



PHILIP O. LOWE, P.E.
Senior Associate, Water and Earth Resources

ACADEMIC BACKGROUND

M.S. Watershed Management, University of Arizona, 1975
B.S. Wildlife Management, University of Arizona, 1973

REGISTRATIONS/CERTIFICATIONS

1988 Professional Engineer (Civil)/Arizona/21699
1996 Professional Engineer (Civil)/California/55258

PROFESSIONAL EXPERIENCE

Mr. Lowe is a senior engineer and project manager with 28 years experience in the hydrologic analysis of watersheds, water resources analysis, floodplain analysis, analysis and design of hydraulic structures, and channel erosion and sedimentation analysis. In addition to his engineering experience, Mr. Lowe is educated in wildlife ecology and watershed management. His responsibilities and experience include environmental permitting and environmental impact analysis under CEQA and NEPA. Typical projects managed by Mr. Lowe are in the following areas:

- Hydrologic analysis of watersheds
- Surface water hydraulic analysis
- Channel erosion and sedimentation analysis
- Design of flood control and erosion control structures
- Plan formulation and feasibility including benefit/cost analysis
- Environmental impact analysis
- US Army Corps of Engineers 404 Permitting
- Habitat restoration and enhancement.

Relevant project experience includes:

- **Hydrology Specialist, Sunrise Powerlink Transmission Line EIR.** Mr. Lowe prepared the water resources section of an EIR/EIS for the Sunrise Powerlink transmission line. This power transmission project would extend from the Imperial Valley to San Diego in California. Portions of the project and project alternatives would pass through the Cleveland National Forest and the Anza-Borrego State Park.
- **Hydrology Specialist, Devers/Palo Verde Transmission Line EIR.** Mr. Lowe prepared the water resources section of an EIR/EIS for the Devers/Palo Verde transmission line project extending from the Palo Verde Nuclear Power Plant in Arizona to San Bernardino, California. One route alternative evaluated passed through the San Bernardino National Forest near Palm Springs, California.
- **Littlerock Reservoir Sediment Transport Analysis, Angeles National Forest, California.** Mr. Lowe performed a sediment transport analysis for the Littlerock Reservoir in the Angeles National Forest near Palmdale, California for the purpose of evaluating environmental impacts associated with reservoir dredging. The analysis consisted of an assessment of hydrologic conditions, field survey of river and reservoir topography and sediment conditions, hydraulic analysis using HEC-RAS, and sediment transport analysis using the HEC-RAS sediment transport package. Mr. Lowe developed sediment dredging alternatives and evaluated potential upstream impacts from the alternatives using sediment transport analysis. The alternatives were evaluated and compared, and mitigation measures developed to avoid upstream impacts.

- **Littlerock Reservoir Slurry Analysis. Palmdale, California.** Mr. Lowe is project manager for a feasibility analysis of using a slurry dredging operation to excavate sediment from the Littlerock Reservoir. Accumulated sediments are compromising the water storage capacity. The study will determine the feasibility of using a dredge and slurry operation as an alternative to conventional trucking to excavate and transport up to 2,000,000 cubic yards of sediment a distance of approximately six miles.
- **Littlerock Reservoir Grade Control Design. Palmdale, California.** Mr. Lowe is project manager for final design of a grade-control structure to control adverse upstream effects of excavation of up to 2,000,000 cubic yards of sediment from the Littlerock Reservoir near Palmdale, California.
- **Staff Assessment for Cosumnes Power Plant, California Energy Commission.** Mr. Lowe prepared the surface water and soils analysis in the Soil and Water Resources sections of the Final Staff Assessment for the proposed Cosumnes Power Plant in Sacramento County.
- **Staff Assessment for Tracy Peaker Power Plant, California Energy Commission.** Mr. Lowe prepared the Soil and Water Resources section of the Final Staff Assessment for the proposed Tracy Peaker Power Plant near Tracy, California.
- **SONGS/Diablo Canyon Steam Generator Replacement Project Environmental Impact Report (EIR).** Mr. Lowe prepared the water resources analysis in preparation of an EIR for replacement of the steam generators at Southern California Edison's San Onofre Nuclear Generating Station near San Clemente in San Diego County, as well as for a similar EIR for the Diablo Canyon nuclear power plant near San Luis Obispo.
- **Viejo System Project Transmission Line EIR.** Mr. Lowe was responsible for preparation of an Initial Study under the California Environmental Quality Act (CEQA) for a 3.1-mile electrical transmission line to be located in southern Orange County, California.
- **Loop 303 Camelback Basins Candidate Assessment Report. Flood Control District of Maricopa County.** Mr. Lowe is project manager for a Candidate Assessment Report to update the hydrologic analysis and develop flood control alternatives to revise the Loop 303 Corridor/White Tanks Area Drainage Master plan in western Maricopa County, Arizona. The project involves hydrologic analysis using HEC-1 for the 65-square-mile watershed, and hydraulic analysis, development and evaluation of alternatives, stakeholder involvement, and development of a recommended plan for a flood-control project to be built in conjunction with the proposed Loop 303 freeway.
- **Durango Regional Conveyance Channel Master Plan. Flood Control District of Maricopa County.** Mr. Lowe was project manager for hydrologic and hydraulic analysis, including alternatives analysis and conceptual master plan of drainage for the Durango Regional Conveyance Channel in Phoenix and Avondale, Maricopa County, Arizona. The analysis included development of discharges along the drainage channel for a range of existing and improved scenarios, preparing a conceptual plan for development drainage in the event the channel is not constructed, developing a range of drainage master plan alternatives with cost estimates, and drainage master plan recommendation including 10% plans.
- **Sunland Channel Master Plan. Flood Control District of Maricopa County.** Mr. Lowe was project manager for a master plan of drainage for the Sunland Channel in Avondale, Maricopa County, Arizona. The analysis included hydrologic evaluation using HEC-1, development of master plan alternatives with cost estimates, coordination with stakeholders, preparing a conceptual plan for development drainage in the event the channel is not constructed, and preparing a recommended plan with cost estimate and 10% plans.
- **Los Angeles Unified School District (LAUSD) Program Environmental Impact Report for New School Construction.** Mr. Lowe prepared the water resources section for a program EIR for a new school construction program for the Los Angeles Unified School District. The purpose of the Program

EIR was to establish a consistent process for CEQA review of future LAUSD projects proposed in the New School Construction program. The purpose of the program was to provide 200,000 new classroom seats in order to accommodate anticipated enrollment growth.

- **Ranchos Soldados Drainage Report, Tucson, Arizona.** Mr. Lowe was responsible for the preparation of a drainage report for a 160-acre residential development in eastern Tucson, Arizona. The analysis included hydrologic analysis using the Pima County hydrology method, floodplain delineation for five watercourses, building setback analysis, 404 jurisdictional delineation, hydraulic design of proposed roadway culvert, scour analysis for utilities and roadway crossings, and preparation of a drainage report describing existing and post-development conditions.
- **City of Phoenix Drainage Improvements.** Mr. Lowe was project manager for alternatives analysis, plan recommendation, and 30% plans for drainage improvements at a site within the City of Phoenix for the purpose of eliminating ponding as a means of mosquito control. The project, in an established drainageway, involved hydrologic and hydraulic analysis, development of innovative solutions for developing positive drainage in difficult situations, cost estimating, evaluation of alternatives, and development of preliminary plans.
- **Miguel Mission Transmission Line EIR.** Mr. Lowe prepared the hydrology and water resources section of this EIR being prepared on behalf of the California Public Utilities Commission evaluating a proposed 35-mile transmission line in San Mateo County. Work included preparation of an initial study prior to preparation of the EIR document.
- **Jefferson-Martin Transmission Line EIR.** Mr. Lowe prepared the hydrology and water resources section of this EIR being prepared on behalf of the California Public Utilities Commission evaluating a proposed 27-mile transmission line in San Mateo County.
- **Kinder Morgan Concord to Sacramento Pipeline EIR.** Mr. Lowe prepared the hydrology and water resources section of an EIR evaluating a proposed 70-mile petroleum products pipeline for the California State Lands Commission. Analysis includes consideration of potential for pipeline accidents to contaminate surface and groundwater in Contra Costa, Solano, and Yolo Counties.
- **Sulphur Creek Ecosystem Restoration, US Army Corps of Engineers (Corps), Los Angeles District.** Mr. Lowe was project manager responsible for preparing a Detailed Project Report for ecological restoration of approximately one half mile of Sulphur Creek in the City of Laguna Niguel, CA. The project involved hydrologic and hydraulic analysis of the creek, hydrogeomorphic analysis of stream functional capacity, and development of a plan to restore stream functional capacity lost through urban development and encroachment.
- **Wood Canyon Ecosystem Restoration, Corps, Los Angeles District.** Mr. Lowe was responsible for a Detailed Project Report for riparian restoration of Wood Canyon Creek in Orange County, CA. The project involved hydrogeomorphic evaluation of stream functional capacity, and design of restoration features to increase functional capacity.
- **Agua Fria Ecosystem Restoration, Corps, Los Angeles District.** Mr. Lowe prepared the preliminary hydrologic and hydraulic analysis for the Agua Fria ecosystem restoration project in Maricopa County, Arizona.
- **Cache Creek Environmental Impact Report, Yolo County, CA.** Mr. Lowe prepared the hydrologic impact analysis for the Cache Creek Resource Management Plan environmental impact report.
- **Hydrologic Analysis for the Pacific Pipeline EIS/SEIR, Kern and Los Angeles Counties.** As a subconsultant to Aspen and on behalf of the CPUC, Mr. Lowe was responsible for preparation of the hydrologic analysis section in support of an EIR/EIS under CEQA and NEPA for a 58-mile oil pipeline

route originating in Kern County and terminating in Santa Clarita. The pipeline crosses 62 watercourses, including 24 that drain directly into water supply reservoirs. Mr. Lowe evaluated baseline conditions and potential groundwater, water quality, stream hydrology, hydraulic, and sediment transport impacts for each crossing of the proposed and alternate routes.

- **Flood Control Studies for Arizona Communities, US Army Corps of Engineers.** Mr. Lowe was responsible for preparation of 43 US Army Corps of Engineers Continuing Authorities Program flood control studies for communities in ten Arizona counties. The purpose of the studies was to make determinations regarding potential Federal interest in flood and erosion control projects at the earliest possible stage of Federal investigation. The project involved (1) data collection; (2) a field investigation; (3) description of the flood or erosion problem and problem history; (4) hydrologic and hydraulic evaluation; (5) assessment of flood-related damages, (6) development of preliminary flood control and erosion-control alternatives; (7) estimate of benefits and costs; and (8) preliminary environmental evaluation.
- **Los Angeles River Alternatives Study (LARAS).** Mr. Lowe was project manager for the LARAS study initiated by Los Angeles County to investigate alternatives to the US Army Corps of Engineers Los Angeles County Drainage Area feasibility plan for flood protection along the lower Los Angeles River in Los Angeles, CA. The LARAS Study conducted by Mr. Lowe involved engineering and environmental feasibility investigations of channel widening, use of existing sand and gravel mines as detention basins, re-operation of Whittier Narrows, Santa Fe and other reservoirs, raising Whittier Narrows Dam, watershed management solutions, detention in groundwater spreading basins, habitat restoration, water supply, and recreation.
- **Gila River Indian Community Planning Assistance, US Army Corps of Engineers.** Mr. Lowe developed and directed a study to develop flood control and erosion control strategies for the Gila River Indian Community near Blackwater, Arizona. The study made an evaluation of Gila River hydrology, hydraulics, floodplain limits and erosion potential. The flooding potential was evaluated using a two-dimensional flow model adapted to evaluating flood conditions for a range of discharges on the wide, braided floodplain.
- **Pacific Heights Environmental Impact Report for, Los Angeles County, CA.** Mr. Lowe was responsible for the preparation of an environmental impact report under CEQA for a 50-unit residential development on a 110-acre, designated significant ecological area in the community of Hacienda Heights, CA. EIR issue areas included biology, drainage, geology and soils, visual resources, traffic and access, land use and public services.
- **San Antonio Creek Hydraulic and Sediment Analysis, Vandenberg Air Force Base.** Severe accumulation of fine sediments in San Antonio Creek on Vandenberg Air Force Base resulted in loss of roadway access across the creek near the point where the creek enters the Pacific Ocean. Mr. Lowe was project manager responsible for a hydrologic, hydraulic and sediment transport analysis to determine sources and rate of sediment accumulation, and development of long-term crossing solutions.
- **Mission Zanja Flood Control Feasibility Study.** Mr. Lowe was project manager for a Corps of Engineers feasibility-level hydraulic analysis and design for drainage improvements to reduce flooding along the Mission Zanja drainageway through the City of Redlands in San Bernardino County, CA. The project involved: (1) detailed hydraulic analysis of the existing Mission Zanja culvert through the downtown area; (2) development and hydraulic analysis of alternatives for an improved inlet to the culvert; (3) sediment-transport analysis of all alternatives; (4) assessment of economic benefits; (5) preliminary design and quantity estimates; and (6) preparation of concept design plans.
- **San Antonio Creek Reconnaissance Study, Upland, CA.** Mr. Lowe was Project Manager of a reconnaissance study of San Antonio Creek for the US Army Corps of Engineers. The study included a

detailed hydraulic capacity analysis, floodplain analysis, general inventory of and valuation of floodplain structures, determination of potential without-project flood control and water supply benefits and development of potential flood control and water supply solutions along an 11-mile, urbanized reach to the San Antonio Creek flood control channel in western San Bernardino County, CA.

- **San Juan Creek River Management Plan, City of San Juan Capistrano.** Mr. Lowe was project manager for reconnaissance-level development of a comprehensive plan for erosion control, flood reduction, riparian vegetation, and wetland restoration and comprehensive management of San Juan Creek in Orange County. Long-term aggregate mining, agricultural use, urban runoff, channelization and piece-meal bank protection have caused significant degradation of the channel system, impacting water quality, beach sand supplies, and the functions and values of the ecosystem. The river management plan includes the removal of large drop structures and levee impoundments to facilitate movement of fish, re-establishment of a riffle-pool sequence with frequent, gentle low drops protected by riprap, re-establishment of riparian and wetland vegetation between riffles, and construction of gabion, riprap or articulated revetment bank protection to protect existing infrastructure.
- **Lytle Creek Levee Design, San Bernardino County, CA.** Mr. Lowe was responsible for hydrologic, hydraulic and sediment transport analysis, concept design and 404 Permit application for a two-mile soil-cement levee to protect an 800-acre sand and gravel mine on the Lytle Creek alluvial fan in San Bernardino County, CA. Analysis included a HEC-2 evaluation of pre- and post-project conditions, an evaluation of alternative bank protection materials, a sediment transport analysis using a quasi-dynamic sediment routing model, scour analyses, and evaluation of expected long-term changes in channel bed profile. The levee was constructed of soil cement at a substantial cost saving in comparison to traditional bank protection materials. As part of this project Mr. Lowe prepared a 404-Permit application, with supporting report, documenting impacts to waters of the US and to threatened and endangered species, with mitigation.
- **San Antonio Parkway Bridge Scour Analysis.** Mr. Lowe conducted river geomorphology, hydraulic and sediment modeling studies to determine scour depths, long-term degradation and lateral erosion potential for design of a major bridge over San Juan Creek in Orange County, CA.
- **Hydrologic Analysis for the Pacific Pipeline Environmental Impact Report, Santa Barbara County, Ventura County and Los Angeles County, CA.** Mr. Lowe was responsible for the preparation of the hydrology section in support of an environmental impact report under CEQA for a 170-mile pipeline route originating from Gaviota, Santa Barbara County and terminating at Long Beach, Los Angeles County. The project included hydrologic, hydraulic, groundwater, water quality, erosion, and sedimentation evaluation for approximately 150 stream crossings. Mr. Lowe prepared the hydrology section of the EIR consisting of impacts analysis, cumulative impacts, mitigation measures, and the alternatives analysis.
- **Desert Greenbelt 404 Permit Application, Scottsdale, Arizona.** Mr. Lowe was project manager on obtaining the 404 Permit with the Corps of Engineers for the City of Scottsdale's Desert Greenbelt project. Desert Greenbelt is a five-mile flood-control channel on an alluvial fan in Scottsdale, Arizona.
- **Project Manager, Gila River Riparian Restoration.** Mr. Lowe was project manager for preparation of a reconnaissance report for habitat restoration along the Gila River between Painted Rock Dam and the Colorado River in Maricopa and Yuma Counties, Arizona. The Gila River riparian area, formerly a lush habitat of cottonwood, willow, mesquite and marsh habitats prior to the modern era, has been severely degraded by farming, the construction of dams upstream, and the intrusion of the invasive salt cedar which is favored by the hydrologic regime formed by the dams.
- **Yellowstone Pipeline Environmental Impact Statement Hydrologic Analysis.** Mr. Lowe was responsible for preparation of the hydrologic and hydraulic analysis in support of the Yellowstone

Pipeline Environmental Impact Statement under NEPA for the Lolo National Forest in Montana. The 10-inch pipeline carries gasoline, diesel, and jet fuel between Missoula, Montana, and Cataldo, Idaho. Six alternative routes totaling approximately 300 miles in length are being investigated in detail. Mr. Lowe was responsible for evaluating potential hydrologic, hydraulic, sediment, groundwater, and water quality impacts along each alternative and at each stream crossing. Secondary impacts such as oil spills, rupture, or exposure of pipe through erosion or other impacts related to the stream are also evaluated. He assessed the severity of potential impacts, developing mitigation measures and prepared a report consistent with the format and guidelines required by NEPA.

