BENCHMARK
RESOURCES

PROPOSAL TO PREPARE AN ENVIRONMENTAL IMPACT REPORT

for the **LAS PILITAS QUARRY PROJECT**

SAN LUIS OBISPO COUNTY
DEPT OF PLANNING & BUILDING

MAY 20, 2011

PROPOSAL TO PREPARE AN ENVIRONMENTAL IMPACT REPORT

for the **LAS PILITAS QUARRY PROJECT**

SAN LUIS OBISPO COUNTY
DEPT OF PLANNING & BUILDING

MAY 20, 2011

BENCHMARK RESOURCES

CONTENTS

1.0 INTRODUCTION 1

2.0 PERSONNEL AND EXPERIENCE 3

2.1 Benchmark Resources Team Overview 3

2.2 Key EIR Team Members 4

2.2.1 Benchmark Resources Team Members 5

2.2.2 Subconsultants 7

2.2.3 Other Staff and Office Facilities 11

2.3 Example Projects/Work Samples 12

3.0 COORDINATION 12

4.0 TASKS, TIMETABLE, AND COST ESTIMATE 13

4.1 Tasks 13

4.2 Timetable 58

4.3 Cost Estimate 59

5.0 OBJECTIVITY 59

6.0 INDEMNIFICATION AND CERTIFICATES OF INSURANCE 60

TABLES

Table 1 Key EIR Team Personnel
Table 2 Benchmark Resources Lead Agency References

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 A-3 Tully & Young SOQ
Appendix B Representative Mine EIRs Summary Descriptions
Appendix C Sample Memorandum of Review
Appendix D Jesse Morrow Mountain Draft EIR Aesthetics Section
Appendix E Las Pilitas Quarry Preliminary Schedule
Appendix F Cost Estimate

PROPOSAL

1.0 INTRODUCTION

Benchmark Resources is a multi-disciplinary environmental planning firm with expertise in conducting and documenting environmental analyses to assist public agencies in complying with the California Environmental Quality Act (CEQA). Environmental review of hard rock mining projects is a key area of our experience and expertise. We have assisted numerous public agencies with CEQA review of mining projects and we have also assisted private entities with environmental resources analysis conducted as a component of mining use permit applications. As a result, Benchmark Resources is unsurpassed in our understanding of the environmental issues and impacts associated with mining projects. Our success in preparing quality EIRs is directly related to the depth of understanding that comes from not only assisting with environmental review and documentation, but also from our experience in assisting in mine reclamation planning, conducting mine inspections for regulatory compliance, and facilitating closure and post-closure monitoring.

Our role in preparing Environmental Impact Reports (EIRs) for our clients is to prepare independent, objective and unbiased work products that inform the public and decision-makers of the potential environmental effects of proposed projects. As expressed in the qualifications and recommended scope of services described in this proposal, we are well-suited to prepare a comprehensive, high-quality EIR to assist the County of San Luis Obispo in its review of the proposed Las Pilitas Quarry Project.

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 environmental impact evaluations, preparing and reviewing mining permitting applications and mine reclamation plans, and assisting agency staff in reviewing applications 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 pride ourselves in providing agency confidence in the permitting process through the consistency and reliability of our work. 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. Ultimately, successful environmental document provides the information necessary to inform decision-makers during their deliberation of project applications and, in the event that decision-makers approve a project, a successful environmental document forms the basis of a legally defensible administrative record to support the agency's decision.

We understand the objectives of agency staff to review and process mining project applications and provide decision-makers with information and recommendations regarding whether to approve projects and the conditions appropriate to impose on a project if approved. We understand the need for decision-makers and the public to be provided with meaningful, impartial information to support their consideration and review of mining project applications. We also embrace the importance of providing meaningful opportunities for public input during the environmental review process and in addressing public input and concerns pertaining to environmental issues.

Benchmark Resources is comprised of staff that are highly regarded experts in CEQA compliance and mineral resource planning. Benchmark Resource's Principals, 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 for the Las Pilitas Quarry Project EIR, is an environmental land use attorney with over 16 years of experience preparing EIRs. David Brown, who will serve in an advisory capacity during preparation of the EIR, has over 25 years of environmental review experience. Mr. Brown conducts as many as 150 mine inspections annually and providing invaluable insight into feasibility of mitigation measures and conditions of approval necessary to address impacts associated with mining projects. 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. 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 CEQA as well as the California Surface Mining and Reclamation Act (SMARA). Our experience with key resource issues typically associated with mining projects – greenhouse gases and air pollutant emissions, hydrology, traffic, aesthetics, and biological resources – enables us to anticipate the range of environmental analyses necessary to efficiently prepare a comprehensive EIR with meaningful impact conclusions and mitigation recommendations. 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 we will prepare a legally defensible environmental document for consideration by the Planning Commission and Board of Supervisors.

Benchmark Resources' objective is to assist San Luis Obispo County (County) with the preparation of an EIR that complies with CEQA and comprehensively reviews the Project in light of local and regional planning policy requirements. We will prepare an EIR that provides an independent, objective, and unbiased work product for use by the County's decision-makers. Benchmark Resources principals, staff and our subcontracts have the capacity and are committed to providing a neutral and unbiased EIR for the Project. The EIR will 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.

Our staff and our subcontractor team of technical experts have the ability and experience to prepare high-quality technical studies. Our studies are consistent with industry standards and provide the necessary research, data and clearly written text necessary for their use as EIR supporting technical studies. We are also experienced in conducting peer reviews of studies and plans submitted by project applicants and use a consistent, comprehensive approach for documenting the adequacy and any deficiencies in such studies. 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
Hatch Mott MacDonald (Traffic/Public Safety)	Jeff Waller
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 has been responsible for the preparation 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 manages 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 working in support of lead agency planning staff.

As Project Director for the preparation of the EIR, Mr. Steubing will oversee every aspect of the Project environmental review process 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 Comments;
- Participate in meetings with County staff and participate in meeting with County staff and the Applicant if requested by staff; 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;
- 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.

Bob Delp – Senior Planner

Mr. Delp has seventeen years of experience conducting resources analyses, preparing environmental documents and managing environmental planning and review processes. He prepares environmental documents for compliance with CEQA and NEPA for water resources, transportation, energy infrastructure and industrial projects. Mr. Delp also manages and conducts environmental review for advance planning activities including those associated with water resources, transportation, land use and recreation.

Mr. Delp will be involved in several aspects of the Project assisting the Project Director and Project Manager, including:

- 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; and
- Review and agency and public comments on Draft EIR and assist in drafting of response to comments for Final EIR.

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 with other project management support, as needed.

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

Hatch Mott MacDonald (HMM), is a leading consulting engineering firm with a century of worldwide experience. We offer public and private clients a complete range of services from planning, feasibility studies, environmental assessments, and conceptual design through preliminary and detailed design, to procurement, construction inspection, construction management, and full project and program management services, as well as operations and maintenance support.

HMM offers innovative approaches to servicing the nation's ever-growing transportation infrastructure needs while ensuring preservation of environmental and historic resources. The company has strong expertise in traffic engineering, transportation planning, and project management. They have served in key roles on a wide variety of project sizes, from small subdivisions to many of the largest transportation projects in California.

The firm's experienced transportation, civil engineering and transportation planning staff has provided planning, design, inspection, and construction support services for the construction of new and rehabilitation/replacement of bridges, highways and local roadways. Structures include movable and fixed bridges that carry or cross railroads, highways or waterways. Highway and roadway projects include restricted and non-restricted access highways, highway and local roadway widening and intersection improvements.

Keith Higgins has directed and performed numerous planning and design projects during his 35-year career. He has extensive operational experience, including serving as a city traffic engineer. Specific experience includes traffic impact analyses; conceptual and final highway, street system, and subdivision design; traffic signal design; signing and striping design; transit system planning and design; traffic volume and speed surveys; safety analysis; traffic control device warrant studies; traffic control device inventory; capacity analysis; circulation studies; parking studies; parking facility design; conceptual interchange design; pedestrian and bicycle studies; transportation systems management; transportation demand management; project representation; community traffic committee organization; railroad design coordination; grading and drainage design; structural design; project management; construction inspection; contract administration; and expert witnessing in personal injury and wrongful death litigation.

Jeff Waller has performed numerous traffic analyses for a wide array of projects, including housing subdivisions and shopping centers, project study reports, quarries

and batch plants, and master plans and general plan updates. Mr. Waller has experience performing traffic analyses throughout the greater Monterey Bay Area, plus San Luis Obispo and Southern Santa Clara Counties. He has also performed full traffic signal warrant evaluations, intersection sight distance evaluations, collision history reviews, and parking supply and demand studies. Mr. Waller's specific areas of expertise include traffic impact analyses and project impact evaluation. Mr. Waller is experienced in various traffic analysis software packages, including Synchro and HCS.

Hydrology and Water Quality

EMKO Environmental, led by Dr. Andrew Kopania, 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. Benchmark Resources conducts environmental review utilizing problem-solving approaches based on our project experience, and we use consistent team members and subcontractors who are experts in their field and understand resource issues associated with mining.

Lead Agency contacts familiar with our relevant EIR work are provided in Table 2, Benchmark Resources Lead Agency References. Benchmark Resources understands the importance of our role in providing 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. We encourage the County to contact any or all of our references, and inquire about our methods of operation in successfully negotiating 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* **559-600-4207** Fresno County Dept. of Public Works & 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 legal counsel if desired by the County) and requires clearly defined communication protocol and boundaries to which we maintain strict adherence.

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 to provide the County with an EIR that analyzes all relevant local and regional environmental issues in a consistent approach with other County environmental review documents in the area. Through the approach outlined in the tasks below, Benchmark Resources will document the particular environmental impacts of the Las Pilitas Quarry Project while providing a baseline scenario, environmental analysis, and mitigation measures commensurate to the Project's identified potential and significant impacts. In the end, this approach will provide for a legally defensible environmental document that clearly identifies and addresses County policies, regulatory agency comments, and public concerns.

The following tasks outline Benchmark Resources' approach to preparation of the Las Pilitas Quarry Project EIR:

- 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 Conditional Use Permit (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.

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.

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.

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 is to conduct all required assessments and prepare an administrative draft version of the Draft EIR for the County's review that is 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 raised in comments responding to the NOP.

Review Public and Agency Comments

Benchmark Resources has reviewed agency and public comments submitted in response to the NOP and comments provided at the public scoping meeting. The analysis and issues to be addressed in the EIR (as outlined below) will address these issues to ensure that agency and public comments and concerns are documented and evaluated appropriately. Key issues raised during scoping include concerns with project-related vehicle trips and associated traffic and safety issues, project water consumption and impacts to water availability, air pollutant emissions including exhaust and fugitive dust emissions, loss of biological resources habitat, impacts to the scenic and visual quality of the area and important viewsheds, effects on storm water runoff and potential flooding or other drainage issues, potential effects on archaeological resources, and Native American tribal consultation. Additional issues raised during scoping, such as effects on neighboring property values and quality of life, may also warrant consideration in the EIR or may warrant consideration by the County through separate evaluations or through the public hearing process. Our scope of work intends to address all relevant environmental issues raised during scoping. We

will work with the County to determine whether it will be appropriate for the EIR to address economic and social concerns that may not cause actual environmental impacts.

Environmental Analysis Approach

The environmental analysis will draw from information available in the Revised Initial Study prepared for the Project by County staff, Applicant-prepared technical studies (if deemed adequate based on Benchmark Resources' peer review of these documents) and additional resource evaluations to be conducted by the Benchmark Resources team. We will address each resource area typically considered in an EIR evaluation (based on Appendix G of CEQA Guidelines as amended in 2010) and additional issues identified in the County's Revised Initial Study for the Project. We will consider individual impact issues based on the CEQA Guidelines Appendix G Guidelines, agency and public comments received during EIR scoping and other issues as necessary to fully evaluate and disclose the environmental effects of the Project.

Our general approach to conducting evaluations associated with each resource topic will include assembling information regarding existing conditions at the Project site and the regional setting; assembling regulatory information including federal, state and local regulations, ordinances and standards; developing and documenting the specific analytical methods used for evaluating each environmental impact issue including identification of the criteria and thresholds used for determining the significance of each impact; evaluating and documenting each Project-specific impact; identifying available mitigation measures for each significant or potentially significant impact; and, finally, evaluating and documenting the potential for each Project-specific impact to contribute to cumulative impacts.

Resource Topics

Based on CEQA Guidelines Appendix G and the Revised Initial Study prepared for the Project, and in consideration of reasonably anticipated impacts that could occur as a result of the Project, Benchmark Resources will evaluate the following overarching resource topics for the EIR:

- Aesthetics;
- Agriculture and Forest Resources;
- Air Quality and Greenhouse Gas Emissions;
- Biological Resources;
- Cultural Resources;
- Geology and Soils;
- Hazards and Hazardous Materials;
- Noise;
- Recreation;
- Land Use and Planning;
- Transportation/Traffic;
- Water; and
- Energy Conservation and Fuel Consumption.

Peer Review of Applicant-Prepared Technical Studies

As an initial step in the resource evaluation process, the Benchmark Resources team will conduct a rigorous review of Applicant-prepared technical studies to determine whether the information and analysis is appropriate for use in preparing the EIR or whether supplemental or new analysis is required. The Benchmark Resources team commonly conducts peer reviews of technical evaluations and we understand the pitfalls of relying on information that is incomplete, inaccurate or otherwise not suitable for supporting the analysis necessary for an EIR. We utilize a Memorandum of Review template to provide a consistent method for our team members to peer review technical studies prepared by others and to document that review. Appendix C, Sample Memorandum of Review Template, provides an example of our Memorandum of Review template.

Benchmark Resources will prepare detailed memoranda of review for each Applicant-prepared technical study containing information considered for use in the EIR. The memoranda will be submitted to the County for consideration of our recommendations. Generally, our recommendations will include a combination of determinations finding that:

1) The resource analysis and technical report is adequate and contains all necessary information to address the relevant issue in the EIR;

2) The resource analysis and technical report is adequate and contains some of the information necessary to address the relevant issue in the EIR, but supplemental information/analysis will be required; or
3) The resource analysis and/or technical report does not provide adequate information and new or substantial supplemental information and analysis will be required.

Commonly, Applicant-prepared technical reports contain a substantial amount of accurate and useful information, but often require supplemental analysis. Our approach in these instances will be to provide a recommendation to the County with regard to an approach for developing the additional information or analysis necessary for the EIR to facilitate the County's decision of whether to request additional information from the Applicant or whether to assign Benchmark Resources (or other County consultant) with the task of developing the additional information.

Other Sources of Data

In addition to utilizing information from the Revised Initial Study and Applicant-prepared technical studies, when appropriate, Benchmark Resources will make the maximum use of existing data, whether in certified EIRs or existing agency, engineering or scientific studies.

Resource Analyses

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 significant and potentially significant impacts. Our approach to data gathering, assumptions used in developing the scope and our proposed approach to the analysis for each specific resource analysis is summarized in the sections below.

Aesthetics

Data Gathering: Information necessary for the aesthetics/visual resources analysis will be developed through a combination of a site visit, photographic documentation of the site from representative locations on- and off-site, including any particularly sensitive view locations, review of the County General Plan and Zoning Ordinances for pertinent policies

and ordinances pertaining to the Project. View site-line drawings submitted by the Applicant will be reviewed.

Assumptions: Design of mining and reclamation areas and facilities will be available in a digital format (Civil 3D 2010) to facilitate preparation of photographic simulations. Project lighting will be limited to safety and security lighting and no nighttime operations with significant lighting requirements will occur. Supplemental site-line profiles and photographic simulations will be required.

Approach: Benchmark Resources will be responsible for the aesthetics resource section (including a visual inventory map, an assessment of existing visual character, assessment of visual quality criteria, site photographs), and an impacts and mitigation section including photographic simulations, assessment of the Project's effect on the existing visual character of the area, and consistency with General Plan and Zoning ordinances. (An example of our approach to aesthetic impact evaluation, including examples of photographic simulations, is provided in Appendix D, Jesse Morrow Mountain Draft EIR Aesthetics Section.)

The visual impact analysis will consider the existing quality of the views, the sensitivity of viewers and the degree of change to the view that will occur as a result of the Project. Potential impacts associated with light and glare will be evaluated based on the Project night and security lighting proposed by the Applicant (to be described in the Project Description).

In conducting the analysis and preparing the EIR aesthetics section, Benchmark Resources will:

- Describe the existing visual character and quality of the Project site and the immediate surroundings using photographs from representative view locations to supplement text descriptions;
- Identify and describe the quality of existing views of the site from adjacent areas;
- Determine whether and to what extent the proposed mining area, the project's equipment, facilities, and stockpiles would be visible from public view locations, would be visible from representative view locations, including those along public roadways;

- Identify up to five representative viewpoints from which views toward the Project Site occur and would have the greatest potential for visual impacts.
- Photograph views from representative viewpoints and prepare sight-line profile drawings (via cross sections) to determine and illustrate the vertical interface of Project facilities within the applicable viewshed.
- Prepare photographic simulations from each selected viewpoint to illustrate the visibility of Project facilities and alterations to the existing landscape as viewed from each of the representative viewpoints.
- Evaluate the aesthetic/visual impact of the Project on scenic vistas/features and its consistency with or change to the visual character of the area and consider the adequacy of Applicant-proposed screening;
- Prepare a written analysis of aesthetic/visual impacts as they relate to relevant County policies and CEQA standards;
- Conduct a qualitative evaluation of the potential for impacts associated with light and glare resulting from Project facilities; and
- Develop mitigation measures for significant and potentially significant visual and lighting impacts. We anticipate that appropriate mitigation will focus primarily on minimizing impacts during operations through concurrent reclamation and visual screening of the Project site from public view locations and through lighting design that minimizes light spill and corona effects.

Agriculture and Forest Resources

Data Gathering: Information necessary for the agricultural resources evaluation will be assembled through review of the County General Plan and Zoning Ordinances pertaining to agricultural resources, review of the California Department of Conservation maps of important farmlands in San Luis Obispo County, review of information from and discussions with the County Agriculture Department and review of landowner information regarding current and historical use of lands for agricultural purposes and Williamson Act contracts, as may be applicable to the Project site and surrounding areas.

Assumptions: Information regarding land uses on surrounding properties will be readily available through review of mapping and aerial photographs, discussion with County staff, and limited coordination with local property owners and land managers. The County's Agricultural Commissioner will be available to work closely with us regarding this analysis. We have assumed up to four (4) hours of coordination time for consultation with the Agricultural Commissioner.

Approach: Benchmark Resources will be responsible for the agricultural resources evaluation that addresses state and local standards relative to the loss of farmlands. Impacts will be identified and quantified including existing agricultural uses, potential conflicts or adverse effects on adjacent agricultural lands, and consistency with County ordinances and policies. Mitigation for this Project will be focused primarily on dust and invasive weed control, as well as reclamation and reseeding requirements to facilitate return to existing land uses post-reclamation.

Analysis and documentation of impacts to agriculture will include:

- Describe existing agricultural resources and uses at, and surrounding, the Project site;
- Prepare graphics to illustrate the proximity of adjacent agricultural land uses to proposed Project facilities and activities.
- Determine impacts of mining operations on adjacent agricultural operations/production, such as dust impacts to adjoining productive farmland, potential for the Project to induce the spread weeds on adjacent properties (including consideration of issues raised in NOP comments and SMARA weed management requirements (14 CCR Section 3705(k)), as necessary);
- Assess ordinance and policy consistency (e.g. Agriculture Policy 18: Location of Improvements) for protection of agricultural resources;
- Consult with the County Agriculture Department and Commissioner to assist in identifying impacts and impact significance;
- Assess indirect impacts related to access points and haul routes that could adversely affect access to adjacent agricultural lands and their production; and

- Identify mitigation measures, if necessary, and when available to reduce or avoid significant or potentially significant impacts.

Air Quality and Global Climate Change

Data Gathering: The San Luis Obispo (SLO) County Air Pollution Control District (APCD) has developed the 2009 CEQA Air Quality Handbook to evaluate project-specific impacts and help determine if air quality mitigation measures are needed, or if potentially significant impacts could result. To evaluate long-term emissions, cumulative effects, and establish county-wide programs to reach acceptable air quality levels, a Clean Air Plan has been adopted (prepared by the APCD). Data gathering will consist of the review of meteorological and air quality data from regional stations, acquisition of specific, equipment-level information from the Applicant concerning project construction and operation, and consultation with the SLO County APCD. All deliverables produced for this project will be reviewed by both Benchmark Resources and Golder Associates (subcontractor) staff, as well as obtaining general buy-in on the methodologies used by the SLO County APCD.

Assumptions: The Applicant will provide sufficient equipment and operations data to prepare baseline data for the EIR air quality analysis. Processing operations flow and mobile equipment inventory information will be available from the Applicant. Quantitative assessment of alternatives will not be required, and a qualitative comparison of the alternatives to the No Project and Project will be sufficient for the alternatives air quality analysis. Information regarding Valley Fever and with the SLO County APCD regarding criteria pollutants, toxic air contaminants, and the County's position on greenhouse gas issues will be readily available from the San Luis Obispo County Public Health Department.

Approach: Air quality impacts and greenhouse gas emissions associated with the Project will be carefully and completely assessed to meet the requirements contained in the SLO County APCD CEQA Air Quality Handbook (December 2009). Benchmark Resources will retain the services of Golder Associates, Inc. to perform the Air Quality and Greenhouse Gas Emissions analysis. The analysis will address both construction and operation activities, including stationary and mobile source emissions.

The air quality assessment will involve the following:

Air Quality Subtask 1: Develop Emissions Inventory

Assessment of the air quality impacts from the project will include development of comprehensive emissions estimates for construction and operation activities.

For construction, primary air emission sources to be included in the inventory include fugitive dust and tailpipe emissions from off-road equipment, road dust and tailpipe emissions from employee and material delivery trucks. The majority of these emissions will be estimated using the URBEMIS emissions estimation program.

For operations, primary air emission sources to be included in the inventory include fugitive dust and tailpipe emissions from off-road equipment used to mine and transport aggregate material onsite; fugitive dust from material processing equipment (crushers, screens, etc.); road dust and tailpipe emissions from product pick-up trucks, recycled material trucks, and employee vehicles, and emissions associated with drilling and blasting activities. These emissions will be estimated using the URBEMIS and EMFAC2007 emissions estimation programs, U.S. EPA AP-42 emission factors, and emission factors from California air quality districts.

For all of the activities listed above, emissions of criteria pollutants, greenhouse gases, and toxic air contaminants (TACs) will be estimated. Diesel particulate matter (DPM) is expected to be a TAC of particular concern.

Emissions of reactive organic gases (ROG), nitrogen oxides (NO_x), DPM, and fugitive particulate matter (PM) from construction activities will be compared to significance thresholds provided in the County APCD CEQA Air Quality Handbook. Similarly, emissions of ROG, NO_x, DPM, fugitive PM, and carbon monoxide from operation activities will be compared to significance thresholds.

Air Quality Subtask 2: Assessment of Ambient Air Quality Standards

In accordance with guidance in the CEQA Air Quality Handbook, the SLO County APCD will be consulted to determine if a dispersion modeling assessment of compliance with ambient air quality standards will be required for this Project. If so, the cost estimate in this proposal provides for the inclusion of this task in the air quality impact assessment.

This task would be performed using either the U.S. EPA ISCST3 dispersion model with screening meteorological data or the U.S. EPA AERMOD dispersion model if actual monitored meteorological data acceptable to the SLO County APCD are available in a model-ready format. The use of screening models (e.g. SCREEN3) will not be appropriate for this project due to the number and location of DPM emission sources involved. Emissions estimates of criteria pollutants developed in Air Quality Subtask 1 above would be input to the dispersion model using appropriate model source representations. Maximum off-site modeled concentrations (including background concentrations if provided by the SLO County APCD) would be compared to appropriate California and federal ambient air quality standards.

