at the University of Waterloo Short Course "Dissolved Organic Contaminants in Groundwater: Innovative Technologies for Site Characterization and Plume Remediation" April 1995.

"A Forced-Gradient Experiment on Solvent Transport in the Borden Aquifer 1. Experimental Methods and Moment Analyses of Results" in Water Resources Research, v.30, 1994. With D. Mackay, G. Bianchi-Mosquera, and H. Kianjah.

"Impacts of Geologic Heterogeneity on Groundwater Contaminant Transport", presented by invitation at the California State Water Resources Control Board, 1992 UST Conference, Santa Clara, California.

"Selection, design, installation, and evaluation of dedicated groundwater sampling systems; A Case Study", Proceedings of the National Groundwater Sampling Symposium, November, 1992. With T. Parker, M. Eisen, A. Robertson, R. Eades, and G. Thomas.

"Ground water pollution update: Causes and implications of slow remediation", Proceedings of the 18th Biennial Groundwater Conference, University of California Water Resources Center, September 1991. With D. Mackay.
"Comparison of methods to estimate mobility of organic contaminants in groundwater", in review. With D. Mackay, G. Bianchi, H. Kianjah, and K. Thorbjarnarson.

"A field method to determine contaminant transport parameters in groundwater", Technical Report to the Metropolitan Water District of Southern California, December, 1989. With D. Mackay.

"Forced gradient field experiments of groundwater transport of conservative tracers and sorbing organic solutes", AGWSE National Meeting, Houston, Texas, September 1989. With D. Mackay, H. Kianjah, and K. Thorbjarnarson.

"Interaction between the northern Idaho-Wyoming thrust belt and bounding basement blocks, central western Wyoming", in Geological Society of America Memoir 171, 1988. With J.P. Craddock and D.V. Wiltschko.

"Idaho-Wyoming thrust belt: Teton Pass, Hoback Canyon, Snake River Canyon", in Rocky Mountain Section, Geological Society of America, Centennial Field Guide, v. 2, 1987. With H.T. Ore.

"The effects of basement - cored buttresses and major stratigraphic changes on thrust sheets: An example from the Idaho-Wyoming-Utah thrust belt", in Geological Society of America Abstracts with Program, v. 17, 1985.

"Deformation consequences of the impingement of the foreland and northern thrust belt (Palisades - Jackson Hole area), eastern Idaho and western Wyoming", in American Association of Petroleum Geologists Bulletin, v. 68, 1984.

GOLDER ASSOCIATES

Kenneth G. Haskell

Education B.Sc., Geological Engineering, Washington State University, 1985.
M.Sc., Geological Engineering, University of Idaho, 1987.

Affiliations Registered Professional Engineer, California

Experience

1987 to date **Golder Associates** **Roseville, California**

Staff Engineer to Principal
Principal Engineer responsible for a variety of geotechnical engineering projects in California, Oregon, and Washington. His experience includes performing site investigations; performing slope stability analyses for rock and soil slopes; providing geotechnical design recommendations for shallow and deep foundations, excavation support, and the construction of embankments over very soft, compressible soils; and evaluation of liquefaction potential. He has developed mining plans, reclamation plans including grading plans for proposed commercial development of aggregate quarries.

Mr. Haskell has prepared reclamation plans for mines and industrial facilities, and prepared construction plans and specifications for a wide variety of decommissioning and demolition, environmental remediation and civil improvement projects.

1986 **Rockwell, Basalt Waste Isolation Project**

Staff Engineer
Scheduled laboratory and in situ rock mechanics tests, assisted in the preparation of site characterization study plans.

1985 - 1986 **Department of Geological Engineering, University of Idaho**

Research Assistant
Statistical evaluation of the effect of rock discontinuity properties on groundwater flow in an underground lead-zinc mine.

1985 **Washington State University**

Geophysics Technician
Geophysical borehole logging of water wells on the Hanford Reservation.

Kenneth G. Haskell

QUARRY AND MINING RELATED PROJECT EXPERIENCE

Permanente Quarry **Santa Clara County, California**
Engineer-of-Record for investigation and developing geotechnical slope design recommendations for the existing main pit and two large waste rock disposal areas. Provided geotechnical recommendations for the quarry reclamation plan to ensure compliance with the geotechnically-related portions of SMARA. The final pit slopes were over 500 feet high.

Teichert Quarry **Sacramento County, California**
Provided technical evaluations for pit slope stability and blasting in support of an Environmental Impact Report for a proposed hard rock quarry in eastern Sacramento County.

Handley Ranch Quarry **Monterey County, California**
Provided technical evaluations for pit slope stability and surface water run-off in support of an Environmental Impact Report for a proposed hard rock quarry in eastern Monterey County.

Teichert Vernalis Quarry **San Joaquin County, California**
Provided technical evaluations for pit slope stability in support of an Environmental Impact Report for a proposed aggregate quarry in San Joaquin County.

Somis Quarry **Ventura County, California**
Project Manager and engineer-of-record for evaluating the compliance of an existing 400-foot high, marginally stable excavation slope with respect to SMARA. Project included an assessment of slope stability of the sandstone and mudstone bedrock slopes, and evaluation of the potential of of-site sediment transport.

Blue Mountain Quarry **Columbia, California**
Project Manager and engineer-of-record for the design of the final pit slopes for the Blue Mountain Quarry. Project included field mapping of existing limestone excavation slopes, evaluation of kinematic and global slope stability, and development of recommendations for blasting and final slope preparation.

Cool Cave Quarry **Cool, California**
Project Manager and engineer-of-record for the evaluation of pit-slope stability for a portion of the pit that was developed adjacent to State Highway 49. The evaluation concluded that the limestone slopes were stable and posed no threat to the highway.

Williams Quarry **San Benito, California**
Provided geotechnical evaluation of the proposed final quarry slopes for a weakly cemented sandstone deposit. Redesigned the final slope configuration to optimize yield and maximize the post-reclamation development potential.

McLaughlin Mine **Lake County, California**
Engineer-of-Record for the closure of a 400-acre tailings impoundmen. The project included a large field exploration program to characterize the geotechnical properties of the tailings. Slope stability, liquefaction, and settlement analyses were completed to evaluate closure alternatives. Engineer-of-record for the preparation of the Final Closure Plan and tailings dam geotechnical monitoring plan.

Kenneth G. Haskell

Carson Hill Mine **Calaveras County, California**

Completed slope stability evaluation for a water reservoir under the jurisdiction of the Division of Safety of Dams and performed slope stability analyses for existing waste rock dumps.

Juniper Uranium Mine **Tuolumne County, California**

Engineer-of-record for the closure of an abandoned uranium mine located in the Stanislaus National Forest. Closure involves the construction of a waste rock repository in the former pit and capping with a low-permeability geomembrane.

Leona Quarry Reclamation **Oakland, California**

Project Manager and engineer-of-record for the preparation of a reclamation plan for the Leona Quarry. Project included evaluating seismic hazards, static and seismic slope stability of 700-foot high, steep bedrock slopes, design of rockfall mitigation measures, and the preparation of surface water control and revegetation plans. A two-dimensional, finite element program (QUAD4M) was used to evaluate potential ground motions and seismic stability of the proposed final quarry slopes. Conducted annual inspections with the Lead Agency for four years.

Lemon Cove Quarry **Visalia, California**

Provided geotechnical evaluation of the proposed development of an aggregate quarry near Visalia California in support of an Environmental Impact Report (EIR). Reviewed subsurface conditions, completed slope stability evaluations during operation and following reclamation, addressed wave erosion and the potential for pit capture by an adjacent river.

El Dorado County, Mine Compliance Support **El Dorado County, California**

Project Manager for addressing geotechnical and hydrological issues associated with annual mine compliance studies in El Dorado County. Golder Associates Inc. is a team member providing compliance and regulatory support to El Dorado County for all active mining facilities within El Dorado County. The project includes annual mine inspections, review of reclamation plans, and financial assurance of the active mining facilities. Completed site reconnaissance and slope stability evaluation of two hard-rock quarries.

San Leandro Quarry **San Leandro, California**

Completed a site reconnaissance and feasibility study for development of residential, single-family homes at the closed San Leandro Quarry. Reviewed rock slope stability, seismic hazards associated with an active fault that runs through the quarry, and developed grading alternatives and associated earth moving quantities for the proposed development.

Penn Mine Reclamation **Calavaras County, California**

Design Engineer for the evaluation of remediation alternatives for an abandoned mine site. Golder was contracted to prepare an Environmental Impact Report and complete feasibility analyses for the clean up and restoration of the site's mining wastes. Engineering analyses were completed to evaluate the slope stability of existing waste piles, the feasibility of raising the existing impoundment dam, minimizing groundwater seepage using grout curtains and extraction trenches, in-situ stabilization of mining wastes, and closing existing mine adits. Golder coordinated workshops between regulators, environmental groups and PRP's.

Martis Valley Quarry **Truckee, California**

Evaluated alternatives for mining aggregate below the current groundwater elevation including the use of dewatering. Currently developing a mining plan to implement the preferred alternative of excavating in the wet (no dewatering). Project involves developing a mine excavation/sequencing plan, revising the reclamation plan, and obtaining permit approval.