- **Crude Oil Pipeline Investigations and Hydraulic and Hydrologic Analyses of Oil Spill Sites for Counties in the States of Missouri, Kansas, and Texas.** Mr. Lowe was project manager for an evaluation of oil spills from a network of hundreds of four- to eighteen-inch crude oil pipelines across the midwestern United States. Due to deterioration of the network, oil spills occurred over a three-state area, potentially impacting thousands of square miles of surface waters. Mr. Lowe performed a hydrologic analysis by regional equation method, determined probable limits of the waters of the US, and evaluated the extent or potential environmental impacts associated with the oil spills. Approximately 130 oil spill sites spread over several counties in the states of Missouri, Kansas, and Texas were investigated.
- **San Vicente Reservoir Pipeline EIR Hydrologic Analysis.** Mr. Lowe was a task leader responsible for the hydrologic and hydraulic analysis in support of an environmental impact report for a 28-mile pipeline to carry tertiary treated wastewater from the North City Wastewater Treatment Plant to San Vicente Reservoir in San Diego County, CA. Two alternative routes were investigated. Mr. Lowe evaluated potential hydrologic, hydraulic, sediment, groundwater, and water quality impacts along each alternative and at each stream crossing. Secondary impacts related to rupture or exposure of pipe through erosion or other impacts stream were also evaluated. Mr. Lowe also assessed the severity of potential impacts, developed mitigation measures and prepared a report consistent with the format and guidelines required by the California Environmental Quality Act (CEQA).
- **Rio Salado Reconnaissance Study.** Mr. Lowe was Delivery Order Manager for the Rio Salado Reconnaissance Report for the United States Corps of Engineers. The report presented the results of an investigation into the feasibility of habitat restoration and riparian enhancement along 28 miles of the Salt River in Tempe and Phoenix, Arizona. Alternatives investigated included construction of an inflatable dam for water impoundment and riparian enhancement in the Salt River at Tempe, mesquite forest and wetland enhancement in the Indian Bend Wash at Tempe, construction of a fisheries lake, habitat restoration and recreation enhancements along the Salt River in Phoenix, and use of treated wastewater for riparian enhancement at the confluence with the Gila River. Benefits and costs were estimated and presented in a comprehensive report.
- **Unnamed Wash Drainage Improvement, Laughlin, Nevada.** Mr. Lowe was responsible for revising the Unnamed Wash flood-control master plan for Clark County, Nevada. The Unnamed Wash, located at Laughlin, is an alluvial watershed with an undersized flood-control channel and a history of severe flooding damage. The project included hydrologic, hydraulic and sediment-transport evaluation of existing and proposed conditions, evaluation of alternatives, concept design, preparation of information for an assessment district, final design, and application for permits, including a US Army Corps of Engineers 404 Permit. Features of the revised Master Plan included a soil-cement entrance transition, soil-cement channels with grade-control structures, a baffle-chute drop structure, and a sediment basin to collect transported sediments prior to entry into the Colorado River.
- **North Scottsdale Flood Control Reconnaissance Study.** Mr. Lowe was project manager on preparation of a US Army Corps of Engineers reconnaissance report for flood protection in the North Scottsdale area of Maricopa County, Arizona.

- **Plunge Creek Levee Design, San Bernardino County, CA.** Mr. Lowe was responsible for hydrologic, hydraulic and sediment transport analysis, concept design and 404 Permit application for a 1.3-mile, soil-cement levee to protect an existing 860-acre sand and gravel mine on the Plunge Creek alluvial fan in San Bernardino County, CA. Analysis included a HEC-2 evaluation of pre- and post-project conditions, an evaluation of alternative bank protection materials, a sediment transport analysis, scour analyses, and evaluation of expected long-term changes in channel bed profile. Mr. Lowe developed a levee concept design, with supporting report, for use in preparation of an environmental impact report for the project. As part of this project Mr. Lowe prepared a 404-Permit application, with supporting report.
- **City of Tucson Drainage Standards Manual, Tucson, Arizona.** Mr. Lowe assisted in the preparation of a comprehensive drainage standards manual for the City of Tucson, Arizona. The manual included hydrologic procedures, methods of hydraulic and floodplain analysis and design procedures. Mr. Lowe had full responsibility for developing and writing the sections on storm drain design, open channel design, and erosion and sedimentation.
- **Project Manager, Arroyo Chico and Alamo Wash Basin Management Plans, Tucson, AZ.** Mr. Lowe was responsible for development of the Arroyo Chico and Alamo Wash Basin Management Plans in Tucson. The Arroyo Chico and Alamo Wash originate in and drain through urban areas of the City of Tucson. They are both short-duration, high-flood-peak watersheds. The basin management plan projects included hydrologic and hydraulic analysis of existing conditions, floodplain mapping, evaluation of potential flood damage, development of flood-control alternatives, detention routing, cost estimates, economic analysis, and development of a preliminary capital improvement program for the City of Tucson. These projects included using the Corps HEC-1 and HEC-2 programs, floodplain mapping, identification of flood hazard areas and evaluation of potential economic risk of flooding.
- **Emergency Response to 1993 Mississippi River Floods, US Army Corps of Engineers.** Assisted in mobilization of project team to St. Louis, Missouri, area within 36 hours from the notice to proceed with the project. Located, posted and documented high water marks for the summer 1993 flooding along the Mississippi River, Meremac Creek and River Des Peres, near St. Louis, Missouri. The 1993 flood elevations were determined in order to guide reconstruction of the floodplain areas in a manner that would optimize opportunities for hazard mitigation. A computerized data base retrieval system was developed for management of the high water mark information. Reviewed the accuracy of existing floodplain maps of the disaster area and its vicinity and compared them to the 1993 event.
- **Environmental Impact Report for a Sand and Gravel Mine, Riverside County, CA.** Mr. Lowe was responsible for preparation of an environmental impact report under CEQA for a 190-acre sand and gravel mine in the Temescal Wash of western Riverside County. Environmental issues included erosion and sedimentation, floodplain impacts, transportation and circulation, geotechnical impacts, visual impacts, vegetation, wildlife, noise, endangered species, air quality, water quality, cultural resources and public safety.
- **Reclamation Plan for Dawson Canyon Mine.** Mr. Lowe prepared a reclamation plan for a sand and gravel mine in the Temescal Wash at Dawson Canyon in Riverside County, CA. Reclamation included planting of native vegetation, screening and installation of soil cement drop structures to control headcutting in the Temescal Wash.
- **Laughlin Bay Boat Lagoon and Wetland Enhancement, Laughlin, NV.** Mr. Lowe was responsible for the design and US Army Corps of Engineers 404 Permit application for a boat lagoon and wetland enhancement project in Laughlin Bay at Laughlin, Nevada. The project included analysis of Colorado River and tributary hydrology, hydraulic analysis of the existing bay, design of a boat lagoon that would also serve as flood protection for the bay, and preparation of a wetland mitigation program acceptable to the Army Corps of Engineers, the United States Environmental Protection Agency, the United States Fish

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and Wildlife Service, the Nevada Department of Wildlife and the Nevada Department of Environmental Protection.

- **Environmental Constraints Analysis for a Residential Development in Apple Valley, CA.** Mr. Lowe was responsible for preparation of an environmental constraints analysis for a proposed 1,100-acre development project in the Apple Valley area of San Bernardino County, CA. The constraints analysis was prepared as an Environmental Impact Report for developing acceptable land use criteria and mitigation measures for preliminary planning of the project. The analysis included an overall analysis of a surrounding 35,000-acre area for regional planning purposes. Environmental issues included endangered species (desert tortoise), flooding, earthquake faulting, traffic, land use, wildlife, vegetation, aesthetics, water supply, wastewater treatment, air quality, cultural resources, and paleontological resources.



JASON W. RICKS
Associate Environmental Scientist

ACADEMIC BACKGROUND

M.S. Environmental Public Health, Tulane University, New Orleans, LA, 1998
B.S. Biology, Alma College, Alma, MI, 1994

PROFESSIONAL EXPERIENCE

Mr. Ricks has over 10 years of professional environmental science and health and safety experience. He has spent the past five years working as a Project Manager and analyst for environmental reviews under CEQA and NEPA, working on over 30 infrastructure, public facility, and development projects. Mr. Ricks specializes in NEPA and CEQA project management and documentation with a particular focus in traffic and transportation, environmental contamination, and hydrology analysis. He also has four years of environmental site assessment experience.

Aspen Environmental Group

2006 to present

- **Tehachapi Renewable Transmission Project EIR/EIS.** Mr. Ricks is serving as the Issue Area Coordinator for physical science technical sections for a joint EIR/EIS for the California Public Utilities Commission (CPUC) and USDA Forest Service for an extensive series of transmission system upgrades spanning Kern, Los Angeles, and San Bernardino Counties. Mr. Ricks is managing the Physical Sciences team in analyzing potential impacts to air quality; noise; geology, soils, and paleontology; environmental contamination; hydrology; fire prevention and suppression; and traffic and transportation.
- **El Casco System Project EIR.** Mr. Ricks completed the Geology and Soils, Hazards and Hazardous Materials, Hydrology, and Terrorism analyses for the EIR being prepared for the CPUC. The Proposed Project would be located in a rapidly growing area of northern Riverside County, which includes the Cities of Beaumont, Banning, and Calimesa. A 115-kV subtransmission line begins at Banning Substation and extends westward toward the proposed El Casco Substation site within the existing Banning to Maraschino 115-kV subtransmission line and Maraschino-El Casco 115-kV subtransmission line ROWs.
- **Ventura River Bank Restoration Project IS/MND.** Mr. Ricks is the Project Manager preparing a MND for the Ventura County Watershed Protection District to address impacts associated with restoring the flood protection function of the Ventura River Bank. Mr. Ricks is responsible for all aspects of the project including content editing, client interaction, schedule maintenance, staff coordination, alternatives analysis, and budget tracking.
- **LADWP Distribution Station #144 IS/MND.** Mr. Ricks is the Project Manager preparing a MND for the Los Angeles Department of Water and Power for a new electrical distribution station in downtown Los Angeles. Mr. Ricks is responsible for all aspects of the project including content editing, client interaction, schedule maintenance, staff coordination, alternatives analysis, and budget tracking.
- **Port of Los Angeles Channel Deepening Project, Supplemental EIS/EIR.** Mr. Ricks is the Deputy Project Manager preparing a joint Supplemental EIS/EIR for the US Army Corps of

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Engineers and the Port of Los Angeles to address impacts associated with providing additional disposal capacity to complete the Port's Channel Deepening Project. Mr. Ricks developed the methodology and approach to impact analysis for the SEIS/SEIR and is responsible for all aspects of the project including content editing, client interaction, schedule maintenance, staff coordination, alternatives analysis, and budget tracking.

- **Littlerock Reservoir Sediment Removal EIR/EIS.** Mr. Ricks conducted analysis and prepared the Geology, Hydrology, and Hazards sections of the joint EIR/EIS for the Littlerock Reservoir Sediment Removal EIR/EIS prepared for the Palmdale Water District and Angeles National Forest. This document was prepared to document the potential effects of constructing a grade control structure and excavating up to 540,000 cubic yards of sediment from Littlerock Reservoir in order to restore the water storage capabilities for beneficial use and prevent sediment loss of the upstream channel.
- **Cabrillo Port Liquefied Natural Gas (LNG) Deepwater Port, Ventura County, CA.** Under contract to the City of Oxnard, Aspen was tasked to review the Draft EIS/EIR for this the proposed construction and operation of an offshore floating storage and regasification unit (FSRU) that would be moored in Federal waters offshore of Ventura County. As proposed, liquefied natural gas (LNG) from the Pacific basin would be delivered by an LNG Carrier to and offloaded onto, the FSRU; re-gasified; and delivered onshore via two new 21.1-mile (33.8-kilometer), 24-inch (0.6-meter) diameter natural gas pipelines laid on the ocean floor. These pipelines would come onshore at Ormond Beach near Oxnard, California to connect through proposed new onshore pipelines to the existing Southern California Gas Company intrastate pipeline system to distribute natural gas throughout the Southern California region. Mr. Ricks reviewed the document for technical adequacy and assisted the City in preparing written comments for the following sections of the EIS/EIR: Ground Transportation and Marine Traffic.
- **Antelope Segments 2 and 3, 500-kV Transmission Project.** Mr. Ricks conducted analysis and prepared the Traffic section of the EIR for the California Public Utilities Commission (CPUC). This EIR was prepared for a 56.7-mile 500-kV transmission line proposed by Southern California Edison (SCE) to serve wind power projects in the Antelope Valley in Los Angeles County and the Tehachapi area in Kern County.
- **Antelope-Pardee 500-kV Transmission Project.** Mr. Ricks conducted analysis and prepared the Traffic section of the joint EIR/EIS for the California Public Utilities Commission (CPUC) and USDA Forest Service. This EIR/EIS was prepared for a 25.6-mile 500-kV transmission line proposed by Southern California Edison (SCE) to serve wind power projects in the Antelope Valley in Los Angeles County and the Tehachapi area in Kern County.
- **Sunrise Powerlink Project EIR/EIS.** Mr. Ricks devised the methodology for analysis of cumulative impacts of the 21 different alternatives to the Proposed Project. This methodology provided comprehensive analysis of potential cumulative impacts while realizing efficiencies to avoid redundancy in analyzing impacts that consisted of short reroutes of portions of the overall 150-mile linear corridor project. He also prepared programmatic impact analysis for a solar thermal power plant and solar photovoltaic project as part of the non-wires alternative to the Proposed Project.
- **Newhall Ranch Specific Plan CEQA Consultation Services.** Under contract to the California Department of Fish and Game (CDFG), Mr. Ricks is assisting the CDFG and Corps of Engineers in the preparation of an EIR/EIS for a master Streambed Alteration Agreement, Section 404 Permit, and Section 2081 Take Permit (for the San Fernando Valley Spineflower) for the Newhall Ranch Specific Plan. Mr. Ricks is providing expert technical review services for the following issue areas: hazards and hazardous materials, visual resources, public utilities, socioeconomics, and environmental justice.

- **Sunset Substation and Transmission and Distribution Project CEQA Documentation, Banning, CA.** Mr. Ricks conducted analysis and prepared the mineral resources, geology and soils, hazards and hazardous materials, and hydrological sections for an Initial Study for the City of Banning. The City proposes to construct the Sunset Substation and supporting 33-kilovolt (kV) transmission line that would interconnect with the City's existing distribution system. The purpose of this new substation and transmission is to relieve the existing overloads that are occurring within the City's electric system and to accommodate projected growth in the City.
- **California Energy Commission (CEC), Technical Assistance in Application for Certification Review.** In response to California's power shortage, Aspen is assisting the CEC in evaluating the environmental and engineering aspects of new power plant applications throughout the State. As part of this effort, Mr. Ricks is serving as a technical specialist for traffic and transportation for several power plant projects:
 - **Chevron Power Plant Replacement Project.** Mr. Ricks conducted analysis and prepared the traffic portion of the Initial Study for the Chevron Power Plant Replacement Project at the existing Chevron Refinery in Richmond, CA.
 - **Carrizo Energy Solar Farm.** Mr. Ricks is preparing the traffic and transportation portion of the Staff Assessment for a new solar thermal power plant in Luis Obispo County.
 - **Chula Vista Energy Upgrade Project.** Mr. Ricks is preparing the traffic and transportation portion of the Staff Assessment for upgrading and expanding an existing peaker plant.
 - **Humboldt Bay Repowering Project.** As technical senior, Mr. Ricks managed the analysis of the traffic portion of the Staff Assessment for replacement of a natural gas fired generator at the existing Humboldt Bay Power Plant.
 - **Ivanpah Solar Electric Generating System.** Mr. Ricks is preparing the traffic and transportation portion of the Staff Assessment for a new solar thermal power plant in west San Bernardino County.

PREVIOUS EXPERIENCE

Los Angeles Unified School District

2004 to 2006

As a CEQA Project Manager for the Los Angeles Unified School District (LAUSD), Mr. Ricks directed and oversaw the work of several teams of CEQA professionals to produce CEQA documentation for more than 12 new elementary and high school construction projects. He was responsible for evaluating proposals, directing and reviewing analysis of all CEQA documents, developing schedules, tracking and reporting project progress, and managing the budget for each project. He also organized and conducted all Scoping and Draft EIR community public meetings for each project.

Meredith and Associates

2002 to 2004

As an assistant Project Manager, Mr. Ricks: performed technical reviews of soil and groundwater investigations to support environmental litigation; developed Health and Safety Policy and Procedures for a local school district; and prepared Phase I environmental assessments.

Tetra Tech Inc.

2001 to 2002

As a Staff Scientist, Mr. Ricks: researched and wrote Phase I and Phase II environmental assessments, soil and ground water monitoring reports, and health and safety plans for environmental remediation projects; collected and analyzed quantitative soil and groundwater data; and coordinated, conducted, and supervised remediation fieldwork activities.

City of Wladyslawowo

1998 to 2000

As a U.S. Peace Corps Volunteer in Wladyslawowo, Poland, Mr. Ricks: managed a grant project to develop a community environmental education park; researched and wrote grant applications for municipal infrastructure projects; and taught environmental-content English language lessons to middle school and high school students.

J.R. Simplot

1995 to 1997

As a Microbiologist Mr. Ricks established and managed a quality assurance microbiology testing program for a food processing company and worked with sanitation staff to improve strategies to meet FDA and HACCP health and safety standards.

ADDITIONAL TRAINING AND COURSES

- Advanced CEQA Training, UCLA Extension, June 2007
- California Environmental Quality Act (CEQA) Compliance Workshop, January 2005
- 8-Hour Health and Safety Refresher Course, March 2002
- 24-Hour Hazardous Waste Operations Training, March 2001
- Project Management Training, Stare Pole, Poland, 1999



VIDA STRONG

Senior Environmental Engineer and Project Manager

ACADEMIC BACKGROUND

Master of Urban Planning, San Jose State University, 1991

B.S., Engineering, California Polytechnic State University, San Luis Obispo, 1987

PROFESSIONAL EXPERIENCE

Ms. Strong has extensive experience in environmental engineering and project management, with an emphasis in the application of CEQA and NEPA in analysis and resultant mitigation monitoring of controversial development projects. She has managed the mitigation monitoring, compliance, and reporting programs for numerous industrial projects on behalf of the permitting agencies. In addition, she has been involved in the management and preparation of environmental documents for numerous industrial projects, requiring the critical application of alternatives development and screening criteria, knowledge of a broad range of issue areas, and extensive local, State, and federal agency coordination. Prior to joining Aspen Environmental Group, Ms. Strong was an Energy Specialist for the Santa Barbara County Planning and Development Department's Energy Division, where she managed the permitting and environmental review of major oil and gas development projects and proposals, and oversaw the implementation of mitigation monitoring plans.

Aspen Environmental Group

1994 to present

Ms. Strong's project experience at Aspen includes the following:

- **Project Manager, Lompoc Wind Energy Project Final EIR.** Under contract to Santa Barbara County, Energy Division, Ms. Strong is currently managing the preparation of the Final EIR for the proposed Lompoc Wind Energy Project. This project involves the installation of 60 to 80 wind turbines and associated facilities including an approximately 8 mile 115kV power line, electrical collection and distribution lines, substation, meteorological towers, onsite access roads and road improvements, communication system, and operation and maintenance facility. The EIR focuses on the potential impacts associated with project construction and operation. Operational issues of concern include avian mortality and long-term visual impacts associated with project facilities within a rural environment.
- **Project Manager, PXP Tranquillon Ridge Development Project EIR.** Under contract to Santa Barbara County, Energy Division, Ms. Strong is currently managing the preparation of an EIR for the proposed PXP Tranquillon Ridge Development Project. This project involves extended reach drilling from Platform Irene in federal waters into the Tranquillon Ridge Field located in State waters. Oil emulsion and gas production would be transported from Platform Irene in existing pipelines to the Lompoc Oil and Gas Plant (LOGP). The EIR focuses on the potential impacts associated with the extended reach drilling activities and extension of life of Platform Irene, the existing pipelines, and LOGP. The development of an onshore drilling facility and associated pipelines is also being assessed as an alternative. Issue areas of concern include system safety/risk of upset, marine biology and water quality, fisheries, terrestrial biology, hydrological resources, cultural resources, air quality, land use, noise, and traffic.