Air Quality Subtask 3: Human Health Risk Assessment

Because there will be sensitive receptors (i.e. residences) within 1,000 feet of the Project, it is anticipated in accordance with the CEQA Air Quality Handbook that a human health risk assessment will be required for this Project. In addition, the need for this assessment was noted in the August 3, 2010 project comment letter from the SLO County APCD. The primary focus of this risk assessment will be cancer risk due to DPM emissions during operations.

DPM emissions will be modeled using either the U.S. EPA ISCST3 dispersion model with screening meteorological data or the U.S. EPA AERMOD dispersion model if actual monitored meteorological data acceptable to the SLO County APCD are available in a model-ready format. The use of screening models (e.g. SCREEN3) will not be appropriate for this project due to the number and location of DPM emission sources involved. Lifetime excess cancer risk will be estimated at locations with occupational worker or residential receptors using

methods recommended by the California Office of Environmental Health Hazard Assessment (Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, October 2003).

Air Quality Subtask 4: Propose Mitigation Measures

Based on the results of Air Quality Subtasks 1 through 3 above, appropriate mitigation measures to reduce air quality impacts to the extent possible, and to less than significant levels where possible, will be developed. The air pollutant emission reductions anticipated as a result of recommended mitigation measures will be determined and incorporated in the final assessments conducted for Air Quality Subtasks 1 through 3.

In addition, it is within this task that the project will be reviewed for consistency with the SLO County APCD Clean Air Plan.

Air Quality Subtask 5: Assess Cumulative Impacts and Greenhouse Gas Impacts

This assessment will quantify estimated project CO_2 emissions based on the inventory described in Subtask 1, and will include a qualitative discussion of the potential cumulative impacts of the project with other nearby projects (for criteria pollutants and TACs) and for greenhouse gases within the context of the requirements under AB32 and available CEQA guidance. Recently, several California air quality districts have started providing quantitative CEQA review guidance for determining the potential significance of greenhouse gas emissions from proposed project. Unless the SLO County APCD or the County has developed specific quantitative methods for evaluating the potential significance of greenhouse gas emissions by the time this assessment is conducted, methodologies from other air quality districts may be used. If the County or other appropriate thresholds identify a quantified threshold for GHG emissions, estimated project CO_2 emissions will be compared to the threshold to determine whether project GHG emissions would be significant.

Air Quality Subtask 6: Prepare Technical Report Document

The results of the emissions inventory development, ambient air quality standard assessment (if required) and the human health risk assessment

will be documented in a stand-alone technical report. This documentation will include data gathered as input to the process, as well as the calculated emission rates, dispersion model output, and risk assessment results.

The report will also include a discussion of potential impacts from Valley Fever and Naturally Occurring Asbestos to the extent that they are determined to be potential issues for the Project.

Air Quality Subtask 7: Review and Incorporate Air Quality and Greenhouse Gas Emissions to EIR Air Quality Section

Benchmark Resources will be responsible for oversight of the Golder Associates air quality analysis and will prepare the EIR Air Quality and Greenhouse Gas Emissions section of the EIR based on the final technical report prepared by Golder Associates.

Biological Resources

Data Gathering: The initial component of the Biological Resources evaluation data gathering phase will consist of peer review of the Applicant-submitted *Sensitive Species and Habitat Survey* (LFR 2009). In addition, data gathering will consist of review of CNDDB and other state databases, previous EIRs or biological assessments, regional conservation plans, and other existing pertinent literature and studies. Field review will be conducted as a component of peer review that will emphasize type and quality of vegetation communities and wetlands, and habitat suitability for and potential for occurrence of sensitive species.

Assumptions: The biological assessment by LFR (2009) provides a comprehensive analysis of the site's biological resources and defines the existing conditions at the date of the study. The site lacks areas subject to the regulatory jurisdiction of the Army Corps of Engineers (ACOE) as wetland or non-wetland Waters of the U.S. and a jurisdictional wetland delineation will not be required. Available data, including the LFR Sensitive Species and Habitat Survey, will be sufficient to determine baseline conditions for the EIR analysis. Electronically-mapped geographic information (including vegetation mapping and species occurrences) prepared by LFR (2009) and Project base maps, boundaries, and design will be available to Benchmark Resources in ArcGIS format.

No additional field surveys (with the exception of ground-truthing during peer review) will be required for the analysis.

Approach: Benchmark Resources will retain Berryman Ecological to conduct peer review of the Applicant-submitted biological resources-related documents and to assist with the biological resources evaluation.

Berryman Ecological will conduct a peer review of the *Sensitive Species and Habitat Survey for the Las Pilitas Rock Quarry*, (LFR, October 2009). Berryman Ecological will also review the Las Pilitas Rock Quarry Tree Plan (Tartaglia Engineering, September 2009) and the Las Pilitas Rock Quarry Revegetation Plan (Tartaglia Engineering, September 2009).

Berryman Ecological biologists will conduct a pedestrian field survey of the mining impact area and a 100-foot buffer area to ground truth and verify current conditions within the Project Site as presented in the LFR 2009 biological assessment. The purpose of the field surveys will be to assess observed site conditions and vegetative cover as a component of the peer review process.

In addition to peer review, Berryman Ecological will conduct a literature review that includes updated search and/or review of the following:

- California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory Database for special-status and sensitive "elements" known to occur at or in the vicinity of the site;
- California Department of Fish and Game (CDFG) Special Vascular Plants, Bryophytes, and Lichens List;
- CDFG Special Animals List;
- CDFG List of California Vegetation Alliances, CDFG List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database, and The Manual of California Vegetation, 2nd ed.;
- Federal, state and local policies and planning documents pertaining to biological resources, including the San Luis Obispo County Draft Conservation and Open Space Element; and

- Available background data or documents concerning biological resources of the project area and region.

Upon peer review verification of the adequacy of the LFR report and completion of literature review (or completion of additional literature review data collection if necessary due to deficiencies in the LFR report), Benchmark Resources and Berryman Ecological will prepare biological resources setting section for the EIR including a description and quantification of habitat types on site and sensitive plant and wildlife species known or potentially occurring on site and their likelihood of occurrence. If the peer review and site verification indicate that the LFR assessment or wetland delineation do not adequately reflect site conditions or do not provide sufficient information to complete the CEQA analysis, additional studies may be necessary and will be scoped separately: these additional studies are not included in the current scope of work or budget.

We will also prepare site vegetation/habitat mapping and special-status species occurrence mapping for the EIR (based on GIS data from the LFR report, revised if necessary based on information from field review). This will include resource mapping of vegetation based on the classification system of natural community Alliances and Associations used by the CDFG Vegetation Classification and Mapping Program, as well as mapping of land cover, CDFG riparian habitat, other special habitats, oak woodlands and individual native trees and locations of any special status species found at the mining impact area.

We will determine and quantify impacts associated with habitat disturbance and will document impacts that may be associated with Project activities, including noise, vibration and lighting. This will include documenting potential Project impacts associated with:

1) Adverse effects to unique or special-status species or their habitats;
2) Reductions in the extent, diversity or quality of native or other important vegetation, including sensitive natural communities;
3) Loss of wetland or riparian habitat, including areas under the jurisdiction of responsible agencies; and,

4) Restrictions to wildlife movement, including barriers to movement of resident and migratory wildlife species, as well as factors that could hinder the normal activities of wildlife.

The Applicant's reclamation plan to restore the site to native vegetation following completion of mining activities will be considered when evaluating impacts and incorporating mitigation measures. Direct and indirect impacts of the project will be considered, including any potential indirect impacts to biological resources downstream from the project site, as applicable (e.g. Salinas River). Effects of changes in hydrology on biological resources due to slope alteration and vegetation clearance will be considered in conjunction with the hydrological analysis.

The impact analysis will provide an independent evaluation and analysis of project construction, operational, and cumulative impacts, and will identify mitigation measures to reduce significant or potentially significant impacts to less than significant levels, when such mitigation is available. Any restoration and monitoring required as a component of Project mitigation will include clear and measureable performance standards and monitoring criteria.

The impact analysis will include a summary of impacts table displaying acreage of vegetation loss by type. We will identify mitigation when available to avoid or minimize significant or potentially significant impacts.

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.

Cultural Resources

Data Gathering: The initial component of the Cultural Resources evaluation data gathering phase will consist of peer review of the Applicant-submitted *Archaeological Surface Survey* (Heritage Discoveries 2009). Benchmark Resources will retain AES to conduct the peer review.

Assumptions: Available data will be sufficient to document the existing cultural resources setting for the EIR. Supplemental surface or subsurface investigations will not be required. No known cultural resources, human

graves, paleontological resources or Native American sacred sites are present at the Project site. Consultation with Native American tribes will not be required or will be conducted by County staff who will provide any relevant findings and communication to Benchmark Resources for incorporation to the EIR, if necessary. There will be no federal involvement/approvals associated with the Project and NHPA compliance will not be required.

Approach: Benchmark Resources will retain AES to conduct peer review of the Applicant-submitted A*rchaeological Surface Survey* and to assist with the cultural resources evaluation. Upon peer review verification of the adequacy of the *Archaeological Surface Survey* report (or completion of additional data collection if necessary due to deficiencies in the survey report), Benchmark Resources will prepare the cultural resources section of the EIR. No known cultural resources sites have been identified on the Project site. As such, our work plan anticipates that a summary of the cultural resources survey and findings will provide the appropriate setting discussion for the EIR. Although no known cultural resources sites have been identified on the Project site, we will prepare the Cultural Resources section of the EIR to discuss potential impacts associated with the potential for discovery of currently unknown cultural or paleontological resources and human remains during survey disturbance activities associated with the Project. The EIR will include documentation of the County's Native American outreach efforts (conducted up to the time the Draft EIR is prepared) based on the Native American Heritage Commission's NOP comment letter and any other information provided by the County prior to completion of the Draft EIR. We will identify recommended mitigation measures that will provide for the appropriate monitoring, work stoppages and treatment of any potentially significant cultural or paleontological resources during Project construction and operation.

Geology and Soils

Data Gathering: Data gathering will consist of a review of previous EIRs and other existing pertinent literature and studies. Golder Associates (Benchmark Resources' subconsultant regarding slope stability and geotechnical issues) will also conduct peer-reviews of the Applicant-submitted Engineering Geology Investigation (GeoSolutions 2009) and General Blasting Plan (Gasch & Associates 2009).

Assumptions: Sampling of geology or soils will not be required. Slope stability analysis and drilling logs/data will be available for review.

Approach: The mining and reclamation plan will be utilized to assess potential slope stability, blasting, or vibration hazards. Assessment and mapping of the potential for upset conditions and contamination will be performed.

Benchmark Resources will be responsible for the geology and soils baseline section (identifying the geology, soils, and humidity), and the impacts and mitigation section for the EIR. The following factors and related issues will be considered in the impacts evaluation:

- Identification of potential hazards as a result of ground disturbance and/or upset conditions;
- Surface drainage analysis;
- Placement of stockpiles to minimize impacts and to protect water/biological resources,
- Utilization of soil erosion and topsoil reserves;
- Slope geometry (steepness and height);
- Geotechnical and earthquake conditions;
- Topography and surface water flow patterns around and through the site;
- Depths to historical and anticipated high groundwater levels;
- Presence of buildings, utilities, and surcharges in the vicinity of the slopes; and
- Examples of past slope performance and erosion.

Benchmark Resources will document potential impacts associated with the factors listed above and, when necessary, will identify recommended mitigation measures and monitoring methods to reduce significant or potentially significant impacts to less than significant levels.

Hazards and Hazardous Materials

Data Gathering: Data gathering will consist of a one-day site reconnaissance to assess the site, and a thorough inventory of hazardous

materials used in existing processing and equipment, storage tanks, and the transportation of hazardous materials.

Assumptions: The analysis will rely on the County's identified mitigation measures that will be incorporated into the Project. These will address hazardous impacts from mining and processing operations. Collection of site-specific soil or groundwater samples or analytical laboratory testing will not be required.

Approach: Information from hydrology assessments will be utilized in conjunction with storage/handling/disposal information to evaluate likelihood of project-related environmental impairment of soil, surface water, or groundwater. Storage, handling, and disposal methods will also be identified. The hazardous materials impacts/mitigation section will discuss hazardous materials/wastes as they apply to physical environmental impacts. Benchmark Resources will be responsible for the hazards and hazardous materials baseline section (including a summary table of information obtained, site map, and location of known hazardous materials), and the impacts and mitigation section (including a discussion of types of impacts and likelihood of occurrence, daily inspections for leakage, blasting analysis and mitigation, and best management practices).

Additional hazards to be addressed include fire hazards that will be evaluated through analysis of potential fire ignition sources associated with the project and emergency fire response capabilities within the project area. The analysis will also consider flood potential associated with the portion of the project site within the Salinas River/Santa Margarita Reservoir Dam Inundation Zone. The analysis will consider Division of Safety of Dams (DSOD) inundation maps of the area and the potential for facilities or personal to be located within the inundation zone and potential for impacts associated with catastrophic failure of the Santa Margarita Dam. If necessary and available, mitigation will be identified for fire and/or flood-related impacts.

The Revised Initial Study (pages 18 and 19) notes that the following measures will be incorporated into the Project:

- To reduce impacts from spillage of petroleum products, the operators shall inspect roads, equipment and trucks daily for leakage and take immediate corrective action to eliminate any discovered leakage.
- A log of facility, equipment and road inspections shall be kept at the site office and shall be available for inspection by County staff.
- On-site servicing and fueling of vehicles shall be accomplished with the use of the following best management practices:
  - Servicing and fueling shall take place only in designated fueling areas outside of on-site drainages.
  - When fueling, tanks shall not be "topped off."
  - A secondary containment, such as a drain pan or drain cloth, shall be used when fueling to catch spills or leaks.
  - Employees and subcontractors shall be trained in proper fueling, servicing, and clean-up procedures.
  - All fluid spills shall be reported immediately to the facility log.
  - Storage of hazardous materials shall be as far as practical from the on-site drainages.
  - A contingency plan for possible leaks and spills of hazardous materials shall be developed and implemented.

In addition, to reduce impacts related to proposed blasting, the Revised Initial Study (page 19) requires the Project to implement the recommendations of the blasting contractor; including but not limited to:

- Controlled blasting techniques;
- Blast site inspections;
- Employee safety meetings;
- Loading of explosives only under direction of a blaster-in-charge;
- Limiting blasting hours to between 7:00am and 6:00pm weekdays (no blasting after sunset);
- Established drilling operations;
- Post blast safety procedures;
- Pre-blast notification and survey;
- Preparation of a conceptual blasting plan;

- Blasting safety plan;
- Blast site security;
- Safety requirements for ignition systems;
- Safe blasting site preparation;
- Blast warning signs/signals; and
- Safe blasting procedures in accordance with regulatory agencies.

Land Use

Data Gathering: Data gathering for the land use analysis will include a detailed review of the County General Plan to identify goals and policies of potential applicability to the Project or Project site. We will review the County Land Use Ordinance and zoning and land use designation maps to determine applicable zoning restrictions and land use designations within the Project vicinity. Benchmark Resources staff will interview staff from the County Planning Department to identify specific land use and zoning issues deemed by staff to be relevant to the land use plan consistency analysis. If requested by staff and if available upon initiation of this task, we will also review a final or proposed final version of the County's Climate Action Plan for potentially applicable goals, objectives and policies.

Approach: The actual proposed intensity of development with development allowed will be assessed, as will the proposed use for consistency with policies of the County General Plan and Zoning Ordinance.

The project description/mapping will be utilized in conjunction with Land Use baseline inventory information to qualitatively assess whether the operation could impact other area operations or land owners.

Benchmark Resources will evaluate whether the Applicant's request for a County Land Use Ordinance modification to authorize an aggregate recycling facility without an existing waste disposal facility is compatible with the applicable County requirements specified at Section 22.30.020(D) of the San Luis Obispo County Code. While the Planning Commission or Board of Supervisors will make the ultimate findings regarding whether to grant the modification based on the above standards, the Land Use section of the EIR will provide the necessary analysis and information on

which the Commission or Board can base its decision. Further, as the County's consultant, Benchmark Resources will provide its recommendation regarding whether the standards have been met and can note in the EIR that the ultimate determination will be made by the County decision-makers when they consider approval of the Project.

Benchmark Resources will be responsible for the land use baseline section (including a discussion of designated area land uses, a summary of actual type and intensity of area development, and a map of land use designations in the site vicinity), and the impacts/mitigation section (including a discussion of development type, intensity, and consistency).

Noise

Data Gathering: Data gathering will consist of a review of previous EIRs and other pertinent literature and studies. Additionally, Benchmark Resources will retain Bollard Acoustical Consultants (BAC) to conduct peer review of the Applicant-submitted David Dubbink Associates (2010) to determine if the report adequately evaluates baseline conditions on Project impacts.

Assumptions: Access will be available to nearby sensitive receptors and noise sources. No nighttime operations are proposed. Existing ambient noise data in David Dubbink Associates January 26, 2010, *Noise Analysis Las Pilitas Rock Quarry,* adequately documents existing ambient noise data for all study area corridors and sensitive receptor locations to be included in the analysis.

Approach: Baseline inventory information and project description process information will be utilized in conjunction with professional judgment to qualitatively assess noise effects on receptors, and compliance with regulations will be assessed. Benchmark Resources will also ensure that the peer-review described above evaluates the Blasting Plan's compliance with applicable local, state, and federal requirements. The Project will be analyzed to ensure that applicable requirements are achieved through Project revisions or compliance with mitigation measures.

The noise analysis will include an assessment of the noise environment in terms of existing noise levels as well as the locations of the nearest noise-

sensitive receptors. The impact analysis will assess and document whether the mining operation and trucking levels would result in significant impacts on these receptors.

Specifically, the analysis will include the following:

- Conduct a third party peer review of the Applicant prepared noise analysis, Noise Analysis Las Pilitas Rock Quarry (David Dubbink Associates, January 26, 2010).
- Develop a baseline truck traffic noise exposure profile in terms of the CNEL noise metric using the FHWA Model with the latest California vehicle noise curves (CALVENO) based upon project truck traffic volumes.
- Evaluate long-term noise exposure from material extraction, processing and hauling associated both with trucking activity and operation of heavy equipment.
- Evaluate the Blasting Plan and Vibration Predictions provided in the Gasch & Associates, December 8, 2009 report. Because of both the real and perceived issue of noise and vibration from quarry blasting, there are numerous state and federal regulatory constraints as to the overpressure and vibration that may be generated by such activity. These constraints are expressed in a parameter called a "scaled distance" (the closer the receptor, the tighter the constraint). This limits the amount of allowed explosive, and requires that a specified number of blasts be tested to verify compliance. Our experience has been that compliance with these limits will prevent any structural damage and minimize the nuisance impact. The Blasting Plan will be reviewed by BAC for adequacy and compliance with applicable federal, state, and local regulations.
- Determine if any additional analysis is needed to assess special noise issues such as back-up alarms, blasting, and recycled concrete and asphalt crushing, or changes in predicted Project-related traffic volumes from those analyzed in the Dubbnick (2010) Noise Analysis. (In the event that additional analysis is deemed necessary, Benchmark Resources and BAC will document the rational regarding the recommended analysis and will work with

the County to define a supplemental noise analysis scope of work and budget.)

- Relate Project noise impacts to the Noise Element noise/land use compatibility guidelines in the San Luis Obispo County General Plan Noise Element and the County Land Use Ordinance (County, 2008) and other applicable noise exposure regulations.
- Document the efficacy of mitigation measures provided in the Dubbink (2010) Noise Analysis and identify alternative or additional measures if necessary to reduce significant or potentially significant noise impacts to less than significant levels when such mitigation is available.

With input and documentation of BAC's peer review and supplemental analyses, if required, Benchmark Resources will prepare the Noise section of the EIR that will describe baseline conditions (including a summary of existing conditions and ambient noise levels on-site), Project noise and vibration impacts and recommended mitigation measures and resulting noise levels and predicted achievement of standards with implementation of mitigation.

Energy Conservation

Data Gathering: Data regarding Project energy consumption and any proposed energy efficiency elements of the Project will be developed as a component reviewing the Project application and preparing the Project description.

Assumptions: Energy efficiency evaluation will be limited to documentation of fuel use and energy requirements of the Project.

Approach: Benchmark Resources will conduct the evaluation of fuel use and energy use. We will compare the Project's estimated energy consumption to the ability of the energy provider to deliver that power. Project energy consumption estimates will be made using information provided by the Project Applicant regarding estimated equipment to be used, annual hours of operation, energy source/fuel type, and estimated electricity consumption for Project facilities operations. We will also document any Applicant-proposed energy efficiency measures to be incorporated to the Project design. We will document energy supplies,

including electric service providers, and the availability of facilities and capacity to provide service.

We will also identify and discussion methods, if any, for reducing and minimizing fuel use and other energy consumption which could be included in the Project to reduce energy consumption and promote energy conservation to the extent feasible. Energy conservation measures that may be appropriate for consideration include energy efficient buildings, trip reduction measures, measures to encourage alternative modes of transportation, measures to minimize vehicle and equipment idling, and recycling opportunities. We will also provide a discussion of applicable energy conservation regulations, including those contained in UBC Title 21 and County General Plan policies.

Recreation

Data Gathering: Data gathering will consist of a review of County trails maps, and coordination with the County Parks Department.

Assumptions: Maps and data will be readily available. The County Parks Department will be available to provide input regarding the Salinas River Trail.

Approach: Benchmark Resources will evaluate the Project's potential effect on the Salinas River Trail alignment. The analysis will evaluate potential effects on the development and use of this segment of the Salinas River Trail in relationship to the Project's footprint and lifespan and anticipated development, use and access of the Project area segment of the Salinas River Trial. As a component of this analysis, we will request input from the County Parks Department to determine whether the alignment would be affected by the proposed mining operations, including the access road and will identify mitigation if required to avoid or minimize potential conflicts with the trail alignment. The trail alignment will be considered as a potential sensitive view location for the aesthetics impact analysis described previously.

Transportation/Circulation

Data Gathering: Benchmark Resources will retain Hatch Mott MacDonald (HMM) to peer-review the Applicant-submitted Traffic

Impact Study (TPG Consulting 2009) and Sight Distance Evaluation (TPG Consulting 2009).

Assumptions: The TPG sight-distance analysis is adequate for use in the updated traffic study. This work plan assumes that HMM will be provided with various electronic files from the Applicant's traffic consultant, including level of service calculation files. (If these files are not provided, HMM will require additional budget to recreate files in order to be incorporated into the revised analysis.) Any necessary additional traffic volumes will be readily available either from San Luis Obispo County staff or from the Project Applicant's traffic consultant in the event that additional study intersection or roadway segments are added to the scope. If such data is not available, HMM will require addition budget to collect this data.

Approach: Benchmark Resources will retain HMM to prepare an updated/revised Traffic Impacts Study for the Project which will provide the information necessary for the Transportation and Circulation section of the EIR. The following subtasks will be performed for this effort.

Traffic Subtask 1: Initial Site Visit

Hatch Mott MacDonald staff will perform a site visit to the Project access location and all identified study intersections for the Project. The site visit will include investigation of traffic and parking regulations, intersection lane configurations, roadway geometry (lane widths, shoulder widths, roadway curvature, etc.), observed traffic operational conditions on the area roadway network (including roadway segments and intersections), conditions of rail crossings, pedestrian and bicycle activity, visibility conditions, field measurements, etc.).