BRIAN PATTERSON, PH.D.

SPECIALIZATION:

- Air Quality
- Human Health Risk Assessments
- Regulatory Review & Permitting
- Emissions Modeling

EDUCATION:

- Ph.D. Physical Chemistry, Oregon Graduate Institute, 1990
- B.A. Chemistry, Reed College, 1984

Dr. Patterson has over 19 years of experience managing and conducting environmental studies and regulatory projects, including environmental impact reports (EIRs)/environmental impact statements (EISs) air quality assessments, air dispersion modeling, risk assessments, emissions inventories, permitting, data management, regulatory review, and visibility analyses. He has worked on projects throughout the United States for both industrial clients and regulatory agencies. Over the last several years, Dr. Patterson's focus has been primarily EIR/EIS air quality assessments and air quality permitting of development, remediation, and renewable energy projects.

RELEVANT EXPERIENCE

- Completed a preliminary air quality assessment and human health risk assessment for the Draft EIR for 10 separate areas within a former gold mine site in California. Assessed construction activities associated with the excavation/remediation and heavy-duty diesel truck trips. Emissions of criteria pollutants, greenhouse gases, and toxic air contaminants were assessed based on available emissions modeling tools and historical soil analytical data. Responsible for the preparation of the air quality impact assessment portion of the Draft EIR.
- Conducted an air quality assessment and human health risk assessment for updates to an EIR and air quality permitting of a proposed aggregate mine and processing facility in California. Assessed mining activities, heavy-duty diesel haul truck shipping, rock crushing, ready-mix concrete plant operation, and asphaltic cement plant operation. Emissions of criteria pollutants, greenhouse gases, and toxic air contaminants were assessed based on available emission factors and emission modeling tools.
- Completed a preliminary air quality assessment and human health risk assessment for the Draft EIR for the tailings impoundment facility at a former gold mine in California. Assessed construction activities associated with the placement of a soil cover, diversion channel trenching activities, wind erosion, and heavy-duty diesel truck trips. Emissions of criteria pollutants, greenhouse gases, and toxic air contaminants were assessed based on available emissions modeling tools and historical soil analytical data. Responsible for the preparation of the air quality impact assessment portion of the Draft EIR.
- Reviewed the air quality portion of an EIS for a proposed casino along the Columbia River Gorge in Washington. Reviewed criteria pollutant emissions from on-site backup generators and associated motor vehicle traffic. Conducted independent CALPUFF dispersion modeling to assess potential visibility impacts within the Gorge. Prepared a technical memorandum summarizing the review.

- Conducted an air quality assessment and human health risk assessment for a proposed wood residual-fueled power plant in rural northern California, in support of the required EIR for the project. Assessed fuel combustion emissions, cooling tower operation, and off- and on-road diesel vehicle activities. Emissions of criteria pollutants, greenhouse gases, and toxic air contaminants were assessed based on available emission factors and emission modeling tools. Responsible for the preparation of the air quality technical document component of the draft EIR.
- Currently completing air quality emissions estimates, dispersion modeling, and human health risk calculations for a medical research center in California. The project work is being conducted in support of the required EIR associated with the facility's Long Range Development Plan. Assessed activities include laboratory operations, backup diesel generator, and on-site combustion turbine operations, and mobile source travel. Emissions of toxic air contaminants are being assessed based on available emission factors, permit limits, and emission modeling tools. Responsible for the preparation of a technical report summarizing the results of the human health risk assessment.
- Completed a baseline multi-pathway exposure and risk assessment for a site with contaminated soil and groundwater in southern California. Ambient soil and groundwater data were processed to determine the maximum, minimum, and 95th percentile upper confidence limit of the mean (95UCL) using the U.S. EPA ProUCL program for each contaminant of concern. The project included all phases of a risk assessment conducted in accordance with U.S.EPA and California Department of Toxic Substance Control guidance, including data summary, toxicity assessment, exposure assessment, and risk characterization. Cancer risk and non-cancer hazard were assessed for the inhalation, ingestion, and dermal exposure pathways.
- Managed a complex air quality modeling and human health risk assessment project for a federal research facility in California. To comply with the requirements of the California Environmental Quality Act (CEQA), emissions of radionuclide and non-radionuclide chemicals were modeled using the AERMOD dispersion modeling system and the resulting human health hazard and risk were estimated. Conducting the study required the compilation of a facility-wide emissions inventory for laboratory, mobile, and other stationary sources; processing of on-site meteorological data for inclusion in the dispersion model, and compilation of appropriate toxicity factors.
- Performed AERMOD dispersion modeling in support of an air quality permit application for an 11 MW wood-fired cogeneration boiler at a wood veneer production facility in Oregon. Regulatory requirements included ambient air quality assessments in Class I and Class II areas for NOx emissions and a review of applicable New Source Performance Standards. On-site meteorological data were collected as part of the project for dispersion modeling purposes.

- Performed CALPUFF dispersion modeling to assess visibility impacts from BART-eligible sources at a pulp mill in Oregon in compliance with the Best Available Retrofit Technology rule. Modeled visibility impacts were compared to the 20% best days for each Class I area assessed over a 300 kilometer radius area surrounding the facility.
- Used the CAL3QHC dispersion model to assess conformity of three major signalized intersection expansion projects in the Portland, Oregon metropolitan area with the carbon monoxide state implementation plan. Traffic volume and signalization data for each intersection were used in conjunction with Mobile 6 emissions data to assess maximum 1-hour and 8-hour carbon monoxide concentrations.
- Conducted ambient impact analysis for a mining operation in Oregon using the Fugitive Dust Model (FDM). Emissions were calculated and modeled for digging, hauling, dumping, and crushing operations. Ambient impacts in Class I and Class II areas were compared to PSD ambient increment levels for TSP, PM10, and NO2.
- Managed PSD dispersion modeling study for a soil remediation project in Idaho. Project included criteria pollutant, air toxic, radionuclide, and visibility impact modeling using the ISCST3, CAP88, and VISCREEN models.
- Performed AERMOD dispersion modeling for a wood pellet manufacturing facility in Oregon in support of a significant Title V permit modification application. Class II area impacts were assessed for carbon monoxide.
- Used the CAL3QHC dispersion model to assess conformity of two separate roadway projects involving multiple signalized intersections in a Seattle, Washington suburb with the carbon monoxide state implementation plan. Traffic volume and signalization data for each intersection were used in conjunction with Mobile 6 emissions data to assess maximum 1-hour and 8-hour carbon monoxide concentrations.
- Performed ISCST3 dispersion modeling of toxic air pollutant emissions from three diesel generators at a gold mine in Washington, in support of a temporary source permit application. Convinced the regulatory agency that the use of ISCST3 was the most appropriate dispersion modeling option given the available meteorological parameters for this remote location. Demonstrated that maximum off-site ambient concentrations were predicted to be below the State's Acceptable Source Impact Levels.

BERRYMAN CONSULTING

BERRYMAN Ecological PO Box 28, Weimar, CA 95736
Ellen@BerrymanEcological.com (530) 878-3660

Ellen Berryman

Ellen Berryman, owner of Berryman Ecological, has twenty five years of experience in environmental biology, conservation planning, and regulatory compliance. She has a well rounded background in both the public and private sector with projects involving biological surveys and investigations, designing mitigation strategies, technical writing, NEPA and CEQA compliance, and habitat conservation planning.

Education

- M.S. Biology, San Diego State University, 1993
- B.S. Zoology, UCSB, 1982

Experience

- Berryman Ecological, Principal, Weimar, CA
- Foothill Associates, Regulatory Department Manager, Rocklin, CA
- EIP Associates, Senior Biologist, Sacramento, CA
- US Fish and Wildlife Service, Biologist, Sacramento, CA
- US Fish and Wildlife Service, Biologist, Carlsbad, CA
- Regional Environmental Consultants, Biologist, San Diego, CA
- California Department of Transportation, Biologist, San Diego, CA

Professional Affiliations

- Member of the Wildlife Society
- Member of the Ecological Society of America
- Member of the California Native Plant Society

Representative Experience

- **Principal, Berryman Ecological.** As the principal for Berryman Ecological, Ms. Berryman manages projects and coordinates project teams to ensure projects are completed within designated timeframes, consistent with project scopes and budgets.
- **Regulatory Department Management.** Before starting her own company, Ms. Berryman was the manager of the Regulatory Department for Foothill Associates. She was responsible for managing the budget and timelines for environmental regulatory projects, managing staff workload, and reviewing products for quality control.
- **Habitat Management Plans.** Ms. Berryman has prepared habitat management plans focusing primarily on conservation needs for state and federally listed species. She prepared two management plans for San Joaquin kit fox (approximately 1,500 acres in Merced County, and approximately 3,000 acres in San Joaquin County). She also prepared a management plan for approximately 180 acres of alkaline sink habitat supporting a state and federally listed plant species (palmate-bracted bird's beak) as well as a suite of other special status plant species, and providing foraging habitat for the state listed Swainson's hawk. Ms. Berryman has prepared management plans for Swainson's hawk habitat on agricultural land in Yolo County, and for vernal pools with federally listed plants and crustaceans in Butte and Sacramento County. She was also involved in preparation of a management plan for riparian habitat and the federally listed least Bell's vireo on the Sweetwater Reservoir in San Diego County.