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- **Project Manager, PG&E Delta DPA Capacity Increase Substation Project.** Under contract to the California Public Utilities Commission (CPUC), Ms. Strong is currently managing the mitigation monitoring, compliance, and reporting program for the PG&E Delta DPA Capacity Increase Substation Project. This project includes a proposed electric substation site, a new loop segment of an existing 230 kV transmission line, a temporary asphalt road, and a temporary bridge over Sand Creek in eastern Contra Costa County, within the limits of the City of Antioch, California. As Project Manager, Ms. Strong is responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting. Construction of this project began in September 2007.
- **Project Manager, SCE Riverway Substation Project.** Under contract to the California Public Utilities Commission (CPUC), Ms. Strong is currently managing the mitigation monitoring, compliance, and reporting program for the SCE Riverway Substation Project. This project involves the construction of a new 1.7-acre 66/12 kV low-profile substation with two 28 MVA transformers and six 12 kV distribution lines in the City of Visalia. The project also includes approximately 1,200 feet of underground 66 kV subtransmission lines, as well as new fiber optic cable and communication equipment to connect the substation to SCE's existing telecommunication system. . As Project Manager, Ms. Strong is responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting. Preliminary site preparation for this project began in October 2007.
- **Project Manager, Lodi Gas Kirby Hills Natural Gas Storage Facility Project.** Under contract to the California Public Utilities Commission (CPUC), Ms. Strong is currently managing the mitigation monitoring, compliance, and reporting program for Lodi Gas' natural gas storage project, Phases 1 and 2, in Solano County. Phase 1 construction has been completed and involved the installation of necessary piping and compression and metering facilities to utilize a depleted underground gas reservoir for natural gas storage. Phase 2 construction, which allows for additional well development and associated facility enhancements, is scheduled for Spring 2008. As Project Manager, Ms. Strong is responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Deputy Program Manager, PG&E Tri-Valley 2002 Capacity Increase Project.** Under Aspen's environmental services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for PG&E's 230kV Capacity Increase Project in the Cities of Pleasanton, Livermore, and Dublin, and Alameda County. Construction involved underground installation of the double-circuit 230 kV transmission line conduit and construction of a substation and several transition stations as three separate phases. The project rights-of-way for each of the project's three phases traverse diverse environments ranging from residential areas to rural grazing lands. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Delivery Order Manager (Project Manager), US Army Corps of Engineers Miscellaneous Environmental Services Contract.** Under Aspen's current two-year environmental services contract with the Corps, Ms. Strong has monitored mitigation implementation for construction of the following flood control improvement projects:
 - **Prado Basin and Santa Ana River Mainstem (Reach 9) Project, Riverside, San Bernardino, and Orange County.** Aspen is currently monitoring the construction of this extensive flood control effort. In addition, Aspen also monitors and maps the clearing of vegetation at Prado Basin and Reach 9, Phases I and II, of the river. Endangered species residing in the riparian forest, riparian scrub and coastal sage scrub habitat include the Santa Ana sucker, least Bell's vireo, willow flycatcher, and coastal California gnatcatcher. Aspen also prepared the Revegetation Plan for the Reach 9, Phase I, portion of the project and conducted

fisheries monitoring. Weekly and Quarterly Reports are prepared by Aspen to document monitoring, construction, and vegetation clearing activities.

- **Murrieta Creek Flood Control, Environmental Restoration and Recreation Project, Riverside County.** Aspen monitored the clearing, construction, and revegetation effort associated with this flood control effort. Reporting, mapping of cleared vegetation, and photo-documentation of pre- and post-construction conditions were tasks also conducted under this Delivery Order.
- **Program Manager, CDFG Region 3 Construction Monitoring and Permitting Program.** For construction projects permitted by the California Department of Fish & Game (CDFG), Region 3, Ms. Strong serves as Program Manager where she oversees the team of Environmental Monitors and Resource Specialists. Under this Program, on behalf of CDFG, the Aspen Team prepares Streambed Alteration Agreements (SBAA) and monitors SBAA condition implementation during construction. In addition, Ms. Strong prepares contractual materials and cost estimates. In addition to AT&T, Williams, MCI/Worldcom, and XO Communications fiber installations; and SoCal Gas, Clearlake Oaks Water District, and Pajaro Valley Water Management Agency pipeline replacement projects; recently completed projects include:
 - California Department of Parks and Recreation Hollister Hills Project, San Benito County
 - San Mateo County Public Works (3 Projects – Colma Creek Channel Improvements, Cupid ROW Canal Vegetation removal, and Colma Creek Flood Control Project work extension)
 - Arup/Brierley for SFPUC Test Bore Project, San Mateo County
 - San Mateo County Parks (2 Projects – Edgewood County Park pedestrian bridge & riparian restoration, and Wunderlich Bridge Replacement Project)
 - Republic Services Vasco Road Landfill Project
 - Midpeninsula Regional Open Space District Ridgetop Trail Construction Project
 - BKF Engineers for City of Burlingame Easton Creek Sanitary Sewer Rehabilitation Project
 - Santa Clara Valley Transit Authority Llagas Creek Flood Control Channel Project and State Route 152/156 Project
 - UTC Shingle Creek Sheet Pile Wall Repair Project, Santa Clara County
 - LFG Alambique Creek On-Site Bridge Replacement Project, Woodside
 - BF Consulting for City of Milpitas Abel Street Infrastructure Improvements Project/Channel Repair
 - City of Belmont East Laurel Creek Slope Stabilization Project.
 - Nektar Therapeutics Belmont Creek Vegetation Removal and Management Project.
 - The Santa Clara Valley Transportation Authority SR152-SR156 Project, SR152-SR-156 Box Culvert Project, and Freight Track Relocation and Berryessa Creek Improvement Project.
- **Project Manager, Monitoring, PG&E Jefferson-Martin 230 kV Transmission Line Project.** Under contract to CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for the PG&E Jefferson-Martin Project. This project involved the installation of a 27-mile 230 kV transmission line through scenic San Mateo County in the Highway 280 corridor, urban Colma and Daly City, and across San Bruno Mountain. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly and Monthly Reporting.
- **Project Manager, Monitoring, SDG&E Miguel-Mission 230 kV #2 Project.** Under contract to the California Public Utilities Commission (CPUC), Ms. Strong managed the mitigation monitoring, compliance, and reporting program for a new SDG&E 230 kV circuit within an existing transmission line right-of-way between Miguel and Mission substations in San Diego County. The project included installing a new 230 kV circuit on existing towers along the 35-mile right-of-way, as well as relocating 69 kV and 138 kV circuits on approximately 80 steel pole structures. In addition, a temporary 230 kV transmission line was installed and the Miguel Substation and Mission Substation were modified to accommodate the new 230 kV transmission circuit. As Project Manager, Ms.

Strong is responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.

- **Project Manager, Monitoring, SCE Viejo System Project.** Under contract to the CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for the SCE Viejo System Project on behalf of CPUC. This SCE project involved the installation of a 220/66/12 kV substation and 3.1-mile 66 kV subtransmission line in southern Orange County, California. The subtransmission line traverses residential and recreational areas in the City of Mission Viejo and the substation is located in a business park adjacent to a wilderness area in the City of Lake Forest. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Deputy Program Manager, PG&E Atlantic Del Mar Project.** Under Aspen's environmental services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for PG&E's Atlantic Del Mar Project in the Cities of Rocklin and Roseville. This approximate four-mile transmission line involved both underground and overhead construction. The project right-of-way traverses potential habitats for listed vernal species and areas containing historic resources. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Project Manager, Looking Glass (LGN) Metropolitan Area Network.** Under Aspen's fiber optic services contract with CPUC, Ms. Strong managed the Mitigation Implementation and Monitoring Plan for LGN's proposed service connections within the San Francisco Bay Area and Los Angeles Basin. As Project Manager, for each LGN service connection, Ms. Strong was responsible for Notice of Construction and Work Plan review, Notice to Proceed recommendations, the construction monitoring effort, and post-construction reporting.
- **Project Manager, AboveNet (formerly Metromedia) Fiber Network.** Under Aspen's fiber optic services contract with CPUC, Ms. Strong managed the mitigation monitoring of AboveNet's construction of service connections within the San Francisco Bay Area.
- **Deputy Program Manager, PG&E Northeast San Jose Transmission Reinforcement Project.** Under Aspen's environmental services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for PG&E's 230kV Reinforcement Project in the Cities of San Jose, Milpitas, and Fremont. Construction of the dual 230kV circuit involved underground construction, single-pole tower installation, and construction of the Los Esteros Substation. Given the proximity of the project to the Bay, sensitive biological resources were present, including the burrowing owl and wetland mitigation sites. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Project Manager, Williams Communications Sentry Marysville Project.** Under Aspen's fiber optic services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for Williams fiber optic installation project in Yuba and Butte Counties. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.
- **Deputy Program Manager, PG&E Line 401 Capacity Loops Project.** Under Aspen's environmental services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for PG&E's Capacity Loops Project in Modoc and Shasta County. This project was permitted under the PG&E/PGT Project constructed in the early 1990's and involved the installation of a natural gas pipeline within Modoc National Forest and rugged, private lands

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within Shasta County containing sensitive cultural and biological resources, respectively. Extensive timber harvesting was also conducted as part of the clearing effort for this project. Given the federal lands and sensitive resources present, numerous federal and State agencies were involved in the permitting of the project. Ms. Strong analyzed and prepared the recommendations for Notices to Proceed and Variance Requests, and maintained communications with CPUC and other interested agencies, including Weekly Report submittals.

- **Program Manager, Level 3 Fiber Optics Network Program:** Ms. Strong oversaw Aspen's work on this statewide CEQA compliance project under the direction of the California Public Utilities Commission (CPUC). Level 3 Communications installed a 2,000-mile fiber optic network throughout California. As Program Manager, she managed a team of up to six Environmental Monitors, conducted the analysis and prepared recommendations for CPUC regarding Notices to Proceed with construction and variance requests, and maintained communications with CPUC, affected agencies, other interested parties regarding the status of project construction and compliance.
- **SCE Valley-Auld Power Line Project Mitigation Monitoring Program, CPUC:** Ms. Strong served as Project Manager for the monitoring of this 11-mile long power line upgrade for compliance with the project's Mitigated Negative Declaration mitigation measures and compliance plans. Other tasks included review of pre-construction compliance materials, preparation of variance recommendations and monthly reports, and coordination with SCE and its subcontractors.
- **Alpine Natural Gas Project Mitigation Monitoring Program, CPUC.** Ms. Strong was the Project Manager for this monitoring and compliance project for construction of Phase I of a 27-mile natural gas pipeline and distribution system in a rural residential area of Calaveras County, under contract to the California Public Utilities Commission. Ms. Strong's responsibilities include management of environmental monitor(s) and coordination with lead agencies and pipeline owner/contractors.
- **Kinder Morgan Carson to Norwalk Pipeline Mitigation Monitoring, Compliance, and Reporting Program:** Ms. Strong served as Deputy Project Manager for this monitoring and compliance project for construction of a 14-mile products pipeline in southern California, under contract to the California Public Utilities Commission. She managed construction compliance issues, coordinated with the environmental manager for Kinder Morgan Energy Partners, and prepared monthly reports for the project's Internet web site.
- **Pacific Pipeline Mitigation Monitoring, Compliance, and Reporting Program.** Ms. Strong served as Deputy Program Manager for this monitoring and compliance project for construction of a 132-mile crude oil pipeline in southern California, which included the installation of a parallel fiber optic network, under contract to the California Public Utilities Commission and the Angeles National Forest. This pipeline was constructed by separate crews at seven pipeline sub-segments and eight stations. Her primary responsibilities on this program included estimation of budgetary and monitor requirements; coordination of technical reviews and decisions on applicant variance requests; securement and deployment of environmental monitors; and coordination with lead agencies and pipeline owner/contractors.
- **Alturas Transmission Line Project EIR/S.** Deputy Project Manager for the EIR/S on Sierra Pacific Power Company's Alturas Transmission Line Project. This EIR/S, completed for the California Public Utilities Commission and the US Bureau of Land Management in November 1995, addressed the impacts of a proposed 165-mile, 345 kV intertie between Alturas, California, and Reno, Nevada. It included consideration of numerous route alternatives in northeastern California and northwestern Nevada as well as other electric power transmission, generation and conservation alternatives. Ms. Strong's responsibilities included description of the proposed project and alternatives, characterization of project parameters for impact analysis, definition of controversial energy supply

and demand issues, coordination with electrical power transmission experts, assistance in management of team subcontractors, and document preparation and production coordination.

- **MacPherson Oil Project Integrated Risk Assessment, City of Hermosa Beach.** Ms. Strong served as Project Manager for the preparation of an Integrated Risk Assessment for the MacPherson Oil Project, under contract to the City of Hermosa Beach. Under this contract, she managed the critique of system safety studies completed for the project. As a result of the critique, an Integrated Risk Assessment was prepared to fully analyze the potential public safety impacts resulting from the project.
- **Delivery Order Manager (Project Manager), US Army Corps of Engineers Miscellaneous Environmental Services Contract.** For Aspen's two-year environmental services contract (1995-1997), Ms. Strong managed the following projects:
 - **Deep Draft Navigation Improvements Project Consistency Determination, Los Angeles Harbor.** Served as Delivery Order Manager for document to address design refinements to Stage 2 of the Port of Los Angeles Pier 400 Deep Draft Navigation Improvement (DDNI) project.
 - **Vandenberg AFB San Antonio Creek Bridges Project Alternative Analysis Report.** Ms. Strong served as Delivery Order Manager for the preparation of an Alternative Analysis Report on various alternatives (developed in conjunction with hydraulic engineering contractor) for the crossing of San Antonio Creek. Baseline conditions and the life expectancy of the existing crossing, El Rancho Road Bridge, due to erosion resulting from seasonal inundation by runoff, was also considered in the analysis. Crossing of San Antonio Creek by the Air Force is considered mission-critical for the transport of missiles to base launch sites.
 - **Upper Newport Bay Environmental Restoration Baseline Conditions Study.** Ms. Strong managed the preparation of a Baseline Conditions Report in support of a feasibility study on Environmental Restoration opportunities in Upper Newport Bay, City of Newport Beach, California. The Baseline Conditions Report was prepared to an EIS/R level of detail and format. The Report also presented the goals and objectives of restoration and available strategies for assessing overall ecosystem conditions (e.g., modified Habitat Evaluation Procedures). Interagency coordination in the form of interagency meeting attendance, and preparation and distribution of meeting materials was also conducted.
 - **US Food and Drug Administration Laboratory EIS/EIR.** Ms. Strong managed preparation of an EIS/R prepared for a proposed US Food and Drug Administration Mega-laboratory in Irvine, California. This EIS/R is was prepared under Aspen's US Army Corps of Engineers General Environmental Services Contract, and included the University of California, Irvine as the CEQA Responsible Agency. The document addressed a broad range of impacts, including biological and water resource impacts on the adjacent San Joaquin Freshwater Marsh Reserve, public health and safety impacts resulting from accidental release from the facility, loss of open space, and transportation impacts.
 - **Border Lighting, Fencing, and, Roadways Final EAs.** Delivery Order Manager for a variety of Environmental Assessments (EAs), including the installation of floodlights, two-tiered fencing, and roadways parallel to the US/Mexico border over a total distance of approximately eight miles.
 - **Sepulveda Armory EA.** Managed preparation of an Environmental Assessment for a proposed new National Guard Armory, Sepulveda Basin in Van Nuys, CA.
 - **INS San Clemente Checkpoint Lane Expansion Project EA.** Delivery Order Manager for the EA addressing the environmental concerns of noise, traffic, HTRW, and aesthetics resulting from the addition of a commuter lane.

Previous Employment

1987 to 1994

Ms. Strong was an Energy Specialist for the Santa Barbara County Planning and Development Department, Energy Division, Santa Barbara, CA (1991 to 1994). In this position, she managed various permitting and CEQA/NEPA related reviews, and Operation and Condition Compliance Monitoring. Her projects included:

- **Mobil Clearview.** Worked directly with Mobil Oil Co. on development of a project description to meet County application processing needs (environmental review, policy consistency determination, etc.) during the initial pre-application review. Representing the County as the Lead Agency for this complicated and controversial project, she:
 - Coordinated the environmental review needs of the various permitting agencies, including the County, State Lands Commission, California Coastal Commission, and US Army Corps of Engineers
 - Served as the primary media contact
 - Monitored State legislation on conversion of State leases to sanctuary status and UCSB purchase of project site.
- **Mobil Ellwood Oil and Gas Processing Plant/Marine Terminal.** Ms. Strong managed permitting and environmental review of proposed facility modifications and sites designated as legal nonconforming uses within recreational and residential zoning districts; she coordinated multi-agency review as required. She also monitored compliance with County permit conditions and worked with Mobil and various County agencies on plan updates (Emergency Response Plan, Fire Protection Plan).
- **Marine Tanker Transport Review.** Managed permitting and environmental review of offshore oil producers' request to tanker Point Arguello crude oil from Gaviota to Los Angeles, including:
 - Worked directly with SEIR/S consultant (Aspen) on completion of environmental document (certified Final SEIR/S) that required a major change to the project description after release of the Draft EIR/S.
 - Worked directly with the various permitting agencies (State Lands Commission, California Coastal Commission) on completion of environmental review, permitting needs, and appeal review.
 - Developed staff report, including staff recommendations, conditions, findings and background. Reviewed and analyzed crude oil transportation options (mode, route, destination) and economics.
 - Project work included interface with County Counsel, Board of Supervisors, and Chevron U.S.A.
- **Emergency Tankering Application Review.** Managed review and analysis of crude oil transportation options (mode, route, destinations) versus Local Coastal Program/Coastal Zoning Ordinance definitions of emergency, and regional and statewide needs. This project also required extensive interface with the County Counsel and news media.
- **Gas Re-Injection Feasibility Analysis.** In support of the Tri-Party Agreement between Chevron, US Minerals Management Service (MMS), and Santa Barbara County on the limitation of pipeline transport of sour gas, Ms. Strong provided consultation to Chevron on behalf of the County on study preparation. Issues addressed included reservoir modeling, system safety, economics, and environmental impacts and benefits. Ms. Strong also worked with MMS regarding Re-Injection Study development and compliance with the Tri-Party Agreement. Further, she monitored offshore producers' compliance with this agreement, including stipulations regarding hydrogen sulfide concentration, pressure operating limits for sour gas pipeline operation and maintenance, and agency reporting requirements.
- **Oil and Gas Processing Facility Permitting.** Ms. Strong monitored compliance with County permit conditions for Chevron's Pt. Arguello oil and gas processing facility. She coordinated the System Safety and Reliability Review Committee (including County Departments of Building and Safety, Environmental Health Services, Air Pollution Control District, and Office of Emergency Services) in their review of facility and operational modifications. She also worked with the California Regional Water Quality Control Board on produced water discharge, and managed the Environmental Quality Assurance Program field monitor.