Traffic Subtask 2: Initial Peer Review

A peer review will be prepared of the 2009 traffic impact analysis for the project and all relevant supplementary letter reports. This review will focus on level of service calculation methodologies and assumptions. However, all elements of the study will be reviewed including:

1. Study scope;
2. Existing traffic volume data;
3. Trip generation, distribution and assignment assumptions;
4. Level of service calculation methodologies and assumptions;
5. Potential impacts to railroad crossings, particularly the one located near the intersection of Estrada Avenue and El Camino Real;
6. Existing, Project and Cumulative impacts; and
7. Recommended mitigation measures.

HMM will prepare a peer review memorandum summarizing all of the comments and issues identified through the peer review. This memorandum will be reviewed by Benchmark Resources and provided to the County. The memorandum will include recommendations regarding the need for revised or additional traffic analysis necessary to support the EIR.

Traffic Subtask 3: Peer Review Conference Call

Benchmark Resources and HMM staff will participate in a conference call with the County (and Applicant at the County's discretion) to discuss the peer review memorandum and recommendations. The purpose of this conference call will be to discuss issues raised in the memorandum, answer questions, clarify points and identify which aspects of the traffic study and supplemental letters, if any, would need to be revised prior to completion of the Draft EIR.

Traffic Subtask 4: Revisions to Traffic Report

Based on decisions made in Subtask 3, above, HMM will make the necessary revisions to the Applicant's traffic report. These revisions are anticipated to include analysis revisions, text edits, and exhibit revisions, amongst other items. Analysis of additional study intersections or roadway segments may also be incorporated into the revised report.

Traffic Subtask 5: Rail Crossing Analysis

We are aware that the California Public Utilities Commission (PUC) has submitted a letter to the County regarding the railroad crossing near the

Estrada Avenue/El Camino Real intersection. This letter asks for a review of Project impacts to the crossing. The current traffic report does not address this issue. HMM will perform an evaluation of the new railroad crossing signal warrant contained within the new 2009 Manual on Uniform Traffic Control Devices, in order to determine if the project would trigger signalization of this intersection. Interactions between vehicle queues at the Estrada/El Camino Real intersection and the adjacent railroad crossing will be discussed. HMM will also evaluate the physical condition of the crossing, including the pavement condition and presence of standard crossing gates and advanced signing and pavement striping.

Traffic Subtask 6: Review of Roadway Suitability for Project Traffic

Trucks from the project would travel along the state highway system, including State Route 58. HMM will perform a cursory review of the suitability of SR 58 to accommodate Project-related truck traffic. The review will consider roadway geometry, safety and maintenance issues. Specific issues to be considered include the presence (or absence) of paved shoulders, sharp horizontal and vertical curves, and pedestrian and bicycle activity (including that which may be present at the crosswalk near Santa Margarita Elementary School and Santa Margarita Community Park). The review will also identify general methods that may be needed to aid Caltrans in maintaining good pavement conditions along on SR 58 between the Project Site access and US 101. The primary basis for the conclusions within this subtask will be the data and observations collected during the site visit under Subtask 1, above.

Traffic Subtask 7: Alternative Truck Routes Analysis

The Project Applicant's proposed truck route would utilize solely State Route 58 between the Project Site and US 101. This route would route Project truck traffic through the community of Santa Margarita and past an elementary school. HHM will investigate potential alternative truck routes that could be utilized for Project-related traffic, including routes that would connect into neighboring Atascadero and/or avoid Santa Margarita altogether. A total of three alternative routes will be qualitatively reviewed for potential use by Project-related truck traffic, focusing on the potential benefits and drawbacks of each alternative. The most feasible alternative will then be quantitatively analyzed and compared with the Applicant's proposed route, to determine the best

route for the project trucks. (Note that this analysis is limited to evaluation of traffic only, and this scope of work does not include an analysis of noise, air quality or other impacts that may be associated with this alternative route.)

The quantitative analysis of the most feasible alternative Project truck route would involve level of service analysis under the same analysis scenarios as identified within the applicant's traffic report, namely Existing, Existing Plus Project, 2030 No Project, and 2030 With Project conditions. Channelization and traffic control warrants will be evaluated. Project impacts and associated mitigations will be identified.

Traffic Subtask 8: Documentation

HMM will update the applicant's traffic report text, exhibits, and appendix to reflect the revised and additional analyses, including appropriate graphics. The revised traffic report will initially be prepared as an administrative draft report for review by Benchmark Resources and San Luis Obispo County staff. The County's comments will be incorporated into a final report for incorporation into the Administrative Draft EIR Transportation section.

Traffic Subtask 9: Assistance with Environmental Report

Benchmark Resources will utilize the information contained in the final Traffic Impact Study to prepare the Administrative Draft EIR Transportation and Circulation section. Additional information and analysis that may be required for that section, including evaluation of potential effects on bicycle and pedestrian circulation (e.g.., Salinas River Trail impacts) and the Project's consistency with applicable transportation-related policies of the County General Plan Circulation and other elements will also be evaluated by Benchmark Resources with input as needed from HMM. HMM staff will be available to assist Benchmark Resources with the incorporation of the traffic study and supplemental letters into the Draft Environmental Impact Report for the project. This will include interpretations of the report contents; and review and feedback regarding the draft circulation section of the traffic report, including mitigation descriptions.

Water

Data Gathering and Peer Review: Data gathering will consist of a review of additional available State, local agency and Applicant data; acquisition and review of logs and completion reports for on-site wells; identification of wells within a 1-mile radius; measurement of water levels in on-site wells; the collection of water quality samples from two on-site wells, springs/ponds, and rivers for analysis of metals and general minerals; and contact with local area knowledge base (RWQCB hydrologists). A peer-review of the Applicant-submitted Drainage Calculations (Tartaglia Engineering 2009) will be completed by EMKO Environmental, Benchmark Resources' hydrology subconsultant.

Assumptions: The County will assist in obtaining DWR well log reports for wells within 1 mile of the site. Collection of surface water and groundwater samples and analytical laboratory testing are required to define baseline conditions and the Applicant will provide data on well construction (including well logs), pumping rates, and current usage. The Applicant will provide documentation of estimated project water demand. The Applicant stormwater and drainage studies are consistent with standards of practice and provide results consistent with regulatory guidance (e.g. 25-yr and 100-yr storm events).

Approach: With input from EMKO Environmental, Benchmark Resources will prepare the hydrology/groundwater quality setting 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. The identification of data gaps (including water quality/quantity issues not discussed and/or considered significant by existing studies) will also be performed.

Definition of baseline conditions will be accomplished using information contained in studies submitted by the Applicant (after conducting peer review and deemed adequate for use), summarizing data presented in other relevant documents (e.g. other EIRs, monitoring reports for nearby mining operations, County Public Works and State Department of Water Resources documents) and collection of site-specific data. The drainage study submitted by the applicant will be reviewed and the results

compared with local meteorological data and the peak flow and volumes numbers produced from standard rainfall-runoff methodologies (e.g. NRCS TR-55). A site reconnaissance visit will be conducted and measurements will be made of groundwater elevations in available wells. Groundwater and surface-water samples will be collected and analyzed for general minerals and related parameters to establish baseline water quality.

A partial listing of the data and information necessary for the CEQA analysis of Hydrology and Water Quality include:

- Baseline meteorological information on rainfall and evaporation, available from public sources;
- Identification of the location and completion details for groundwater wells within 1 mile of the project, available from the California Department of Water Resources;
- Surface-water runoff characteristics of the site under baseline and proposed project conditions, including flow volumes and rates for key storm events (e.g. 25-yr 24-hr storm; 100-yr 24-hr storm), determined using standard rainfall-runoff methodologies;
- Surface-water quality, including parameters identified in the Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Coast Region, to be analyzed in samples collected during the site reconnaissance;
- Groundwater conditions, including seasonal changes in water levels, mapping of the hydraulic gradient, identification of flow conditions, testing to identify the transmissivity of the water-bearing units, and identification of recharge areas, available from site-specific data and information from adjacent facilities; and
- Groundwater quality, including parameters identified in the Basin Plan, plus parameters of potential concern in the region, including iron, and manganese.

The following factors and related issues will be considered in the impacts evaluation:

- Effects of mining, road construction, and infrastructure development (e.g., water tanks) on post-project storm runoff rates,

directions, and volumes and the capacity of the proposed stormwater detention system to avoid local and off-site flooding;

- Effects of erosion from mining and internal/access road construction on post-project water quality of storm runoff (i.e., turbidity and suspended sediment) to local wetlands and stream channels, Moreno Creek and the Salinas River;
- Effects of mining and reclamation activities on the water quality of storm runoff to local wetlands and stream channels, Moreno Creek and the Salinas River, from factors other than erosion (e.g., temperature, dissolved oxygen) and pollutants (e.g., fertilizers, pesticides, oil and grease);
- Potential changes in the quantity and/or quality of groundwater recharge resulting from excavation into a currently undisturbed area, reclamation activities (fertilizers and pesticides), or wastewater disposal (nitrogen); and
- Potential changes in local surface water and groundwater flow directions and effects on water budgets for local wetlands, stream channels and riparian habitat.

This analysis will include the following:

<u>Water Subtask 1: Perform Background Research and Visit the Project Site</u>

EMKO will review available regional and site-specific information (e.g., soils, geology, rainfall) on the hydrology and geology of the quarry area, including the project geology report and drainage calculations for stormwater management, geologic maps and agency publications (CA Division of Mines and Geology, USGS, etc.), and historic and contemporary aerial photography. We will perform a reconnaissance visit to the Project Site to observe existing conditions related to existing drainage patterns, stream channels, riparian and seasonal wetlands and existing roads. We will query local and regional agency staff (e.g., County and Regional Board) about the planned mining program and the approaches proposed for addressing potential hydrologic and water quality impacts, including assessments of impacts and efficacy of mitigation at the Santa Margarita quarry, as well as Cal Portland's Rocky Canyon quarry, also developed in similar materials.

Water Subtask 2: Define Regulatory Setting

EMKO will identify and summarize the relevant regulations and guidance related to groundwater and surface water protection from mining activities, including stormwater quality and quantity management. These sources include federal and state regulations, such as the Clean Water Act, Porter-Cologne Act and Surface Mining and Reclamation Act (SMARA), and related permit programs administered by the Office of Mine Reclamation (e.g. SMARA), State Water Resources Control Board (NPDES permits for stormwater runoff and construction activities), Central Coast office of the Regional Water Quality Control Board (Basin Plan compliance; groundwater protection) and FEMA (flood control). County and regional guidance and ordinances provide the framework for management of stormwater and compliance with mandated water quality programs, including design and use of stormwater control facilities, conditioning discharges into receiving waters, and mandating protection of surface water and groundwater quality and quantities.

Water Subtask 3: Rainfall-Runoff Analysis (Runoff Quantity, Drainage System Capacity and Downstream Flooding)

EMKO will review the Project drainage report prepared by Tartaglia Engineering (2009) and calculations related to stormwater management.

Control of drainage will be evaluated for consistency with local (San Luis Obispo County) and regional regulatory criteria for stormwater quantity management. EMKO will evaluate the suitability of the proposed drainage system to control velocities, minimize downstream erosion and avoid contributions to flooding in the drainage network leading to the Salinas River, as well as the portion of the site draining to Moreno Creek. EMKO will also assess the feasibility of measures proposed to maintain flows to preserve wetlands and stream channels.

EMKO will use conventional methods to calculate the likely changes in peak flows resulting from mining as planned/phased. EMKO will review the stormwater calculations and independently estimate the preliminary detention requirements for design storms, such as the 100-year recurrence interval event. EMKO will assess the need for additional measures to maintain or reduce peak flows from the design storms and avoid flooding downstream. If appropriate, EMKO will identify additional measures that

could be installed or implemented to mitigate potential construction-period and post-construction impacts on peak flows.

Water Subtask 4: Water Quality (Surface Runoff)

During active mining, the primary risk of erosion would be from stockpiled topsoil, spoils and mined materials. Guidance for effective protection of these stockpiles are contained in the portions of the County's Land Use Ordinance addressing sedimentation and erosion control, and in the NPDES Construction and Industrial General permits. The Project will be required to prepare an Erosion and Sediment Control Plan, a SWPPP and other stormwater management documents required by the County and Regional Board.

Other than sediment, the primary constituents of potential concern in runoff from the quarry would be chemical contaminants, such as petroleum products (fuel; lubricants) from mining and processing equipment and from operation of the asphalt and concrete recycling plants. If untreated, runoff from the site could degrade water quality in downstream wetlands, Moreno Creek, and the Salinas River.

EMKO will characterize the pollutants of concern under existing conditions (undisturbed lands with dirt roads) and following quarry development and expansion. EMKO will review available monitoring data from runoff water quality sampling at the Hanson Aggregate granite quarry just northwest of the Project site. EMKO will also review the Project site designs and engineering reports for consistency with regulatory criteria and suitability of water quality treatment measures proposed to avoid off-site impacts. Where applicable, EMKO will identify additional opportunities and constraints that bracket selection of BMPs and recommend further measures that are appropriate for the Project.

Water Subtask 5: Groundwater Recharge (Volumes and Flow Directions)

The extent of existing groundwater recharge on the currently undisturbed Project site is unknown but development of a quarry could lead to changes in the quantity (volume) of groundwater recharge and/or modify groundwater flow paths. This could potentially reduce recharge to the local aquifer and the Salinas River, affecting the local water supply, as

well as hydrologic support for downgradient wetlands and stream channels.

As currently proposed, some portion of the runoff from operating portions of the quarry would be routed to detention basins in other areas of the site, where some fraction would be retained and potentially infiltrated with the remainder released downstream. EMKO will conduct a hydrogeologic analysis that will consider data from local wells, geology reports and measurements and observations from our reconnaissance visit, in conjunction with the Applicant's site plan and drainage study, to assess potential Project impacts on groundwater recharge and to evaluate the likelihood of infiltration from the proposed detention basin sites. If appropriate, EMKO will recommend additional mitigation measures to maintain pre-development volumes and quality of recharge.

Water Subtask 6: Hydrologic Support for Wetlands and Stream Channels (Groundwater and Surface Water)

Either re-directing surface runoff or lowering groundwater levels significantly could reduce hydrologic support to local wetlands, such as the existing vernal swales, or the riparian wetlands and stream channels draining the un-mined portions of the central valley and/or south-facing slopes north of Highway 58. Changes to the amount or timing of flows would result in modified water budgets and potential adverse effects on habitat and resource quality. In this task, we will use the water balance approach to examine how the proposed operation might modify the amount of recharge reaching local features and, if appropriate, identify suitable mitigation measures to retain hydrologic support and avoid or minimize potential impacts as mining proceeds. Historic aerial photography will be reviewed to better understand wetland and riparian response to periods of wet and dry years. Water budgets will be prepared for wet, normal, dry, and (if necessary) critically-dry years.

Water Subtask 7: Ground Water Recharge (Quality)

Potential impacts on groundwater quality originate from two sources: mining operations and operation of the on-site septic system for wastewater disposal. All of the constituents present in surface runoff from the site, except sediment, could potentially infiltrate and contribute to pollution of local groundwater. Changes in the quantity of local

recharge will be assessed in the above tasks through review of local geologic and hydrogeologic conditions, field reconnaissance, aerial photography and water budgeting. Using this information, EMKO will evaluate the potential for mobilization of some or all of these pollutants into groundwater and recommend additional mitigation measures, if needed, suitable for maintaining water quality of recharge to the local aquifer.

EMKO will review the septic system proposed for project use for consistency with local plumbing codes, the Land Use Ordinance, and other regulatory guidance. Based on the location, design, proposed loading and the local hydrogeologic setting (soils, geology, rainfall recharge, aquifer characteristics), EMKO will assess potential risk of impacts from system failure (daylighting effluent), short-circuiting (via bedrock fractures), and nitrogen loading to the aquifer (methemoglobinemia or "blue baby" disease). If appropriate, EMKO will recommend additional mitigation measures for wastewater disposal to avoid these impacts and maintain the quality of groundwater.

Water Subtask 8: Water Supply

Estimated Project water use will be based on information provided by the Project Applicant documenting all potential sources of water consumption associated with the Project. Using estimated water demand and well log data, in combination with aerial photography review, regional climate data, regional soils (NRCS) and geology (CDMG) reports, and EMKO's extensive experience in bedrock aquifer environments, EMKO will assess potential impacts of planned withdrawals, evaluate the feasibility of Applicant-proposed mitigation measures, and recommend additional or alternative mitigation if necessary.

Water Use and Supply

An independent assessment the project water demand will be made based on data and information available from similar mining projects and information provided by the applicant. The availability of water to meet this demand will be evaluated based on the baseline water use at the project site and the measurements made at the site as part of the site reconnaissance. This evaluation will identify the potential for impacts to

occur related to the quantity and availability of groundwater and, partly, to groundwater quality.

Discharges to Surface Water and Groundwater

The Project will include the discharge of process water and waste fines to settling ponds. The potential for this water to enter surface-water courses or to percolate to groundwater will be assessed, along with the effect on water quality. The potential regulatory requirements related to such discharges (e.g. federal Clean Water Act, state Non-Degradation Policy and Waste Discharge Requirements, County policies and ordinances) will also be evaluated and used to define compliance and potential mitigation requirements. The use of petroleum products, chemicals for vehicle repair and maintenance, and potential blasting agents may degrade water quality if not managed appropriately. Evaluation of the use of such substances will be coordinated with the Hazards and Hazardous Materials section of the EIR to be sure that the potential impacts to surface water and groundwater are appropriately evaluated and identified.

Stormwater Runoff

The Project will result in major changes to the ground surface and topography. The resulting changes to stormwater runoff, in terms of both peak flow rates and volumes, will be assessed and compared with the proposed stormwater control systems. The ability of the proposed systems to retain appropriate storm flows, depending on the regulatory requirements of SMARA, the Regional Water Quality Control Board, or the County (e.g. 20-yr storm, 25-yr storm, 100-yr storm), will also be evaluated. The potential to use the stormwater system as part of the project water supply, to recharge groundwater, and/or to maintain surface flows in critical areas, will also be considered to offset potential impacts. In addition, the ability of the proposed control systems to meet stormwater quality requirements (e.g. SWPPP, general construction or industrial NPDES permits) and the potential to violate any water quality standards will be addressed as part of the analysis in the EIR.

Reclamation

The proposed conditions after mining is completed, 30 or more years in the future, will be different than both current conditions and the

conditions that are present during the active mining phase of the proposed project. Potential water demand for dust control or maintenance of vegetation, discharge of water from or to the site, and stormwater runoff rates and volumes will be compared to baseline conditions to evaluate whether the proposed reclamation plan is sustainable or creates any potential impacts related to the criteria listed above.

Impacts and Mitigation Measures

Appropriate mitigation measures will be developed for any potentially significant impacts identified in the Hydrology and Water Quality section of the EIR. Mitigation monitoring programs, reporting requirements, and compliance schedules will also be prepared, as appropriate, to ensure that the mitigation measures are enforceable and that County staff can effectively evaluate compliance. The impacts/ mitigation section will include a discussion of surface and groundwater monitoring requirements, and mitigation will be focused on Project design and process technologies.

Optional Task: Water Supply Assessment

While not included in the County's Initial Study or the RFP, Benchmark Resources is prepared to assist the County with the preparation of an SB 610 Water Supply Assessment (WSA) as an Optional Task for this Project. Our recommendation that the County consider this optional task is based on the holding of *Center for Biological Diversity v. County of San Bernardino* (May 25, 2010). In *Center for Biological Diversity*, the California Court of Appeals for the Fourth District held that the County of San Bernardino violated CEQA by approving a Final EIR for an open-air composting facility without having prepared a WSA (among other reasons). The case involved the development of an 80-acre open-air composting facility (Hawes Project) within an unincorporated area of the County. The court concluded that an open-air composting facility was a "processing plant" under Water Code Section 10912, and since the approval allowed for an 80-acre facility, the Hawes Project was a "project" under the Water Code. The court stated that the "plant" included not only structures but also the land, machinery and fixtures used in carrying out a trade or industrial business. This holding is significant because it potentially expands the

area of a facility that will be considered part of the project, and will thus expand many projects beyond the 40-acre threshold for WSA preparation.

Prior to this holding, it was unclear whether the WSA requirements applied to mining projects. This was particularly in question if Applicants limited the size of the plant area to less than 40 acres. While the decision ultimately rests with the County, we believe that the County should consider preparing a WSA for this Project because the Project disturbance area would be 60 acres (over the 40-acre threshold). We have assisted clients in the preparation of WSAs for a number of mining projects for which we are providing environmental review services. We have worked with both EMKO Environmental and Tully & Young in preparing WSAs and incorporating the relevant findings in the EIR water supply evaluation. EMKO Environmental is included on our team for the hydrological resources review of the Project. Tully & Young would also be available to join our team to assist with preparation of the WSA (a summary of Tully & Young's qualifications is provided in Appendix A-3, Tully & Young SOQ). Either one, or a combination of these firms, is prepared to assist the Benchmark Resources team with preparation of a WSA for the Project. If requested by the County, we would augment our Scope of Work and Cost Estimate to add this Optional Task.

Thresholds of Significance, Impacts, and Mitigation Measures

Benchmark Resources will work with San Luis Obispo County regarding appropriate evaluation criteria and 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 (e.g., the Topaz Solar Farm Project and the Santa Margarita Ranch Specific Plan EIR); and
- Thresholds established by Responsible and Trustee Agencies.

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. This task also includes providing Project Management and Coordination with County staff regarding the preparation and processing of the EIR.

In addition, Benchmark Resources will manage its subconsultants, prepare invoices and 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, or internet-based file-sharing program.

Subtask 6.1 Kick Off Meeting

The Project Director (Bruce Steubing) and Project Manager (Andrew White) will attend the kick-off meeting along with key subconsultants from the Benchmark Resources team. The County and Benchmark Resources will determine which members of the consulting team will attend the kick off meeting and which members will have subsequent site review meetings based on the time needed to survey existing conditions and proposed project components. Handouts will include Kick-Off Meeting Agenda, EIR Outline, and Preliminary EIR Preparation Schedule. The meeting time is assumed to be up to five (5) hours of a pre-meeting at the County's office, followed by a site review. We have also budgeted 5 hours of travel time for the Project Director and Project Manager.

Subtask 6.2 Staff Meetings

We have budgeted for attendance of up to five (5) staff meetings at the County's offices. The budget includes attendance at three (3) meetings by the Project Director and two (2) meetings by the Project Manager. Benchmark Resources will also prepare e-mail agendas in preparation of the meetings and prepare e-mail action item summaries following the meetings. We have assumed up to twenty-five (25) hours of meeting time and twenty-five (25) hours of travel time. We have also included up to five (5) hours of preparation time (one hour per meeting) and up to five (5) hours of time (one hour per meeting) of the Project Director's time to summarize and follow-up on action items for each meeting. Meeting attendance will be invoiced on a time and

materials basis; therefore, meeting time can be re-allocated to conference calls up to the amount of hours estimated in the approved budget.

Subtask 6.3 Management and Coordination

Management and coordination will consist of the following:

- General Coordination with County and with Benchmark Resources team members.
- EIR Management regarding coordinating with the County, various members of the Consulting team, and Regulatory Agencies (e.g., follow-up on action items, development of agendas, telephone calls and e-mails).
- Regarding contract administration, the Project Director will review the expended labor and effort and track the level of work completed on the Project and will prepare a monthly invoice documenting the work completed and adherence to the schedule
- Support staff will assist project managers in invoicing, tracking budget and documentation of schedule adherence.

Subtask 6.4 Public Hearings (Planning Commission and Board of Supervisors)

Benchmark Resources' Project Director will attend up to four (4) public hearings before the Planning Commission and/or Board of Supervisors. The Director will attend each of the four (4) public hearings. This may include a public hearing on the Draft EIR as well as public hearings for the Planning Commission and/or Board of Supervisors' consideration of Final EIR certification and Project approval. For each hearing, if necessary, Benchmark Resources will prepare presentations outlining key parts of the environmental analysis and will answer questions posed by the Planning Commission and/or the Board of Supervisors. The presentations will include PowerPoint presentations and handouts that summarize environmental determinations and findings.