  Ms. Berryman is currently preparing of a habitat management plan for several thousand acres in East Contra Costa County. The management plan tiers off of the East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). This will be the first management plan to be prepared under the HCP/NCCP, and will serve as a template for future plans.
- **Regional Conservation Plans**. Ms. Berryman has a strong background in regional habitat conservation planning from her experience in the HCP Division of the US Fish and Wildlife Service. She was instrumental in preparation of the Multiple Species Conservation Plan (MSCP) for south-coastal San Diego County. She was responsible for reviewing and commenting on the MSCP framework and subarea plans and Environmental Impact Report/Environmental

BOLLARD ACOUSTICAL CONSULTANTS

Statement of Qualifications
Bollard Acoustical Consultants, Inc.

Bollard Acoustical Consultants, Inc. (BAC) provides advanced noise and vibration consulting services. Such services include the preparation of environmental noise and vibration assessments for traffic, aircraft, railroad, and industry noise sources; and architectural acoustics assessments for school, commercial/office, residential, performing arts, and worship spaces. We prepare environmental studies for residential developments of all sizes, ranging from individual lot splits to large master-planned communities. We are proficient in both CEQA and NEPA compliance, and serve as sub-consultants to many planning firms in the preparation of EIR's and EIS's. Bollard Acoustical Consultants, Inc. also provides services to City and County municipalities in the form of General Plan Noise Element and Municipal Code Noise Ordinance updates, and often provides planning staff training regarding acoustics.

The principals of the firm are Paul Bollard, President and Jason Mirise, Vice President. Mr. Bollard has a degree in Mechanical Engineering, 23 years experience as an acoustical consultant, and is a Board Certified Member of the Institute of Noise Control Engineers (INCE). Mr. Mirise has a Masters degree in Acoustics from The Pennsylvania State University, is a specialist in architectural acoustics, and has 14 years experience in acoustical consulting. Mr. Bollard and Mr. Mirise are joined by Mr. Jonathan Lopez as a Consultant and Christine Sabatka, Office Manager. Together, the staff comprises more than 40 years of experience in providing acoustical consulting services.

Bollard Acoustical Consultants, Inc. understands that whether you are an architect, engineer, planner, developer, industry, airport, or city or county government, you deserve the highest-quality acoustical consulting services, provided in a timely and cost-effective manner. Our friendly and talented staff will utilize state-of-the-art instrumentation and know-how in working with you to achieve solutions to your acoustics- and vibration-related challenges.

Paul Bollard - President

Employment History:

2005 - Present:	Bollard Acoustical Consultants, Inc. – President
1999 - 2005:	Bollard & Brennan, Inc. – President
1997 - 1999:	Bollard Acoustical Consulting – Owner
1987 - 1997:	Brown-Buntin Associates, Inc. – Senior Consultant

Mr. Bollard has prepared in excess of a thousand acoustical studies covering a wide variety of environmental, industrial, and architectural issues. He has developed and demonstrated particular expertise in noise control using sophisticated data acquisition instrumentation and complex analytical modeling techniques. Representative studies to which Mr. Bollard has managed or made significant contributions follow.

- Environmental noise studies including EIR/EIS preparation for proposed residential developments, roadway improvement projects, schools, commercial developments, and recreational facilities.
- Large-scale environmental noise monitoring programs for Noise Elements of city and county General Plans.
- Industrial noise studies including analysis of rocket-engine test stands, food processing plants, power plants, HVAC equipment, and aggregate mining and processing facilities.

Professional Affiliations:

- Institute of Noise Control Engineering (INCE), Board Certified
- The Association of Environmental Professionals (AEP)
- The Acoustical Society of America (ASA)

Education:

- Bachelors of Science degree in Mechanical Engineering from the California State University at Sacramento, 1987
- Masters Degree courses in Mechanical Engineering with emphasis on acoustics, California State University at Sacramento, 1990-1993

Jason Mirise - Vice President

Employment History:

2005 - Present:	Bollard Acoustical Consultants, Inc. – Vice President
2003 - 2005:	Bollard & Brennan, Inc. – Senior Consultant
1996 - 2003:	Brown-Buntin Associates, Inc. – Senior Consultant

Mr. Mirise has managed acoustics studies involving a wide variety of architectural and environmental issues. Mr. Mirise has developed particular expertise in the field of architectural acoustics, providing successful acoustical consulting services for school, commercial/office, residential, performing arts, and worship spaces.

Mr. Mirise has been actively involved in many aviation noise studies, including aircraft noise level measurements, analysis, and modeling for many of the Country's larger airports. Mr. Mirise has participated in residential and school sound insulation programs near many of these airports. Mr. Mirise has had experience working with the Federal Aviation Administration's (FAA) Integrated Noise Model (INM) since 1996.

Additionally, Mr. Mirise has managed acoustics projects involving the measurement and modeling of noise from traffic, railroad, and industrial noise sources.

Professional Affiliations:

- Institute of Noise Control Engineering (INCE) – Member
- Acoustical Society of America (ASA) – Associate Member
- Audio Engineering Society (AES) – Member

Education:

- Bachelor of Science in Electrical Engineering, Loyola Marymount University, Los Angeles, California, 1992
- Master of Engineering in Acoustics, The Pennsylvania State University, University Park, Pennsylvania, 1996

Jonathan Lopez - Consultant

Employment History:

2007 - Present: Bollard Acoustical Consultants, Inc. – Consultant

2006 - 2007: Bollard Acoustical Consultants, Inc. – Technician

Mr. Lopez was a technician with Bollard Acoustical Consultants, Inc. while completing his Bachelors degree at California State University, Sacramento. While a technician, he assisted project managers in the preparation of various types of acoustical studies. He is currently a consultant who manages projects involving traffic, train, commercial, and industrial noise.

Professional Affiliations:

- Institute of Noise Control Engineering (INCE) – Associate Member
- American Society of Mechanical Engineers (ASME) – Member

Education:

- Bachelors of Science degree in Mechanical Engineering from the California State University at Sacramento, 2006

Bollard Acoustical Consultants References

Public Sectors

- Ms. Toni Barry
  Sacramento County
  Department of Environmental Review and Assessment
  Sacramento, CA (916) 440-7914 – Fax: (916) 874-8343

- Ms. Pam Hayden
  Planning Director
  Yreka Planning Department
  Yreka, CA (530) 841-2386 – Fax: (530) 841-4386

- Mr. Dan Breedon
  Butte County Planning Department
  Oroville, CA (530) 538-7601 – Fax: (530) 538-7785

- Mr. Michael Johnson, AICP
  Director, Placer County Planning Department
  Auburn, CA (530) 745-3197 – Fax: (530) 745-3120

- Mr. Steven Banks
  Senior Planner
  City of Folsom Public Works
  Folsom, CA (916) 355-7385 – Fax: (916) 355-7274

Private Sectors

- Mr. Jack Paddon & Mr. Jim Williams
  Principals
  Williams + Paddon – Architects + Planners, Inc.
  Roseville, CA (916) 786-8178 – Fax: (916) 786-2175

- Mr. David Mogavero
  Principal
  Mogavero Notestine Associates
  Sacramento, CA (916) 443-1033 – Fax: (916) 443-7234

- Mr. Bruce Steubing
  Benchmark Resources
  El Dorado Hills, CA (916) 983-9193 – Fax: (916) 983-9194

- Ms. Lillie Noble
  Teichert Aggregates
  Sacramento, CA (916) 484-3011 – Fax: (916) 484-7012

Bollard Acoustical Consultants Fee Schedule & Consulting Terms

Effective February 26, 2010

Principal Consultant	$160 / hr.
Senior Consultant	$130 / hr.
Consultant	$110 / hr.
Principal Consultant Legal Work	$240 / hr.
Technical Support Staff	$80 / hr.
Clerical Support Staff	$50 / hr.
Mileage	¢55 / mile
Per Diem Charges (meals & lodging)	$150 / day

Insurance Coverage:

Bollard Acoustical Consultants, Inc. maintains general and professional liability insurance policies with two million dollars coverage each and maintains automobile liability insurance coverage at one million dollars. We provide certificates of insurance to our clients at no charge.

Request for Retainers:

For new clients, Bollard Acoustical Consultants, Inc. requires a retainer of 50% of the contract amount prior to beginning work on the project.

Invoicing and Terms of Payment:

Bollard Acoustical Consultants, Inc. reserves the right to submit monthly invoices for services and expenses which have been incurred when project time-lines are expected to exceed 30 days. Payment for professional services is due within 30 days of the invoice date, and past due thereafter. Past due invoices will incur interest at the rate of 1.5% per month on the balance due.