From 1988 to 1991, Ms. Strong served as a Project Manager at **Coats Consulting** in Aptos, California, where she managed the environmental review division. She was responsible for EIR and Negative Declaration preparation for residential, commercial, and light industrial projects.

Ms. Strong also worked as a Marketing Engineer for **Zilog Corporation**, designer and manufacturer of microprocessors and peripherals, in Campbell, California, from 1987 to 1988. She monitored product line sales, costs, and profits, and presented product line financial status to management on a weekly basis. She was also involved in new product development and introduction.

HONORS AND AWARDS

- Cum Laude - B.S., Engineering
- Marketing Person of the Year - Zilog

SELECTED TECHNICAL REPORTS

M.U.P. Thesis - Fiscal Impact Analysis for Rancho San Benito: A Proposed New Town

AREAS OF EXPERTISE

- Mitigation Monitoring, Compliance, and Reporting
- CEQA/NEPA Analysis



Aspen Environmental Group

SUSAN S. WALKER

Senior Associate, Environmental Planning

ACADEMIC BACKGROUND

M.A., Applied Geography, The City University of New York, 1988

B.A., Physical Geography, University of Colorado at Boulder, 1983

PROFESSIONAL EXPERIENCE

Ms. Walker joined Aspen Environmental Group in 1999, and has over 18 years of experience in environmental consulting. Ms. Walker primarily functions as a Project Manager for both large- and small-scale multidisciplinary environmental review documents under the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). Ms. Walker additionally functions as a Principal Investigator and Issue Area Coordinator for land use and public policy analyses and related social science analyses. Ms. Walker also has expertise in regulatory permit acquisition, the development of permit compliance strategies, permit compliance implementation and tracking, agency coordination and relations, and, assistance with GIS planning and implementation. Ms. Walker's project-specific efforts are provided below.

Aspen Environmental Group

1999 to present

- **Port of Los Angeles Channel Deepening Project.** Ms. Walker is currently serving as the Issue Area Coordinator for social sciences, and as a senior technical analyst for a Supplemental Environmental Impact Statement/Environmental Impact Report (Supplemental EIS/EIR) addressing proposed channel deepening within the Port of Los Angeles. Ms. Walker is completing senior technical reviews of all resource/issue-specific analyses related to the social sciences, and is also functioning as either the principal analyst or as a co-analyst for the Supplemental EIS/EIR's land use, visual resources, recreation, socioeconomic and environmental justice analyses.
- **Sylmar to Pacific Ocean DC Electrode Replacement Project.** Ms. Walker is currently acting as the Project Manager for preparation of an Initial Study for replacement of the onshore, underground segment of a direct current (DC) electrode located in the vicinity of West Los Angeles, Santa Monica, and Pacific Palisades, California. Ms. Walker is responsible for overall coordination and management of Aspen's project team and its subcontractors, senior technical review of all resource/issue-specific analyses, oversight of document reproduction and distribution and development of a CEQA-related public property owner and agency distribution list, and, preparation of the Initial Study's Project Description, mandatory findings of significance, and land use and recreation analyses. Following completion of the Initial Study, Ms. Walker will manage completion of either a Mitigated Negative Declaration (MND) or Environmental Impact Report (EIR) for the project.
- **Lake Canyon Dam and Detention Basin.** Ms. Walker is currently serving as the Project Manager for a proposed flood control detention basin and dam. The project sponsor is the Ventura County Watershed Protection District (VCWPD), and its purpose is to protect areas of the City of Ventura from flood waters associated with a 100-year storm event. Ms. Walker is responsible for the management of all aspects of Aspen's efforts, including: completion, noticing, and distribution of the project's Initial Study, Draft EIR, Final EIR; coordination and facilitation of the project's public meetings, including the development and presentation of meeting materials, agendas and project

summaries; participation in the project's various environmental review hearings with decision makers; and, oversight of the project's regulatory permit acquisition efforts for impacts associated with jurisdictional surface waters.

- **Ormond Beach Habitat Restoration Feasibility Study.** Ms. Walker is currently acting as the Project Manager for preparation of a Wetlands Restoration Feasibility Study for more than 750 acres of land within the Oxnard Plain in Ventura County, California. The project includes: identifying restoration goals with the assistance of regional experts and the local stakeholders; assessing various opportunities and constraints in the area (biological, engineering, cultural, infrastructure, regulatory, land use, land availability, funding, soils and surface water contamination and remediation, water quality, geotechnical, socioeconomic, and recreation); developing and subsequently evaluating and ranking the final restoration alternatives identified by the project team; and, providing short-term and long-term recommendations to the State Coastal Conservancy (SCC) for implementation. The SCC will use the results and recommendations of this study to make decisions on the nature and timing of future restoration activities.
- **Tehachapi Renewable Transmission Project.** Ms. Walker is currently acting as the land use analyst and Issue Area Coordinator for the social sciences for the Tehachapi Renewable Transmission Project's EIR/EIS, and its associated resource/issue-specific Specialist Reports. The project involves a suite of new, replacement and modified transmission lines extending from a planned substation located southeast of the City of Tehachapi, Kern County, to a substation located in the City of Ontario, San Bernardino County; the project also involves one new and several expanded substations. Ms. Walker is responsible for the management, coordination and senior technical oversight of seven technical teams, including the analysts for cultural resources, visual resources, socioeconomic, agricultural resources, recreation and wilderness, environmental justice, and public utilities. She is additionally responsible for preparation of the EIR/EIS's land use analysis and Land Use Specialist Report. Her efforts have also included review of the Proponent's Environmental Assessment (PEA) for technical adequacy, the preparation of data adequacy comments and data requests, and assistance with development of the technical approach for the analysis of cumulative impacts.
- **Redmont Pump Station Replacement Project.** Ms. Walker is currently serving as the Project Manager for an Initial Study and Mitigated Negative Declaration (IS/MND) for a proposed water supply pump station replacement project in the community of Sunland, which is located in the City of Los Angeles, California. Ms. Walker is responsible for preparation of the IS/MND's Project Description and Mitigation Monitoring Plan, completion of the IS/MND's land use and planning, recreation, aesthetics, and mandatory findings of significance, management of Aspen's project team, including its subcontractors, senior technical review of all resource/issue-specific analyses addressed in the IS/MND, and oversight of document reproduction. Ms. Walker is additionally responsible for completion of the project's environmental review notices.
- **Tranquillon Ridge Oil and Gas Development Project.** Ms. Walker served as a senior technical analyst for an EIR addressing proposed oil and gas development of the Tranquillon Ridge oil and gas field, located in State waters offshore northern Santa Barbara County, California. Ms. Walker completed the EIR's analyses for visual resources/aesthetics, land use and public policy, and recreation. Ms. Walker additionally assisted with development of the EIR's off- and on-shore cumulative project listings and descriptions, as well as completion of multiple resource/issue-specific technical analyses for the EIR's cumulative impacts assessment.
- **Owens River Gorge Restoration Project.** Ms. Walker served as both the Project Manager and a senior technical analyst for a preliminary environmental review of proposed modifications to the water flows released into an approximate 10-mile reach of the Owens River Gorge, located in Mono and Inyo Counties, California. The analysis was completed for the Los Angeles Department of Water and Power for habitat restoration and maintenance. Ms. Walker was responsible for all aspects of the

project's management, coordination and senior technical review for an Initial Study level of analysis, and prepared the document's Project Description, as well as numerous resource/issue-specific technical sections, including land use and planning, recreation, and mandatory findings of significance.

- **Preliminary Environmental Profile of California's Imported Electricity.** Ms. Walker served as a contributing author of a technical report addressing the primary sources of California's imported electricity, and the key biological and water-related impacts associated with that electricity's generation. The report was prepared for the California Energy Commission (CEC) in support of its "Environmental Performance in 2005 Integrated Energy Policy Report." Ms. Walker's efforts were focused on issues associated with power generated from natural gas and hydroelectricity. In addition, Ms. Walker provided overall assistance to the report's Project Manager, including overall staff coordination and guidance, as well as senior technical reviews.
- **Antelope-Pardee 500-kV Transmission Project.** Ms. Walker served as a technical analyst for an Alternatives Siting Report for the proposed Antelope-Pardee 500-kV Transmission Project. Her efforts included the identification of alternative above- and below-ground Right-Of-Way alignments, coordination with transmission engineers to evaluate the technical feasibility of the alternatives, and preliminary assessments of the potential impacts and key advantages and disadvantages of the alternatives. Ms. Walker additionally prepared several technical sections of the project's environmental review document, including its assessment of both growth inducing impacts and irreversible and irretrievable commitment of resources. She also prepared numerous responses to comments on the Draft EIR/EIS for the purposes of its finalization, and completed several of the resource/issue-specific technical analyses included in the Final EIR/EIS's "Findings of Fact."
- **Environmental Information Document and Coastal Consistency Determinations for Federal Oil and Gas Leases Offshore Santa Barbara, Ventura and San Luis Obispo Counties.** Ms. Walker served as the Project Manager for preparation of a multidisciplinary Environmental Information Document (EID) and ten Federal Coastal Consistency Determinations that evaluated the potential effects of future development of the undeveloped federal oil and gas leases offshore Santa Barbara, Ventura and San Luis Obispo Counties, California. The documents address both lease-specific and cumulative impacts for the period 2006 through 2030. In addition to overall project management and coordination, Ms. Walker was responsible for senior technical review and the preparation of text regarding near- and long-term activities that may occur on the Pacific Outer Continental Shelf, and was a principal author of the California Coastal Act policy consistency analyses prepared for each of the project's Lease/Unit-specific Coastal Consistency Determinations.
- **Simulation of Natural Flows in Middle Piru Creek.** Ms. Walker served as the Project Manager for an EIR addressing a proposed dam flow release modification schedule into middle Piru Creek, located in Ventura and Los Angeles Counties, California. The purpose of the project was to mimic natural surface water flows. Ms. Walker was responsible for overall management and coordination of the project team, senior technical review of all resource-issue specific analyses, and preparation of several sections of the EIR, such as the description of the proposed project and its alternatives and the analyses for the environmentally preferred alternative, growth-inducing impacts, and cumulative impacts. Ms. Walker was also responsible for the writing and publication/distribution of all public and agency notices, and coordinated the content of, and led the project's public workshops and meetings.
- **Ventura River *Arundo* Removal Demonstration Project.** Ms. Walker served as the Project Manager for the preparation of an EIR for the proposed removal of *Arundo donax*, a highly invasive non-native plant species, using four different removal and revegetation techniques within the Ventura River, Ventura County, California. Ms. Walker additionally served as the overall Project Manager for the effort's regulatory permit acquisition program. Ms. Walker prepared multiple chapters of the EIR, including its Project Description, completed numerous technical analyses of the document, such as

public health, visual resources, land use and planning, recreation, and General Plan environmental policy consistency, provided senior technical review for all other sections of the EIR, prepared for and participated in the project's public hearings, and assisted with the project's public noticing requirements under CEQA.

- **Morro Bay Power Plant Project.** Ms. Walker served as the Power Plant Coordinator and land use analyst for preparation of the Preliminary and Final Staff Assessments (PSA and FSA, respectively) for the Morro Bay Power Plant Project. Ms. Walker managed Aspen Environmental Group's staff and subcontractors' work efforts and schedules, coordinated with the CEC Project Manager regarding overall project logistics and schedule, and, conducted the land use analysis for the PSA and FSA, including participation in public workshops and evidentiary hearings.
- **Mountain View Power Plant Project.** Ms. Walker assisted with preparation of the socioeconomics analysis during preparation of the PSA and FSA for the proposed Mountain View Power Plant Project. Efforts included data searches and reviews, agency contacts, and preparation of the analysis and text for the PSA and FSA.
- **Inland Empire Power Plant Project.** Ms. Walker acted as the Power Plant Coordinator and socio-economics and alternatives analyst for the CEC's environmental review of the Inland Empire Power Plant Project. Efforts included overall staff coordination, communications and scheduling during preparation of the project's data adequacy analyses, PSA, and FSA, as well as the coordination of, preparation for, and participation in the project's various public workshops and hearings.
- **Coastal Power Plant Evaluation.** Ms. Walker functioned as a senior analyst during preparation of an evaluation focused on the key environmental and regulatory issues associated with the licensing and operation of coastally located power plants within California. Ms. Walker conducted agency interviews, researched power plant-specific licensing cases and other project-specific analyses and reports, and prepared written summaries of the findings of these efforts for inclusion in a draft and final report for review by the CEC.
- **Level 3 Communications Infrastructure Project.** Ms. Walker served as the Deputy Project Manager for the preparation of 21 Initial Studies and a master Subsequent MND for the Level (3) Communications Infrastructure Project. The project consisted of the installation of nearly 2,000 miles of fiber optic telecommunications cable throughout California, as well as the cable's related above-ground support facilities. Ms. Walker managed in-house technical and support staff during preparation of the Draft and Final Initial Studies and Subsequent MND, coordinated the completion and publication/distribution of all necessary public and agency noticing, and, oversaw final document editing, compilation and production. Additionally Ms. Walker prepared the 21 Project Descriptions for each Initial Study, prepared the master overview section of the Subsequent MND, and completed each Initial Study's Population and Housing analysis.
- **Visalia Landfill Master Development Plan.** Ms. Walker provided management assistance during preparation of Draft and Final EIRs for a proposed expansion of the Visalia Landfill, located in Tulare County, California. Ms. Walker completed the Draft and Final "Project Description" and "Introduction" sections of the EIR, conducted the land use and planning analysis of the EIR, and assisted with completion of the document's "Impact Overview" section. In addition, Ms. Walker assisted Aspen's Project Manager with overall project coordination and management of technical staff.
- **Bull Creek Channel Ecosystem Restoration Project.** Ms. Walker functioned as Project Manager for preparation of an Environmental Assessment (EA) and Ecosystem Restoration Report (ERR) for the Bull Creek Channel Ecosystem Restoration Project. The project was sponsored by the U.S. Army Corps of Engineers (Corps) with cooperation by the City of Los Angeles (City). The project involved

restoration of a degraded reach of Bull Creek, located within the Sepulveda Dam and Flood Control Basin, Los Angeles, as well as the development of a new park and wetlands habitat area. Ms. Walker provided overall management of, and direction to the project's technical team, completed senior technical reviews of a draft and final documents, and also prepared several technical sections of the ERR and EA.

- **San Jose/Old San Jose Creek Restoration Project.** Ms. Walker provided technical analysis for preparation of an EA and ERR for proposed restoration of the final reaches of San Jose and Old San Jose Creeks, located in Santa Barbara County, California. Her efforts included completion of "baseline" and impact analyses for several resource-specific issues, including land use and planning, recreation, aesthetics, and cumulative impacts, as well a preparation of several sections of the two documents' overall content, such as their respective Project Descriptions and Project Purpose and Need.
- **Imperial Beach Shore Protection Project.** Ms. Walker served as the Project Manager for the Imperial Beach Shore Protection Project, a beach restoration effort sponsored by the Corps with participation by the City of Imperial Beach. The effort included preparation of a Draft and Final EIS/EIR for the project. Ms. Walker's efforts included: coordination with Corps staff and managers regarding overall project logistics and schedule; management of the project's in-house technical team and the project's various subcontractors; preparation of many of the EIS/EIR's non issue/resource-specific technical sections, such as the document's Project Description; oversight of all document editing, compilation and production; and, participation in local and California Coastal Commission public hearings.
- **Prado Basin and Vicinity Project.** Ms. Walker functioned as an analyst during finalization of the Prado Basin and Vicinity Project EIS/EIR. The project consisted of a proposal to raise the Prado Dam, located in San Bernardino County, California, and install a series of flood control structures within the Prado Dam Basin to provide greater flood control of the downstream area of the Santa Ana River. Ms. Walker prepared numerous responses to comments submitted on the Draft EIS/EIR, and is also assisted with over project management and coordination.
- **Bellevue Primary Center Interim Facility.** Ms. Walker served as the Project Manager for a revised IS/MND for the Los Angeles Unified School District's (LAUSD) Bellevue Primary Center Interim Facility. The project consisted of the temporary relocation of a primary center located in the City of Los Angeles. Ms. Walker coordinated with LAUSD staff during preparation of the IS/MND, managed Aspen Environmental Group's staff, oversaw final document editing, compilation and production, and, prepared the revised Project Description.
- **Hamilton High School Master Addition.** Ms. Walker acted as the Project Manager for an IS/MND for a proposed expansion of the Hamilton High School, located in the City of Los Angeles. Ms. Walker was responsible for: overall coordination and communications with LAUSD staff and its consultants; management and coordination of Aspen Environmental Group's staff and its subcontractors; preparation of the documents' general sections, such as the Project Description; and, senior technical review of all sections and analyses contained within the draft and final documents. Ms. Walker also prepared materials for, and participated during, the project's public hearings and community outreach meetings.
- **Aldama Elementary School Master Addition.** Ms. Walker served as the Project Manager for an IS/MND addressing a proposed addition to the Aldama Elementary School, located in the City of Los Angeles. Ms. Walker was responsible for: overall coordination and scheduling of the project's environmental review; senior technical review of all technical analyses prepared for the documents; preparation of several of the documents' sections such as their Project Descriptions and the MND's Mitigation Monitoring Plan; and, participation during the project's public hearings.

- **Wonderland Avenue Elementary School Master Addition.** Ms. Walker served as the Project Manager for an IS/MND addressing a proposed addition to the Wonderland Avenue Elementary School, located in the City of Los Angeles. Ms. Walker was responsible for overall coordination and scheduling of the project's environmental review, review of all environmental review documents produced for the project, completion of several of the Initial Study's technical analyses, preparation of all of the responses to comments received on the Draft IS/MND, and, completion and distribution of the project's public and agency notices.
- **Reseda High School Master Portable Addition.** Ms. Walker served as the Project Manager for an IS/MND addressing proposed portable classroom additions to Reseda High School, located in the City of Los Angeles. Ms. Walker was responsible for overall management of Aspen's internal staff and subcontractors, senior technical review of all draft and final technical analyses, and preparation of several sections of the two documents, including the Initial Study's and MND's respective Project Descriptions, the MND's Mitigation Monitoring Plan, and the Initial Study's aesthetics, agricultural resources, hazards and hazardous materials, land use and planning, recreation and mandatory findings of significance analyses.
- **Hughes Middle School Re-Opening.** Ms. Walker served as the Project Manager for the preparation of an Initial Study for a proposed re-opening of a middle school as a "span" (6th through 12th grade students) in Woodland Hills, California. The analysis involved two separate school campuses, including a relocation of an existing Adult School. Ms. Walker was responsible for: overall management and coordination of the project team; preparation of numerous technical sections of the Initial Study; senior technical review of all other technical analyses; and, preparation for, and facilitation of the project's public scoping meeting. Ms. Walker was also responsible for the preparation, publication and distribution of all of the project's public and agency noticing.
- **LAUSD New Construction Program EIR.** Ms. Walker is served as the Principal Investigator for an extensive public outreach and demographic analysis of the LAUSD's District-wide Program EIR for new school construction over a 15 to 20 year period. Ms. Walker was responsible for an in-depth assessment of numerous demographic and economic attributes of the District's population, both regionally and locally, and additionally assisted with sections of the document's "Program Description."
- **Morro Bay Sampling and Chemical Analysis Project.** Ms. Walker acted as the Project Manager for a water sampling and chemical analyses project within Morro Bay. The purpose of the project was to sample selected locations of the Bay for the necessary approvals needed for proposed dredging activities. Principal agency approvals include the U.S. Environmental Protection Agency and California Coastal Commission. Ms. Walker's involvement included the coordination and scheduling of activities between the Corps and Aspen's subcontractors, and senior technical review of all documents submitted to the Corps.
- **Kern County Oil and Gas Development Permitting Evaluation.** Ms. Walker served as a senior analyst for an evaluation of the local and State permitting processes for new oil and gas development projects within Kern County, California. Ms. Walker provided technical analyses of various regulatory, policy, and resource-specific issues, and also assisted with overall facilitation of the project during agency, industry, and special interest group meetings and workshops.
- **Division of Oil, Gas and Geothermal Resources Regulatory Compliance Initial Study.** Ms. Walker served as a senior analyst for an Initial Study evaluating the California Division of Oil, Gas and Geothermal Resources' (DOGGR) proposed program for compliance with CEQA for oil and gas drilling in Kern County, California. Ms. Walker revised DOGGR's regulations for CEQA compliance for review by DOGGR counsel and the Deputy Attorney General, and prepared the agricultural resources and land use and planning analyses of the project's Initial Study. Ms. Walker also assisted

with overall project management, and provided senior technical review for several of the Initial Study's resource/issue-specific analyses.