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 E, Las Pilitas Quarry Project EIR Preliminary Schedule.

4.3 Cost Estimate

Our Cost Estimate (see Appendix F, Cost Estimate) is based on our understanding of the Project and our experience with the requirements of preparing EIRs for proposed hardrock mining operations. 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.

This Cost Estimate assumes that the County will lead any necessary coordination with County departments, Federal, State and Regional Agencies and the public. 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

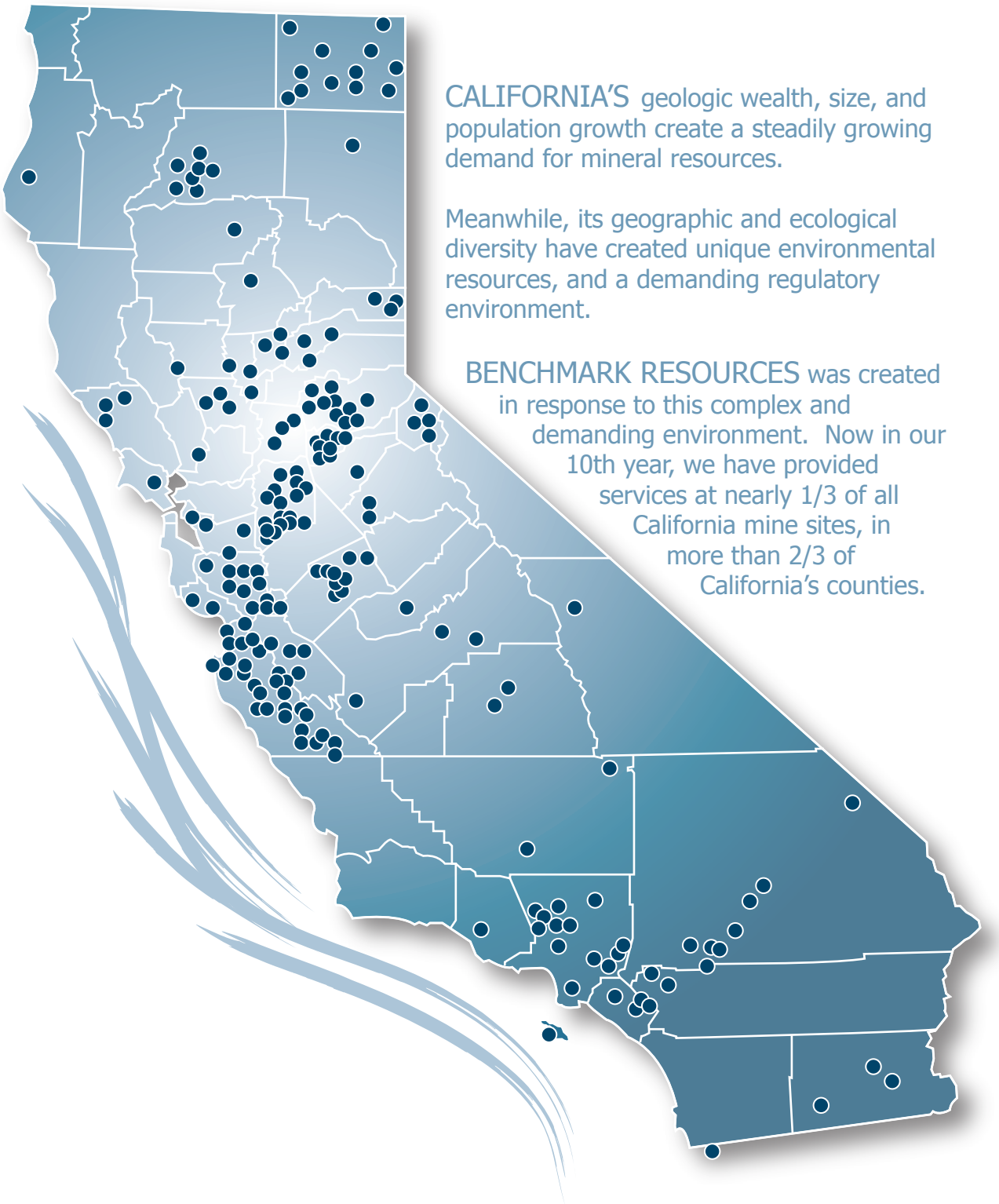
Benchmark Resources has recent or ongoing contracts with over 40 California public agencies. Our ability to cooperatively work with and facilitate communication among all parties is a hallmark of our success throughout the state. Each of our public agency clients has specific communication protocols that we respect and comply with once established. We understand that Environmental Impact Reports are to be an independent, objective, and unbiased work product. Benchmark Resources' principals, consultants and subcontractors have the capacity to submit a neutral and unbiased environmental document for the County's use in considering approval of the Project.

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

ANDREW WHITE
Project Manager

- Review of and familiarity with Applicant-supplied technical documents, Project Description, Reclamation Plan and applicable County policies;
- 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: 10%

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%

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%

BOB DELP
Senior Planner

- 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;
- Anticipated level of effort: 10%

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%

Hatch Mott MacDonald
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;
- Assist in preparing applicable mitigation measures; and
- Anticipated level of effort: 10%

Figure 2
EIR Team Roles and Duties

APPENDICES

APPENDIX A-1

BENCHMARK RESOURCES RESUMES

Bruce Steubing

Principal

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.

Andrew White

Project Manager

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 Quarry EIR • Jaxon Enterprises EIR • Carmelita Project Application Package and Initial Environmental Assessment	• 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 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.

Bob Delp

Project Manager

QUALIFICATIONS SUMMARY

Mr. Delp has seventeen years of experience conducting resources analyses, preparing environmental documents and managing environmental planning and review processes. He prepares environmental documents for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) for water resources, transportation, energy infrastructure and industrial projects. Mr. Delp also manages and conducts environmental review for advance planning activities including those associated with water resources, transportation, land use and recreation.

Years of Professional Experience: 17

Recent Projects	Responsibilities	Areas of Emphasis
• Austin Quarry CEQA Compliance (IS and EIR in progress) • Gold Rush Ranch and Golf Resort Specific Plan CEQA Review (IS and EIR) • Saratoga Way Extension Project CEQA Review (EIR) • A&A Cement Import & Distribution Project EIR (IS and EIR) • Sutter Creek Wastewater Treatment Plant CEQA Review (EIR) • Animas-La Plata Water Storage and Conveyance NEPA Compliance (EIS) • Western Placerville Interchanges CEQA/NEPA Compliance (EIR/EA)	• Environmental Review Management • Environmental Document Preparation • Project Description and Alternatives Formulation • Resource Analyses • Technical Report Review/Editing • Public and Agency Involvement • Meeting and Hearing Presentations	• CEQA/NEPA Compliance Strategy and Management • Aesthetics/Visual Resources Analysis • Recreation Analysis • Land Use and Plan Consistency Analysis • Alternative Transportation Analysis • Alternatives Formulation and Analysis • Cumulative Impacts Analysis

EDUCATION

Certificate in Land Use and Environmental Planning, University of California, Davis, 2010
B.A., Economics – Emphasis on Energy and Environmental Issues, California State University, Chico, 1992.

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.

Austin Quarry CEQA Compliance
Madera County

Assistant Project Manager for the preparation of an Environmental Impact Report (EIR) for a proposed hard rock quarry, aggregate processing facility, hot mix asphalt plant, concrete/asphalt recycling facility, administration building, maintenance facility and other ancillary facilities in Madera County. Responsibilities include review of Project application and peer reviewed Applicant technical studies to determine their adequacy, review of scoping comments and provide recommendations to the County, conducting resources evaluations and preparing an EIR for the Project.

A&A Cement Import & Distribution Facility CEQA Compliance
Port of Sacramento

Provided project management and environmental review services associated with the development of a proposed cement import and distribution facility at the Port of Sacramento in the City of West Sacramento, California. Responsibilities included coordination of project scoping, management of resources evaluation team, and production of CEQA-related documents, including an Initial Study and EIR.

INDUSTRIAL AND PRECIOUS MINERALS PROJECTS

San Benito County Resource Recovery Park
San Benito County

Project Manager and lead analyst during EIR scoping and initial evaluation for a proposed resource recovery park in San Benito County, California. Project responsibilities included leading public and agency coordination for EIR scoping and managing multi-disciplinary resources evaluation team.

Sutter Creek Wastewater Treatment Plant
Amador County

Managed the preparation of a preliminary draft EIR for the proposed expansion of a wastewater treatment plant and associated treated effluent conveyance, storage and disposal system. Project management responsibilities included coordination of project scoping, management of multi-disciplinary resources evaluation team, production of project CEQA documents, and coordination with responsible agencies.

Sacramento River Wastewater Treatment Plant
Sacramento County

Assisted with the preparation of water quality and aquatic resources setting sections of an EIR for the Sacramento County wastewater treatment plant expansion.

High Desert Power Project
San Bernardino County

Environmental analyst for the siting of a 700-megawatt (MW) combined cycle power plant and associated linear facilities including a transmission line and gas and water pipelines.

OTHER PROJECTS

Gold Rush Ranch and Golf Resort
Amador County

Project Manager and lead analyst for the preparation of an Environmental Impact Report (EIR) for a proposed residential and golf resort specific plan in Sutter Creek, California. Project management responsibilities included coordination of project scoping, management of multi-disciplinary resources evaluation team, production of project CEQA documents, and coordination with responsible agencies.

El Dorado County Regional Transportation Plan
El Dorado County

Project Manager and lead analyst for the preparation of an Initial Study for the El Dorado County 2010-2030 Regional Transportation Plan (RTP). Project responsibilities included conducting resource impact analysis, preparation of an Initial Study, leading public and agency coordination for Environmental Impact Report (EIR) scoping effort and managing multi-disciplinary resources evaluation team in preparation for EIR production.

Animas-La Plata Water Storage and Conveyance
Colorado

Assistant Project Manager and lead report author for the preparation of a Supplemental Environmental Impact Statement (EIS) for a water storage and conveyance project in southwest Colorado and northern New Mexico. Assisted in the management of technical resources evaluation team, coordinated with Reclamation staff and managers, conducted field review and authored drafts of the Supplemental EIS.

Colorado River Interim Surplus Criteria
Colorado

Assistant Project Manager and lead report author for the preparation of an EIS evaluating the effects of interim criteria for determining surplus water supply conditions within the Colorado River system. Responsibilities included developing a comprehensive NEPA compliance work program, managing the technical resources evaluation team, coordinating with Bureau of Reclamation staff and managers, and preparing drafts of the EIS and related documents. The EIS evaluated multiple scenarios for Colorado River flow regimes and Lake Mead storage, and required unique methods for documenting potential environmental effects as well as water allocation and energy production scenarios within the Lower Colorado River system.

Spanish Fork Canyon-Nephi Irrigation System
Utah

Assisted with the preparation of a Draft EIS for a 42-mile irrigation water pipeline and associated facilities, as well as a multiple-use recreation trail, in Utah County, Utah. Responsibilities included working with project design engineers to develop the project description, coordination with agencies and stakeholders, and review and technical editing of resource analyses reports.

Multiple Environmental Planning and CEQA Projects
El Dorado County

Provided on-call planning, project management and environmental review services associated with roadway and bicycle/pedestrian facility development projects in El Dorado County, California. Responsibilities included assisting DOT with implementation of roadway and circulation elements of the County's General Plan; developing CEQA compliance procedures to standardize CEQA review; managing and assisting with the preparation of EIRs for roadway improvement projects and traffic impact mitigation fee implementation.

Western Placerville Interchanges
City of Placerville

Provided environmental project management support during the preparation of joint NEPA/CEQA document associated with a Highway 50 interchange improvement project in the City of Placerville, California. Responsibilities included developing and assisting with public involvement program, oversight of multi-disciplinary team of resource specialists and engineers, conducting land use, visual impacts and community impact assessment, and coordination with lead and responsible agencies.

Clark Canyon Reservoir
Montana

Assisted with the preparation of a recreation and resource management plan and NEPA compliance documentation for Clark Canyon Reservoir in southwestern Montana. Responsibilities included developing and implementing a public involvement program, planning and conducting public workshops and scoping meetings, coordinating and conducting resource analyses, conducting land use plan consistency assessment, and assisting with the preparation of the Resource Management Plan and associated Environmental Assessment.

Rubicon Trail
El Dorado County

Assisted with the preparation of a master plan and management of CEQA compliance efforts associated with the Rubicon Trail, a multi-use off-highway vehicle road in northern California. Assisted with several aspects of the project, including data collection, agency interviews and coordination, preparation of planning documents, conducting public workshops and meetings, and preparation of a Draft EIR.

Bass Lake Regional Park
El Dorado County

Managed CEQA compliance activities for the initial planning and environmental review of a 40-acre regional park in western El Dorado County, California. Responsibilities included developing and conducting public involvement program, managing a team of resource specialists conducting the environmental analysis, and preparing administrative environmental documentation for the project.

NEPA Scoping/
Strategic Planning Assistance
Colorado

Provided NEPA process recommendations and input to Bicycle Colorado (a non-profit bicycle advocacy group) to assist with strategic planning for involvement in scoping and other opportunities for public input during NEPA process for proposed roadway improvements.

Amador County
Transit Stop Development
Amador County

Provided environmental compliance support associated with the preparation of a Categorical Exclusion (CE) to meet Caltrans NEPA requirements for the development of 16 bus stops in Amador County, California. Responsibilities included development of project work plan, environmental site review and documentation, and preparation of CE.

Wellton-Mohawk Title Transfer
Bureau of Reclamation

Assisted with NEPA compliance activities associated with a title transfer of works, facilities, and lands within the Wellton-Mohawk Irrigation and Drainage District (WMIDD). Responsibilities included preparation and editorial review of environmental documentation, oversight of resource specialists, and coordination with WMIDD and Bureau of Reclamation staff.

David Brown

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

Preparation of Financial Assurance Cost Estimate and 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. Review of documents regarding construction debris recycling.

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

Hatch Mott MacDonald

Hatch Mott MacDonald (HMM) is a leading consulting engineering firm with a century of worldwide experience. We offer public and private clients a complete range of services from planning, feasibility studies, environmental assessments, and conceptual design through preliminary and detailed design, to procurement, construction inspection, construction management, and full project and program management services, as well as operations and maintenance support.

The company has strong expertise in traffic engineering, transportation planning, and project management. We have served in key roles on a wide variety of project sizes, from small subdivisions to many of the largest transportation projects in California.

With over 50 offices in North America, and two in Santa Clara County, we can respond quickly and cost-effectively to any project demand. Our focus on innovation and corporate dedication to quality has been widely recognized with numerous industry awards and accolades from our clients. It is our corporate commitment to bring the highest quality service to our clients on every project.

Northern California Office Locations

Gilroy Office:
1300-B First Street, Gilroy, CA 95020.
P: 408.848.3122

Pleasanton Office (West Unit Headquarters):
3825 Hopyard Road, Ste 240, Pleasanton, CA 94588
P: 925.469.8010

San Jose Office:
181 Metro Drive, Ste 510, San Jose, CA 95110
P: 408.572.8800

Sacramento Office:
7311 Greenhaven Dr, Ste 250, Sacramento, CA 95831
P: 916.399.0580

Transportation Engineering Services

HMM offers innovative approaches to servicing the nation's ever-growing transportation infrastructure needs while ensuring preservation of environmental and historic resources.

The firm's experienced transportation, civil engineering and transportation planning staff has provided planning, design, inspection, and construction support services for the construction of new and rehabilitation/replacement of bridges, highways and local roadways. Structures include movable and fixed bridges that carry or cross railroads, highways or waterways. Highway and roadway projects include restricted and non-restricted access highways, highway and local roadway widening and intersection improvements.

HMM's staff is also highly experienced in the planning and design of traffic management

systems and the maintenance and protection of traffic during roadway construction.

HMM performs regional transportation planning and modeling. Many of the studies performed by HMM have involved the development of complex mitigation-measure programs and/or funding mechanisms for improvements required by multiple projects. The evaluation and design of project site access and on-site (internal) circulation – including automobile traffic operations, bicycles, service/delivery trucks and busses – is another of HMM's areas of expertise.

HMM has designed multi-modal transit facilities in conjunction with transit-oriented development including parking strategies and streetscapes with urban designs, transit maintenance facilities, bus stops and bus shelters.

HMM also has expertise in the planning, analysis and design of transportation facilities, and our highway and rail engineering staff has completed a variety of major projects from conception to completion throughout North America.

Summary of Services

Hatch Mott MacDonald's transportation group provides professional services in the following areas:

Civil Engineering

- Bicycle & Pedestrian Facilities Design
- Construction Inspection
- Construction Signing Plans
- Construction Cost Estimates
- Cost Allocations
- Geometric Street & Highway Design
- Highway & Street Lighting Design
- ITS Design
- Parking Facilities Design
- Pavement Design
- Pavement Delineation Design
- Project Management
- Sight Distance Analyses
- Signing Design
- Street & Highway Final Design

Traffic Engineering

- Access & Circulation Studies
- Expert Testimony
- Freeway Operations Analysis
- Project Study Reports
- Speed Studies
- Traffic Count Programs
- Traffic Handling for Special Events
- Pedestrian Facilities Planning
- Municipal Traffic Engineering
- Accident Analysis & Record System
- Traffic Impact Studies
- Traffic Safety Studies
- Traffic Operations & Safety
- Traffic Signal Timing
- Traffic Control Devices
- Parking Facilities Planning
- Safe Routes to School Planning
- ITS Planning & Implementation

Transportation Planning & Engineering

- Bicycle & Pedestrian Planning
- Circulation Elements
- Freight Movement Studies
- Origin-Destination Studies
- Parking Studies & Strategies
- Regional Transportation Planning
- Site Selection & Planning
- Traffic Control Planning
- Traffic Fee Programs
- Traffic Simulation
- Traffic Generation Studies
- Transportation Specific Plans
- Transit Hub Development Design
- Transit Planning
- Transit Operations
- Transit Design
- Transit Marketing
- Transit Funding
- Trans. Systems Management
- Travel Demand Forecasting
- Trip Reduction Programs
- Streetscape & Urban Design

Electrical Engineering

- Control Systems
- Heavy Rail Signal Systems
- Voice and Video Data
- Radio Communications
- Public Address Systems
- Changeable Message Signs
- Network Management Systems
- Power Distribution Substation
- Overhead Caternary Systems
- 3rd Rail and Distribution
- Light Rail Signal Systems
- Traffic Signal Systems
- Fiber-Optics
- Alarm and Detection Systems
- Telephone Systems
- LAN's / WAN's
- SCADA
- Power Distribution Systems
- Overhead Catenary Systems
- Fare Collection Systems – Light Rail

Street and Parking Lot Lighting	Corrosion Control
System Maintenance	Utility Negotiations
Systems Testing	Systems Integration
System Safety	Traffic Model Development

Intelligent Transportation Systems

Floating Vehicle Data Systems	Electrical Engineering
Traveller Information Systems	Changeable Message Signs
Vehicle Speed Limits	HOT Lanes
Feasibility Studies	Voice and Video Data
Changeable Message Signs	Traffic Signal Systems
LAN's / WAN's	Communication Systems
Training and Implementation	Network Management & Control
Electronic Toll Systems	Software Development
Congestion Pricing	Control Systems
Radio Communications	Network Management Systems
Fiber-Optics	Utility Negotiations

Bridge Engineering

Bridge Approach Roadway Reconst.	Bridge Widening Improvements
Bridge Design	Hydraulic / Hydrology Studies
Bridge Detail Studies	Load Rating Evaluations
Bridge Inspection	Right-of-Way Mapping
Bridge Realignment	Scour Analysis
Bridge Rehabilitation	Surveying

Highway Engineering

Construction Management	Hydrologic / Hydraulic Studies
Environmental Assessments	New Highway Design
Highway Paving Design	Permitting
Highway Relocation Design	Safety Assessments
Highway Reconstruction Design	Safety Improvements
Highway Widening	Wetland Delineation / Mitigation

Hatch Mott MacDonald

Jeff Waller, TE

Education
B.S. Civil Engineering, San Jose State University, San Jose, CA, 1999

Registration
TE - CA
No. 2429, 2007

Years in Practice – 10

Memberships
Institute of Transportation Engineers

Chi Epsilon

Tau Beta Pi

Experience Summary

Mr. Waller has performed numerous traffic analyses for a wide array of projects, including housing subdivisions and shopping centers, project study reports, quarries and batch plants, and master plans and general plan updates. Mr. Waller has experience performing traffic analyses throughout the greater Monterey Bay Area, plus San Luis Obispo and Southern Santa Clara Counties. He has also performed full traffic signal warrant evaluations, intersection sight distance evaluations, collision history reviews and parking supply and demand studies. Mr. Waller's specific areas of expertise include traffic impact analyses and project impact evaluation. Mr. Waller is experienced in various traffic analysis software packages, including Synchro and HCS.

Selected Project Experience

Quarries

Hildreth Creek Quarry, Madera County, CA
Project Manager. This traffic analysis was performed for a 3,000,000 ton-per-year quarry, asphalt and concrete batch plants, and construction materials recycling center in eastern Madera County. The traffic analysis for the project involved multiple intersections along a state highway along which substantial growth is anticipated over the next decade. A customized trip generation was developed for the project, based upon the projected project employment and operations.

Hidden Canyon Quarry, Monterey County, CA.
Project Manager. A traffic analysis was performed for a 300,000 ton-per-year quarry northeast of Greenfield in Monterey County. The analysis included a review of project access alternatives to US 101 through the community of Greenfield, as well as potential truck queuing impacts at an intersection adjacent to an existing railroad crossing.

Handley Ranch Quarry, Monterey County, CA
Analysis Assistant. This project involved a traffic analysis for a 1,500,000 ton-per-year quarry, asphalt and concrete batch plan, and construction materials recycling center northeast of Gonzales in Monterey County. The project included analysis of a proposed private roadway that would shorten travel time and distance for quarry-bound trucks, as well as a design of an intersection channelization improvement at a nearby freeway interchange.

San Luis Obispo County

Baker Property, Pismo Beach, CA
Project Manager. This analysis involved a mixed-use development involving residential, commercial, office, and retail space on the border of Pismo Beach and Arroyo Grande. The project involved analysis of operations along an arterial corridor bordering the project site, along with an adjacent interchange. Project access was reviewed, including a potential sight distance problem and methods to discourage use by project traffic of an existing loading bay alley behind a nearby shopping center.

Arroyo Grande General Plan, Arroyo Grande, CA
Analysis Assistant. Future traffic forecasts were developed for an update of the City of Arroyo Grande General Plan. A new traffic demand model was created for the Five Cities region (of which Arroyo Grande is a part), in order to develop future traffic volumes for multiple street network and land use alternatives. Levels of service analysis was performed and signalization warrants were evaluated for eleven key intersections throughout the city. Recommended intersection improvements were developed for deficiently-operating intersections.

Golden Hill Business Park Expansion, Paso Robles, CA
Project Manager. The project was a proposed new business park and re-subdivison of an existing business park in northern Paso Robles, California. Level of service analysis was performed of various intersections near the project site. Also addressed were a future secondary access to the study area and the potential for a freeway or expressway upgrade along nearby Highway 46.