ANALYTICAL ENVIRONMENTAL SERVICES

TABLE OF CONTENTS

Statement of Qualifications – Cultural Resources

Qualifications 1

Introduction 1

Services Offered 1

Company Profile 4

Key Staff 5

Project Management 5

Technical Staff 6

Clients and Relevant Experience 7

Representative Clients 7

Representative Projects 8

Project Management and Quality Control 10

Contact Information:

Mike Taggart, RPA, Project Manager
mtaggart@analyticalcorp.com

Analytical Environmental Services
1801 7th Street, Suite 100
Sacramento, CA 95811
Phone: (916) 447-3479
Fax: (916) 447-1665
www.analyticalcorp.com

QUALFICATIONS

INTRODUCTION

Analytical Environmental Services (AES) is a multidisciplinary consulting firm specializing in environmental and engineering services. AES personnel provide the depth of knowledge and practical experience needed to successfully comply with an array of complex regulatory requirements. AES staff members include experts in cultural resources, land use planning, water resources, engineering, air quality, biology, graphic design, and geographic information systems.

The AES cultural resources unit is comprised of specialists who meet the *Secretary of the Interior's Professional Qualification Standards* for **Archaeology**, **History**, and **Architectural History**. AES's cultural resources staff has an in-depth working knowledge of cultural resources standards, guidance, and regulatory compliance at the federal, state, and local level including Section 106 of the National Historic Preservation Act (NHPA), the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), the California Public Resources Code (PRC), the Archaeological Resources Protection Act (ARPA), and the Native Graves Protection and Repatriation Act (NAGPRA).

SERVICES OFFERED

AES combines an experienced and creative staff with cutting edge technology to deliver a superior product at a competitive price. We work closely with each client to assess their needs and develop cost-effective strategies that ensure regulatory compliance. In general, cultural resources work falls into one or more of six categories: inventory, evaluation, treatment, monitoring, consultation, and interpretation. Within these broad categories, specific services offered by AES include the following:

- **Background and archival research:** AES is well versed in conducting records searches, reviewing pertinent primary literature, reviewing historic maps, and conducting archival research at libraries, historical societies, county recorder/assessor's offices, and other archival facilities.

- **Cultural resource inventories:** AES routinely designs and conducts resource investigations to identify and record cultural resources in a variety of settings. Resources encountered are

documented on State of California Department of Parks and Recreation forms, photographed, and mapped. Data collected in the field can be seamlessly integrated into a geospatial database by AES's geographic information system (GIS) technicians for management and analysis.

- **Evaluation of cultural resources:** AES has evaluated the significance of a broad range of resources. We employ several technical specialists whose areas of expertise include prehistory, historic archaeology, architectural history, and history. Resources are analyzed by developing a historic context or research design, followed by application of established criteria of the National Register of Historic Places (NHPA) and/or the California Register of Historical Resources and consideration of the integrity of the subject resource.

- **Archaeological site testing and data recovery:** subsurface characterization of archaeological deposits is often required to evaluate the significance and integrity of prehistoric sites. Adverse effects to significant archaeological sites are often mitigated by conducting data recovery investigations that collect a representative sample of the deposit. AES has the staff and resources necessary to effectively accomplish such archaeological investigations and subsequent reporting. Moreover, AES's in-house graphics specialists, web designer, and GIS technicians can provide value-added services by disseminating the results of such investigations via custom designed websites, searchable geospatial databases, or interpretive displays.

- **Consultation with Native Americans, governmental agencies, and other interested parities:** AES has established strong working relationships with a number of Native American tribes in California and beyond. Our cultural staff regularly consults with local Native American groups and individuals, federal, state, and municipal agencies, as well as other interested parties such as historical societies.

- **Preparation of technical reports and CEQA/NEPA sections:** AES consistently produces high quality technical documents that are thorough, precise, and exceed regulatory requirements. Our reporting is guided by the California Office of Historic Preservation's Archaeological Resource Management Reports: Contents and Format (California Office of Historic Preservation 1989).

- **Development of mitigation and treatment measures:** depending on the nature of anticipated impact(s) of a given project, mitigation may be required. AES has developed and implementing a range of mitigation and/or treatment options that are developed on a case-by-case basis.

- **Laboratory processing and artifact analysis:** AES maintains an archaeological laboratory in its Sacramento office capable of processing and analyzing a broad range archaeological materials. Artifacts recovered from archaeological sites are treated according to standards set forth at 36 CFR 79. Once sorted and classified, artifacts are catalogued using translatable database software, which can easily be integrated with a geospatial database (GIS). AES employs technical specialists with experience analyzing a variety of artifacts and other archaeological constituents. We have established relationships with outside laboratories to provide highly specialized analyses such as paleobotanical identification, protein residue analysis, obsidian hydration determinations, geochemical sourcing of lithic materials, and radiocarbon assays.

- **Preparation of research designs, data recovery plans, and inadvertent discovery plans:** AES's key cultural staff has experience crafting a variety of planning and research documents, each tailored to the specific needs of our clients.

- **Preservation planning:** AES's archaeologists and historians have assisted a number of entities in developing long-range preservation plans.

- **Construction monitoring and cultural resources training:** the AES cultural staff has considerable experience drafting construction monitoring programs and conducting on-site cultural resources training for construction personnel. AES has in-house staff ready to provide archaeological monitoring services on short notice.

COMPANY PROFILE

Analytical Environmental Services is a multidisciplinary consulting firm specializing in environmental and engineering services. AES personnel provide the depth of knowledge and practical experience needed to successfully comply with an array of complex regulatory requirements. We specialize in the development of environmental documents that comply with Section 106 of the National Historic Preservation Act (Section 106), the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and other relevant frameworks. A certified small business, AES has the technical expertise and professional experience required to provide exceptional cultural resources management and compliance support for projects of all sizes throughout California and the western United States.

AES has completed projects of various magnitudes for an array of municipalities, counties, public agencies, tribal governments, and private firms. AES has a technical staff of approximately 40 professionals in a range of disciplines, including cultural resources, land use planning, biology, toxicology, air quality, hydrology, geological resources, socioeconomics, graphic design, and geographic information systems. AES is large enough to accomplish most services in-house and accommodate peak workload demands. Yet, the firm is not so large that it takes clients for granted. On the contrary, AES values every client and places a premium on their satisfaction.

AES has earned a reputation for technical expertise, dependability, and outstanding project management. Our clients benefit from proactive problem solving that emphasizes anticipation and resolution of regulatory and environmental issues early in the planning process. The management team introduced herein has worked together to bring numerous projects to completion. David Zweig (Principal), Mike Taggart (Cultural Resources Director), and Doug Edwards (Senior Historian/Architectural Historian) are each committed to being highly responsive to client needs and providing services of the highest quality.

Client satisfaction is attested to by our firm's rapid growth. Founded in January 2001, AES has been among the 100 fastest growing companies in the Sacramento region since 2004 according to the *Sacramento Business Journal*. Widespread client satisfaction is perhaps best evidenced by the volume of repeat business AES has enjoyed. Superior performance on initial projects with new clients has frequently been rewarded by sole source

contracts for larger, more complicated projects.

KEY STAFF

PROJECT MANAGEMENT

Mike Taggart, M.A., RPA - *Cultural Resources Director*

Mike Taggart is the Director of the AES Cultural Resources Unit. Mr. Taggart is a Registered Professional Archaeologist and has worked in the public and private sectors of cultural resource management throughout California, Oregon, and Washington. Mr. Taggart provides oversight of field investigations, special laboratory studies, and technical reporting in support of federal, state, and local regulatory compliance (NHPA, NEPA, CEQA, TRPA, etc.). Other responsibilities include Native American consultation, general project management, and supervision of technical staff. Mr. Taggart has planned and conducted many cultural resource inventories, site evaluations, and data recovery projects for agencies such as the Caltrans, US Forest Service, Natural Resource Conservation Service, El Dorado Irrigation District, Placer County Water Agency, and the Tuolumne Economic Development Authority, as well as for a host of private and tribal clients.

Shelley McGinnis, Ph.D. - *Anthropologist and Project Manager*

Dr. McGinnis, Project Manager and Cultural Resources Specialist as AES, holds a B.A. and M.A. in Anthropology and a Ph.D. in Environmental Studies. Her archaeological experience includes excavation, laboratory analysis, and survey work on projects in the southern United States and California. She has also worked as a teaching assistant for two archaeological field schools in Irbid, Jordan. Her primary area of expertise include assisting local Tribes with NEPA/CEQA compliance as well as reviewing environmental studies and government planning documents to ensure that cultural resources are protected. Dr. McGinnis has also represented local Tribes during Section 106 and SB 18 consultations and has developed tribal monitoring agreements.

TECHNICAL STAFF

Laura Brown, M.S., LEED AP – *Architectural Historian*

Laura Brown, M.A., is an architectural historian at AES. Ms. Brown is also a LEED AP who has worked as a conservator and architectural historian in California. Her broad capabilities include overseeing a conservation laboratory, analyzing materials, surveying historic structures, and developing recommendations for architectural treatments in compliance with the Secretary of the Interior's standards. In addition to analytical training, Ms. Brown has excellent research and survey skills. In her capacity as architectural historian, she works closely with the planning group, evaluating properties for Section 106 compliance. Duties include writing National, State, and Local Historic Resource Evaluation Reports,Supplemental Information Reports, Historic Structure Reports, and Certificates of Appropriateness. Ms. Brown's past experience includes stints as an archivist for the Metropolitan Museum of Art's Cloisters and as a Monuments Conservator for the City ofNew York Department of Parks and Recreation.