- **Combined Array for Research in Millimeter-wave Astronomy Project Special Use Permit Application.** Ms. Walker prepared several sections of a Special Use Permit (SUP) application package for submittal to the U.S. Forest Service for a proposed astronomy facility in the Inyo National Forest, California. Ms. Walker's efforts included an analysis of the federal, State and local regulatory permits and approvals required for the proposed facility, an evaluation of the facility's consistency with the U.S. Forest Service's SUP Screening Criteria, and technical editing and review of the project's final SUP application package.

Previous Experience

1989 to 1999

Prior to joining Aspen Environmental Group Ms. Walker served as a Project Manager at Dames & Moore, and as a contract planner with the Energy Division of the Santa Barbara County (California) Planning and Development Department. A selection of projects she worked on is provided below.

Environmental Impact Reports, Statements, and Analyses

- **Point Pedernales Project Modification.** Ms. Walker was responsible for completion of an Initial Study and EIR Addendum, and coordination of a Quantitative Risk Analysis for a proposed hydrogen sulfide concentration increase in the 23-mile off- to onshore natural gas pipeline of the Point Pedernales Project located in northern Santa Barbara County.
- **Santa Barbara County Groundwater Element.** Ms. Walker served as the project manager for a Public Draft revision and Final Programmatic EIR addressing the proposed adoption and implementation of a Groundwater Element into the Santa Barbara County Comprehensive General Plan.
- **Vista Del Mar School Relocation and Water Supply Pipeline.** Ms. Walker served as the Project Manager for preparation of a series of Supplemental and Addenda EIRs for construction of a proposed elementary school and water supply pipeline located in central Santa Barbara County.
- **Arroyo Las Posas Channel Improvements Project.** Ms. Walker served as the Project Manager for preparation of a Draft and Final EIR addressing a phased series of stream channel improvements to the Arroyo Las Posas, Ventura County. She additionally served as a technical analyst for land use and visual resources and participated in the project's public hearings.
- **Los Angeles Department of Water and Power Land Exchange.** Ms. Walker served as the Project Manager for Finalization of an EA and Senate Briefing Report for a proposed exchange of properties in Clarke County, Nevada, and Los Angeles County, California, by the Los Angeles Department of Water and Power and Bureau of Land Management.
- **Port of Oakland Feasibility Study.** Ms. Walker prepared an environmental feasibility analysis for proposed rail access to the Port of Oakland by the Atchison, Topeka & Santa Fe Railroad Company. The analysis included assessments of traffic and transportation, air quality, land use, and risk.
- **Mobil M-70 Pipeline Replacement.** Ms. Walker assisted with the overall coordination and preparation of an EIS/EIR addressing the replacement of a 92-mile crude oil pipeline located between Lebec and Torrance, California.
- **California Offshore Oil and Gas Resources Study.** Ms. Walker served as the Assistant Project Manager for the preparation of an extensive inter-disciplinary study evaluating the potential environmental, engineering, and socio-economic constraints associated with various levels of offshore oil and gas development in Ventura, Santa Barbara, and San Luis Obispo Counties.

- **Las Vegas Valley Flood Control Master Plan.** Ms. Walker assisted with the preparation of a Programmatic EIS for a long-range Master Plan of the Las Vegas Valley Flood Control District's phased Flood Control Improvements Project. Her efforts included overall project coordination and analysis of land use and facilities infrastructure.
- **Molycorp Pipeline Replacement Project.** Ms. Walker prepared a detailed Project Description for regulatory permitting and inclusion in a joint EA/MND for replacement of a wastewater pipeline system operated for a rare earths mine located in the Mojave Desert.
- **Elsmere Solid Waste Facility.** Ms. Walker prepared of an extensive, multidisciplinary "standalone" Executive Summary for public review detailing the findings of an EIS/EIR for development of a regional landfill for Los Angeles County.
- **Atchison-Topeka Remediation Project.** Ms. Walker prepared an Initial Study and MND for a proposed remediation project in support of truck/train intermodal operations within the City of Vernon, California.
- **Bureau of Land Management Land Exchange.** Ms. Walker prepared socioeconomic and prime farmlands analyses for an EA addressing a series of proposed land exchanges within southern and central Nevada. Analysis included completion of a Farmland Protection Policy Act assessment and U.S. Natural Resource Conservation Service 1006 "Farmland Conversion Impact Rating Forms."

Environmental Regulatory Permitting and Compliance Planning

- **Mead-Adelanto Transmission Project.** Ms. Walker served as Project Manager for the multidisciplinary federal, State, and local regulatory permitting and construction-phase permit compliance planning and implementation of a 210-mile 500 kV transmission line extending from Boulder City, Nevada, to Adelanto, California.
- **Vista Del Mar Water Supply Pipeline.** Ms. Walker served as the Project Manager for the multidisciplinary regulatory permit acquisition and construction-phase compliance planning and implementation of an elementary school and water supply pipeline located in Santa Barbara County.
- **Point Pedernales Project Condition Effectiveness Review.** Ms. Walker completed a comprehensive Preliminary Screening Analysis assessing the effectiveness of the 192 conditions associated with the Santa Barbara County Final Development Plan for the Pt. Pedernales Project, an on- and offshore oil and gas development project.
- **Point Pedernales Project Permit Modifications.** Ms. Walker completed the analysis and regulatory processing of Final Development Plan Substantial Conformity Determinations and a Final Development Plan Director's Amendment for proposed modifications to the Pt. Pedernales Project's oil and gas processing facility located in northern Santa Barbara County, California.
- **Point Pedernales Project Regulatory Compliance.** Ms. Walker was responsible for the compliance tracking and enforcement of the 192 Final Development Plan conditions associated with the Pt. Pedernales Project, an on- and offshore oil and gas development project located in northern Santa Barbara County.
- **Torch Lompoc Gas Processing Facility.** Ms. Walker was responsible for the oversight and coordination of the final regulatory technical reviews and approvals required for commissioning and operation of a natural gas processing plant located in northern Santa Barbara County.
- **Los Medanos Energy Facility.** Ms. Walker served as the Assistant Project Manager during preparation of multiple amendments to an approved CEC Application For Certification for a series of proposed modifications to a power plant located in Contra Costa County.

- **Pastoria Energy Facility.** Ms. Walker served as a Principal Investigator and technical editor during preparation of a CEC Application For Certification for a proposed power plant located in southern Kern County. Resource-specific investigations included assistance with completion of the application's socioeconomic, cumulative impacts, water supply, and "Applicable Laws, Ordinances, Regulations and Standards" analyses.
- **Kern River Natural Gas Pipeline.** Ms. Walker served as a Principal Investigator during the pre-construction preparation of compliance implementation plans, as well as construction-phase development and implementation of multiple databases tracking the environmental monitoring and regulatory permit compliance of a 904-mile natural gas pipeline traversing the states of Wyoming, Utah, Nevada, and California.
- **Hercules Remediation Project.** Ms. Walker assessed the federal, State, and local regulatory permit acquisition requirements for the remedial clean-up of an extensive petrochemical spill associated with the Hercules Oil and Gas Development Project located in Santa Barbara County.

Land Use and Public Policy Analyses & GIS Applications

- **Santa Barbara North County Siting Study.** Ms. Walker completed the land use analysis and oil and gas facility infrastructure "baseline" section for a siting and constraints study focused on the potential alternatives available for the construction and operation of a new consolidated oil and gas processing facility in northern Santa Barbara County, California.
- **Miramar Railroad Realignment.** Ms. Walker served as the Principal Investigator for the land use and public policy baseline, impacts, and constraints analyses for a rail line straightening and expansion project located in the northern portion of the City of San Diego. Analyses were completed for inclusion in both a "stand alone" environmental constraints study and EIR.
- **Mobil M-70 Pipeline Replacement Project.** Ms. Walker served as the Principal Investigator for the land use analysis, mapping, and impact assessment of a proposed 92-mile crude oil pipeline and alternatives between Lebec and Torrance, California. The effort included local and County public policy analysis of pipeline placement and operation requirements.
- **Las Vegas Valley Water District Cooperative Use Project.** Ms. Walker Principal conducted an image processing and spatial analysis of a series of LANDSAT satellite images to classify natural habitats and land use for the preliminary siting of an extensive network of water supply wells and pipelines throughout southern Nevada.
- **Kern County Valley Floor Habitat Conservation Plan.** Ms. Walker conducted an extensive habitat and land use air photo interpretation, mapping, and analysis of the western half of Kern County for inclusion in the Kern County Valley Floor Habitat Conservation Plan. The effort included mapping and analysis of the County's General Plan Land Use Element Goals and Policies, and County Zoning Ordinances.
- **Borax Mine Expansion.** Ms. Walker served as the Principal Investigator for the Project Description, Project Alternatives, and socioeconomic and land use analyses portions of an EA addressing a proposed expansion of the U.S. Borax Boron Mine facility, Kern County, California.
- **Clark County (Nevada) Flood Control District Master Plan EIS.** Ms. Walker prepared the Project Description, cumulative impacts, and land use analyses of the Clark County Flood Control District Master Plan EIS.
- **QAD Facility Expansion.** Ms. Walker Prepared the noise and land use analyses for a preliminary environmental assessment/screening for a proposed facility expansion of a light-industrial enterprise

in Carpinteria, California. The task included local and Santa Barbara County analysis of General Plan and Zoning regulations related to land use development.

- **Santa Clara River Flood Control Improvements.** Ms. Walker served as the Principal Investigator for a detailed air photo interpretation, mapping, and quantification of predominant habitat types, land uses, and stream network patterns associated with the Santa Clarita Valley, California. Analysis included impact assessment of a proposed series of regional flood control improvements of the Santa Clara River.
- **Dominigoni Valley Development Project.** Ms. Walker conducted an air photo interpretation, mapping, and analysis tracking the historic land uses, natural habitats, and stream network patterns associated with the Dominigoni Valley, California. The analysis was conducted to evaluate potential land development and its affects on local stream networks.
- **Geographic Information System Applications.** Ms. Walker has managed and/or implemented the design, development, and analysis of numerous multidisciplinary Geographic Information System (GIS) efforts, including: California Offshore Oil and Gas Energy Resources Study; Kern County Habitat Conservation Plan; Chevron Hawaii Refinery Pipeline Data Management System; Union Pacific-Southern Pacific Merger Application Environmental Analysis; Caltrans Route 41 Environmental Assessment Project; and, Nellis Air Force Base Integrated Natural Resources Management Plan.

PROFESSIONAL AFFILIATIONS

- Association of Environmental Professionals

CERTIFICATES/AWARDS

- Darkenwald Award for outstanding academic achievement by a first year graduate student (City University of New York, Department of Geography and Geology, 1987).



WILLIAM WALTERS, P.E.
Air Quality Specialist

ACADEMIC BACKGROUND
B.S., Chemical Engineering, 1985, Cornell University

PROFESSIONAL EXPERIENCE

Mr. Walters has over 20 years of technical and project management experience in environmental compliance work, including environmental impact reports, RCRA/CERCLA site assessment and closure, site inspection, source monitoring, emissions inventories, source permitting, and energy and pollution control research.

Aspen Environmental Group

2000 to present

Responsible as lead technical and/or project manager of environmental projects. Specific responsibilities and projects include the following:

- Preparation of the Air Quality Section and General Conformity Analysis for the Matilija Dam Ecosystem Restoration Project EIS/R for the United States Army Corps of Engineers (Corps).
- Preparation of the Air Quality Section for the Heacock and Cactus Channels Flood Damage Reduction Project's Draft Environmental Assessment and Mitigated Negative Declaration for the Corps.
- Preparation of the Air Quality Section for the Santa Ana River Interceptor Line (SARI) Protection/Relocation Project's Draft Supplemental Environmental Impact Statement/Environmental Impact Report.
- Preparation of emission inventory and General Conformity Analysis of the Murrieta Creek Flood Control Project and the Joint Red Flag exercise to be conducted in the Nevada Test and Training Range for the Corps.
- Preparation of emission inventory and General Conformity Analysis of the Patriot Integrated Air Defense Exercise to be conducted in the Nevada Test and Training Range for the United States Air Force.
- Preparation of emission inventory for the construction activities forecast for the San Jose/Old San Jose Creeks Ecosystem Restoration project for the Corps.
- Preparation of the Air Quality Section of the Environmental Information Document in support of the Coastal Consistency Determinations for the suspension of operation requests for undeveloped units and leases off the Central California Coast.
- Preparation of the Air Quality sections for two separate Department of Water Resources (DWR) Santa Ana Valley Pipeline Repairs Project CEQA Categorical Exemption Memorandums.
- Preparation of the Air Quality Section for the DWR Horsethief Creek Bridge Mojave Siphon Maintenance Road project IS/MND.

- Preparation of the Air Quality Section for the DWR Pyramid Dam Emergency Access Road project IS/MND.
- Assistance in the preparation of the Air Quality Sections for the DWR Tehachapi Second Afterbay Project Initial Study and EIR.
- Preparation of the Air Quality Inventory for the Los Angeles Department of Water and Power (LADWP) Upper Reach River Supply Pipeline Project EIR and Lower Reach River Supply Pipeline Project EIR.
- Project management and preparation of the Air Quality Section for the Los Angeles Department of Water and Power (LADWP) Valley Generating Station Stack Removal IS/MND support project.
- Preparation of the Air Quality Section for the LADWP Sylmar to Pacific Ocean DC Electrode Cables Replacement Project IS/MND.
- Preparation of an Air Quality Inventory for the Los Angeles Department of Water and Power's revised Pine Tree Wind Development Project.
- Preparation of the Air Quality section of the SCE Devers-Palo Verde 500 kV No. 2 Transmission Line Project EIS/EIR for the California Public Utilities Commission (CPUC).
- Preparation of the Air Quality section of the SCE Antelope-Pardee 500 kV Transmission Project EIR/EIS for the CPUC.
- Preparation of the Air Quality section of the SCE Antelope Transmission Project Segments 2 and 3 EIR for the CPUC.
- Preparation of the Air Quality section for the SCE El Casco System Project Draft EIR for the CPUC.
- Preparation of the Air Quality section of the PG&E Hydrodivestiture Draft EIR/EIS for the CPUC.
- Preparation of the air quality sections for the Kirby Hills Natural Gas Storage Project Phase I and Phase II Initial Studies/Mitigated Negative Declarations for the CPUC.
- Preparation of the air quality section and General Conformity Analysis for the Littlerock Reservoir Sediment Removal Project for the Palmdale Water District.
- Preparation and project management of the air quality section of the Staff Assessment and/or Initial Study and the visual plume assessment for the following California Energy Commission (CEC) licensing projects: Hanford Energy Park; United Golden Gate, Phase I; Huntington Beach Modernization Project (including Expert Witness Testimony); Woodland Generating Station 2; Ocotillo Energy Project, Phase I; Magnolia Power Project; Colusa Power Project; Inland Empire Energy Center; Rio Linda/Elverta Power Plant Project; Roseville Energy Center; Henrietta Peaker Project; Tracy Peaking Power Plant Project (including Expert Witness Testimony); Avenal Energy Project; San Joaquin Valley Energy Center (including expert witness testimony); Salton Sea Unit 6 Project (including expert witness testimony); Modesto Irrigation District Electric Generation Station (including expert witness testimony); Walnut Energy Center (including expert witness testimony); Riverside Energy Resource Center (including expert witness testimony); Pastoria Energy Facility Expansion; Colusa Generating Station; Panoche Energy Center; and Starwood Power Plant.
- Preparation and project management of the visual plume assessment for the following California Energy Commission (CEC) licensing projects: Metcalf Energy Center Power Project (including Expert Witness Testimony); Contra Costa Power Plant Project (including Expert Witness Testimony); Mountainview Power Project; Potrero Power Plant Project; El Segundo Modernization Project; Morro Bay Power Plant Project; Valero Cogeneration Project; East Altamont Energy Center (including expert

witness testimony); Russell City Energy Center; SMUD Cosumnes Power Plant Project (including expert witness testimony); Pico Power Project; Blythe Energy Project Phase II; City of Vernon Malburg Generating Station; San Francisco Electric Reliability Project; Los Esteros Critical Energy Facility Phase II; Roseville Energy Park; AES Highgrove Power Plant; Sun Valley Energy Project; Walnut Creek Energy Park; South Bay Replacement Project; Panoche Energy Center; Colusa Generating Station; Bullard Energy Center; Carlsbad Energy Center; San Gabriel Generating Station; Sentinel Energy Project; City of Vernon Power Plant; Chevron Richmond Power Plant Replacement Project; and Victorville 2 Hybrid Power Project.