Keith B. Higgins, CE, TE

Education
BS, Transportation Engineering (Honors), California Polytechnic State University, 1975

Registration
Civil Engineer
CA, 30489, 1979
Traffic Engineer
CA, 1385, 1981

Years in Practice – 35

Memberships
American Planning Association
American Public Works Association
American Society of Civil Engineers
Association of Environmental Planners
California Alliance for Advanced Transportation Systems
California Public Parking Association
Civil Engineers and Land Surveyors of California
Institute of Transportation Engineers
International Municipal Signal Association
National Parking Association
Tau Beta Pi
Transportation Research Board
Gilroy Rotary Club
Gilroy Chamber of Commerce

Mr. Higgins has directed and performed numerous planning and design projects during his 35-year career. He has extensive operational experience, including serving as a city traffic engineer. Specific experience includes traffic impact analyses; conceptual and final highway, street system, and subdivision design; traffic signal design; signing and striping design; transit system planning and design, traffic volume and speed surveys; safety analysis; traffic control device warrant studies; traffic control device inventory; capacity analysis; circulation studies; parking studies; parking facility design; conceptual interchange design; pedestrian and bicycle studies; transportation systems management; transportation demand management; project representation; community traffic committee organization; railroad design coordination, grading and drainage design; structural design; project management; construction inspection; contract administration; and expert witnessing in personal injury and wrongful death litigation.

Selected Project Experience

California Polytechnic State University, San Luis Obispo, CA
Principal-In-Charge. This traffic study involved an analysis of traffic impacts associated with the development of the proposed faculty housing project on California Polytechnic State University Site H-8. Site H8 is located on the north side of Highland Drive, west of Highway 1 in San Luis Obispo, California. The project involved the development of 80-units for faculty housing. The project would be accessed from Highland Drive and involved the development of 84 dwelling units to be utilized for faculty housing. . Traffic operational analyses including traffic control and channelization were evaluated for all analysis scenarios. Pedestrian, bicyclist and transit access was also evaluated. Mitigation measures were recommended where warranted.

Brisco Road-Halcyon Road/Hwy 101 Interchange Project Study Report
Principal-In-Charge. The scope of work involved improving the capacity, safety and traffic operations at the Brisco Road-Halcyon Road/Highway 101 interchange. Included in the project study report (PSR), the project evaluates various low-cost operational improvement options such as roundabouts at the ramp intersections for Caltrans and express bus stops as well as park-and-ride lots for Arroyo Grande that may be implemented within the study area. Improvements to the Brisco Road-Halcyon Road/Highway 101 interchange are essential to the continued growth in communities surrounding the City of Arroyo Grande.

San Luis Obispo County Traffic Monitoring
Principal-In-Charge. The project involved collection of hourly seven-day counts for throughout unincorporated areas and most cities in San Luis Obispo County. A total of 73 road segments were counted, once in the summer and again in the fall seasons.

Highway 1/Highland Drive Traffic Signal Modification Improvements
Principal-In-Charge. HMM prepared a complete set of Plans, Specifications and Estimates (PS&E) for the traffic signal modification at the intersection of Highway 1/ Highland Drive. The project included coordination with PG&E, Caltrans, and the City of San Luis Obispo.

Highway 46 West Corridor Study
Principal-In-Charge. The project required the analyses of corresponding traffic operations and recommendations of appropriate mitigations and an access management plan for the Highway 46 corridor Traffic operations along the corridor were analyzed for each of the study intersections, for both existing and future conditions. The analysis included intersection channelization, street lighting, traffic control, sight distance, geometrics and signing. In addition, the adequacy of the shoulder widths, bridge widths, passing sight distance and striping along Highway 46 was analyzed.

San Luis Obispo North Coast Area Plan
Principal-In-Charge. The purpose of the study was to identify future transportation needs in the coastal Towns of San Simeon and Cambria. This report included both existing and future General Plan traffic analysis for total of 10 intersections and seven road segments in the City of Cambria, California.

Hatch Mott MacDonald

Pallavi Saxena

Planner/Engineer III

Education

Bachelors of Technology, (Civil Engineering), L.D.C.E., India
M.S. Urban Planning and Transportation, San Jose State University, CA

Years in Practice – 6

Memberships

American Planning Association

US Green Building Council

Women's Society of Transportation Engineers

Institution of Transportation Engineers

Experience Summary

Ms. Saxena has experience in transportation planning and land development. During her career, she has worked on various Traffic Impact Studies, as well as Parking and Corridor Studies. She has a strong knowledge of local development codes, regulations and improvement standards. Ms. Saxena is proficient in many different analysis software programs, including Traffix, Synchro, Sim-Traffic, HCS+, Cube, AutoCAD, LDD and ArcGIS. She has excellent verbal and written communication skills and strong analytical skills.

Transportation Planning Project Experience

Study of SR 46 East Roadway Improvement, Paso Robles, CA

Evaluated the need for roadway improvements in the northern section of city of Paso Robles to support approved and proposed near term development and to enhance operations along the SR 46 East Corridor. The study includes intersection level of service analysis using Synchro and traffix. Analysis of the potential impacts of proposed roadway improvements by the city of Paso Robles This project was initiated by City of Paso Robles to increase local circulation access and reduce vehicle travel in the SR 46 corridor. Lead all tasks associated with the Transportation Inventory Assessment, which included the development of Synchro models and traffix network, an analysis of historical and future traffic data, and a review of local developments and local comprehensive plans. As the Project Engineer/Planner for the Improvement Study phase of the project, I lead the traffic operations analysis tasks, facilitated consensus-building at stakeholder meetings, and was one of the primary points of contact for the Client.

GIS Mapping for High Speed Rail, Sylmar to Palmdale, CA

Worked and prepared GIS maps for the Feasibility Analysis Report for High Speed Rail project alignments in the Palmdale to Sylmar corridor. This included incorporating information from different cities like Santa Clarita, Acton etc and compiling data from different resources to creates maps with alternative alignments and future land uses.

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.

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

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.

MICHAEL TAGGART, MA, RPA

Director of Cultural Resources

Michael Taggart is Director of Cultural Resources at Analytical Environmental Services. He is a Registered Professional Archaeologist (RPA) that 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, 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.

EDUCATION

Oregon State University (2002)
MASTER OF ARTS, INTERDISCIPLINARY STUDIES
(ANTHROPOLOGY & GEOGRAPHY)

Humboldt State University (1998)
BACHELOR OF ARTS, ANTHROPOLOGY

PROFESSIONAL EXPERIENCE

- **Cultural Resources Assessments for Highway 49 Realignment Alternatives, El Dorado County.** Prepared for Environmental Stewardship and Planning under subcontract to T.Y. Lin International. Project Manager and Field Director.

- **Cultural Resources Inventory for Proposed San Pasqual Aggregate Quarry, San Pasqual Indian Reservation, San Diego County.** Prepared for San Pasqual Band of Mission Indians and Bureau of Indian Affairs. Field Director and Lead Author.

- **Cultural Resources Assessment for the Del Norte Clinics Proposed Outpatient Health Clinic, Yuba City, Butte County.** Prepared for Del Norte Clinics in support of HRSA CIP Grant. Cultural Resources Director.

- **Cultural Resources Inventory and Evaluation for the Madera Ranch Quarry, Madera County.** Prepared for Resource Design Technology, Inc. Project Manager and Field Director.

- **Empire Mine Environmental Impact Report, Cultural Resources, Nevada County.** Prepared cultural resources sections for Empire Mine State Historic Park Site Characterization and Remediation Project Program EIR. Cultural Resource Specialist.

- **Cultural Resources – Construction Personnel Training Program – Williams Quarry.** Prepared for Resource Design Technology, Inc. Cultural Resources Specialist.

- **Cultural Resources Inventory for Nine Wetlands Reserve Program Parcels in Butte, Colusa, Sutter, Tehama, and Yolo, Counties.** Prepared for Natural Resource Conservation Service. Project Manager and Field Director.

- **Cultural Resources Inventory of the Power Fire Burn Area, Amador County.** Prepared for the Eldorado National Forest. Project Manager and Field Director.

- **Archaeological Research Design and Data Recovery Plan for CA-ELD-263 and CA-ELD-728, Sly Park Reservoir, El Dorado County.** Prepared for El Dorado Irrigation District. Project Manager and Lead Author.

- **Cultural Resources Inventory and Evaluation for the Highway 49 Beautification Project, Placer County.** Prepared for Environmental Stewardship and Planning under subcontract to HLA Group. Project Manager and Field Director.

- **Cultural Resources Inventory and Evaluation of the Ione Plymouth Property, Amador County.** Prepared for Analytical Environmental Services and Ione Band of Miwok Indians. Archaeologist and Lead Author.

- **Phase II Archaeological Investigations and Damage Assessment at Forest Service Site 05-03-56-770, El Dorado County.** Prepared for the Eldorado National Forest. Project Manager and Field Director.

- **Extended Phase I Archaeological Investigations at the Logtown Midden, CA-ELD-851/H, El Dorado County.** Prepared for California Department of Transportation, District 3. Project Manager and Field Director.

- **Archaeological Investigations of the Long Canyon Site, Placer County.** Prepared for the Eldorado National Forest. Project Manager and Archaeologist.

- **Pleasant Oak Main Pipeline Replacement Project, El Dorado County.** Prepared for El Dorado Irrigation District. Project Manager.

- **Cultural Resources Inventory and Evaluation for the San Andreas Wastewater Treatment Plant Expansion Project, Calaveras County.** Prepared for ECO:LOGIC Engineers and the San Andreas Sanitation District. Project Manager and Field Director.

- **Cultural Resources Training and Inadvertent Discovery Program, El Dorado County.** Conducted for Lake Tahoe Development Company. Project Manager.

- **Cultural Resources Inventory for SAFETEA-LU Transportation Projects in Mariposa County.** Conducted for the County of Mariposa. Project Manager.

- **Cultural Resources Inventory of the Middle Fork American River FERC Relicensing Project, Placer County.** Conducted for Placer County Water Agency. Field Director.

- **Archaeological Data Recovery Investigation of CA-PLA-668 and CA-PLA-671, Placer County.** Prepared for Snyder Development. Project Manager and Field Director.

- **Cultural Resources Inventory of the Dennis Parcel, Tuolumne Indian Rancheria, Tuolumne County.** Prepared for Tuolumne Economic Development Authority. Project Manager and Field Director.

- **Archaeological Investigation of a 19th Century Shrimp Camp (CA-CCO-506H) and three prehistoric shellmounds (CA-CCO-282, -283, and -423) at the former Point Molate Naval Fuel Depot, Contra Costa County.** Conducted for the City of Richmond and Bureau of Indian Affairs. Project Manager and Lead Author.

- **Extended Phase I Archaeological Investigations at the Historic Fremont Town Site and prehistoric archaeological sites CA-YOL-12 and CA-YOL-13, Yolo County.** Prepared for Wildlands, Inc. Project Manager and Field Director.

- **Cultural Resources Inventory for the Sycuan Fee-to-Trust Project, San Diego County.** Conducted for the Sycuan Band of the Kumeyaay Nation and Bureau of Indian Affairs. Principal Investigator and Lead Author.

- **Archaeological Data Recovery at CA-YOL-110, Capay Valley, Yolo County.** Conducted for the Rumsey Band of Wintun Indians. Principal Investigator and Lead Author.

- **Archaeological Data Recovery at Sites CA-KER-1304 and CAKER-4623, Cottonwood Pass, Kern County. Prepared for California Department of Transportation, District 6.** Field Director and Contributing Author.

- **Extended Phase I Archaeological Investigations along Dersch Road, Shasta County. Prepared for California Department of Transportation, District 2.** Project Manager and Field Director.

- **Phase I & II Archaeological Investigations for the Sage Hen Curve Correction Project, Lassen County.** Prepared for California Department of Transportation, District 2. Project Manager and Field Director.

SPECIALIZED TRAINING

- Certified 29CFR1910 and Title 8 GISO 5192, 40 Hour Course: *Hazardous Waste Operations and Emergency Response*, OSHA Approved.

- *Archaeological Resource Protection Act: Investigation and Damage Assessment.* Provided by Archaeological Resource Investigations, Little Tujunga Ranger Station, Angeles National Forest.

PRESENTATIONS

- **Considering Cultural Resources in Fee-to-Trust Actions: Integrating Section 106 and NEPA.** Presented at the Annual California Fee to Trust Consortium hosted by the Bureau of Indian Affairs and Sycuan Band of the Kumeyaay Nation. December 4, 2008, San Diego, CA.

- **Implications of the Cayton Creek Site (CA-SHA-726/H) Projectile Point Assemblage: Inferring Spatial and Temporal Variability.** Presented at the 41st Annual Meeting of the Society for California Archaeology. March 24, 2007, San Jose, CA.

- **Fire Use in Managing Landscapes: Challenges and Opportunities for Cultural Resource Managers.** Presented at the 38th Annual Meeting of the Society for California Archaeology. March 20, 2004, Riverside, CA.

- **Upper Deschutes River Basin Prehistory.** Presented at the 55th Northwest Anthropological Conference. April 11, 2002, Boise, Idaho

PROFESSIONAL AFFILIATION

- Register of Professional Archaeologists (RPA # 12572)
- Society for California Archaeology (Member)

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**

SECTION 2 – PROJECT TEAM AND EXPERIENCE

Tully & Young, Inc. is a niche strategic water management and planning firm offering customized services to meet the needs of our clients. A summary of the primary staff involved in our client projects is provided below.

Gwyn-Mohr Tully, J.D., co-founder of Tully & Young, Inc., is a licensed attorney with over 17 years experience in surface and subsurface hydrology, water law, and water planning. Mr. Tully consults with public agencies and private clients on developing and implementing water resource management plans and individual water projects. In this context, Mr. Tully has conducted water rights investigations; assessed contractual water obligations; negotiated water transfers; prepared water settlements; evaluated surface and subsurface water supplies; prepared regulatory, legal, and political assessments; researched historical water rights and supplies; and conducted and coordinated high-level stakeholder interactions.

Greg Young, P.E., co-founder of Tully & Young, Inc., is a registered civil engineer with over 20 years of extensive experience in strategic water resource planning. Mr. Young has spent much of his career synthesizing multiple water resource disciplines with practical knowledge to empower clients. Mr. Young's experience and skill provides his clients with unique insight, comprehensive analysis, and valuable solutions. Through involvement in numerous projects focused on the elements of UWMPs and SB 610 Water Supply Assessments throughout the State, Mr. Young has developed valuable skills to quickly evaluate existing documents, often recognizing the shortcomings and problems that arise when not prepared as part of an array of strategic planning documents.

Kris Olof, E.I.T., offers expertise in water demand and supply analyses and integration in the context of water resource planning. Mr. Olof's responsibilities have included preparing UWMPs and performing demand analysis for SB 610 Water Supply Assessments, as well as helping develop regional solutions designed to protect water rights, address water quality issues, and ensure local control of water resources.

Michael Kiparsky, Ph.D., received his Ph.D. from the Energy and Resources Group (ERG), an interdisciplinary graduate program at U.C. Berkeley, where his course work included hydrology, geomorphology, river restoration, water law, negotiation and mediation, and environmental policy. Mr. Kiparsky has won a Graduate Fellowship and a Doctoral Dissertation Research Improvement Grant from the National Science Foundation, a CALFED Science Fellowship, and the first annual ACWA Water Law & Policy Scholarship. Mr. Kiparsky has an overarching professional interest is in water resources, and he works on both the technical and policy aspects of the interface between science and policy. His research experience includes water operations modeling, risk analysis, climate analysis and the social science of complex resource management and policy. For this project, Mr. Kiparsky will provide qualitative discussion of climate change impacts and assist Mr. Ferguson as needed.

APPENDIX A-3

TULLY & YOUNG SOQ

PROFESSIONAL SERVICES
FOR
SB 610 WATER SUPPLY ASSESSMENTS

Statement of Qualifications

Prepared for:

Benchmark, Inc.

MAY 2011

Tully & Young
Comprehensive Water Planning

3600 AMERICAN RIVER DRIVE SUITE 260
SACRAMENTO, CALIFORNIA 95864
P: 916.669.9356
F: 916.669.9358
DESIGNATED CONTACT: GWYN-MOHR TULLY, J.D.

SECTION 1 – FIRM QUALIFICATIONS

Tully & Young's mission is to advise our clients with honesty and integrity on optimal water resources planning and management by synthesizing hydrology, engineering, law, and policy. Tully & Young is a highly specialized and unique water-planning firm that integrates multiple water resource disciplines with sophisticated experience to empower its clients' decision-making.

We think comprehensively. We assist our clients in seeking workable solutions that meet their fundamental water and land planning objectives. We collaborate with relevant parties – clients, other consultants, attorneys, stakeholders, experts, and the public – to ensure information is available at the necessary level of detail to identify, assess and implement dynamic water resource management solutions. Our services cover a broad range of issues to meet the complex set of client needs. We:

- Prepare compliant Urban Water Management Plans (UWMPs)
- Prepare SB 610 Water Supply Assessments
- Prepare General Plan Water Supply Evaluations
- Prepare Groundwater Management Plans (GMPs)
- Prepare and assess CEQA-related water analyses
- Conduct comprehensive fatal flaw analysis of existing UWMPs, GMPs, engineering and planning documents
- Prepare in-depth supply/demand analyses
- Develop water conservation strategies
- Research historic water rights
- Negotiate complex water management issues
- Provide water transfer support, marketing and analysis
- Financially value water assets
- Provide expert witness testimony and consulting

As illustrated in the figure on the next page, Tully & Young has comprehensive experience specifically related to UWMPs and associated water planning documents. This experience, gained from drafting and defending documents, performing fatal flaw analyses and understanding the usefulness and potential vulnerabilities of existing data and public documents, gives us a unique understanding of the importance of drafting a good UWMP.

Tully & Young has helped clients successfully synthesize the legal requirements under the Planning, Zoning, and Development laws for General Plans and Specific Plans with Urban Water Management Plans, Groundwater Management Plans, Water Supply Assessments, Water Supply Verifications, Water Infrastructure Master Plans and other relevant documents prepared by urban water purveyors. For example, Tully & Young has been hired specifically to implement the latest Supreme Court rulings on water planning issues in the context of land use planning projects, including those related to preparation of EIR/EIS under the *Vineyard* case and SB 610 WSAs in the *OWL* case and its progeny.

We understand the significance of integrating planning documents and have been hired to help avoid legal risk. And, just as important, we understand how failure to integrate planning documents can complicate the City's development and water supply infrastructure projects and create legal vulnerabilities. In our view, the UWMP is the cornerstone water-planning document and must be undertaken with rigor and creativity to provide a usable "game plan" for the City.

Urban Water Management Planning Act and Related Experience

Tully & Young
Comprehensive Water Planning

	Elements of an UWMP												
	Comprehensive demand determination and projections	Review of water rights, contracts and agreements	Evaluate water supply reliability under normal and dry conditions	Supply and demand integration for normal and dry years	Develop and evaluate demand management measures	Develop and evaluate new supply options (recycle, desal, transfers)	Develop policies and temporary shortage provisions	Conservation opportunity assessment and quantification	NEW Per-capita baseline determination and 2020 target identification	Integrate legal, technical, political and economic elements	**Prepare compliant UWMP, SB 610 WSA or General Plan WSE documents, or GMPs**	**Comprehensive fatal flaw analysis of existing UWMPs, GMPs, engineering and planning documents**	**Summarize Water and Gov't code statues and case law in concert with legal team**
Sacramento Hydrologic Region													
City of Folsom	●	●	●	●	●	●	●	●	●	●	●		●
City of Yreka	●	●	●	●		●		●	●	●	●		
Placer County Water Agency	●	●	●	●	●			●	●	●	●		
City of Oroville	●	●				●				●		●	
City of Colusa	●	●	●	●	●		●	●		●	●		
Carmichael Water District	●	●	●	●	●				●	●			
Amador County Water Agency	●	●	●	●	●	●	●	●		●	●		●
South Feather Water and Power		●											
Sutter Pointe (for Sutter County)	●	●		●	●	●	●	●		●	●		●
El Dorado Irrigation District		●	●									●	
Foster Enterprises	●	●	●		●	●	●			●			
Sacramento County Water Agency		●	●	●								●	●
City of Lincoln	●	●	●	●	●	●	●	●		●	●		●
San Joaquin Valley													
City of Taft	●	●	●	●	●	●	●	●		●	●		
West Kern Water District		●	●	●	●	●						●	
Buena Vista Water Storage District		●											
City of Lathrop	●	●	●	●	●	●	●	●		●		●	●
City of Manteca			●	●	●								
Bakersfield Metropolitan Area	●	●	●	●						●	●		●
City of Bakersfield		●	●									●	
California Water Services Company		●										●	
East Niles Community Services District		●										●	
North of the River Municipal Water District		●										●	
County of Tulare	●	●	●	●	●		●			●	●	●	
Oildale Mutual Water Company		●										●	
Vaughn Mutual Water Service Company		●										●	
Lamont Public Utility District		●										●	
KCWA I.D. 4		●										●	
Kern Delta Water District		●											●
County of Madera	●	●	●	●	●	●	●	●		●	●	●	
City of Fresno			●										
City of Clovis			●										
Semitropic Water and Storage District		●								●			●
Other Regions													
City of Cloverdale	●	●	●	●	●					●	●		
Sonoma County Waste Management Agency		●	●	●							●		
City of Hollister		●			●							●	
San Benito County Water District		●			●								
Santa Clara Valley Water District		●	●	●	●	●	●			●			●
Sunnyslope County Water District	●	●	●	●	●	●	●	●		●	●		●
White Rock Club		●											●
Grenada Irrigation District	●			●	●								
Various State and Regional Entities and Organizations													
Northern California Water Association													●
Sacramento Area Council of Governments	●	●		●				●		●			●
California Farm Bureau Federation													●
City of Sacramento (Water Forum)		●	●									●	
California Resources Agency (for Delta Vision)			●	●	●	●	●	●		●			●

Client References and Projects

The following selected references highlight the land use and water supply integration that is critical to successful water management planning. An abbreviated listing of other clients and projects is included following these referenced projects to demonstrate the range of clients and projects served by Tully & Young.

2005 and 2010 UWMP, SB 610s, Water Supply Management Strategy
City of Folsom
Ken Payne (916) 351-3573

Over the past six years, the City of Folsom hired Tully & Young to conduct extensive water supply and demand investigations, prepare various documents to support policy decisions and CEQA compliance, and assist with various complex water-related negotiations. Through various efforts, we have researched the City's pre-1914 water rights, its CVP contract supplies, the City's obligations under regional water supply agreements, its local agency contract supplies, the potential for reuse under existing state law and the potential for acquiring new supplies to meet growing demands. We have recommended and implemented strategies for EIR and EIS compliance in the context of project developments and are guiding their internal effort to develop the 2010 UWMP.

Delta Vision Blue Ribbon Task Force Strategic Planning and Support Services
California Resources Agency
Leo Winternitz (now with The Nature Conservancy) (916) 449-2850

Tully & Young was recruited to assist the Delta Vision staff with preparing topic-specific context memos for presentation to the Delta Vision Blue Ribbon Task Force. During 2007, we drafted two iterations for each of the following context memos: (1) Sustainability, (2) Delta Water Management Governance Structure, and (3) Water Supply and Water Quality. Additionally, we were requested to assist with an array of tasks including (1) assembling and moderating panels in front of the Task Force, (2) identifying critical policy issues, (3) reviewing and objectively assessing stakeholder comments on early drafts of the Delta Vision, (4) preparing objective, informative white papers to help with policy direction decisions, and (5) preparing several technical graphics included in the final Delta Vision documents.

By Spring of 2008, Greg Young and Gwyn-Mohr Tully were selected as "technical support leads" for two of four critical work areas for the Delta Vision Strategic Plan development: Water Supply and Reliability, and Governance and Strategic Finance. In this capacity, Mr. Young and Mr. Tully led stakeholder workgroups, directed fact-finding, testified before the Governor's Delta Vision Blue Ribbon Task Force, and drafted portions of each of the four draft strategic plans prior to the Task Force's final document.