Jennifer Bowden, B.A. - *Cultural Resources Specialist*

Ms. Bowden is an archaeologist with more than a decade of experience in cultural resource management. She has conducted all phases of cultural resource investigations, including background research, survey, site recording, significance evaluations, archaeological excavation, artifact analysis, and technical report production. Ms. Bowden's diverse geographic and technical background in cultural resources is an asset to any project. Relevant past professional positions include a stint at the Smithsonian Institution as an archaeological intern, working as a field and laboratory archaeologist in Florida, New Mexico, and California, and serving as the Assistant Coordinator of the North Central Information Center at CSU Sacramento. In her current capacity, Ms. Bowden conducts cultural resource investigations, participates in Native American consultation, and authors technical reports in support of Section 106, NEPA, and CEQA documents.

Leanna Flaherty, B.A. - *Archaeologist*

Ms. Flaherty has over 8 years of experience as an archaeologist throughout California in all phases of cultural resource management including project oversight, survey, excavation, laboratory studies, and technical report writing. Ms. Flaherty is completing her Master of Arts degree at California State University, Chico, with an expected graduation date of May 2010. Her past experience includes serving as an archaeologist for a number of private consulting firms, the US Forest Service, as well as work conducted on behalf of California Polytechnic State University. Ms. Flaherty has played an instrumental role in a number of large-scale projects including archaeological inventory, testing, and evaluation, data recovery archaeological excavations, laboratory analysis, and technical writing

Yolanda Chavez, B.A. - *Cultural Resources Specialist*

Ms. Chavez is a Cultural Resources Specialist with over 20 years experience in cultural resources management. She has worked with tribes, state and federal agencies on NEPA, NHPA, Sec 106 consultation, NAGPRA, CEQA, and SB 18. Her background includes internships with the Smithsonian Institution museum division, Introduction to the Federal System for Native Americans at American University, internship at the Northwest Information Center, archaeological field work, completion of course work towards a Master's degree in Cultural Resources Management and 10 years as member of the Mendocino County Archaeological Commission. Ms. Chavez currently works as an assistant to Dr. McGinnis on cultural resources issues, ethnographic research, tribal consultations, and site monitoring. Ms Chavez is long standing member of the Society for California Archaeology, Native American Programs Committee.

Megan Wahrlich, B.A. - *Archaeological Lab and Field Technician*

Ms. Wahrlich is an archaeological technician with five years of experience. She has been involved in all phases of archaeological fieldwork and laboratory processing, including survey, site recording, archaeological excavation, mapping, cataloguing, database maintenance, photo-documentation, and artifact analysis. In her current capacity at AES, Ms. Wahrlich's responsibilities include archaeological site monitoring, survey, maintenance of AES's archaeological laboratory, all phases of fieldwork, and completion of site record forms.

CLIENTS AND RELEVANT EXPERIENCE

REPRESENTATIVE CLIENTS

The following list of AES clients illustrates our firm's broad range of experience in environmental compliance. Clients routinely comment on the quality of the work product and the level of personal attention they receive by AES project managers. AES is exceptionally proud that return customers and referrals constitute the core of an expanding list of satisfied clients.

Municipal and Local Agency Clients

City of Lincoln, Placer County
City of Vacaville, Solano County
City of Sacramento, Sacramento County
City of West Sacramento, Yolo County
City of Richmond, Contra Costa County
City of Vallejo, Solano County
City of Stockton, San Joaquin County
City of Woodland, Yolo County
City of American Canyon
City of Hollister, San Benito County
County of Sacramento
Mariposa County
Sacramento Municipal Utilities District (SMUD)
Port of Sacramento
Carmichael Water District
Sonoma County Water Agency
San Benito County Water District
Spanish Flat Water District

State Agencies

Caltrans
State Water Resources Control Board

Private Clients

Carter Burgess Engineers
HydroScience Engineers
Claybar Engineering
Warmington Homes California
Guenoc Vineyards
Moskowite Vineyard
McDermott Vineyards
Hansen Engineering
West Yost Associates
Kinder Morgan Energy
Lennar Communities
Castle Company
Bay Development Group
Law Offices of George Phillips

Tribal Clients

Elk Valley Rancheria
Rumsey Indian Rancheria of Wintun Indians
United Auburn Indian Community
Paskenta Band of Nomlaki Indians
Blue Lake Rancheria
Table Mountain Rancheria
Bear River Band of Rohnerville Rancheria
Jackson Rancheria

REPRESENTATIVE PROJECTS

POINT MOLATE REDEVELOPMENT PROJECT - CONTRA COSTA COUNTY

Lead Agency:
Bureau of Indian Affairs
Pacific Region Office

Document:
Cultural Resources Inventory and Evaluation & Environmental Impact Statement

Key Elements/Issues:

- 71-acre National Register Historic District
- Evaluation of historic built environment
- Archaeological testing of three prehistoric sites
- Testing of a 19th century shrimp camp
- SHPO and Native American consultation
- Public outreach

SYCUAN BAND FEE-TO-TRUST PROJECT, SAN DIEGO COUNTY

Lead Agency:
Bureau of Indian Affairs
Pacific Region Office

Document:
Cultural Resources Inventory and Evaluation & Environmental Assessment

Key Elements/Issues:

- Section 106 and NEPA Compliance
- Survey of ~1,900 acres
- 25+ resources documented
- Archaeological testing of 19th century shrimp camp
- Archival research
- Native American consultation

RIVER RANCH MITIGATION BANK - YOLO COUNTY

Lead Agency:
US Army Corps of Engineers
Sacramento District

Document:
Cultural Resources Inventory and Evaluation

Key Elements/Issues:

- Section 106 compliance
- Inventory and evaluation of reclamation features
- Archival research
- Field survey and documentation
- Native American consultation

SAFETEA-LU TRANSPORTATION PROJECTS - MARIPOSA COUNTY

Lead Agency:
Mariposa County Public Works
Caltrans

Document:
Archaeological Survey Reports and Historic Property Survey Reports (ASR/HPSR)

Key Elements/Issues:

- Five transportation improvement projects
- Section 106, CEQA, and NEPA compliance
- Cultural resource inventories
- Archival research
- Native American and historical society consultation

SAN ANDREAS WASTEWATER TREATMENT FACILITY - CALAVERAS COUNTY

Lead Agency:
San Andreas Sanitation District
CA State Water Resources Control Board

Document:
Cultural Resources Inventory and Evaluation & Initial Study / Mitigated Negative Declaration

Key Elements/Issues:

- Section 106 and CEQA compliance
- Cultural resources inventory
- Evaluation of a 19th century mining landscape
- Archival research
- Native American consultation

RUMSEY RANCHERIA CULTURAL RESORUCE INVESTIGATIONS - YOLO COUNTY

Client:
Rumsey Band of Wintun Indians

Document:
Cultural Resources Inventories, Evaluations, Mitigative Data Recovery; and Tribal Environmental Impact Report (TEIR)

Key Elements/Issues:

- Survey of tribal land
- Evaluation of historic structures
- Archaeological site testing, evaluation, and data recovery
- Archival research
- Consultation with Cultural Renewal Committee

UNITED AUBURN INDIAN COMMUNITY HOUSING PROJECT - PLACER COUNTY

Lead Agency:
Bureau of Indian Affairs
Pacific Region Office

Document:
Cultural Resources Inventory and Evaluation & Environmental Impact Statement

Key Elements/Issues:

- Section 106 and NEPA compliance
- 1,100-acre project area
- 13 historic properties
- Archaeological testing at four sites
- Evaluation of two historic buildings
- Native American consultation

MILLERTON ROAD WIDENING PROJECT - FRESNO COUNTY

Lead Agency:
County of Fresno
Department of Public Works

Document:
Cultural Resources Inventory and Evaluation

Key Elements/Issues:

- Section 106 and CEQA compliance
- Survey of ~850 acres
- Documentation of prehistoric, historic, and multicomponent sites
- Archival research
- Native American consultation

LITTLE HASTINGS ISLAND MITIGATION BANK - SOLANO COUNTY

Lead Agency:
US Army Corps of Engineers
Sacramento District

Document:
Cultural Resources Inventory and Evaluation

Key Elements/Issues:

- Section 106 and CEQA compliance
- Survey of 165 acres in Sacramento River Delta
- Evaluation of historic reclamation features
- Archival research
- Native American consultation

FORT YUMA QUECHAN CASINO PROJECT - IMPERIAL COUNTY

Lead Agency:
Fort Yuma Quechan Indian Tribe

Document:
Cultural Resources Inventory and Impact Assessment

Key Elements/Issues:

- 150-acre survey
- Documentation of six prehistoric cultural resources
- Interviews and consultation with Tribal Elders
- Impact assessment
- Development of mitigation plan

PROJECT MANAGEMENT AND QUALITY CONTROL

AES's approach to project management is simple but effective. It begins with the assignment of an experienced Project Manager responsible for all aspects of the project. Among other duties, the Project Manager monitors costs, establishes production milestones, and provides quality control oversight. The Project Manager also serves as the primary point of contact between the client and AES, as well as between AES and any subcontractors added to the project team.