- Preparation and project management of the public health section of the Initial Study for the Woodland Generating Station 2 CEC licensing project.
- Preparation of project amendment or project compliance assessments, for air quality or visual plume impacts, for several licensed power plants, including: Metcalf Energy Center; Pastoria Power Plant; Elk Hills Power Plant; Henrietta Peaker Project; Tracy Peaker Project; Magnolia Power Project; Delta Energy Center; SMUD Cosumnes Power Plant; Walnut Energy Center; San Joaquin Valley Energy Center; City of Vernon Malburg Generating Station; Otay Mesa Power Plant; Los Esteros Critical Energy Facility; Pico Power Project; Riverside Energy Resource Center; Blythe Energy Project Phase II; Inland Empire Energy Center; Salton Sea Unit 6 Project; and Russell City Energy Center.
- Preparation and instruction of a visual water vapor plume modeling methodology class for the California Energy Commission.
- Assistance in the preparation of the noise assessment section of the Staff Assessment for the Contra Costa Power Plant CEC licensing project.
- Assistance in the aircraft safety review of thermal plume turbulence for the Riverside Energy Resources Center; and the Blythe Energy Power Plant and Blythe Energy Project Phase II (including expert witness testimony) siting cases. Assistance in the aircraft safety review of thermal and visual plumes of the operating Blythe Energy Power Plant.
- Preparation of vertical plume velocity reports to support aircraft safety reviews for multiple projects, including: the Russell City Energy Center Amendment (including expert witness testimony), Eastshore Power Project (including expert witness testimony); and the Victorville 2 Hybrid Power Project.
- Preparation of the air quality section of the staff paper; "A Preliminary Environmental Profile of California's Imported Electricity," for the CEC and presentation of the findings before the Commission.
- Preparation of the staff paper "Natural Gas Quality: Power Turbine Performance During Heat Content Surge" for the CEC, and presentation of the preliminary findings at the California Air Resources Board Compressed Natural Gas Workshop and a SoCalGas Technical Advisory Committee meeting.
- Preparation of the staff paper "Emission Offsets Availability Issues" and preparation and presentation of the Emission Offsets Constraints Workshop Summary paper for the CEC.
- Preparation of information request and data analysis to update the Energy Commission's Cost of Generation Model capital and operating cost factors for combined and simple cycle gas turbine projects. Additionally, performed a review of the presentation for the revised model as part of the CEC's 2007 Integrated Energy Policy Report workshops, and attended the workshop and answering Commissioner questions on the data collection and data analysis.

- Preparation of permit applications, emission calculation spreadsheets, the 2006/2007 Annual Emission Report for submittal to the SCAQMD, and an air quality compliance manual for Desa International's Southern California manufacturing facility.
- Preparation of the Air Quality Section of the Los Angeles Unified School District New School Construction Program EIR and provided traffic trip and VMT calculation support for the Traffic and Transportation Section. As part of this project attended two public scoping meetings.
- Management and preparation of the Draft Air Quality Sections for the Reseda Senior High School Portable Addition IS/MND and Wonderland Elementary Addition IS/MND projects for LAUSD.
- Technical review and updating of the Air Quality Section for the Valley High School No. 1 EIR (CSUN), Jefferson No. 6 Primary Center MND, Southern Regional Elementary School #1 MND, and Central Regional Elementary School #16 MND projects for LAUSD.
- Preparation of the Air Quality Sections and/or impacts modeling assessments for the Central Regional Middle School #7 MND, Southern Regional Middle School #6 EIR, Narbonne HS Stadium Lighting and Improvements, and Maclay Elementary School Addition projects.
- Revision of the Risk Management Plan (RMP) for the SSI Foods Wilder Idaho Facility Ammonia Refrigeration Systems.
- Preparation of a control technology evaluation for the control of nuisance odors from wood-fired pizza ovens for the A16 restaurant in San Francisco, California.
- Preparation of comments on the Air Quality, Alternatives, Marine Traffic, Public Safety, and Noise section of the Cabrillo Port Liquefied Natural Gas Deepwater Port Draft EIS/EIR for the City of Oxnard.
- Preparation of comments on the Air Quality section of the Long Beach LNG Import Project Draft Environmental Impact Statement/Environmental Impact Report for the City of Long Beach.
- Preparation of an odor and health impact study in support of the Ventura County Piru Area Plan Update EIR.

Camp Dresser & McKee, Inc.

1998 to 2000

Mr. Walters was responsible as lead technical and/or project manager of environmental projects. Specific responsibilities and projects include the following:

- Preparation of emission inventories and dispersion modeling for criteria and air toxic pollutants for the Los Angeles International Airport Master Plan (LAXMP) EIS/EIR.
- Project Manager/Technical lead for the completion of air permit applications and air compliance audits for two Desa International fireplace accessory manufacturing facilities located in Santa Ana, California.
- Air quality audit for a confidential can manufacturing company at two manufacturing sites.
- Project manager/technical lead for the completion of Risk Management Plans (RMPs) for four J.R. Simplot food processing facilities in Oregon, Idaho, and Washington and the Consolidated Reprographics facility located in Irvine, California. Project manager for the concurrent Process Safety Management plan support for the J.R. Simplot Hermiston (Oregon) and Heyburn (Idaho) facilities and the project manager/technical lead for the RMP support for the SSI food processing facility in Wilder, Idaho, and the Atlantic Custom Processors food processing facility in Fort Fairfield, Maine.

- Completion of an environmental tax credit application for the J.R. Simplot Hermiston Oregon food products facility.

Planning Consultants Research

1997 to 1998

Mr. Walters was responsible as lead technical and/or project manager of environmental projects. Specific responsibilities and projects include the following:

- Project Manager for a stationary source emission audit of the entire Los Angeles International Airport complex for Los Angeles World Airports (LAWA) in support of the LAXMP.
- Review of the Emission Dispersion Modeling System (EDMS) and preparation of a report with findings to the Federal Aviation Administration for LAWA in support of the LAXMP.
- Project manager for the ambient air monitoring and deposition monitoring studies performed for LAWA in support of the LAXMP, including the selection of the monitoring sites and specialty sub-contractor, and review of all monitoring data.
- Completion of intersection "CO Hotspots" modeling, ambient monitoring, and deposition monitoring reports for LAWA in support of the LAXMP.

Aspen Environmental Group/Clean Air Solutions

1995 to 1996

Mr. Walters was responsible as lead technical and/or project manager of environmental projects. Specific responsibilities and projects include the following:

- Manager of the Portland, Oregon, office of Clean Air Solutions from March 1995 to December 1995, with responsibilities including Project Management, Business Development, and Administration.
- Control technology assessment, engineering support and Notice of Intent to construct preparation for J.R. Simplot's Hermiston, Oregon, food processing facility. Review and revision of an Air Contaminant Discharge Permit application, Title V permit application, and PSD modeling analysis for J.R. Simplot's Hermiston facility.
- Air quality compliance report including an air emission inventory, regulation and permit compliance determination, and recommendations for compliance for Lumber Tech, Inc.'s Lebanon, Oregon, wood products facility.
- Source test methodology and equipment selection for testing inlet and outlet concentrations of total petroleum hydrocarbon and benzene from soil gas extraction/oxidation units for Cascade Earth Sciences, Ltd.
- Preparation of a Tier II (synthetic minor) permit application for the American Fine Foods' Payette, Idaho, food processing facility.
- Emission inventory and compliance evaluation for Simplot's Aberdeen, Idaho, food processing facility.
- Preparation of an Air Contaminant Discharge permit application for Marlette Homes, Inc. Hermiston, Oregon, manufactured housing facility.
- Preparation of a Title V permit application for Simplot's Helm, California, fertilizer manufacturing facility.
- Source test contractor selection and test oversight for J.R. Simplot's food processing plant in Hermiston, Oregon, and Boise Cascade's wood-fired boiler in Willamina, Oregon.

Fluor Daniel, Inc.

1990 to 1995 and 1996 to 1997

Mr. Walters was responsible as lead technical or project manager for major environmental projects for both government and private clients. His projects included:

- Prepared several air permit applications for the ARCO Los Angeles Refinery Polypropylene Plant Project.
- Phase I environmental assessments for seven properties located in Southern California.
- Prepared Environmental Baseline Reports for 33 sites in Guam for the US Navy.
- Prepared site investigation and RCRA closure plan report for Olin Hunt Specialty Chemical's Vernon, California, hazardous waste storage site.
- Project manager of the Anaconda Smelter site for the US Environmental Protection Agency's (EPA) Alternative Remedial Contract System (ARCS) project during the conclusion of technical activities and project closeout. Prepared a cost recovery report for the project.
- Task manager for nine site investigations under the EPA Region VI ARCS contract. Project activities included data collection, work plan preparation, field sampling, final report preparation, and Hazard Ranking System (HRS) PRescore preparation.
- For the Hanford (Washington) Waste Vittrification Project, prepared an air emission inventory for criteria pollutants, prepared an emission inventory and compliance evaluation of toxic air pollutants, performed compliance review of design drawings and equipment specifications, analyzed failure probability and consequence analysis of design-basis accidents.
- Prepared fugitive and point source VOC emission estimates and performed a "Top-Down" BACT analysis for a 217 MMBtu/hr steam boiler for a proposed ethanol production facility in Great Falls, Montana.
- Performed environmental analysis for the Bonneville Power Authority, including air pollution BACT analysis, wastewater analysis, and evaluation of secondary environmental effects of electric power producing technologies.

Jacobs Engineering Group

1988 to 1990

Mr. Walters was responsible for a wide range of air pollution regulatory and testing projects, including the following:

- Project manager of air toxic emission inventory reports (under California's AB2588), prepared for US Borax's boron mining and refining facility and the Naval Aviation Depot (North Island Naval Base, San Diego, California).
- Prepared air permit applications and regulatory correspondence for several facilities:
 - US Department of Energy's Feed Material Production Center uranium processing facility in Fernald, Ohio
 - Emission sources at a confidential high technology electronics manufacturing facility
 - Evaluation of a sludge dewatering process at Unocal's Wilmington, California, Refinery
 - United Airlines blade repair facility at the San Francisco Airport
 - Relocation of Kerr-McGee's rocket fuel storage and blending facility to Apex, Nevada.
- Prepared source testing plans, Quality Assurance/Quality Control (QA/QC), and testing oversight for several facilities, including: QA/QC for RCRA air emissions sampling plan for the Department of Defense's Chem-Demil facility on Johnston Atoll; prepared plan and provided QA/QC and field

oversight for emissions testing at Baxter Healthcare in Irvine, California; and prepared plan and provided testing oversight for Kerr-McGee's existing ammonium perchlorate manufacturing facility in Henderson, Nevada.

- Completed identification of air permitting regulations and control technology requirements for a proposed 30,000 barrel per day catalytic cracking unit for Coastal Corporation's Pacific Refinery, located in Hercules, California.
- Characterized and quantified air emissions for offshore oil and gas development activities associated with Federal oil and gas Lease Sale 95, offshore southern California, for the US Minerals Management Service.
- Assisted in selection and design of air pollution control equipment for various clients.
- Prepared environmental reports, including waste stream quantification and characterization for several proposed facilities, including:
 - Lake Minerals proposed soda ash plant at Owens Lake, California
 - Minsal's proposed potash facility located on the Salar de Atacama in Chile.

San Joaquin County Air Pollution Control District

During 1987 and 1988

Mr. Walters served as an air pollution engineer and was responsible for the following: start-up site inspections of air pollution sources; monitoring source tests and evaluating source test reports; permitting minor and major sources of air pollutants; processing emission banking applications; and aiding in the preparation of the District's Best Available Control Technology (BACT) quarterly reports, Reasonable Further Progress reports, and emission inventories.

Adelphi Center for Energy Studies

1985 to 1986

Mr. Walters served as a combustion facility manager/research engineer and was responsible for the following: management and implementation of all conventional and novel fuel combustion projects, including the preparation of interim and final reports, conducting source tests using EPA methods 1-4 and 17, and the data analysis of all combustion tests; maintenance and repair of all combustion facility equipment; preparation of all combustion project proposals; and implementation and data analysis of fuel atomization studies, fuel rheology research, and bench scale coal ash removal research.

CERTIFICATIONS

- Chemical Engineer, California License 5973
- CARB, Fundamentals of Enforcement Seminar
- EPA Methods 1-8, 17; Training Seminar

AWARDS

- California Energy Commission Outstanding Performance Award 2001

JAY SHETH
CHEMICAL ENGINEER

Mr. Sheth is a graduate of the University of Southern California and a registered professional chemical engineer in both California and Arizona.

EDUCATION

M.S., Chemical Engineering, University of Southern California, 1975
B.S., Chemical Engineering, University of Southern California, 1973

REGISTRATION

California Chemical No. 3535
Arizona Chemical No. 23163

SPECIAL FIELDS OF KNOWLEDGE

Hydrocarbon Processing - Design and Operations
Risk Assessment, Risk Analysis and Hazard and Operability Studies
Operations Management
Project Management
Petroleum Processing, Economics and Feasibility
System Safety and Reliability
AIChE Process Risk Management Training

PROFESSIONAL ACTIVITIES

Tau Beta Pi
American Institute of Chemical Engineers
American Society of Mechanical Engineers

PROFESSIONAL EXPERIENCE

Mr. Sheth has had over thirty-six years experience in process risk assessment and evaluation, project management, process design, facilities revamp, plant construction, start-up and environmental permit management.

Mr. Sheth has been associated with Robert Brown Engineers for more than thirty years serving as lead process and project engineer in the hydrocarbon facility risk assessment and evaluations, facility audits, process design of gas treating facilities, refinery expansions, grass root refineries, SNG modifications for refinery fuel gas feed, offsite facilities, in-line fuel oil and gasoline blending facilities, utilities, and sulfur removal and recovery. He has conducted configuration and economic feasibility studies for shale oil, tar sands bitumen, grass-roots refineries and related facilities. He has also been involved with simulation of the California refineries for California Energy Commission (CEC) projects.

Mr. Sheth has an extensive experience in the risk assessment and Hazard and Operability Studies (HAZOPS). Mr. Sheth has been associated with risk assessment, risk analysis and HAZOPS for more than twenty two years.

Mr. Sheth, as part of five-member panel, conducted evaluation of design and operational safety of Alyeska's Valdez Marine Terminal's Tanker Vapor Control System in Alaska.

Currently, Mr. Sheth has been involved with the County of Santa Barbara providing safety review of the oil and gas projects. The responsibilities include reviewing process and mechanical design; HAZOPS; risk assessments; corrosion control, monitoring, inspection and maintenance; EIRs; relief system; startup and commissioning procedures; operating procedures; electrical area classifications; handling of hazardous and toxic chemicals; safety regulations; emergency shutdown systems and other safety related systems. The safety reviews are being conducted since 1984. The oil and gas projects in the county include: PXP's (formerly Chevron) Pt. Arguello Project; Phillips' Tajiguas Gas Plant Modification; Shell Molino Gas Plant Expansion; PXP's (formerly Unocal) Pt. Pedernales Project; ExxonMobil Santa Ynez Project; All American Pipeline Project; Texaco Gaviota Marine Terminal; E&B Natural Resources' (Formerly ARCO) South Cuyama Project; POPCO's Gas Plant Expansion; Venoco's (formerly ARCO/Mobil) Ellwood Oil & Gas Treating Facility, Ellwood Marine Terminal and Platform Holly; Unocal/Nuevo's (now PXP) Gas Plant; Molino Energy's Gas Plant Project; Greka's (formerly Conoco) Santa Maria Asphalt Refinery; ConocoPhillips' (formerly Unocal) Pipelines and Pump Stations; and other oil and gas processing facilities.

Mr. Sheth is one of the principal participants of the annual Safety, Inspection, Maintenance and Quality Assurance Program (SIMQAP) audits of all Oil & Gas processing facilities in the County of Santa Barbara. These audits ensure that the facilities are operated in a safe and environmentally sound manner.

Mr. Sheth was involved in preparation of Initial Study and EIRs for petroleum pipelines in the L.A. Basin. Mr. Sheth assisted in preparation of the Supplemental EIRs for the Pacific Pipeline and Santa Fe Product Pipeline. He was responsible for the implementation of the mitigation measures (as part of the Pacific Pipeline Mitigation Monitoring Program) during the design and construction of the Pacific Pipeline.

Mr. Sheth was involved in evaluating and auditing Alyeska's Valdez Marine Terminal Tank Vapor Recovery and Tanker Vapor Control Systems for safety, corrosion and leaks. Mr. Sheth was also involved with All American Pipeline Company's System Safety Section of the EIR for the crude oil pipeline from California to Texas.

A grass root refinery was constructed in record time under the leadership of Mr. Sheth. The project was completed (from conception to startup) within a year. The project included economic feasibility, permitting, design, construction management, and startup of the facility.

Mr. Sheth has performed economic feasibility studies for various hydrocarbon processing facilities. Over the years, projects included four west coast refineries for possible purchase and bank evaluation for collateral coverage, heavy crude oil gasification to produce synthetic natural gas for the Gas Company, Shale oil feasibility for the Edison and petroleum products loading operation. Feasibility study of a grass root refinery in Arizona resulted in realization of the refinery project.

Mr. Sheth has provided litigation assistance for a number of projects. Among the projects for which the assistance provided were: Feedstock contract dispute and Rate case for NI Gas, Fuel contract dispute for Southern California Edison (SCE) and oil price fixing dispute against the Oil Companies. Mr. Sheth was also involved in preparing testimony for FERC (Federal Energy Regulatory Commission) and CPUC (California Public Utilities Commission) hearings for a rate reasonableness review. Mr. Sheth was expert witness for number of litigations including the litigation of Nuevo's crude oil pipeline rupture due to corrosion in the offshore environment, Venoco's Pig Receiver accident as well as Venoco's insurance claims for the sour gas releases from the Ellwood facilities.

Mr. Sheth has been involved in the project management for the start-up of a gas treating facility. The facility included an offshore pipeline, gas sweetening, dehydration, NGL recovery, sulfur removal and recovery and offsites.

As an adjunct to his process engineering activities at RBE, Mr. Sheth has conducted freight forwarding inspection and certification of process equipment and materials being sent to Indonesia.

As a senior chemical engineer at C. F. Braun, Mr. Sheth was responsible for utility flow diagrams, hydraulic calculations and steam balances for amine, sour water and offsite units.

As a process and plant engineer for Basin Petroleum Company, Mr. Sheth was responsible for converting a petrochemical plant into a refinery. This work included process design for a crude topping unit, vapor recovery system and offsites. He also supervised plant construction and start-up.

Mr. Sheth conducted environmental studies, assisted in filing and obtaining permits for the plant hydrocarbon emissions, air pollution and water pollution control systems. Mr. Sheth also conducted pilot plant studies for various sulfonation processes and prepared sulfonation reports, cost analysis, laboratory tests for quality control.

At the University of Southern California Mr. Sheth served as a research assistant and tutor. He assisted the department of chemistry professor in his kinetics research, and assisted department of chemical engineering chairman in preliminary studies on various coal gasification processes. He served as a teaching assistant for the unit operations laboratory in the department of chemical engineering. He also tutored chemistry, mathematics and physics.

Mr. Sheth is President of Robert Brown Engineers, overseeing the operations since 1986.



GEOTECHNICAL CONSULTANTS, INC.

Geotechnical Engineering • Geology • Hydrogeology

JAMES E. THURBER, R.G., C.E.G., C.H.G.

STATEMENT OF QUALIFICATIONS

James Thurber leads Geotechnical Consultants, Inc.'s (GTC's) geologic and hydrogeologic efforts. Mr. Thurber is actively involved in engineering geology, hydrogeology, and hazardous material assessments for numerous local and regional environmental impact reports. His EIR experience includes long linear pipelines and transmission lines, new power plants, highways, new schools, and large redevelopment projects. He is experienced in the impact analysis of hazardous materials for large planning projects and preparing appropriate and applicable mitigation measures. Mr. Thurber has also conducted hazardous waste investigations and site characterization for leaking underground fuel tanks, industrial facilities and solid waste landfills, and is experienced in the assessment of site conditions related to past and current use of hazardous materials and environmental contamination.