Water Supply and Demand Evaluation
Bakersfield Metropolitan Area
Mr. Eric Norris, PMC (530) 760-7060 x213

Tully & Young was asked to prepare a water supply and demand analysis to support the Bakersfield Metropolitan Area's General Plan Update that covered the entire City of Bakersfield as well as large urban and agricultural lands in Kern County. Tully & Young synthesized the water supply picture in the region that included over 30 different water entities from groundwater storage districts to retail water agencies. We analyzed and integrated numerous UWMPs and other planning documents in conducting the investigation. We provided the client with a detailed picture of the current and future regional water situation as well as an analysis of future water supply issues that may implicate long-term water

supply reliability in the Bakersfield Metropolitan Area – especially as it related to availability of State Water Project contract supplies. Our assessment included an evaluation of dry year issues and water right vulnerabilities.

Santana Ranch SB 610 WSA
Sunnyslope County Water District, San Benito County
Ken Girard (831) 637-4670
Lissette Knight (831) 637-5313
Tully & Young prepared a compliant Water Supply Assessment to accompany the Specific Plan being completed for a 300-acre development just east of Hollister, California. As part of this work, Tully & Young completed regional groundwater conditions analyses, prepared Central Valley Project (CVP) water supply reliability analyses, and analyzed the water supplies and demands of other planned developments to objectively assess the sufficiency of water supplies for the project. A critical aspects of this work included reviewing the data and assumptions included in the City of Hollister UWMP to determine congruence or variations from assumptions and characterizations of the regional water supply and demand conditions. Tully & Young's assessment of the reliability of the CVP water supply in the context of the groundwater conditions in the region was instrumental in the SB 610 WSA analysis. Tully & Young was also instrumental in preparing the water analysis in the project level EIR for the development and responding to comments.

Mokelumne River Water Storage and Conjunctive Use Project (MORE Project)
U.S. Bureau of Reclamation
Tully & Young worked on the MORE Project to identify gaps in the feasibility analysis for developing a conjunctive use project in the Mokelumne River drainage region. Tully & Young's efforts included working with water purveyors on the Mokelumne to understand how the proposed conjunctive use project could be developed within the context of their existing systems.

EBMUD's 2040 Water Supply Management Program and other regional entities identified the conjunctive water program as part of its long-range water supply planning objectives. Working with EBMUD To understand its 2040 Plan was critical in understanding how water could be managed in the Mokelumne River Basin.

Freeport Water Supply Project
Tully & Young has worked with EBMUD and Sacramento County Water Agency (SCWA) to identify and develop water conveyance opportunities in the Freeport Water Project. This Project, when fully operational, will pump 185 mgd of water in dry years from the Sacramento River for use in SCWA's service area and for export into EBMUD's service area. In other years, normal and wet years (approximately 7 out of 10 years) EBMUD's portion of Freeport will be unused and potentially available for use by other purveyors or by EBMUD for new projects. Tully & Young has analyzed the technical details of the Freeport conveyance and negotiated conveyance agreements with EBMUD and SCWA to use a portion of the facility to deliver water to developments.

Austin Quarry SB 610 Water Supply Assessment
Vulcan Materials, Inc.
Tully & Young prepared an SB 610 WSA for a new quarry operation in the Central Valley. This WSA addressed the adequacy of surface and subsurface water supplies as well as quarry operational demands. In addition, we

assisted the client in assessing the reliability of water supplies and integrating the water supply analysis into the project EIR in compliance with the California Supreme Court's *Vineyard* decision. This project is still ongoing.

Site 40 Compost Facility SB 610 Water Supply Assessment

Sonoma County Waste Management Agency

With recent court rulings clarifying the trigger for completing a SB 610 Water Supply Assessment, the Sonoma County Waste Management Agency determined the need to prepare an assessment for a proposed 50 acre green-waste composting facility. Tully & Young was selected to support the EIR consultant and prepare the WSA. Unique circumstances involving historic water rights, limited groundwater and availability of recycled water required a comprehensive strategy to be developed on the planned water supply and the subsequent analysis of impacts of supply alternatives in the accompanying EIR. Tully & Young led the strategy development, outlining the varied degrees of risk under differing scenarios and assisted the EIR consultant in identifying and evaluating supply alternatives.

Other Experience

In addition to the specific project references above, the list below further indicates our breadth of experience that benefits each of our future clients.

- *Placer County Water Agency*: 2010 UWMP Update and Integrated Water Resource Plan Update
- *Carmichael Water District*: Water Asset Assessment, 2010 UWMP Update
- *Lewis Operating Corp*: Water Supply Evaluation to support CEQA documentation for Arboretum Specific Plan (bridging County-supplied SB610 WSA)
- *County of Madera*: Gunner Ranch Project SB 610 WSA
- *Amador Water Agency*: Wicklow Way SB 610 WSA
- *Lennar Homes*: Sutter Point SB 610 WSA
- *Department of Water Resources*: Upper San Joaquin River Storage Investigation – Conjunctive Use Opportunities; and Technical Support for Agricultural Water Use Efficiency Provisions under SBx7 7
- *Sacramento Suburban Water District*: 2009 and 2010 Water Transfer Support Services
- *City of Taft*: General Plan EIR Water Supply Evaluation
- *City of West Sacramento*: 2010 Water Transfer Services
- *Sacramento Area Water Forum*: Dry-year Implementation Procedures
- *Santa Clara Valley Water District*: San Luis Low Point Improvement Project; Groundwater Management Strategy; and Proposition 218 Implementation
- *The Nature Conservancy*: San Joaquin River Migratory Bird Habitat Project; Cosumnes River Pre-Wetting Project; Water Rights Reporting and Filings; and Shasta River and Mill Creek water rights investigations
- *Numerous public and private clients*: Assistance with water supply and demand issues, opportunities in General Plan Updates and Specific Plan CEQA compliance analyses, and water transfers including (but not limited to): County of Tulare, City of Yreka, City of Cloverdale, City of Colusa, City of Oroville, Sacramento Regional County Sanitation District, Richland Planned Communities, SunCal Companies, AKT, Lennar, Gunner Ranch, The Charles Orwick Trust, Williams and Chunn Ranch, White Rock Club, Mohr-Fry Ranches, Smith Family Trust, Bear Creek Association and Granite Construction Company.

SECTION 2 – PROJECT TEAM AND EXPERIENCE

Tully & Young, Inc. is a niche strategic water management and planning firm offering customized services to meet the needs of our clients. A summary of the primary staff involved in our client projects is provided below.

Gwyn-Mohr Tully, J.D., co-founder of Tully & Young, Inc., is a licensed attorney with over 17 years experience in surface and subsurface hydrology, water law, and water planning. Mr. Tully consults with public agencies and private clients on developing and implementing water resource management plans and individual water projects. In this context, Mr. Tully has conducted water rights investigations; assessed contractual water obligations; negotiated water transfers; prepared water settlements; evaluated surface and subsurface water supplies; prepared regulatory, legal, and political assessments; researched historical water rights and supplies; and conducted and coordinated high-level stakeholder interactions.

Greg Young, P.E., co-founder of Tully & Young, Inc., is a registered civil engineer with over 20 years of extensive experience in strategic water resource planning. Mr. Young has spent much of his career synthesizing multiple water resource disciplines with practical knowledge to empower clients. Mr. Young's experience and skill provides his clients with unique insight, comprehensive analysis, and valuable solutions. Through involvement in numerous projects focused on the elements of UWMPs and SB 610 Water Supply Assessments throughout the State, Mr. Young has developed valuable skills to quickly evaluate existing documents, often recognizing the shortcomings and problems that arise when not prepared as part of an array of strategic planning documents.

Kris Olof, E.I.T., offers expertise in water demand and supply analyses and integration in the context of water resource planning. Mr. Olof's responsibilities have included preparing UWMPs and performing demand analysis for SB 610 Water Supply Assessments, as well as helping develop regional solutions designed to protect water rights, address water quality issues, and ensure local control of water resources.

Michael Kiparsky, Ph.D., received his Ph.D. from the Energy and Resources Group (ERG), an interdisciplinary graduate program at U.C. Berkeley, where his course work included hydrology, geomorphology, river restoration, water law, negotiation and mediation, and environmental policy. Mr. Kiparsky has won a Graduate Fellowship and a Doctoral Dissertation Research Improvement Grant from the National Science Foundation, a CALFED Science Fellowship, and the first annual ACWA Water Law & Policy Scholarship. Mr. Kiparsky has an overarching professional interest is in water resources, and he works on both the technical and policy aspects of the interface between science and policy. His research experience includes water operations modeling, risk analysis, climate analysis and the social science of complex resource management and policy. For this project, Mr. Kiparsky will provide qualitative discussion of climate change impacts and assist Mr. Ferguson as needed.

APPENDIX B

REPRESENTATIVE MINE EIRS SUMMARY DESCRIPTIONS

AUSTIN QUARRY EIR

MADERA COUNTY

PROJECT SUMMARY

The Austin Quarry Project would develop a hard rock quarry and associated facilities on a 356-acre site in southwestern Madera County, California. Associated with the quarry would be an aggregate processing facility, hot mix asphalt plant, concrete/asphalt recycling facility, administration building, maintenance facility and other ancillary facilities. The Project would also require off-site roadway improvements and utilities installation. The Project applicant proposes to establish an adjacent 500-acre conservation area to mitigate biological resources impacts. The maximum proposed aggregate production from the quarry is 2.5 million tons per year. Mining would continue for up to 100 years followed by a 3-year reclamation phase which would be undertaken to restore the majority of the Project site to open space and dry land grazing uses.

Project Manager: Bruce Steubing

Client: Madera County Planning Department

Services:

- Staff Services in Support of EIR Process
- Peer Review Applicant Technical Studies
- Manage Public Involvement Process
- Conduct Resources Analyses for EIR
- Prepare EIR and Supporting Documents

Key Issues:

- Traffic
- Air Quality and GHG Emissions
- Visual Impacts
- Hydrology and Water Quality
- Blasting Noise and Vibration

Status: Draft EIR and Technical Studies in production as of September 2010.

Issues

Area residents expressed concerns regarding Project-related traffic on area roads and air pollutant emissions associated with traffic and quarry operations. A traffic impact study, air quality impact evaluation and health risk assessment are being prepared to document potential effects associated with traffic and air pollutant emissions. Project activities and facilities would be visible from two state highways and several residences requiring photographic simulations and a detailed aesthetic/visual resources impact analysis. Potential ground and surface water quality impacts, including potential overdraft of the groundwater aquifer, require hydrological evaluation and consideration of options for minimizing impacts. Detailed noise and vibration studies will be documented in the EIR to provide information necessary to address concerns about blasting expressed by local residents.

Services Provided

Coordinating Project CEQA review activities with the County. Review Project application and peer reviewed Applicant technical studies to determine their adequacy in supporting the information and analyses required for the EIR. Prepared the Notice of Preparation and assisted County staff with conducting an EIR scoping meeting. Reviewed all scoping comments and provided recommendations to the County with regard to addressing scoping issues in the EIR. As of September 2010, conducting resources evaluations and preparing a Draft EIR for the Project.

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

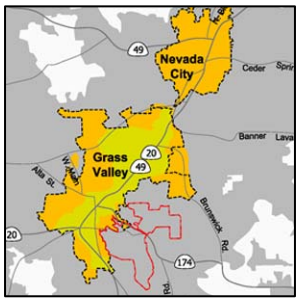
Status: Approved October 2006.

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.



EMPIRE MINE

STATE HISTORIC PARK
SITE CHARACTERIZATION AND REMEDIATION PROJECT
PROGRAM EIR

NEVADA COUNTY

PROJECT SUMMARY

This Draft Program Environmental Impact Report (Draft PEIR) has been prepared for the California Department of Parks and Recreation to evaluate the potential environmental effects of the Site Characterization and Remediation Project at Empire Mine State Historic Park (Park), located in Nevada County, California. In 2006, the California Department of Toxic Substance Control and the Central Valley Regional Water Quality Control Board entered into a Joint Cleanup and Abatement Order, Imminent and/or Substantial Endangerment Determination and Partial Consent Order with DPR and Newmont USA, Ltd. to oversee characterization, evaluation, and remediation at the Park. This Draft PEIR evaluates impacts associated with characterization, evaluation and remediation at the Park.

Project Manager: Bruce Steubing

Client: State of California, Department of Parks and Recreation

Services:

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

Key Issues:

- Cultural Resources
- Biological Resources
- Noise

Status: Draft Program EIR circulated August through October 2009. Final EIR prepared December 2009.

Issues

The Draft Program EIR takes a tiered approach to potential environmental impacts associated with characterization, evaluation and remediation activities at the Park. A project-specific evaluation is performed for area identified for potential remediation efforts while a program approach is utilized outside of those areas. Key issues involved impacts to historical and archeological resources at the Park, biological resources that could use the Park, and noise associated with remediation activities to park users and surrounding residences.

Services Provided

Prepared the Draft Program EIR. The Draft EIR was released in August 2009 and the Final EIR was prepared in December 2009. Presented the EIR at a Public Meeting in September 2009.

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.

JAXON ENTERPRISES, INC.

MINE EXPANSION AND RECLAMATION PLAN PROJECT EIR

MERCED COUNTY

PROJECT SUMMARY

The Project will excavate and process 6 million tons of aggregate by: (1) expanding an existing aggregate surface mine laterally from 90± acres to approximately 357± acres; (2) increasing the depth of the permitted mine; (3) increasing the annual material to be mined from a the current baseline of 260,000 tons/year mined, and 240,000 tons/year marketed to a maximum of 550,000 tons/year mined and 500,000 tons/year marketed; (4) modifying the reclamation phasing from five acre increments to 20-acre increments; (5) establishing an updated reclamation plan; and (6) clarifying the permit to recognize the Applicant's ability to operate the plant at night to serve public agency projects which require nighttime deliveries.

Project Manager: Bruce Steubing

Client: Merced County, Planning and Community Development Department

Services:

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

Key Issues:

- Noise
- Traffic
- Air Quality
- Biological Resources

Status: Approved August 2008.

Issues

The EIR focuses on aesthetics, air quality, land use, noise, traffic and biological resources. The central issue was nighttime noise and traffic impacts along County roads. The Project also dealt with impacts to biological resources. The key analytical factor for this Project was evaluating impacts related to the baseline of an approved Project. 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 May 2008. Presented the EIR to the Planning Commission. The Project was ultimately approved by the Planning Commission in August 2008.

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.

KINGS RIVER SAND & GRAVEL PROJECT EIR

FRESNO COUNTY

PROJECT SUMMARY

In 1999, Calaveras Materials Inc. (Calaveras) asked Fresno County (County) to approve a conditional use permit (CUP) to excavate and process sand and gravel and operate an aggregate processing plant and a ready-mix concrete plant. This project was reviewed and subsequently approved. In 2003, Calaveras applied to modify or delete certain traffic mitigation measures imposed during the public hearing approving the Project. In an effort to reduce potential impacts associated with the previously approved Project and support modifying or deleting certain traffic mitigation measures, Calaveras filed an application to reduce the production volume approved under the original project. In particular, the modified project reduced production volume by 50 percent (from 2 million tons per year to 1 million tons per year) and decrease the estimated volume of total traffic associated with the Project.

Project Manager: Bruce Steubing

Client: Fresno County, Department of Public Works and Planning

Services:

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

Key Issues:

- Noise
- Traffic
- Air Quality
- Public Safety

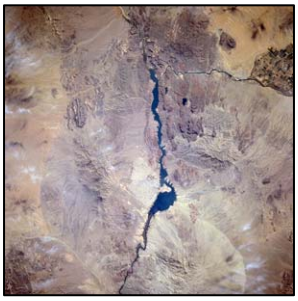
Status: Approved August 2008.

Issues

The Supplemental EIR focuses on aesthetics, air quality, land use, noise, traffic (including public safety) and cumulative impacts. The central issue was traffic impacts to County roads and the associated impacts to public safety as it related to crossing of an narrow bridge and potential impacts to recreational users of the Kings River. Noise impacts to surrounding residents were also a key issue that required mitigation. The Project also had significant and unavoidable impacts associated with Project-and cumulatively-generated NO_x.

Services Provided

Prepared the Supplemental EIR and performed staff services under contract to Fresno County. Worked as a coordinator with the EIR prepared that prepared the original EIR and then took over preparation of the Supplemental EIR. The Draft EIR was released in May 2007 and Final EIR was released in November 2007. Presented the EIR to the Planning Commission and Board of Supervisors at several controversial public hearings. The Project was ultimately approved by the Board in August 2008.



M&T CHICO RANCH MINE EIR

BUTTE COUNTY

PROJECT SUMMARY

The M&T Chico Ranch Mine Project proposed an off-channel alluvial mining operation adjacent to Little Chico Creek over a 20- to 30-year period. The Applicant proposed to mine approximately 193 acres of a 235-acre site; approximately 6 acres would have been mined each year. Temporary topsoil stockpiling would encompass approximately 2 acres for a total of approximately 235 acres of project-related disturbance. Total project reserves were estimated at over 5.5 million cubic yards wand a proposed annual maximum volume marketed of 250,000 cubic yards.

Project Manager: Dave Brown

Client: Butte County, Development Services Department

Services:

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

Key Issues:

- Hydrology and Water Quality
- Flooding
- Traffic
- Williamson Act

Status: Project denied.

Issues

The Draft EIR analyzed a suite of environmental issues. Significant analysis was conducted on impacts to Little Chico Creek or flooding event impacts to the Project site. The Project would also result in the loss of state designated prime agricultural land and cancellation of the existing Williamson Act contract. These issues required detailed soil and land use analysis. In addition, significant concern surrounded Project traffic, the use of local roadways and safety. Significant effort was spent analyzing traffic, alternative traffic routes, and impacts associated with haul truck traffic on area roadways.

Services Provided

Prepared the EIR under contract to Butte County. The Draft EIR was released in May 1998 and Final EIR was released in October 2003. Assisted County staff in presenting the EIR to the Land Use Committee and Planning Commission. While the Board of Supervisors expressed satisfaction with the EIR evaluation, the project was ultimately denied based on public opposition.

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.

PATTERSON SAND & GRAVEL EIR

PLACER COUNTY

PROJECT SUMMARY

The Patterson Sand and Gravel Mine Expansion Project proposed an expansion to its existing mining operation to include approximately 365 acres located on a 746-acre site that includes the existing operation, walnut orchards, rice fields, and the proposed expansion area. Mining would occur over a 40-year period and include removal of oak woodland and prime agricultural farmland. The entire project site is located within the 100-year flood zone of the Bear River. The average annual production rate would be reduced from about 1.5 mty to 1.25 mty. Project-related truck traffic requires routing through the small community of Sheridan.

Project Manager: Andrew White

Client: Placer County, Community Development Resources Agency

Services:

- Environmental Impact Report
- Technical Studies
- Scoping and Hearing Presentation
- Reclamation Plan Amendment

Key Issues:

- Baseline Conditions
- Traffic
- Noise
- Alternatives

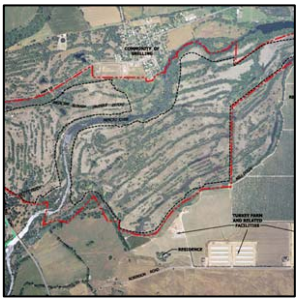
Status: Approved October 2007.

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, alternative, and cumulative impacts. Due to the removal of large amounts of oak woodland and prime agricultural soil, Resource Design developed comprehensive mitigation measures and prepared a Reclamation Plan Amendment to adequately compensate for anticipated impacts. In addition, due to the site's location within the 100-year floodplain of the Bear River, extensive analysis of flooding, pit capture, and streambed alteration were examined. Resources Design prepared a comprehensive traffic and associated noise analysis, including examination of two alternative traffic routes, due to truck routing through the town of Sheridan.

Services Provided

Prepared the EIR under contract to Placer County. The Final EIR was released in August 2007 and Project was approved in October 2007. Presented the EIR to the local advisory council, Agricultural Commission, and Planning Commission.



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

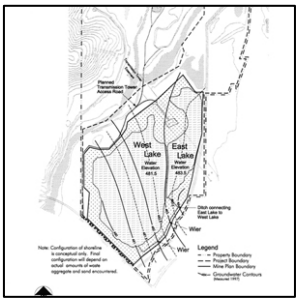
Status: Approved in November 2009.

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.



STILLWELL PROJECT EIR

TULARE COUNTY

PROJECT SUMMARY

The Stillwell Project was an application for a Special Use Permit and Reclamation Plan to conduct off-channel operations for the extraction of aggregate resources on approximately 141.9 acres of a 154-acre portion of the Stillwell Ranch. The site will be mined over a 10- to 20-year period and reclaimed to a lake and surrounding pasture. It is proposed that up to approximately 11.5 million tons of rock, sand, and gravel be mined during the life of this project.

Project Manager: David Brown

Client: Tulare County, Resources Management Department

Services:

- Environmental Impact Report
- Technical Studies
- Hearing Presentation

Key Issues:

- Biological Resources
- Hydrology and Water Quality
- Traffic and Transportation
- Alternatives

Status: Approved August 2002.

Issues

The Draft EIR analyzed a suite of environmental issues including aesthetics, air quality, biological resources, hydrology and water quality, cultural resources, noise and vibration, traffic, public services and utilities, alternatives and cumulative impacts. Because of the Projects proximity to the Kaweah River significant analysis was conducted to assess potential hydrologic and water quality impacts, including potential flooding concerns. In addition, significant time was spent analyzing impact to special status species and developing mitigation measures to reduce impacts.

Services Provided

A Draft EIR was released in July 2001 and the Final EIR was released in July 2002. Presented the EIR during the hearing process.

TEICHERT QUARRY EIR

SACRAMENTO COUNTY

PROJECT SUMMARY

Teichert Quarry is an application for a new hardrock quarry in eastern Sacramento County. The entitlements requested included a Conditional Use Permit, Reclamation Plan, Rezone, and General Plan Amendment. The Applicant has proposed mining, processing, and off-haul of approximately 6 million tons of aggregate annual on approximately 380 acres of grazing land over a 25-year period. The Project is the first hardrock quarry proposed in Sacramento County. In addition, the Project is located in one of the last designated open space areas of the County but in proximity to large commercial and residential areas of the City of Folsom and Rancho Cordova. Under contract to Sacramento County to prepare the Environmental Impact Report for this Application.

Project Manager: Andrew White

Client: Sacramento County, Department of Environmental Review and Assessment

Services:

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

Key Issues:

- Air Quality
- Biological Resources
- Hydrology and Water Quality
- Traffic and Transportation

Status: Draft EIR released August 2008. Approved November 2010.

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 open space location, including two seasonal drainages and several special status species, biological resources was a key element of the Draft EIR. In addition, the proximity of the Project to an EPA-designated superfund site has required extensive hydrology and water quality analysis. As is typical of mining projects, traffic and impacts to local roadways with surrounding communities has been a significant concern and required extensive traffic analysis.

Services Provided

Under contract with Sacramento County to prepare the Environmental Impact Report. Conducted agency and public scoping in 2004 and 2006. A Draft EIR was released in August 2008 and the Final EIR was released in September 2010. Will attend and present the EIR during the hearing process.