Committed to completing projects on schedule and within budget, AES Project Managers embrace proactive consultation and understand the benefits of excellent communication. Project Managers keep clients, in-house technical experts, and any subcontracted team members well informed at all phases of a project. Such communication allows for early identification of potential problems, thereby allowing for the development of preventive solutions as early as possible in the planning process.

AES may also assign a Deputy Project Manager to large and complex projects. The Deputy Project Manager, who is usually responsible for providing field direction and over sight of technical analyses, works closely with the Project Manager and is kept familiar with all aspects of the project. This provides a secondary point of contact for the client and any subcontractors, thus ensuring that progress continues in the absence of the Project Manager.

In-house technical specialists will be assigned as needed to accomplish the tasks identified in the scope of work. In addition to areas of expertise, technical staff are assigned to projects based on their experience working with the assigned Project Manager and Deputy Project Manager. Preexisting working relationships result in product consistency, cost efficiency, and many other project dividends.

Quality control is integrated and emphasized throughout the life of the project. The Project Manager and Deputy Project Manager coordinate to ensure each section of a document is subject to multiple reviews for consistency and technical adequacy. A senior technical analyst peer reviews any sections with modeling and/or more in-depth technical analysis. Each complete document is then subject to line editing and a formatting review prior to release. A team approach to project management fosters a collective interest in maintaining the highest levels of quality throughout all aspects of the document.

RYAN LEE, AICP

Project Manager

Ms. Lee is a project manager and environmental planning specialist experienced in the preparation of both CEQA and NEPA compliance documents for a variety of local, state, and federal agencies, as well as an array of private clients. Areas of expertise include regulatory process and compliance, agency coordination, public outreach, alternative analysis, and land use and growth inducing impact analysis. Ms. Lee has served as a project manager for numerous CEQA compliance infrastructure projects, and is adept at facilitating agency coordination and developing project specific approaches to environmental compliance to guide completion of projects on time and within budget.

EDUCATION **University of California, Santa Barbara**
B.A., ENVIRONMENTAL STUDIES & GEOGRAPHY

PROFESSIONAL EXPERIENCE

- **Easterly Wastewater Treatment Plant Tertiary Project CEQA-Plus EIR**, **Project Manager,** City of Vacaville, California. 2009- Present.
- **Millerton Road Widening IS/MND**, **Project Manager,** Fresno County, California. 2007-Present.
- **County Service Area 34 Phase II Pipeline Project IS-EA, Project Manager,** 2009-Present.
- **City of Sacramento On-Call Bio Services, Project Coordinator,** City of Sacramento, 2009-Present.
- **AES Greenhouse Gas Verification and Reporting Services, Project Coordinator,** 2009-Present.
- **Del Paso Road Interchange Project Caltrans Cat EX, Project Manager,** City of Sacramento, 2010.
- **Fulcrum Capital Properties Triangle Specific Plan EIR**, **Project Manager,** City of West Sacramento, 2005-2008.
- **University Park EIR, Project Manager,** City of West Sacramento, 2005-2009.
- **McKinley Village EIR, Project Manager,** City of Sacramento, 2008-Present.
- Romulus Hotel and Casino Project, Bureau of Indian Affairs, City of Romulus, Michigan, 2009-Present.
- **Samish Indian Casino, Project Manager,** Bureau of Indian Affairs, 2009-Present.
- **Cowlitz Casino and Hotel Project EIS**, **Project Manager,** Bureau of Indian Affairs, Clark County, Washington. 2007-2009.
- **San Benito River Greenway Project IS/MND**, **Project Manager,** City of Hollister, San Benito County, California. 2008.
- **City of Hollister Reclaimed Water Irrigation Project Subsequent EIR**, **Project Manager,** City of Hollister, San Benito County, California. 2007-2008.
- **Federal Aviation Administration - Hollister Municipal Airport Recyled Water Irrigation System EA and Cat Ex**, **Project Manager,** City of Hollister, San Benito County, California. **2008.**
- **San Benito County Water District Recyled Water Project Supplement to EIR, Project Manager,** City of Hollister, San Benito County, California. 2009.
- **Domestic Water System Improvements and Recycled Water Facility EIR**, **Deputy Project Manager,** City of Hollister, San Benito County, California. 2005-2006.
- **Station 65 EIR**, **Deputy Project Manager,** City of Sacramento, Sacramento County, California. 2008.
- **Irrigation Expansion and Beneficial Reuse Project EIR**, **Deputy Project Manager,** Sonoma County Water Agency, Sonoma County, California. 2006-2008.
- **Russian River County Sanitation District Equalization Storage Basin EIR**, **Deputy Project Manager,** Sonoma County Water Agency, Sonoma County, California. 2006-2008.
- **Scotts Valley Casino and Hotel Project EIS**, **Deputy Project Manager,** Bureau of Indian Affairs, City of Richmond, Contra Costa County, California.
- **Graton Casino and Hotel Project EIS**, **Environmental Analyst,** Bureau of Indian Affairs, Sonoma County, California.
- **Barstow Casino Project EIS, Environmental Analyst,** Bureau of Indian Affairs, San Bernardino County, California**.**
- **Enterprise Casino and Hotel Project EIS**, **Environmental Analyst,** Bureau of Indian Affairs, Yuba County, California.
- **Jamul Casino and Hotel Project EIS**, **Environmental Analyst,** Bureau of Indian Affairs, San Diego County, California.

- **Upper Lake Casino and Hotel Project EA**, **Environmental Analyst,** Bureau of Indian Affairs, Lake County, California.
- **Parks at Southport EIR**, **Environmental Analyst,** City of West Sacramento, Yolo County, California.
- **Riverpoint Marketplace EIR**, **Environmental Analyst,** City of West Sacramento, Yolo County, California.
- **RMC Pacific Materials EIR, Environmental Analyst,** City of West Sacramento, Yolo County, California.
- **Mace Covell Technical Studies**, **Environmental Analyst,** City of Davis, Yolo County, California.

PROFESSIONAL AFFILIATIONS

- **American Planning Association**
- **Association of Environmental Professionals**

APPENDIX B

REPRESENTATIVE MINE EIRs SUMMARY DESCRIPTIONS

HANDLEY RANCH EIR

MONTEREY COUNTY

PROJECT SUMMARY

The Handley Ranch Project proposed to develop a new hardrock quarry on approximately 333 acres of the 1,230-acre Handley Ranch. Associated with the quarry would be an aggregate processing facility, hot mix asphalt plant, Portland Cement Concrete plant, concrete/asphalt recycling facility, administration complex, employee/maintenance facility, and various other processing areas. The Project would include construction of an off-site haul road about 1.5 miles in length and an upgrade of the Gonzales/U.S. Highway 101 freeway interchange. The maximum proposed aggregate production during the project life would be 1.5 million tons per year. Mining would continue for up to 113 years and a 7-year final reclamation phase would extend the total Project lifespan to about 120 years. The post-mining land use for the Project site would be open-space and an 80-surface-acre water storage reservoir.

Project Manager: Dave Brown

Client: Monterey County, Planning and Building Inspection Department

Services:

- Staff Services
- Rezone
- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentation

Key Issues:

- Williamson Act
- Traffic
- Air Quality
- Hydrology and Water Resources

Status: Approved October 2003.

Issues

The Draft EIR analyzed a suite of environmental issues. The Project included use of groundwater from the impacted Salinas Valley Groundwater Basin. A sophisticated hydraulic analysis was required examining impacts to surrounding agricultural uses dependent on groundwater and seawater intrusion due to existing overdraw of groundwater. In addition, the Project site would be visible from surrounding areas and roadways which required detailed aesthetic simulations. Project traffic on local roadways with existing deficient traffic index required significant analysis and mitigation.

Services Provided

Prepared the EIR and performed staff services under contract to Monterey County. Prepared an Initial Study and conducted a scoping meeting in March and April 2002. The Draft EIR was released in May 2003 and Final EIR was released in October 2003. Presented the EIR to the Planning Commission, which was approved in October 2003.

JESSE MORROW MOUNTAIN

MINE AND RECLAMATION PROJECT EIR

FRESNO COUNTY

PROJECT SUMMARY

Jesse Morrow Mountain Mine and Reclamation Project is an application for a new hardrock quarry in eastern Fresno County. The entitlements requested included a Conditional Use Permit and Reclamation Plan. The Applicant has proposed mining, processing, and off haul of approximately 2 million tons of aggregate annually on approximately 440 acres of grazing land over a 100 year period. The proposal includes recycling, ready-mix, and asphalt batch plants, uses ancillary to aggregate mining and processing.

Project Manager: Andrew White

Client: Fresno County, Department of Public Works and Planning

Services:

- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentations

Key Issues:

- Aesthetics
- Biological Resources
- Cultural Resources
- Traffic and Transportation

Status: Draft EIR released September 2009. Final EIR in preparation.