He brings with him 25 years of experience and an in-depth knowledge of the development, protection, and management of municipal groundwater resources. His expertise encompasses hydrogeologic assessment of groundwater basins; aquifer characteristics determination; water well site selection; water well design; management of well construction; and the assessment and development of well rehabilitation programs. Mr. Thurber has conducted groundwater resource studies to evaluate storage capacity, estimate recharge, and develop flow models to assess long-term yield, seawater intrusion, and drought impacts. His particularly sought after skills include the design of large-diameter, high-capacity municipal supply wells; injection and monitoring wells in nested and cluster configurations; and interpretation of stratigraphic and geophysical logs for final selection of screened intervals and gravel pack during well construction to optimize sand-free groundwater production and aquifer-specific monitoring.

EDUCATION

Colorado State University, M.S., Geology, 1982
California State University, Northridge, B.S., Geology, 1978
California State University, Northridge, B.A., Geography, 1976

CERTIFICATION AND REGISTRATION

Registered Geologist No.4197, State of California
Certified Engineering Geologist No.1458, State of California
Certified Hydrogeologist No.162, State of California

MEMBERSHIP

National Ground Water Association
American Water Works Association



EXPERIENCE

GEOTECHNICAL CONSULTANTS, INC. Mr. Thurber joined the firm in 1985 and manages GTC's Orange County office. Select project experience includes:

SCE Tehachapi Renewable Transmission Project, Kern, Los Angeles, and San Bernardino Counties, California. We are analyzing environmental contamination, geology, soils, and seismic issues for a 159 mile long 500kV transmission line and four alternative alignments extending from Tehachapi across Antelope Valley, across the San Gabriel Mountains and San Gabriel Valley to Mesa Substation in Montebello, and then east across the Montebello, Puente, and Chino Hills to Mira Loma Substation in the City of Ontario. These alignments traverse the San Andreas, San Gabriel, Sierra Madre, Whittier, and Chino fault zones as well as landslide prone areas in the San Gabriel Mountains and Chino Hills.

Lower Crystal Springs Dam Improvement Project EIR, San Mateo County, California. A new spillway and stilling basin are planned to prevent erosion and scour of the dam abutments during the Probable Maximum Flood. The new concrete stilling basin measures 90 feet by 100 feet with 18 foot high sidewalls and will rest on sandstone after removal of 15 feet of alluvium. Geologic impacts related to excavation and shoring of artificial fill, alluvium and colluvium along San Mateo Creek, erosion during construction, and potential corrosive soil and bedrock were evaluated.

Irvington Tunnel Project EIR, Alameda County, California. Geotechnical Consultants analyzed the environmental impacts of geology, soils and seismicity for the critical 4-mile long water conveyance tunnel, portals and disposal areas. GTC also assisted with the identification and analysis of groundwater resources. The new water transmission tunnel will parallel the existing tunnel and will pass through an uplifted block of Tertiary sedimentary rock bounded by the active Calaveras and Hayward faults. Geologic impacts of tunneling include intercepting groundwater and decreasing spring flows, tunneling through weak rock and fault gouge zones, slope stability concerns at the portals, and placement of large volumes of tunnel rock and muck at disposal sites.

Calaveras Dam Replacement Project EIR, Alameda and Santa Clara Counties, California. The new dam will replace the existing seismically unsafe dam. The dam site requires deep excavation to remove loose deposits, weathered bedrock and a large landslide on the right abutment. Three borrow sites and two large disposal sites are required to obtain the range of earth materials needed for dam construction and disposal of excess and unusable material. Geologic issues include active faulting and strong groundshaking sourced from the nearby Calaveras fault, placement of large disposal fills, and erosion along access roads, borrow sites and permanent disposal areas.

Sunrise Powerlink Project EIR/EIS, Imperial and San Diego Counties, California. We conducted the analysis of the environmental impacts of geology, soils, seismicity and environmental contamination for the 150-mile long transmission line that extends from the



Salton trough, over the Peninsula Ranges and into the Coastal terraces. The diverse geologic setting presents several impacts related to crossing of active faults, strong seismic shaking, erosion, slope stability, and access to mineral resources. The environmental analysis is evaluating five alternatives and potential new in-area power generation. Hazardous materials and unexploded military ordinance sites are also being identified and evaluated for project impacts.

SCE Antelope-Pardee Transmission Segment 1, Los Angeles County, California. We are analyzing geology, soils, and seismic issues for five alternative alignments, each measuring about 25 miles long. In addition, we are evaluating environmental contamination along these alignments, particularly the underground portions. These alignments traverse high desert, and mountainous areas, and the San Andreas rift zone.

SCE Antelope Transmission Project Segments 2 and 3, Los Angeles and Kern Counties, California. We are analyzing geology, soils, and seismic issues for three alternative alignments extending from Tehachapi across Antelope Valley to Palmdale and the Vincent Substation. In addition, we are evaluating environmental contamination along these alignments, particularly the underground portions. These alignments traverse the Garlock and San Andreas fault zones.

Master Plan EIR - Los Angeles Pierce College Facilities; Hazardous Material and Geologic Hazards EIR Sections. Prepared the Geology and Soils, and Hazardous Materials Draft EIR sections. The geologic/seismic hazard assessment identified geologic setting, including soil characteristics, faults, and seismicity at the proposed project site, and the preliminary hazardous material site assessment investigated the potential for environmental contamination to adversely impact proposed Pierce College Master Plan improvements. Provided analysis of significant impacts from geologic hazards and developed mitigation measures.

Jefferson-Martin 230 kV Transmission Line EIR. Mr. Thurber was responsible for overseeing the preparation of the geology and environmental contamination sections of the EIR.

California Energy Commission, Staff Assessments Technical Assistance in Application for Certification Review. Geotechnical Consultants Inc. is assisting Aspen Environmental Group and CEC in evaluation of new power plant applications throughout the State. Mr. Thurber is serving as a Project Hydrogeologist for the issue area of groundwater for cooling and potable supply.

Groundwater Staff Assessment. Conducted the analyses of groundwater issues for domestic supply and cooling at the Morro Bay Power Plant (MBPP) and the San Joaquin Valley Energy Center (SJVEC). Provided written testimony for the staff assessments of MBPP and SJVEC, and provided oral testimony at the MBPP hearings.



Compliance Review. Provided support for CEC staff evaluating preliminary well design and estimates of groundwater production and aquifer storage and recovery for the High Desert Power Plant. As Project Hydrogeologist, assisted with review of aquifer test planning, analysis of aquifer test results, and well interference calculations for the Blythe Energy Power Plant.

Miguel-Mission 230 kV #2 EIR. Mr. Thurber is the Associate Geologist overseeing preparation of the geology and environmental contamination sections of the EIR. The project is being prepared for the California Public Utilities Commission (CPUC) to evaluate a proposed 35 mile lone 230 kV circuit within an existing transmission line ROW between Miguel and Mission substations in San Diego County. In addition, the Miguel Substation and Mission Substation would be modified to accommodate the new 230 kV transmission circuit.

Kinder Morgan Concord to Sacramento Pipeline EIR. Project manager for the geology and environmental contamination sections of an EIR evaluating a proposed 70-mile long refined petroleum products pipeline for the California State Lands Commission. Analysis included consideration of potential impacts from active fault crossings, landslides, liquefaction, existing soil and groundwater contamination, and from potential pipeline accidents in Contra Costa, Solano, and Yolo Counties.

Bolsa Chica Water Line EIR. Prepared geology, seismicity, groundwater resources and hazardous materials sections of the Bolsa Chica Water Line Environmental Impact Report. This project was prepared for the CPUC to evaluate a proposed water transmission line through the City of Huntington Beach for use by Southern California Water Company. Provided analysis of significant impacts from geologic hazards, hazardous materials, use of groundwater resources, and developed mitigation measures.

New Mental Health Treatment Facility, Coalinga and Imperial County. Performed preliminary geologic and hazardous material site assessments to evaluate the potential for geologic/seismic hazards and environmental contamination to impact the proposed New Mental Health Treatment Facilities. Prepared environmental contamination and geologic hazards sections of the EIR.

A listing of other projects is given below:

Environmental Impact Technical Studies

Preliminary Environmental Assessment, Proposed Military Vehicle Storage Facility,
Bakersfield, California
New Mental Health Treatment Facility, Coalinga and Imperial County, California
Initial Study to Evaluate the Division of Oil, Gas, and Geothermal Resources, CEQA
Compliance Program, Kern County, California
Caltrans District 7 Headquarters EIR; Los Angeles, California
Sunrise Powerlink Transmission Project, Imperial and San Diego Counties, California
Tranquillon Ridge Oil Pipeline EIR Update, Santa Barbara County, California



SFPUC WSIP-Program EIR, San Francisco Bay Area, California
SFPUC Lower Crystal Spring EIR, San Mateo, California
SFPUC Calaveras Dam EIR, Sunol, California
SFPUC Alameda Siphons, Sunol, California
SFPUC Irvington Tunnel EIR, Sunol to Newark, California
Devers-Palo Verde 500kV Transmission Line, Arizona to California
Antelope Transmission Project, Kern and Los Angeles Counties, California
Antelope-Pardee Transmission Line, Antelope Valley to Santa Clarita, California
Santa Fe Pacific Pipeline, Carson to Norwalk, California
Adelante Eastside Redevelopment Project, Los Angeles, California
California Public Utilities Commission, Level 3 Communications Network, California
North County Landfill Siting Study, San Diego County, California
Imperial Redevelopment Project, San Diego, California
Cajon Pipeline, San Bernardino and Los Angeles Counties, California
Pacific Pipeline, Santa Barbara, Ventura and Los Angeles Counties, California
North Park Redevelopment Project, San Diego, California
San Ysidro Redevelopment Project, San Diego, California

Municipal Water Wells

Colorado Well, Arcadia, California
Brewer Desalter Well, Torrance, California
Well 14 and 15, 99th Street Well Field, City of Los Angeles, California
Well Nos.19, 20, 21, 22, 23, 24 and 25, Orange, California
Well Nos.1B, 8, 9 and 11, Mesa Consolidated Water District, Costa Mesa, California
Water Well Rehabilitation, Mesa Consolidated Water District, Well Nos.4, 5, 7
and 8, Costa Mesa, California
Vandenberg Well, City of Tustin, California
Well IDP-1 through IDP-4, Irvine Desalter Project, Orange County Water District,
Irvine, California
Sebastopol Road and Occidental Road Wells, Santa Rosa, California
Ball and Boisseranc Wells, Buena Park, California
Well 2363 and 2201, USMC Camp Pendleton Air Base, Oceanside, California
Valley Well No.2, San Diego Wild Animal Park, San Pasqual Valley, Escondido

Injection/Recharge Wells

Injection Wells I24 and I25, Well Development and Aquifer Testing, Talbert Seawater
Barrier, Orange County Water District, Fountain Valley, California
Injection Well Cluster I26, Talbert Seawater Barrier, Orange County Water District,
Fountain Valley, California



Groundwater Monitoring, Site Characterization Studies

West Coast Barrier Triple Nested Monitoring Well, Redondo Beach, California
Nested Monitoring Wells, Sonoma County Water Agency, Windsor, California
Nested Monitoring Wells, Orange County Water District, Newport Mesa,
Orange County, California
West Waterman Canyon Portal, Inland Feeder Tunnel, San Bernardino, California
San Pasqual Valley, San Diego, California
Mesa Consolidated Water District/Orange County Water District, Deep Multi-Port
Monitoring Well, Costa Mesa, California
Calabasas Landfill, Calabasas, California
Puente Hills Landfill, Whittier, California
Los Alamitos AFRC Landfill, Los Alamitos, California
Domtar Gypsum, Inc., Vernon, California
Culver City Motor Clinic, Culver City, California
Norwalk Dump, Norwalk, California
Stinnes-Western Chemical Corporation, Vernon, California
Cooper Drum Company, South El Monte, California
George Air Force Base, Adelanto, California
Palomar Airport Landfill, Carlsbad, California

Water and Wastewater Treatment Facilities

SFPUC Harry Tracy Water Treatment Plant Geologic Hazard Assessment, San Mateo,
California
SFPUC Moccasin Penstock Replacement Tunnel Feasibility, Moccasin, California
Metro Biosolids Center/Northern Sludge Processing Facility, San Diego, California
Point Loma Wastewater Treatment Plant, Sludge Pumping Facilities,
San Diego, California
San Diego-Tijuana Land and Ocean Outfalls, San Diego, California
Sunnydale Transport/Storage Facilities, San Francisco, California
San Diego Sludge Management Facilities, San Diego, California
Tehachapi Wastewater Treatment Plant, Tehachapi Correctional Institution,
Tehachapi, California
Silverwood Lake Water Treatment Plant, Crestline, California
Groundwater Desalter Facility, San Juan Capistrano, California

Leaking Underground Fuel Tanks

Orange Fire Station, Orange, California
California Industrial Products, Santa Fe Springs, California
Rexnord-Tridair Industries, Torrance, California
W.A. Woods Industries, South Gate, California
Burch Ford, La Habra, California



Tunnels

Moccasin Penstock Replacement Tunnel Feasibility, Moccasin, California
North Outfall Replacement Sewer, Los Angeles, California
North City Tunnel Connector, San Diego, California
Inland Feeder - Mountain Segment Tunnel, San Bernardino, California

Freeway, Light Rail, Airport Projects

BART Earthquake Safety Program, Aerial Guideway Structures Project, San Francisco Bay Area, California
Yuma Drive Interchange, Riverside, California
Route 91 Sound Walls, Riverside, California
I-15/Glen Helen Parkway Interchange, San Bernardino, California
I-10 HOV Project, Los Angeles, California
Route 222 – Bass Lake Road Improvements, Madera County, California
Routes 18, 40, 62, 83, and 79 Roadway Rehabilitation Projects, San Bernardino County, California
Santa Monica Airport, Santa Monica, California
Ontario Airport, Ontario, California
Los Angeles Airport, Los Angeles, California
Rice Avenue - U.S. 101 Interchange (IS/EA; ND/FONSD) Oxnard, California
Isabel Avenue Extension, Livermore, California

Other Projects

Los Angeles Regional Transit System Blue Line, Los Angeles, California
AT&T Light Guide Cable, Northern California
Celeron/All American Pipeline, Santa Barbara County, California
Hayward Fault Evaluation, Fremont, California
Aguanga-Earthquake Valley Fault, Warner Springs, California
MBC/NSPF Gallery Fault Investigation, San Diego, California
Smith Headquarters Facility, Los Angeles, California
Indicator Pile Pre-drilling and Observation, Box Culvert, San Diego, California
LAMTA Red Line East Side Vibration Propagation Study, Los Angeles, California
MBC/NSPF South Access Road, San Diego, California
California Science Center/California African American Museum Parking Structure EIR; Los Angeles, California

South Coast Air Quality Management District

Air Quality Complaint Report

Complaint 181387

Receive By:	GRACEN on 1/10/2006 22:25:00	Assignment No:	918889
Assign By:	JLAW on 1/11/2006 07:42:37	Inspector:	JOSEPH LIAW (JL05)
Dispatch On:	1/10/2006	Instruction:	
Team:	C		
Type:	ODORS		
Description:	SMELLED SOMETHING FUNNY OUTSIDE,		

Instance Start Date:

Instance End Date:

Complainant

First Name: _____ Last Name: _____
Address: _____
Phone: _____

Alleged Source

Name: OIL WELL
Address: LA CIENEGA/SLAUSON, CULVER CITY, CA 90230 (Sector LF)

Actual Source

Name: _____
Address: _____

Disposition

SUNK on 1/11/2006 07:46:27

Inspector Comment

Complaints nos. 181387 and 181389

On 1/10/06 at 2330 hours, I arrived at the complainant's home located at _____ to investigate the odor complaint. I met with both the complainant, _____, and her husband, _____. According to he stated that earlier that evening at 2230 hours, he stepped outside his home and smelled a strong diesel exhaust odor. He characterized the odor as similar to the exhaust from airplanes or from diesel trucks. Also, he stated that the smell was strong for only a brief period and has since gone away. During the time I was there, both _____ and _____ stated that they were unable to smell any odors. I left their residence at 2345 hours and headed towards PXP LA for surveillance. The facility is located along S. La Cienega Blvd. and La Brea Ave. While driving along S. La Cienega Blvd., I did notice a petroleum smell that was mixed with exhaust fumes. Since there really weren't any traffic, I did not believe that it was from a car or truck. Also, along La Cienega, there were no places to stop and get out of the vehicle to determine the odor. Therefore, I drove along Stocker St. and Fairfax Ave. to verify the odor. Plains Exploration & Production Company (FID# 133987) in Los Angeles office is located on 5640 S. Fairfax Avenue. I was able to park along the road at several spots and walk up to the fence line closer to the oil wells. At these spots, I was only able to detect a faint crude oil odor, which was different than the smell along La Cienega Blvd. At the time, I thought it was possible that I was detecting a smell that had a mix of crude oil and vehicle exhaust.

As for the complaint investigation, both the complainants and I were unable to identify the odor at the complainant's residence. Also, the described odor according to the complainants was a diesel odor. During my surveillance, I was able to identify a faint petroleum odor. However, it was weak at the time, and I was unable to match this odor to the one the complainant identified when he called the district's complaint number. Therefore, the source of the odor was unknown and no further actions were taken. I left the area at 0010 hours.

On 1/11/06, I was notified by Supervisor Sam Vega that the our emergency response team went out to PXP LA after 2130 hours on 1/10/06 in response to a substance release from a oil well. I contacted Pat Gorski (323-298-2441), EH&S Advisor for PXP LA, to gather more information. According to Mr. Gorski, during the late evening of 1/10/06, a rig drilling for PXP in the Inglewood Oil Field experienced an influx of natural gas during drilling operations. An unknown amount of methane gas and hydrogen sulfide was released into the atmosphere. Also, the prevailing winds carried the odor from the location towards the ocean. According to Mr. Gorski, the concentrations of gas on and leaving location were confirmed to neither be flammable nor hazardous. Also, representatives from Los Angeles County Fire Department, Culver City Fire Department and Los Angeles County Health and Hazardous Materials Department have been onsite to confirm there were no hazards posed to the community.

INSPECTOR: _____
signature

DATE: _____

SUPERVISOR: _____

signature

DATE: _____

South Coast Air Quality Management District

Air Quality Complaint Report

Complaint 181392

Receive By:	AKIM on 1/11/2006 07:41:37	Assignment No:	918895
Assign By:	samy on 1/11/2006 07:52:50	Inspector:	JOSEPH LIAW (JL06)
Dispatch On:	1/11/2006	Instruction:	
Team:	C		
Type:	ODORS		
Description:	Strong fumes from oil drilling. Fumes began last night and is still present.		