APPENDIX C

SAMPLE MEMORANDUM OF REVIEW

Consultant: _____

Date: _____

MEMORANDUM OF REVIEW

REVIEW OF APPLICANT-SUBMITTED BASELINE STUDIES

OSTER/ LAS PILITAS EXPANSION PROJECT

Issue: _____

Applicant Report Title/Date: _____

SECTION I: ACCURACY & COMPLETENESS

A. Does the report:

1. **State any assumptions and sources of data?**

2. **Address all areas of the site and planned operations (see attached Site & Operations Map)?**

3. **Address baseline conditions sufficient for each of the impacts being considered (both Appendix G and Preliminary Impact Table Appendix D of the Scope of Work and any others you expect)? Cite appropriate sources.**

4. **Are the utilized methods and protocols up to current regulatory standards/ adopted practices?**

B. Is the report current?

1. **In terms of a) date of field work; and b) addressing the current project as proposed (geographic extent and operations as provided in application's Project Description)?**

2. **Nomenclature (site, Project name, geographic features, etc.)?**

C. Are graphics:

1. **Clear as to where resources are located?**

2. **Are electronic files (source files, not PDFs) readily available?**

SECTION II: SUPPLEMENTAL NEEDS

1. **What is magnitude of errors/discrepancies?**

2. **Is it more efficient to request supplementary data from Applicant?**

3. **Should we undertake with budget request?**

SECTION III: RECOMMENDATIONS

1. **What are your recommendations regarding geographic scope for cumulative impacts analysis, relative to your resource issue?**

2. **What are your recommendations regarding applicable significance thresholds, particularly as they relate to quantification of Appendix G criteria?**

APPENDIX D

JESSE MORROW MOUNTAIN DRAFT EIR AESTHETICS SECTION

3.1 AESTHETICS

This section describes the visual character in the vicinity of the Project site and describes the impacts on visual resources resulting from the Project. Elements considered in this section include the degree of natural screening by vegetation and topography, relative size of features, and the length of time these features are in view.

3.1.1 Methodology and Terminology

County staff and its subconsultants visited the Project site on several occasions to document the existing visual character of the site and the surrounding vicinity. Extensive photographic documentation of the Project site's existing visual character was taken from public viewsheds surrounding the Project site. These photographs were taken from each representative location with views of the Project site. Computer simulations were generated from the same Key Observation Points (KOPs) from which the existing photographs were taken. Project-specific information, including specific facility details, was included in the computer simulations. In addition, existing aerial photographs, topography, and County literature (e.g. General Plan) were reviewed to assess the visual quality of the area. Elements considered in determining the Project's change to the visual character of the site or surroundings included the degree of natural or Project purposed screening by vegetation, topography, or berms, relative size of Project features and components, and the length of time the features are in view.

The procedure for analysis in the visual assessment was based, in part, on the visual impact assessment methodology employed by the Federal Highway Administration, the Bureau of Land Management (BLM), and the United States Forest Service. The assessment was conducted in a series of steps:

1. Defining the Project setting and viewsheds;
2. Identifying sensitive view receptors for assessment;
3. Analyzing the baseline visual quality and character of the identified views;
4. Depicting the visual appearance of the Project from the identified views;
5. Assessing the Project's impacts to those views in comparison to their baseline visual quality and character; and
6. Proposing methods to mitigate any potentially significant visual impacts identified.

To assess the potential for aesthetic impacts associated with implementation of the Project, the analysis focuses on the degree to which the Project directly and/or indirectly diminishes or enhances the existing visual quality and character of the natural environment. The analysis depends largely on the visual contrast created between the Project and the existing landscape. Visual contrast is measured by comparing the Project's features with the major features in the existing landscape. While an assessment of potential visual impacts is by nature somewhat subjective, qualitative criteria such as an evaluation of basic design elements of form, line, color, and texture are used to make this comparison and describe the visual contrast created by the Project.

3.1.2 Existing Conditions

3.1.2.1 Regional Landscape

The regional character of the County is distinguished by three general regions: Sierra Nevada Mountains and foothills (east), San Joaquin valley, and Coast Ranges (west). The Project site sits at the base of the Sierra Nevada foothills in the eastern region of the County. The existing visual character of the eastern region of the County is characterized by agricultural uses and habitat associated with the Kings River and the backdrop of the Sierra Nevada mountain range. Urbanization in the eastern region of the County is limited to residential, primarily associated with the towns of Sanger and Reedly, rural farming community (single-story residential buildings and farming structures), industrial, and limited commercial. Agriculture and grazing land occupy much of the surrounding region and dominates the visual landscape in this region of the County.

3.1.2.2 Project Site Characteristics

The Project site is in the eastern portion of rural unincorporated Fresno County approximately 8 miles east of the City of Sanger and characterized by open agricultural land. The Project is located on the south side of Jesse Morrow Mountain where elevations on the site range from approximately 600 to 2,100 feet amsl. Surface water runoff is generally rapid and flows to the southeast into stream drainages that are tributaries to the Kings River. The Project site is bound by agricultural land uses to the north, agricultural land uses and Alta Main Canal to the west, the Friant Kern Canal and SR 180 to the south, and grazing land and open space to the east (see Figure 3.1-1, Key Observation Point and Panoramic Photograph Locations).

A total of three vegetation communities or land cover types were identified within the Project site boundaries including annual grassland, disturbed areas, and drainages. Two intermittent drainages occur within the Project site capturing high-energy surface runoff flows from precipitation events. No other wetland or drainage features were identified within the Project site. Grassland views of the Project site change in color based on season, with spring views of Jesse Morrow Mountain characterized by open green grassland. Views change from green to yellow or brown as summer arrives and temperatures increase, which continues through winter until the following spring.

The Project site is enclosed by a cattle fence on all sides; no other man-made structures exist on-site. SR 180 borders the southern portion of the Project site and provides access. Several dirt cattle roads exist on-site, providing access and movement to and within the Project site.

Surrounding Visual Environment

The Project site is situated in a rural unincorporated portion of Fresno County. Views of the Project site are generally uninterrupted by buildings, residences, and other structures common of urbanized and residential areas. Much of the views in the area are characterized by agriculture and open grassland (see Figure 3.1-2, Panoramic Photographs).

Spring typically consists of open green fields, with a mix of budding trees and wild flowers. The grasses typically change from a green to yellow or brown as summer arrives, which continues through winter until the following spring. Agriculture land similarly changes based on the type of crop grown, growing cycle, and season. This

may include views of furrowed lands, initial planting and various stages of crop development, and various mobile equipment and associated workers.

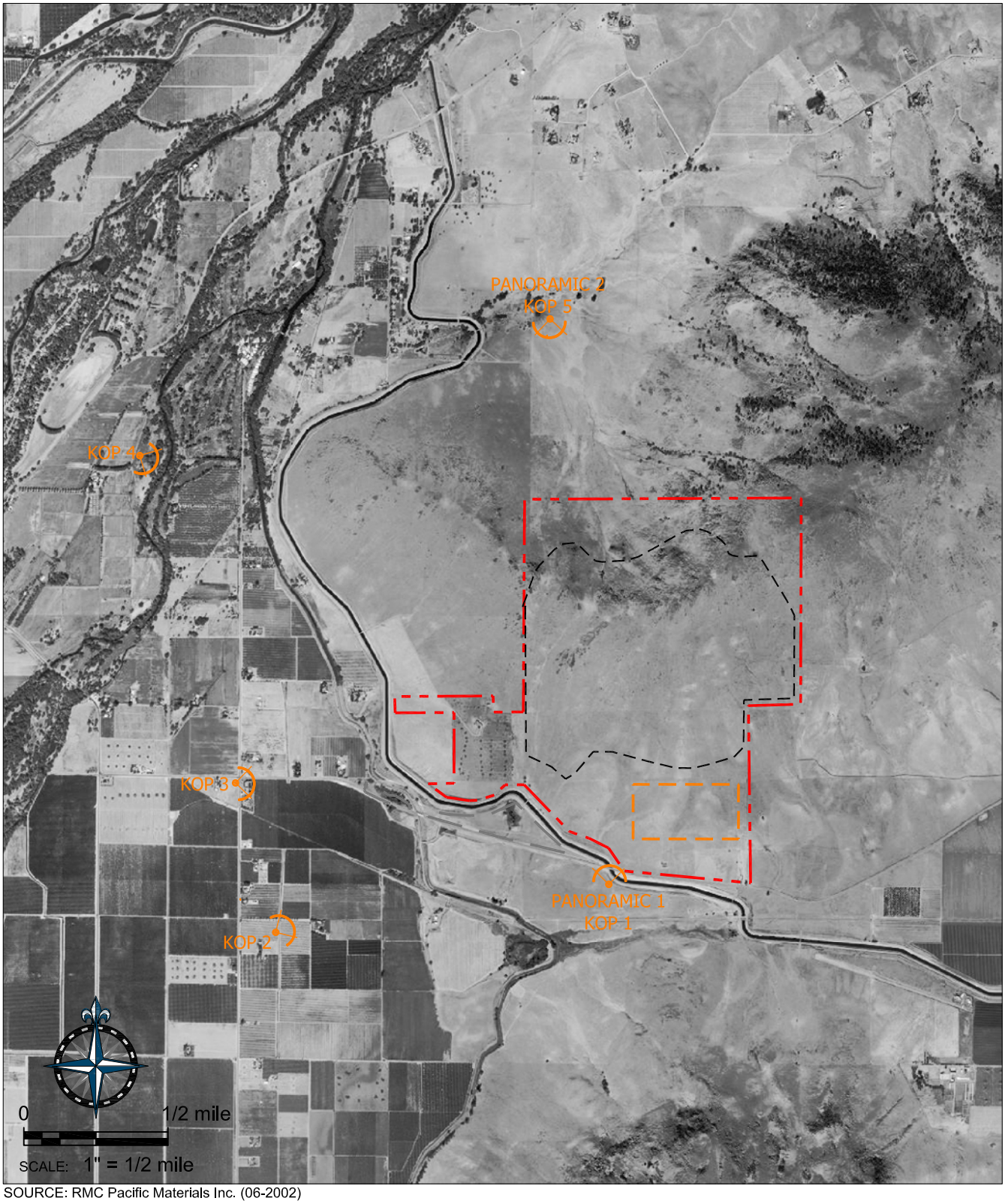
SR 180 provides access and views of the Project site to traffic traveling along this corridor. SR 180 is characterized as a two-lane road providing access from the City of Fresno and other communities within the central County to the eastern portion of the County and beyond to Kings Canyon and Sequoia National Parks. The stretch of SR 180 to the south of the Project site is a County-designated scenic roadway and is eligible for designation as a state scenic highway.

Jesse Morrow Mountain is located in Fresno County at 2,108 feet amsl at its highest point. Jesse Morrow Mountain is located west of Clark Valley and is in the middle of an area that is characterized as flat, open, agricultural land. Jesse Morrow Mountain is characterized as dry grazing land. The west side of the valley has rolling hills in the area. Depending on the season, the vegetation can be various shades of color ranging from green to tan. Other mountain ranges located to the north and northeast, include Tivy Mountain and Bear Mountain, which are visible from the valley floor. Campbell Mountain, at an elevation of 1,752 feet amsl, is located to the south and is also visible. The Friant Kern Canal is located to the south. The Alta Main Canal is located to the west.

Due to the high level of visual quality, visibility, and viewer exposure of the Project site, the mining of aggregate has been designed to minimize visual impacts through selection of where mining commences, utilization of benching and berms to minimize line of sight exposure, and concurrent reclamation. As each bench is completed, the preceding bench would be reclaimed (highwall face would be broken, resoiled, and reseeded). Bench cutting would involve cutting 50-foot-high steps on the southern side of Jesse Morrow Mountain that would be blended into the Mountain's existing topography. The width of the bench would vary with the face of Jesse Morrow Mountain (i.e., narrow near the top and wider near the base).

Public Views and Receptor Views

KOPs are representative locations from which the Project components may be visible during the life of the Project, or a portion thereof, and/or which are considered sensitive to visual changes due to their existing visual qualities or high level of viewer exposure. Figure 3.1-1 shows the KOP locations. The factors used in selecting KOPs were visual quality, viewer sensitivity, visibility, and viewer exposure. Illustrations of existing conditions (as of May 2005), a digital terrain model, and a photo simulation of Bench 12



SOURCE: RMC Pacific Materials Inc. (06-2002)

Project Site
Mine Area
Processing Facility Area
KOP 3 Key Observation Point Number and Location

JESSE MORROW MOUNTAIN QUARRY

Key Observation Point and Panoramic Photograph Locations

Figure 3.1-1

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

PANORAMIC PHOTOGRAPH 1

View from south side of Friant-Kern canal. View East. Jesse Morrow Mountain is on left,
Campbell Mountain is on right.
(Taken: 05-2007)

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

PANORAMIC PHOTOGRAPH 2

View from north side of Jesse Morrow Mountain, near Suncrest and Piedra Road.
(Taken: 05-2007)

(approximately 30 years from Project approval) and Bench 24 (build-out) are provided in Figures 3.1-3 through Figure 3.1-7, KOP Mine-Reclamation Sequence Photographic Simulation, to show the change in views of from the KOP locations.

Key Observation Point 1 – Friant-Kern Canal

KOP 1 is located on the south side of the Friant-Kern Canal, 500 feet directly south of the Project site. This KOP shows the perspective available in the foreground, middleground and background to those driving east and westbound on SR 180. Viewer exposure and sensitivity is high due to the Project site being visible to a large number of potential viewers traveling on SR 180 (see Figures 3.1-3a and -3b).

SR 180 provides provide access to the Project site and a major thoroughfare for travelers to Kings Canyon and Sequoia National Parks from central Fresno County and SR 99. SR 180 is currently designated as an eligible state scenic highway. Paperwork has been filed with Caltrans to make the stretch of SR 180 adjacent to the Project an official state scenic highway. The speed limit along SR 180 is 55 miles per hour. The Project site is visible or partially visible within an approximate 2-mile stretch traveling along SR 180, generally occurring between the intersections of SR 180/ Franckwood Avenue and SR 180/South Alta Avenue. Therefore, only commuters traveling along that portion of SR 180 may see or partially see aspects of the site. These views are likely to be brief because of vehicle speed, intervening topography, and Project design. However, while the traveling public will only see passing views of the quarry site, the haul trucks traveling to and from the quarry will be readily visible to the motoring public.

The visual quality of the site as viewed from the Friant-Kern Canal is also high because the environment is undeveloped. The natural environment provides little contrast or variety from this KOP. The visibility of the Project site as viewed from the Friant-Kern Canal and SR 180 is high because of its relative proximity from the KOP.

Key Observation Point 2 – Frankwood Avenue

KOP 2 is located 0.75 miles southwest of the Project site on Frankwood Avenue behind a local Bed & Breakfast. The viewshed as seen from this area consists of a vineyard and a view of the Project's west side.

This KOP shows views available to Bed & Breakfast guests. The visual quality of the site as viewed from the Bed & Breakfast is high because the area has minimal vegetative screening or urban development. The natural environment provides moderate contrast against the vineyard. Figures 3.1-4a and -4b for this KOP, provide foreground and middleground views consist of the green vineyard while the background consists of the tan colored grasses of the mountain. These views would change at various times of the year as vegetation of both the vineyard and Project site change color with the seasons. Viewer sensitivity, visibility, and level of exposure are high due to the proximity of the KOP to the Project site (see Figures 3.1-4a and -4b).

Key Observation Point 3 – SR 180 and Frankwood Avenue

KOP 3 is located 0.75 miles west of the Project site on the northeast corner of Frankwood Avenue and SR 180 (across from the Sherwood Restaurant). The perspective from KOP 3 is the view looking northeast to the Project site. The area in the foreground and middleground is characterized by agricultural land and two residences: one close to SR 180 and the other further north near the Project site.

The visual quality and contrast of the landscape as viewed from KOP 3 is moderate because the surrounding environment has rural development, SR 180, undeveloped or fallow agricultural land, and a transmission line that crosses the viewshed. Visibility and level of exposure is high because the Project site would be within the viewshed of those traveling eastbound on SR 180 (see KOP 1 discussion, above). Viewer sensitivity would be high since the Project site is visible from this KOP (Figures 3.1-5a and -5b).

Key Observation Point 4 – Piedra Road Near Kings River

KOP 4 is located 1.7 miles northwest of the Project site near horse ranches on Piedra Road and near the Kings River. This eastward view faces the northwest side of Jesse Morrow Mountain. This area is characterized by horse ranches, trees, and residences, which provide moderate contrast against the undeveloped Project site. The visual quality and viewer sensitivity of the site as viewed from KOP 4 is high due to the large rural residential development in the area. Foreground views consist of large expanses of tall trees that provide a linear pattern against Jesse Morrow Mountain; middleground and background views consist of undeveloped, rolling terrain of Jesse Morrow Mountain. The visibility

EXISTING CONDITION

View from south side of Friant-Kern canal. View north along south face of mountain.

BENCH 12 SIMULATION

Photographic simulation illustrating quarry development at the bench 12 (30 year) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 1

Mine - Reclamation Sequence Photographic Simulation (Bench 12)

Figure 3.1-3a

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from south side of Friant-Kern canal. View north along south face of mountain.

BENCH 24 SIMULATION

Photographic simulation illustrating quarry development at the bench 24 (Ultimate Buildout) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 1

Mine - Reclamation Sequence Photographic Simulation (Bench 24)

RESOURCE DESIGN TECHNOLOGY, INC.

Figure 3.1-3b

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from southwest of the Proposed Project site at Frankwood Avenue, behind a local bed and breakfast.

BENCH 12 SIMULATION

Photographic simulation illustrating quarry development at the bench 12 (30 year) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 2

Mine - Reclamation Sequence Photographic Simulation (Bench 12)

Figure 3.1-4a

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from southwest of the Proposed Project site at Frankwood Avenue, behind a local bed and breakfast.

BENCH 24 SIMULATION

Photographic simulation illustrating quarry development at the bench 24 (Ultimate Buildout) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 2

Mine - Reclamation Sequence Photographic Simulation (Bench 24)

Figure 3.1-4b

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from SR 180 and Frankwood Avenue intersection, near the northwest corner of Sherwood Restaurant.

BENCH 12 SIMULATION

Photographic simulation illustrating quarry development at the bench 12 (30 year) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 3

Mine - Reclamation Sequence Photographic Simulation (Bench 12)

Figure 3.1-5a

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from SR 180 and Frankwood Avenue intersection, near the northwest corner of Sherwood Restaurant.

BENCH 24 SIMULATION

Photographic simulation illustrating quarry development at the bench 24 (Ultimate Buildout) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 3

Mine - Reclamation Sequence Photographic Simulation (Bench 24)

Figure 3.1-5b

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from Piedra Road, near Kings River; located near horse ranches at west end of Jesse Morrow Mountain.

BENCH 12 SIMULATION

Photographic simulation illustrating quarry development at the bench 12 (30 year) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 4

Mine - Reclamation Sequence Photographic Simulation (Bench 12)

Figure 3.1-6a

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from Piedra Road, near Kings River; located near horse ranches at the west end of Jesse Morrow Mountain.

BENCH 24 SIMULATION

Photographic simulation illustrating quarry development at the bench 24 (Ultimate Buildout) time frame .

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 4

Mine - Reclamation Sequence Photographic Simulation (Bench 24)

Figure 3.1-6b

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View of north side of Jesse Morrow Mountain, from Suncrest and Piedra Road.

BENCH 12 SIMULATION

Photographic simulation illustrating quarry development at the bench 12 (30 year) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 5

Mine - Reclamation Sequence Photographic Simulation (Bench 12)

Figure 3.1-7a

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

EXISTING CONDITION

View from north side of Jesse Morrow Mountain, from Suncrest and Piedra Road.

BENCH 24 SIMULATION

Photographic simulation illustrating quarry development at the bench 24 (Ultimate Buildout) time frame.

SEE FIGURE 3.1-1 FOR PHOTOGRAPH LOCATIONS

JESSE MORROW MOUNTAIN QUARRY

KOP 5

Mine - Reclamation Sequence Photographic Simulation (Bench 24)

Figure 3.1-7b

RESOURCE DESIGN TECHNOLOGY, INC.

THIS PAGE
INTENTIONALLY
LEFT BLANK

and level of exposure are low because the Project site's processing plant and mining area are not visible from this KOP (see Figures 3.1-6a and -6b).

Key Observation Point 5 – End of Suncrest off of Piedra Road

KOP 5 is located 100 feet north of the Project site. This southern view faces the north side of Jesse Morrow Mountain. This KOP represents the view of the Project site as seen by residents of Tivy Valley. The visual quality of the site as viewed from KOP 5 is high due to the natural and undeveloped environment of the area. The natural environment provides very little contrast or variety: the foreground views consist of grasslands resulting in a flat, horizontal landscape while the middleground and background views consist of the hillside leading up to the north side of Jesse Morrow Mountain. Trees are scattered throughout the hillside. Viewer sensitivity is high because of the residents in this area that have immediate views of Jesse Morrow Mountain. Visibility, and level of exposure, are low due to the distance to the Project site and also because the majority of the Project's operations would not be visible from this KOP (see Figures 3.1-7a and -7b).

3.1.3 Regulatory Setting

3.1.3.1 State

California Scenic Highway Program

The California Scenic Highway Program was enacted in 1962 to protect and enhance California's scenic beauty by identifying and conserving those portions of the state highway system that would diminish aesthetic values of surrounding lands if changed. A highway may be eligible for designation as "scenic" based on landscape seen by travelers on that highway, quality of the landscape seen, and the extent development would intrude on enjoyment of the landscape. Prior to official designation of a highway as scenic, a city or county must nominate the highway for designation and adopt ordinances that protect its scenic quality. The City or County then applies to Caltrans for scenic highway approval. A list of state scenic highways is identified in Section 263 of the Streets and Highway Code.

3.1.3.2 Local

Fresno County General Plan

The County's General Plan is the primary document that establishes aesthetic, visual and local land use goals, policies, and programs, and provides the decision-making framework for the regulation of future development in the County. The County's General Plan establishes policies related to aesthetics and the preservation of scenic resources within the community, including the designation of a local scenic highway program. The General Plan does not have a specific element for aesthetic resources. However, the following goals and policies from the Open Space and Conservation Element are applicable to the Project:

Scenic Resources

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

- **Policy OS-K.1:** The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas whenever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.
- **Policy OS-K.2:** The County shall identify and map significant scenic resources within the County and shall develop a program to manage these resources.
- **Policy OS-K.3:** The County should preserve areas of natural scenic beauty and provide for public access to scenic vistas by purchasing sites for park use.
- **Policy OS-K.4:** The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

Scenic Roadways

Policies in this section are intended to protect the scenic qualities along the roadways of the County by identifying, developing, and maintaining scenic amenities along roads and highways in the County and ensuring development enhances those resources.

Goal OS-L.1: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in the County.

- **Policy OS-L.1:** The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.

- **Policy OS-L.3:** The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:
  a. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way;
  b. Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;
  c. Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way. Modification of the setback requirement may be appropriate when any one of the following conditions exist:
     1. Topographic or vegetative characteristics preclude such a setback;
     2. Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;
     3. Property dimensions preclude such a setback; or
     4. Development proposal involves expansion of an existing facility of an existing concentration of uses.
  d. Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and
  e. Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape.
- **Policy OS-L.4:** The County shall require new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of the development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.
- **Policy OS-L.9:** The County shall work with the Department of Transportation to pursue scenic highway designation from the State of California for the State Scenic Highway segments eligible for such designation.

Sierra South Regional Plan

The Sierra South Regional Plan deals specifically with the southeastern portion of Fresno County. This plan's boundaries are the Kings River Regional Plan on the northwest, the south fork of the Kings River on the north, Kings Canyon National Park on the east, Tulare County on the south, and the Friant-Kern Canal on the west. The Sierra South Regional Plan focuses on the three major concerns in the area: land use,

transportation, and environmental resources management (Fresno County 1984). Management objectives, policies, and standards are set for each of these three major concerns in this plan.

The following goals, objectives, and policies are applicable to the Project:

Sierra-South Area Goals

1. Preserve the County's natural resources in a manner consistent with the need to conserve the physical environment and beauty of the County.