Issues

The Draft EIR analyzed a suite of environmental issues including aesthetics, agricultural resources, air quality, biological resources, hydrology and water quality, geology and soils, hazards and hazardous materials, noise and vibration, traffic, and cumulative impacts. Because of the Projects location on State Route 180, a designated scenic roadway, assessment of aesthetic resources required extensive preparation of visual simulations at different phases of Project development and from various viewpoints surrounding the site. In addition, Jesse Morrow Mountain retains cultural significance to a local Native American group requiring extensive consultation with the local group and Native American Heritage Commission. The Projects proximity to small farming communities has resulted in significant public concern regarding air quality, noise and traffic.

Services Provided

Under contract with Fresno County to prepare the Environmental Impact Report. Conducted agency and public scoping in 2005. A Draft EIR was released in September 2009 and the Final EIR is anticipated to be released in the Winter of 2009/2010. Will attend and present the EIR during the hearing process.

MADERA QUARRY

MINE AND RECLAMATION PLAN PROJECT EIR

MADERA COUNTY

PROJECT SUMMARY

A Greenfield hard rock quarry, aggregate processing facility and asphalt batch plant, required a Use Permit reclamation plan, and Zone Change approvals located in rural Madera County. Project involves mining on 125 acres over a 50-year period.

Project Manager: Bruce Steubing

Client: Madera County, Planning and Community Development Department

Services:

- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentation

Key Issues:

- Hydrology
- Williamson Act compatibility
- Traffic
- Noise

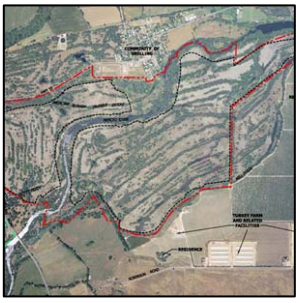
Status: Approved October 2006; underwent revisions based on Court of Appeals decision; re-approved June 2010.

Issues

The EIR focuses on hydrology, noise, traffic, and land use compatibility issues (including Williamson Act). The main issues focused on water supply, traffic, noise, and land use compatibility with surrounding neighbors. The highly controversial project required several Planning Commission and Board of Supervisor hearings. The Project had significant and unavoidable impacts associated with nighttime noise impacts and short-term cumulative traffic impacts.

Services Provided

Prepared the EIR. The Draft EIR was released in January 2008 and the Final EIR was released in June 2005 and the Final was released in February 2006. Presented the EIR to the Planning Commission and Board of Supervisors from January 2008 through six hearings until the Board of Supervisors approved the Project in October 2006. Prepared a Revised EIR. The Draft Revised EIR was circulated in December 2009/January 2010. The Planning Commission recommended approval in March 2010. The Board of Supervisors approved the Project in June 2010.



SNELLING TAILINGS PROJECT EIR

MERCED COUNTY

PROJECT SUMMARY

The Applicant is proposing to develop and operate a new dredge tailings removal operation in northeastern Merced County adjacent to the Merced River and Community of Snelling. The Project would remove approximately 8 million tons of tailings over a maximum of 50 years. The Project will remove above grade dredge tailings from an approximate 624-acre Project site with only about 409 acres will actually be mined. The vertical extent of dredge tailing removal would range from approximately 2 feet to 20 feet, depending on the thickness of the deposit. The annual production is expected to range from 100,000 to 435,000 tons. The operation is composed of 6 phases, which range from about 70 to 132 acres in overall size.

Project Manager: Andrew White

Client: Merced County, Planning and Community Development Department

Services:

- Staff Services
- Initial Study
- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentation

Key Issues:

- Aesthetics
- Traffic
- Noise
- Flooding

Status: Approved in November 2009.

Issues

The Draft EIR analyzed a suite of environmental issues including aesthetics, air quality, biological resources, hydrology and water quality, hazards and hazardous materials, noise and vibration, traffic, alternatives, and cumulative impacts. Due to the development of wetlands and associated riparian vegetation between dredge tailing rows, significant time was spent developing mining practices and mitigation measures to ensure minimal disturbance to these resources. Significant concern was raised by agency's regarding flooding requiring HEC-RAS modeling because the site is adjacent to the Merced River. Members of the neighboring Community of Snelling raised noise concerns requiring detailed noise analysis and eventually modification to proposed hours of operation and Project setbacks.

Services Provided

Prepared the EIR under contract to Merced County. Prepared an Initial Study and conducted a scoping meeting in December 2007. The Draft EIR was released in December 2008 and Final EIR was released in September 2009. The Project was approved by the Planning Commission in November 2009 and was not appealed to the Board of Supervisors.

CHEVRON

SAN ARDO TO COALINGA HEATED OIL PIPELINE PROJECT EIR

MONTEREY/FRESNO COUNTIES

PROJECT SUMMARY

Chevron Pipeline Company proposed to construct, operate, maintain, and eventually decommission an underground heated crude oil pipeline that would extend from the existing San Ardo Oil Field in the upper Salinas Valley to the Kettleman-Los Medanos Pipeline southeast of Coalinga in the San Joaquin Valley. The Project would traverse parts of both Monterey and Fresno Counties and would extend over a distance of almost 60 miles.

Project Manager: Bruce Steubing

Client: Monterey County, Planning and Building Inspection Department

Services:

- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentation

Key Issues:

- Geotechnical and Slope Stability
- Biological Resources
- Surface Water Hydrology
- Multi-jurisdictional Coordination

Status: Approved October 2006.

Issues

The key issues were geotechnical and slope stability impacts associated with construction and operation of a heated oil pipeline over the San Andres Fault and through the Costal Ranges and down into the San Joaquin Valley. Additional issues included impacts to surface water and biological resources associated with the construction and maintenance of the linear Project spanning close to 60 miles. Last, ensuring compliance with CEQA requirements and planning objectives for two counties was a particular challenge.

Services Provided

Preparation of the EIR. The Draft EIR was released in October 2007, and the Final EIR was released in March 2008. Presented the EIR to the Planning Commissions in both Monterey and Fresno Counties. The Project was approved, unanimously, by both Monterey and Fresno County in May 2008 and June 2008, respectively.