Environmental Resources Management Element Objectives

a. Prohibit activities and uses that could endanger the environmental quality and natural character of the area.
b. Preserve the scenic quality of the land, especially that adjacent to designated scenic highways.

Scenic Resources Management Policies

a. The policies of Section 306-04 (Scenic Resources) of the General Plan shall apply.

3.1.4 Thresholds of Significance

The significance of potential aesthetic impacts was determined based upon CEQA Guidelines (CCR §§ 15000-15387) as they apply given the Project's specifics. Using these criteria, the Project would have a significant aesthetic or visual impact if it would cause:

- Substantial adverse effects on scenic vistas;
- Substantial damage to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantial degradation of the existing visual character or quality of a site and its surroundings; or
- Creation of a new source of substantial light and glare which would adversely affect day or nighttime views in the area.

3.1.5 Environmental Impacts, Mitigation Measures, and Significance Determinations

Impact 3.1-1: Effect on a Scenic Vista

The Project would be visible from viewsheds south and north of the site.

A scenic vista defined as an area that is designated, signed, and accessible to the public for the express purpose of viewing and sightseeing. There are no designated scenic vistas located within the viewshed of the Project site.

Level of Significance Before Mitigation: Less than Significant

Mitigation Measure: None Required

Impact 3.1-2: Effect to Visual Character of Site and Surroundings

The Project would alter site topography, remove existing vegetation, increase the level of vehicle activity, and introduce buildings and equipment at the site.

The Project site, consisting of the southern face of Jesse Morrow Mountain, provides views of undeveloped grassland hillsides characteristic of the Sierra Nevada range to surrounding receptors and vehicles traveling on SR 180. The Project site has not been developed for intensive agricultural production or other land uses (i.e., parks, homes), and is dominated by views of grazing/agricultural land and undeveloped land representative of the area.

Mining operations would use both berms and concurrent reclamation to minimize the visual changes to travelers on SR 180 and surrounding vicinity. As described in Section 2.4, mining would be completed in a series of 24 benches. During the start of each bench, the topsoil and overburden would be stripped and used to construct a 5- to 10-foot berm along the southern edge of the bench. The berm would serve the dual purpose of safety by preventing any equipment from rolling off the bench, and as a visual barrier of the mobile equipment operating during the excavation of the bench. The berm would be visible until the mining of the bench is completed, at which time the berm material would be used in concurrent reclamation of the bench. Simultaneously, a new bench would be started. This period of transition may require up to 3 months to complete. It is estimated that the life of each bench and associated berm at the

start of operations would be 2 to 3 years for the first several benches. Mining of the remaining benches would last approximately 7 years.

As mining of each bench is completed, concurrent reclamation of previously mined benches can move forward. Starting after completion of Bench 1 (of 24 benches), Bench 2 mining operations will begin as described above. During this transition period (approximately 3 months) the berm established on Bench 1 will be removed and distributed to the bench surface consistent with the Reclamation Plan. Following completion of Bench 2 and transitioning to Bench 3, the same steps would apply as described above. Upon completion of Bench 3 and transitioning to Bench 4, final reclamation of Bench 1 will begin. Final reclamation will include blasting of material to fill the bench and create an approximate 2:1 slope. Topsoil and overburden, as necessary, would be spread over the filled bench and planted with vegetation according to the Reclamation Plan. This procedure of bench mining and concurrent reclamation would continue until Bench 24, the proposed build-out of the Quarry in 100 years. Figure 2.0-10 provides a schematic representation of how the above mining and concurrent reclamation would work. Utilizing the method of mining and concurrent reclamation, no more than two completed benches and one active mining bench would be visible disturbed at any one time.

The Project will consist of 400 acres for mining and 40 acres for an aggregate processing facility. The processing would consist of a paved access road from SR 180, aggregate storage areas, maintenance and repair shop, fuel and oil storage tanks, asphalt plant, concrete batch plant, truck bins, rock crushers and sorters, parking areas and ramps, and a water reclamation pond. There would also be administrative offices and a control tower in the processing area. The administrative offices would have an approximate height of 35 feet, while the control tower and asphalt oil and cement silos would be approximately 50 feet high. As described in Section 2.4, the processing facility would be partially screened by a vegetated berm along the west, south, and east to reduce the visibility of processing facility equipment and features to travelers on SR 180 and surrounding receptors.

The haul road would zigzag across the southern side of the mountain from the processing plant, while the conveyor belt and maintenance road would be located on the right side of the haul road along Jesse Morrow Mountain (Figure 2.0-2).

To assess the visual impact of Project mining and reclamation operations as described above, computer simulations were prepared to depict the views and visual character of the Project from the five KOPs discussed in Section 3.1.2.2. The KOP locations and computer simulations are presented in Figures 3.1-3 through 3.1-7. The results of the computer simulations and the impact of Project operations to the selected KOP locations are discussed below.

Key Observation Point 1

KOP 1 is located on the south side of the Friant-Kern Canal and looking north towards the southern portion of the Project site. The processing plant and mining activities would be visible from this KOP as it would be in the foreground of the view.

Aesthetic changes to the Project site would involve contrast and change in color by the removal of vegetation on the quarry slopes. The concurrent site reclamation would help reduce the visibility of the Project site from surrounding areas. Once the appropriate amount of rock has been removed from a bench, the surface would be graded to a 2:1 ratio (horizontal to vertical) slope. The reclaimed slope, on average, would be less than the existing slope of Jesse Morrow Mountain. The removed topsoil would be replaced and spread over the slope, and then the slope would be revegetated with a grass seed mix approved by the County.

Key Observation Point 2

The Project's mining area and processing plant would not be visible from KOP 2. The Project at the buildout scenario would significantly alter the existing form and landscape by lowering the elevation of the Jesse Morrow Mountain and altering the form from its existing condition. Changes in the existing condition would be visible.

Key Observation Point 3

The Project's processing plant area would not be visible from KOP 3. However, the western ridge of the Quarry site would be highly visible and altered considerably by the Project build-out, as topography lines would be more prominent.

Key Observation Point 4

The Project's processing plant and mining area would not be visible from KOP 4. Visibility of the Project's structural elements is low and would not be a dominant feature in the foreground views. At the build-out scenario, there would be a moderate change in elevation between the two mountain peaks as visible from this KOP.

Key Observation Point 5

The Project's structural elements would not be visible from KOP 5 since the mining would occur on the south face of the mountain. There is approximately 324 acres on the north side of the mountain that would remain undeveloped and serve as a buffer zone. Residences in Tivy Valley have views of the peaks of Jesse Morrow Mountain. Therefore, changes in the elevation of Jesse Morrow Mountain would be visible from this KOP.

Impacts to the visual character of the Project site would result from all phases of the construction process. Although the vegetative berm will reduce the impact of the processing area, short-term construction impacts would allow views of the plant prior to establishing this berm and while vegetation matured to full height and width. Long-term impacts would be limited to the on-going mining activity of the current bench and preceding benches not yet subject to final reclamation treatment, described above.

The processing site and the majority of the mining area would be visible from KOP 1. Long-term impacts would result from the addition of the processing facility to the landscape. The Project's facilities would introduce new elements into the landscape that would alter the existing form, line, color, and texture of the existing landscape over the long term. The processing plant would not be visible from KOPs 2, 3, 4, and 5 as evidenced in the Figures 3.1-4 through 3.1-7.

Reclamation of the Project site would be completed such that visual impacts are minimized and upland cattle grazing would continue in non-mining areas and be re-established once the Project is complete. Although the year-to-year difference in elevation as a result of the mining activity is small, the cumulative difference between the existing condition and ultimate buildout is a significant alteration in the landscape and terrain. This is considered significant.

Level of Significance Before Mitigation: Significant

Mitigation Measures: Mitigation Measure 3.1-1

a. *The Applicant shall submit to the Fresno County Planning Department for approval a landscaping plan for the berm surrounding the west, south, and east portions of the processing plant area consistent with the reclamation plan and section 858 of the County Zoning Ordinance;*
b. *The Applicant shall submit an appropriate grazing seed mix for the revegetation of the Project site to the County for approval prior to reclamation of Bench 1.*
c. *When each bench is created, a berm shall be constructed along the southern leading edge or original topography of the mining area by using overburden or other surface materials to reduce the line of site observations of the mining operations from SR 180 and other lower elevations with views to the site.*
d. *Buildings shall be painted earthtone colors to fit into the landscape.*

Level of Significance After Mitigation: Significant and Unavoidable

Impact 3.1-3: Project's Effects on Scenic Resources for a State Scenic Highway

The Project would alter natural features and scenic qualities near SR 180, a County-designated scenic roadway.

The Project is adjacent to and north of SR 180, an eligible state scenic highway and a Fresno County Designated Scenic Roadway. An application to officially designate SR 180 adjacent to the Project site was filed with Caltrans and is in process. Fresno County Designated Scenic Highways are selected based on unique or outstanding scenic quality or because they provide access to regionally significant scenic recreational areas. As provided in Section 3.1.3.2, the County General Plan has outlined goals and policies to limit the visual impact of development along County designated scenic roadways, including limiting the visibility of proposed transmission lines, towers, and signs (billboards are prohibited) and designing developments to blend into the natural landscape and minimize visual disturbance to vegetation and topography (General Plan Policy OS-L.3).

Section 2.4 and Impact 3.1-2, above, provide a description of mining and reclamation practices and site design intended to minimize the visibility of

mining and processing operations to travelers on SR 180 and views from the surrounding vicinity. Figure 2.0-10 provides a schematic representation of how mining and concurrent reclamation would work.

Utilizing the method of mining and concurrent reclamation, no more than two completed benches and one active mining bench would be visible disturbed at any one time. The conveyor system and haul road would be visible during the entire operation; however, as the benches descend in elevation, the conveyor belt and haul road would become proportionally shorter. In addition, these Project elements are relatively small in scale compared to Jesse Morrow Mountain, minimizing their visual impact as to Jesse Morrow Mountain as a whole. The berm surrounding the west, south, and east portions of the processing facility would partially screen the area to travelers on SR 180, but would be visible during berm construction, maturation of planted vegetation, and would be partially visible permanently.

The Project design measures summarized above and in the detailed descriptions provided in Section 2.4 and Impact 3.1-2, above, would help reduce visual impacts to travelers on SR 180. Although SR 180 is not a state scenic highway, it is a County-designated scenic highway; as a result, the impacts to the scenic quality along SR 180 from the Project's operations would remain significant absent mitigation.

Level of Significance Before Mitigation: Potentially Significant

Mitigation Measures: See Mitigation Measure 3.1-1a through 3.1-1d.

Level of Significance After Mitigation: Less than Significant

Impact 3.1-4: Introduction of Light or Glare

Project operations could introduce nighttime lighting for quarry or plant site operations. Such nighttime lighting or glare from reflective surfaces may affect views.

As discussed in Section 2.5.2, mining and quarry operations would occur from 7:00 a.m. to 7:00 p.m. in the summer and 7:00 a.m. to 5:00 p.m. in the winter months. Ancillary activities including and the ready mix plant and asphalt batch plant would begin operation as early as 3:00 a.m. Additional plant operations would occur at various times as outlined in Table 2.0-4. In addition, though

rarely, nighttime operations could occur in response to Caltrans road construction projects or emergency situations. Both operation of ancillary plant facilities and potential nighttime operations would cause new sources of light and glare as a result of operations after sunset. Glare from nighttime lighting can be hazardous to drivers and an annoyance to nearby residences by reducing the quality of nighttime views in a rural setting. Nighttime lighting can also cause skyglow, defined as a glow that extends beyond the light source. Skyglow can reduce views of the nighttime sky. While new lighting would be introduced and the resulting impacts would be adverse, the Project's processing plant area would be set back approximately 800 feet from SR 180, which could reduce any potential light and glare impacts from nighttime operations to drivers on SR 180. However, even with the setback, impacts from light and glare are considered potentially significant.

Level of Significance Before Mitigation: Potentially Significant

Mitigation Measures: Mitigation Measure 3.1-2

a. *Night lighting on the property shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties.*
b. *The Applicant shall submit a lighting plan to the County Planning Department for approval prior to construction of the processing facility that will identify the location of lights, how they will be aimed, and types of shielding that will be utilized such that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized.*
c. *Nighttime lighting on the Project site shall be limited to areas required for the safety of project personnel and the public.*
d. *The Project's fencing shall be constructed of non-reflective material, treated, or painted to reduce visual impacts.*
e. *Non-reflective surfaces shall be used for the processing plant equipment and structures to minimize glare from these facilities.*

Level of Significance After Mitigation: Less than Significant

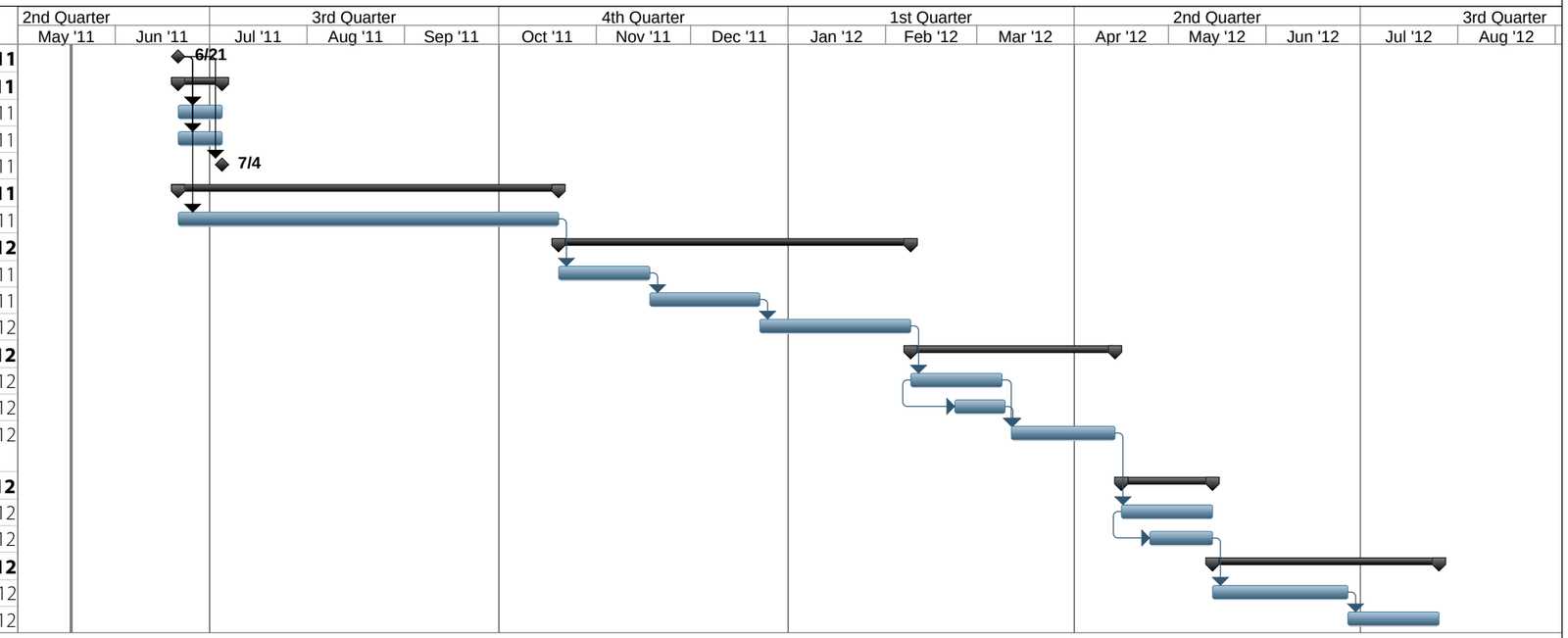
APPENDIX E

LAS PILITAS QUARRY PRELIMINARY SCHEDULE

APPENDIX E - LAS PILITAS QUARRY EIR

PRELIMINARY SCHEDULE

Project Tasks	Start	Finish
NOTICE TO PROCEED	**Tue 6/21/11**	**Tue 6/21/11**
PROJECT DESCRIPTION AND EIR OUTLINE	**Tue 6/21/11**	**Mon 7/4/11**
a. Prepare Draft Project Description	Tue 6/21/11	Mon 7/4/11
b. Prepare EIR Outline	Tue 6/21/11	Mon 7/4/11
*Kick-Off Meeting	Mon 7/4/11	Mon 7/4/11
ADMINISTRATIVE DRAFT EIR	**Tue 6/21/11**	**Wed 10/19/11**
a. Prepare Administrative Draft EIR	Tue 6/21/11	Wed 10/19/11
PREPARE DRAFT EIR	**Thu 10/20/11**	**Wed 2/8/12**
a. County Review of Administrative Draft EIR	Thu 10/20/11	Thu 11/17/11
b. Modify Based on County Comments	Fri 11/18/11	Thu 12/22/11
c. Public Review of Draft EIR	Fri 12/23/11	Wed 2/8/12
ADMINISTRATIVE FINAL EIR	**Thu 2/9/12**	**Fri 4/13/12**
a. Prepare Administrative Final EIR	Thu 2/9/12	Thu 3/8/12
b. Prepare Administrative Draft MMRP	Thu 2/23/12	Fri 3/9/12
c. County Review of Administrative Final EIR and Administrative MMRP	Mon 3/12/12	Fri 4/13/12
FINAL EIR	**Mon 4/16/12**	**Mon 5/14/12**
a. Prepare Final EIR	Mon 4/16/12	Mon 5/14/12
b. Prepare Findings	Wed 4/25/12	Mon 5/14/12
PUBLIC HEARINGS	**Tue 5/15/12**	**Wed 7/25/12**
a. Planning Commission Hearings	Tue 5/15/12	Tue 6/26/12
b. Board of Supervisors	Wed 6/27/12	Wed 7/25/12



LAS PILITAS QUARRY EIR
MAY 2011

Main Task Summary: Subtask Summary: Meetings:

APPENDIX F

COST ESTIMATE

LAS PILITAS QUARRY PROJECT EIR

COST ESTIMATE

TASK AND SUBTASK	COST CATEGORY	Principal/ Project Director $195/hr (hrs)	Project Manager/ Sr. Planner $175/hr (hrs)	Technical Staff $95/hr (hrs)	Support Staff $85/hr (hrs)	LABOR SUBTOTAL Hours	LABOR SUBTOTAL Costs	EXPENSES Direct Expenses [3] ($)	EXPENSES Subcontractors ($)	TOTAL ESTIMATED COSTS ($)
TASK 1:	**PROJECT DESCRIPTION AND EIR OUTLINE**									
1.1	Prepare Draft Project Description	28	12	12	16	68	$10,060	$500		$10,560
1.2	Prepare EIR Outline and Style Guide	4	4		8	16	$2,160	$110		$2,270
	TASK 1 SUBTOTAL	**32**	**16**	**12**	**24**	**84**	**$12,220**	**$610**	**$0**	**$12,830**
TASK 2:	**PREPARE ADMINISTRATIVE DRAFT EIR [1]**									
2.1	Introduction and Summary	2	4	2	8	16	$1,960	$100		$2,060
2.2	Finalize Project Description	8	8	10	6	32	$4,420	$220		$4,640
2.3	Aesthetics	8	16	32	8	64	$8,080	$400		$8,480
2.4	Agricultural Resources	6	4	2	4	16	$2,400	$120		$2,520
2.5	Air Quality	6	4	4	4	18	$2,590	$130	$28,000	$30,720
2.6	Biological Resources	8	16	8	8	40	$5,800	$290	$10,475	$16,565
2.7	Cultural Resources	4	4	2	8	18	$2,350	$120	$1,758	$4,228
2.8	Geology and Soils	4	8	4	4	20	$2,900	$150	$20,000	$23,050
2.9	Hazards and Hazardous Materials	4	8	2	4	18	$2,710	$140		$2,850
2.10	Land Use	18	12	4	4	38	$6,330	$320		$6,650
2.11	Noise	12	8	4	4	28	$4,460	$220	$3,000	$7,680
2.12	Traffic and Circulation[2]	16	18	16	16	66	$9,150	$460	$22,400	$32,010
2.13	Water	6	6	6	6	24	$3,300	$170	$15,000	$18,470
2.14	Alternatives	16	8	4	8	36	$5,580	$280		$5,860
2.15	Other CEQA Sections	8	16	8	8	40	$5,800	$290		$6,090
2.16	Print and Assemble Administrative Draft EIR (5 copies)	0	4	4	16	24	$2,440	$600		$3,040
	TASK 3 SUBTOTAL	**126**	**144**	**112**	**116**	**498**	**$70,270**	**$4,010**	**$100,633**	**$174,913**
TASK 3:	**PREPARE DRAFT EIR**									
3.1	Modify Based on Applicant and County Comments	24	36	4	16	80	$12,720	$640		$13,360
3.2	Print and Assemble Document (45 copies)	4	8	8	32	52	$5,660	$3,100		$8,760
	TASK 3 SUBTOTAL	**28**	**44**	**12**	**48**	**132**	**$18,380**	**$3,740**	**$0**	**$22,120**
									DRAFT EIR SUBTOTAL	**$209,863**
TASK 4:	**PREPARE ADMINISTRATIVE FINAL EIR**									
4.1	Review/Prepare Responses to DEIR Comments	40	40	16	40	136	$19,720	$990		$20,710
4.2	Print and Assemble Administrative Final EIR (5 copies)		4	4	16	24	$2,440	$600		$3,040
	TASK 4 SUBTOTAL	**40**	**44**	**20**	**56**	**160**	**$22,160**	**$1,590**	**$0**	**$23,750**
TASK 5:	**PREPARE FINAL EIR**									
5.1	Review Comments and Incorporate Changes	16	24	8	32	80	$10,800	$540		$11,340
5.2	Print and Assemble Document (55 copies)		8	8	32	48	$4,880	$3,100		$7,980
	TASK 5 SUBTOTAL	**16**	**32**	**16**	**64**	**128**	**$15,680**	**$3,640**	**$0**	**$19,320**
TASK 6:	**MEETING ATTENDANCE, MANAGEMENT, AND COORDINATION [4]**									
6.1	Kick-Off Meeting	10	10			20	$3,700	$190		$3,890
6.2	Staff Meetings (5 meetings)	36	20			56	$10,520	$530		$11,050
6.3	Management and Coordination	40	40		24	104	$16,840	$840		$17,680
6.4	Public Hearings (Planning Commission/Board of Supervisors) (4 meetings)	40		8	32	80	$11,280	$560		$11,840
	TASK 6 SUBTOTAL	**126**	**70**	**8**	**56**	**260**	**$42,340**	**$2,120**	**$0**	**$44,460**
									FINAL EIR SUBTOTAL	**$87,530**
TASK 7:	**MITIGATION, MONITORING, AND REPORTING PROGRAM**									
7.1	Prepare Administrative Draft MMRP	4	8		16	28	$3,540	$180		$3,720
7.2	Prepare MMRP	4	4		4	12	$1,820	$90		$1,910
	TASK 7 SUBTOTAL	**8**	**12**	**0**	**20**	**40**	**$5,360**	**$270**	**$0**	**$5,630**
TASK 8:	**PREPARE FINDINGS [4]**									
8.1	Prepare Findings of Fact	16	16		18	50	$7,450	$370		$7,820
	TASK 8 SUBTOTAL	**16**	**16**	**0**	**18**	**50**	**$7,450**	**$370**	**$0**	**$7,820**
									FINDINGS AND HEARINGS SUBTOTAL	**$7,820**
						SUBTOTALS	**$193,860**	**$16,350**	**$100,633**	**$310,843**
									GRAND TOTAL	**$310,843**

[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.

BENCHMARK
RESOURCES

4990 Hillsdale Circle, Suite 400
El Dorado Hills, California 95762
P: 916.983.9193 | F: 916.983.9194

www.benchmarkresources.net