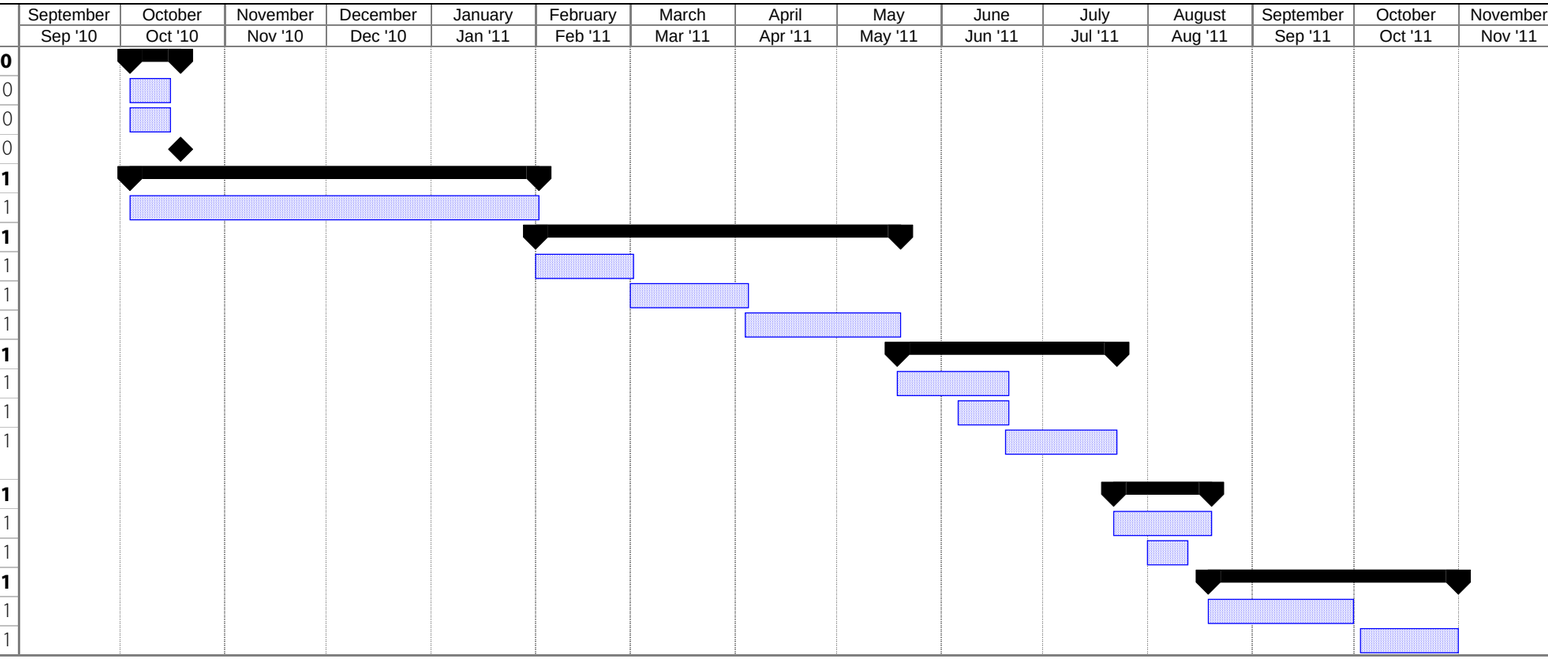
APPENDIX C

LAS PILITAS QUARRY PRELIMINARY SCHEDULE

APPENDIX C - LAS PILITAS QUARRY PROJECT

PRELIMINARY SCHEDULE

Project Tasks	Start	Finish
PROJECT DESCRIPTION AND EIR OUTLINE	**Mon 10/4/10**	**Mon 10/18/10**
a. Prepare Draft Project Description	Mon 10/4/10	Fri 10/15/10
b. Prepare EIR Outline	Mon 10/4/10	Fri 10/15/10
*Kick-Off Meeting	Mon 10/18/10	Mon 10/18/10
ADMINISTRATIVE DRAFT EIR	**Mon 10/4/10**	**Tue 2/1/11**
a. Prepare Administrative Draft EIR	Mon 10/4/10	Tue 2/1/11
PREPARE DRAFT EIR	**Tue 2/1/11**	**Thu 5/19/11**
a. County Review of Administrative Draft EIR	Tue 2/1/11	Tue 3/1/11
b. Modify Based on County Comments	Tue 3/1/11	Mon 4/4/11
c. Public Review of Draft EIR	Mon 4/4/11	Thu 5/19/11
ADMINISTRATIVE FINAL EIR	**Thu 5/19/11**	**Fri 7/22/11**
a. Prepare Administrative Final EIR	Thu 5/19/11	Mon 6/20/11
b. Prepare Administrative Draft MMRP	Mon 6/6/11	Mon 6/20/11
c. County Review of Administrative Final EIR and Administrative MMRP	Mon 6/20/11	Fri 7/22/11
FINAL EIR	**Fri 7/22/11**	**Fri 8/19/11**
a. Prepare Final EIR	Fri 7/22/11	Fri 8/19/11
b. Prepare Findings	Mon 8/1/11	Fri 8/12/11
PUBLIC HEARINGS	**Fri 8/19/11**	**Mon 10/31/11**
a. Planning Commission Hearings	Fri 8/19/11	Fri 9/30/11
b. Board of Supervisor	Mon 10/3/11	Mon 10/31/11



LAS PILITAS QUARRY
AUGUST 2010

Main Task Summary: Subtask Summary: Meetings:

APPENDIX D

COST ESTIMATE

LAS PILITAS QUARRY PROJECT

COST ESTIMATE

COST CATEGORY / TASK AND SUBTASK		LABOR							EXPENSES		TOTAL ESTIMATED COSTS ($)
		Principal $200/hr (hrs)	Project Director $195/hr (hrs)	Project Manager $175/hr (hrs)	Technical Staff $95/hr (hrs)	Support Staff $85/hr (hrs)	LABOR SUBTOTAL Hours	LABOR SUBTOTAL Costs	Direct Expenses [3] ($)	Subcontractors ($)	
TASK 1:	**PROJECT DESCRIPTION AND EIR OUTLINE**										
1.1	Prepare Draft Project Description		24	12	12	16	64	$9,280	$930		$10,210
1.2	Prepare EIR Outline and Style Guide		4	4		8	16	$2,160	$220		$2,380
	TASK 1 SUBTOTAL	**0**	**28**	**16**	**12**	**24**	**80**	**$11,440**	**$1,150**	**$0**	**$12,590**
TASK 2:	**PREPARE ADMINISTRATIVE DRAFT EIR [1]**										
2.1	Introduction and Summary		2	4	2	8	16	$1,960	$200		$2,160
2.2	Finalize Project Description	4	8	8	10	6	36	$5,220	$520		$5,740
2.3	Aesthetics		8	16	32	8	64	$8,080	$810		$8,890
2.4	Agricultural Resources		4	4	4	4	16	$2,200	$220		$2,420
2.5	Air Quality		6	4	4	4	18	$2,590	$260	$28,000	$30,850
2.6	Biological Resources		8	16	8	8	40	$5,800	$580	$10,475	$16,855
2.7	Cultural Resources		8	8	2	8	26	$3,830	$380	$1,758	$5,968
2.8	Geology and Soils		4	8	4	4	20	$2,900	$290	$20,000	$23,190
2.9	Hazards and Hazardous Materials		4	8	2	4	18	$2,710	$270		$2,980
2.10	Land Use		6	6	4	4	20	$2,940	$290		$3,230
2.11	Noise		4	8	4	4	20	$2,900	$290	$3,000	$6,190
2.12	Traffic and Circulation [2]		16	18	16	16	66	$9,150	$920	$15,000	$25,070
2.13	Water		6	6	6	6	24	$3,300	$330	$15,000	$18,630
2.14	Alternatives		16	8	4	8	36	$5,580	$560		$6,140
2.15	Other CEQA Sections		8	16	8	8	40	$5,800	$580		$6,380
2.16	Print and Assemble Administrative Draft EIR (5 copies)		0	4	4	16	24	$2,440	$1,100		$3,540
	TASK 3 SUBTOTAL	**4**	**108**	**142**	**114**	**116**	**484**	**$67,400**	**$7,600**	**$93,233**	**$168,233**
TASK 3:	**PREPARE DRAFT EIR**										
3.1	Modify Based on Applicant and County Comments		24	36	4	16	80	$12,720	$1,270		$13,990
3.2	Print and Assemble Document (45 copies)		4	8	8	32	52	$5,660	$5,100		$10,760
	TASK 3 SUBTOTAL	**0**	**28**	**44**	**12**	**48**	**132**	**$18,380**	**$6,370**	**$0**	**$24,750**
										DRAFT EIR SUBTOTAL	**$205,573**
TASK 4:	**PREPARE ADMINISTRATIVE FINAL EIR**										
4.1	Review/Prepare Responses to DEIR Comments		40	40	16	40	136	$19,720	$1,970		$21,690
4.2	Print and Assemble Administrative Final EIR (5 copies)			4	4	16	24	$2,440	$1,100		$3,540
	TASK 4 SUBTOTAL	**0**	**40**	**44**	**20**	**56**	**160**	**$22,160**	**$3,070**	**$0**	**$25,230**
TASK 5:	**PREPARE FINAL EIR**										
5.1	Review Comments and Incorporate Changes		16	24	8	32	80	$10,800	$1,080		$11,880
5.2	Print and Assemble Document (55 copies)			8	8	32	48	$4,880	$5,100		$9,980
	TASK 5 SUBTOTAL	**0**	**16**	**32**	**16**	**64**	**128**	**$15,680**	**$6,180**	**$0**	**$21,860**
TASK 6:	**MEETING ATTENDANCE, MANAGEMENT, AND COORDINATION [4]**										
6.1	Kick-Off Meeting		15	15	4	16	50	$7,290	$730		$8,020
6.2	Staff Meetings (5 meetings)		75	30	4	24	133	$22,300	$2,230		$24,530
6.3	Management and Coordination		40	40		24	104	$16,840	$1,680		$18,520
6.4	Public Hearings (Planning Commission/Board of Supervisors) (4 meetings)		60	30	8	32	130	$20,430	$2,040		$22,470
	TASK 6 SUBTOTAL	**0**	**190**	**115**	**16**	**96**	**417**	**$66,860**	**$6,680**	**$0**	**$73,540**
										FINAL EIR SUBTOTAL	**$120,630**
TASK 7:	**MITIGATION, MONITORING, AND REPORTING PROGRAM**										
7.1	Prepare Administrative Draft MMRP		4	8		16	28	$3,540	$350		$3,890
7.2	Prepare MMRP		4	4		4	12	$1,820	$180		$2,000
	TASK 7 SUBTOTAL	**0**	**8**	**12**	**0**	**20**	**40**	**$5,360**	**$530**	**$0**	**$5,890**
TASK 8:	**PREPARE FINDINGS [4]**										
8.1	Prepare Findings of Fact		16	16		18	50	$7,450	$750		$8,200
	TASK 8 SUBTOTAL	**0**	**16**	**16**	**0**	**18**	**50**	**$7,450**	**$750**	**$0**	**$8,200**
										FINDINGS AND HEARINGS SUBTOTAL	**$8,200**
							SUBTOTALS	**$214,730**	**$32,330**	**$93,233**	**$340,293**
										GRAND TOTAL	**$340,293**

[1] See Table 2 of the Proposal, submitted under separate cover, for specific approach and assumptions related to environmental resource evaluations.

[2] Actual traffic costs dependent on number of intersections and road segments required by County.

[3] Based on 10% of labor costs, rounded to the nearest $10. EIR reproduction costs are estimated based on number of copies. Assumption: 1 volume for Draft EIR and Final EIR (Volume 2 on disks).

[4] This Cost Estimate provides an estimate as required by Section 3.4 of the Request for Proposal. Benchmark Resources understands, however, that staff meetings, public hearings, and preparation of findings shall be invoiced on a time and materials basis.