Instance Start Date:

Instance End Date:

Complainant

First Name: _____ Last Name: _____
Address: _____
Phone: _____

Alleged Source

Name: PXP (OIL DRILLING)
Address: LA CIENEGA/STOCKER, CULVER CITY, CA 90230 (Sector LF)

Actual Source

Name: _____
Address: _____

Disposition

SUNK on 1/11/2006 17:39:47

Inspector Comment

On 1/11/06, complaints #181392, 181393, 181394, 181395 and 181402 were called in regards to an odor associated with a incident at Plains Exploration & Production Company (FID# 133987) located on 5640 S. Fairfax Ave. in Los Angeles.

Earlier on 1/11/06, I was notified by Supervisor Sam Vega that the our emergency response team went out to PXP LA after 2130 hours on 1/10/06 in response to a substance release from a oil well. I contacted Pat Gorski (323-298-2441), EHI&S Advisor for PXP LA, to gather more information. According to Mr. Gorski, during the late evening of 1/10/06, a rig drilling for PXP in the Inglewood Oil Field experienced an influx of natural gas during drilling operations. An unknown amount of methane gas and hydrogen sulfide was released into the atmosphere. Also, the prevailing winds carried the odor from the location towards the ocean. According to Mr. Gorski, the concentrations of gas on and leaving location were confirmed to neither be flammable nor hazardous. Also, representatives from Los Angeles County Fire Department, Culver City Fire Department and Los Angeles County Health and Hazardous Materials Department have been onsite to confirm there were no hazards posed to the community.

After gathering the information, I contacted each of the complainants to inform them of my findings. Also, I asked each of them to continue to call AQMD's complaint number whenever they notice any odors.

INSPECTOR: _____
signature

DATE: _____

SUPERVISOR: _____

signature

DATE: _____

**CULVER CITY FIRE DEPARTMENT
INCIDENT REPORT**
Universe:None Population:None Repeat Set:None

INCIDENT ID#	20060118
INCIDENT DATE	01/11/2006
DATE REPORT ENTERED	01/11/2006
RECORD COMPLETE	Y
DISPATCH TIME	02:16:42
ROLLOUT TIME	02:16:53
ARRIVAL TIME	02:17:14
RESPONSE (IN MIN)	0
CODE 3 RESPONSE	Y
JURISDICTIONAL STATION	33
SHIFT	A
REPORTED BY	SYVERSON SYVERSON
UNITS ON SCENE	B1
SITUATION FOUND	200 Overpressure rupture, explosion, overheat, other 410 Flammable gas or liquid condition, other
MUTUAL AID	N None or no mutual aid involved
METHOD OF ALARM	01 Telephone
ADDRESS/LOCATION	10640 YOUNGSWORTH RD
ZIP CODE	90230
NUMBER OF PERSONNEL	0
ENGINES USED	0
OTHER VEHICLES USED	0
SPECIFIC PROPERTY USE	
ACTION TAKEN	
AREA OF FIRE ORIGIN	
LEVEL OF FIRE ORIGIN	
FORM OF HEAT	
IGNITION FACTOR	
MATERIAL TYPE	
MATERIAL FORM	
IGNITION FACTOR	
EXTINGUISHMENT METHOD	
TOTAL DOLLAR LOSS	
NUMBER OF STORIES	
FLAME DAMAGE	
SMOKE DAMAGE	
TYPE CAUSING MOST SMOKE	
TYPE CAUSING MOST SMOKE	
AVENUE OF SMOKE TRAVEL	
DETECTOR PERFORMANCE	
SPRINKLER PERFORMANCE	
OCCUPANT LAST	
FIRST	
ADDRESS	10640 YOUNGSWORTH RD
PHONE	
RESPONSIBLE PARTY	
ADDRESS	10640 YOUNGSWORTH RD
PHONE	
EQUIPMENT INVOLVED	NNN No equipment involved in ignition
RIC NARRATIVE	THERE WAS NO RIC NEEDED FOR THIS CALL.
INCIDENT NARRATIVE	B1 responded to an odor investigation in the area of Culver Crest. Units had been in the area earlier for a possible natural gas leak. At that time there was a slight smell of a petroleum-type odor coming from the area of the oil production fields. E3 and R3 had also been dispatched to a resident who complained of a headache and burning eyes - possibly as a result of the smell. B1 arrived to the area to discover that the smell from earlier had increased in intensity and area. B1 contacted LA County Health Haz Mat. Yoshiaki Ishimaru and Karen Coddling arrived. B1 also contacted LA County Fire and asked for an engine company to meet at the Command Post. Culver City notified B1 that they were receiving a high volume of calls for

this odor. Engine 58 arrived on scene (Captain Dean Rivero). LA County and B1 proceeded on to the oil field, Plains Exploration Production (PXP). Upon arrival we were met by the production operator, Al Deacon. We informed him that we had received multiple calls for a strong odor in the Culver Crest area and inquired if there were any operations that were ongoing that might be the cause of the smell. He escorted us to rig # 1-195 (Vickers). We were met there by the job consultant, Craig Cody and Production Foreman Jim Galvin. They indicated that there had been a problem on the rig. They had apparently hit a pocket of methane which in turn caused a large volume of "mud" (400 barrels) to come to the surface. Cody stated that they had been monitoring for LELs and H2S and no alarms had sounded throughout the incident that occurred at approximately 2130. We were then met at the site by the Operations Manager, LA Basin, Gerry Cales. He confirmed that there had been a release and that they were in the process of pumping out the mud. The well was shut down and in control and had been since shortly after the incident occurred. LA County Health Haz Mat monitored the area and had no readings for LEL or H2S using three different monitors. AQMD (Mohan), State OES (Control #06-0270), and National Response Center (#784-841, Miss Johnson) were notified. B1 contacted Culver City to have them inform residents who called that the smell was not harmful and according to Health Haz Mat could be characterized as a "nuisance only" at the time. Cales informed B1 that they would be performing additional procedures to "circulate" the gasses that were building in the well. This operation would start around 0700 and commence around 1100 hours on 1-11-06. They would be conducting routine analysis of the gas LEL levels throughout that process. He added that there were an additional 50-100 barrels of mud that was still in the well that would have to be pumped out and disposed of. All mud that was collected would be moved to sealed containers to reduce odors. It was the opinion of the PXP and Haz Mat officials that the cause for the smell was not the gas release but rather the mud on the ground in and around the well area. LA County Fire, Haz Mat and Culver City Battalion One cleared. Culver City and LA County Engine 58 will return to the site at approximately 0900 to monitor progress.

Culver City Inc # 20060118
 AQMD 951-830-8836
 LACo Fire Inc # 8221
 Yoshiaki Ishimaru 323-890-4093 Cell # 213-200-4057
 Karen Coddling 323-890-4112
 Gerry Cales 323-298-2226
 Jim Galvin 323-298-2268
 Plains Exploration and Production 323-298-2200
 Plains Exploration and Production Emergency # 323-855-3203
 Captain Dean Rivero, Engine 58, 323-291-8392, 323-881-2455

EMERGENCY RESPONSE SUMMARY

DATE: January 11, 2006

INCIDENT: Emergency Response Notification #121860
Methane and H2S release at an Oil Well Drilling Site in Culver City.

LOCATION: Plains Exploration and Production Co. (I D # 133987)
5640 Fairfax Ave.,
Culver City, CA 90056
Thomas Guide 673 A4

REQUESTOR: State OES notified and LA Co. Fir Dept. Health Haz. Mat.

AQMD STAFF: Mohan Nagavedu, ER Coordinator (x3739)
Sam Vergara, Field Supervisor (x.2318)
Larry Israel, ER Inspector

ACTION: Supervising AQ Inspector Sam Vergara and AQ Inspector Larry Israel were dispatched to respond to the incident and handle any complaints, render aid to L.A. Co. Health Hazmat, and take enforcement action as necessary.

One sample collected – SUMA canister on La Cienega north of Stocker.

ADDITIONAL: While drilling at about 8800 ft they hit a large pocket of methane. Appox. Several hundred barrels of contaminated drilling mud and water was collected in a sump. Facility has shut down the drilling and started to pump the contaminated water and mud. Four complaints received by District: C-181387 and 181389 was received on 1/10/05 around 2250 hrs. and C 181392 and 181393 were received this morning. Refinery Inspector Joseph Liaw to follow up on the complaints.

South Coast Air Quality Management District

Air Quality Notification Report

Notification 122010

Receive By: CPONCE on 1/11/2006 08:08:00 Assignment No: 918202 Inspection Date:
Assign By: cpnce on 1/12/2006 12:50:33 Inspector: LAURANCE B ISRAEL (LI02)
Dispatch On: 1/27/2006 Disposition:
Team: A
Activity: SAMPLE TRACKING
Instruction: THO in sample is 4 times ambient levels

Description: 1 sample - Summa Canister #64142

Instance Start Date: 01/11/2006 00:00

Instance End Date: 01/24/2006 00:00

Notifier

Facility: 133987 PLAINS EXPLORATION & PRODUCTION CO, LP
First Name: JOHN Last Name: BARKER
Address: 5640 S FAIRFAX AVE, Unit 6011-01, LOS ANGELES, CA 90056
Phone: (805)290-8048 (Work)

Site Location

Facility: 133987 PLAINS EXPLORATION & PRODUCTION CO, LP
Address: 5640 S FAIRFAX AVE, LOS ANGELES, CA 90056 (Sector LF)

Inspector Comment

INSPECTOR: _____
Signature

DATE: _____

SUPERVISOR: _____

DATE: _____

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

Page 1 of 3

TO: Jay Chen, Sr. Manager
Toxic

LABORATORY NO: 06011-01

REFERENCE NO: PAMSGC2

SAMPLE DESCRIPTION:

FACILITY ID#:

One each canister

OTHER ID#:

DATE SAMPLED: 01/11/06

SAMPLE SOURCE:

DATE RECEIVED: 01/11/06

Emergency Response

DATE ANALYZED: 1/11-13/06

Plains Exploration Production

SUBMITTED BY: Lorraine Israel

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS

Qualitative Analysis and Quantitation of Hydrocarbons by Gas Chromatography (GC) -
Flame Ionization Detection (FID)

Note:

See Attached Results

Sulfur compounds were not analyzed because the canister used for collecting the sample was not appropriate for storing sulfur compounds.

Date Approved: 1/24/06

Approved By:

Rudy Edan, Sr. Manager
Laboratory Services Branch
(909) 396-2391

LN: 06011-01

Analyst:

Instrument:

Calibration Standard:

Calibration Procedure:

Page 2 of 3

Winol Chanjamsri

PAMSGC2

SRM 1800-03-A, Cylinder #033777

One point forced to zero with the average of seven injections

Used propane for C2 to C4, and benzene for C5 to C12

Components	Concentration (ppb)				
		Burbank 1/8/06	Burbank 1/11/06	1/14/06	Pico Rivera 1/11/06
Canister ID or date sampling	54149	1/8/06	1/11/06	1/14/06	1/8/06 1/11/06
Ethane	139.2	17.4	27.7	7.8	19.3 16.9
Ethylene	3.3	8.1	13.0	4.5	9.5 9.4
Acetylene	2.5	5.7	10.1	3.2	6.5 7.1
Propane	82.8	8.8	18.4	4.3	15.2 17.7
Propylene	1.1	2.0	3.0	1.2	2.7 2.5
Isobutane	22.0	3.3	4.3	1.2	4.3 4.1
n-Butane	33.4	7.6	10.1	3.0	8.8 7.9
1-Butene	<0.1	0.3	0.3	0.2	0.4 0.4
Isobutene-2	<0.1	0.2	0.3	0.1	0.2 0.2
Isobutylene	<0.1	0.3	0.6	0.3	0.6 0.7
n-Butene-2	<0.1	0.2	0.3	0.1	0.2 0.2
Isopentane	13.2	7.0	9.2	2.9	8.5 7.8
Pentane-1	<0.1	0.2	0.3	0.1	0.2 0.2
n-Pentane	12.6	2.9	4.1	1.2	3.7 3.4
Isopentane	1.1	0.3	0.4	0.1	0.3 0.3
trans-2-Pentene	1.5	0.3	0.5	0.1	0.3 0.3
cis-2-Pentene	0.9	0.2	0.3	0.1	0.2 0.2
2,2-Dimethylbutane	0.9	0.6	0.1	0.2	0.8 0.6
Cyclopentane	7.0	0.3	0.5	0.1	0.4 0.4
2,3-Dimethylbutane	2.1	0.7	1.0	0.3	0.8 0.7
2-Methylpentane	4.9	2.6	2.8	0.8	2.4 2.2
3-Methylpentane	3.9	1.2	1.7	0.6	1.6 1.4
Hexane-1	<0.1	0.1	0.1	0.1	0.1 0.1
n-Hexane	2.8	1.1	1.8	0.6	1.3 1.3
Methylcyclopentane	3.2	1.2	1.7	0.6	1.6 1.4
2,4-Dimethylpentane	0.5	0.6	0.7	0.2	0.6 0.6
Benzene	0.8	1.4	2.0	0.8	1.8 1.7
Cyclohexane	1.8	0.6	0.8	0.3	0.7 0.7
2-Methylhexane	1.7	0.9	1.3	0.4	0.9 1.0
2,3-Dimethylpentane	1.7	1.0	1.4	0.6	1.3 1.3
3-Methylpentane	2.2	1.1	1.6	0.7	1.9 1.6
2,2,4-Trimethylpentane	1.7	1.8	2.3	0.3	0.8 0.8
n-Heptane	1.3	0.7	1.3	0.0	0.1 0.1
Methylcyclohexane	2.4	0.1	0.2	0.2	0.5 0.5
2,3,4-Trimethylpentane	0.3	0.5	0.7	0.2	0.5 0.5
Toluene	4.9	4.6	8.2	2.2	6.0 8.2
2-Methylheptane	0.8	0.3	0.5	0.1	0.4 0.4
3-Methylheptane	0.3	0.3	0.6	0.2	0.3 0.3
n-Octane	1.1	0.3	0.6	0.1	0.4 0.4
Ethylbenzene	1.1	0.7	1.0	0.3	0.8 0.9

LN: 06011-01

Components	Concentration (ppb)					
		Burbank (24 hr)*			Pico Rivera (24 hr)*	
Canist ID or date sampling	54149	1/8/08	1/11/08	1/14/08	1/8/08	1/11/08
m- & p-Xylene (1)	1.9	2.2	3.4	1.0	2.6	2.6
Styrene	0.9	0.2	0.3	0.1	0.2	0.3
o-Xylene	0.6	0.8	1.2	0.4	0.9	0.9
n-Nonane	0.2	0.3	0.4	0.1	0.2	0.3
Isopropylbenzene	<0.1	0.1	0.1	0.0	0.1	0.1
n-Propylbenzene	0.2	0.2	0.2	0.1	0.2	0.2
m-Ethyltoluene	0.3	0.6	0.8	0.2	0.8	0.8
p-Ethyltoluene	0.2	0.3	0.4	0.1	0.3	0.3
1,3,5-Trimethylbenzene	0.2	0.3	0.5	0.1	0.3	0.3
o-Ethyltoluene	<0.1	0.2	0.3	0.1	0.2	0.2
1,2,4-Trimethylbenzene	0.3	0.7	1.0	0.3	0.7	0.8
n-Decane	<0.1	0.4	0.6	0.1	0.3	0.4
1,2,3-Trimethylbenzene	0.2	0.3	0.3	0.2	0.3	0.3
m-Diethylbenzene	<0.1	0.1	0.2	0.1	0.1	0.1
p-Diethylbenzene	0.2	0.2	0.2	0.1	0.2	0.1
n-Undecane	<0.1	0.2	0.2	0.1	0.1	0.1
Dodecane	<0.1	0.0	0.1	N/D	0.1	0.1
Total Hydrocarbons (ppbC)	2393.7	575.7	866.2	249.8	648.4	657.5

*: These are the sample concentrations from our PAMS sites for comparison purpose.

Note:

Total Hydrocarbons for normal ambient air range from 100 ppbc to 1100 ppbc.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

X DISTRICT INFORMATION

☐ INVOICE SOURCE

LABORATORY NO. 06011-01

TO: SCAQMD LAB: X OTHER: ☐

SOURCE NAME: PLAINS EXPLORATION PRODUCTION LD. No. _____

Source Address: 5640 FAIRFAX AVE City: INGLEWOOD

Mailing Address: SAME AS ABOVE City: _____ Zip: _____

Contact Person: JOHN BARKER Title: SAFETY SPECIALIST Tel: (805)896-8848

Analysis Requested by: LAURANCE ISRAEL Date: 1/11/06

Approved by: *[Signature]* Office: Compliance Budget #: 50-375

REASON REQUESTED: ☒ Court/Hearing Board ☐ Permit Pending ☐ Hazardous/Toxic Spill X

Suspected Violation Rule(s) 402 Other ☐

Sample Collected by: SAM VERGARA Date: 1/11/06 Time: 06:06 hrs

Specify the description and location where the sample was collected:

SAMPLE #1: Summa canister #54149 collected air sample at intersection of Stocker Ave and Kenneth Hahn Park on La Cienega Blvd

Analysis Requested: Percentage of Hydrocarbons and Non-hydrocarbons, Methane and Sulfur compounds.

Relinquished by	Received by	Firm/Agency	Date	Time
<i>[Signature]</i>	Laurance B. Israel	SCAQMD	1-11-06	07:45
Laurance B. Israel	<i>[Signature]</i>	SCAQMD	1-11-06	8:05

Remarks: Please expedite emergency response sample and notify Jay Chen, Sr. Manager, Toxic.

South Coast Air Quality Management District

Air Quality Complaint Report

Complaint 181853

Receive By: AKIM on 2/6/2006 09:30:19
Assign By: madams on 2/7/2006 10:58:06
Dispatch On: 2/7/2006
Team: C
Type: ODORS
Description: Chemical odor. (Pls contact).

Assignment No: 622762
Inspector: JOHN LEVY (JL01)
Instruction: Investigate odor complaint.

Instance Start Date:

Instance End Date:

Complainant

First Name: Last Name:
Address:
Phone:

Alleged Source

Name: OIL DRILLING
Address: UNK, BALDWIN HILLS, CA 90056 (Sector LF)

Actual Source

Name:
Address:

Disposition

SUNK on 2/10/2006 13:33:07

Inspector Comment

On February 7, 2006, I received this complaint assignment for an incident that was reported to the District hotline on February 6. I spoke by phone to the complainant on February 8, at 16:35 hours. , told me that she has lived in her home for seven years, and has never experienced odors as strong as those she has recently noticed at her home during the past month. The odors, which she described as "strong gaseous type", have been present about three times during the past month. She told me that she could not smell anything at the time of our conversation, but the odors were extremely strong on Feb. 6. I informed her that the fire department and the District have received numerous complaints over the past few weeks from residents in and around her neighborhood, and that it appears that the source may have been drilling activities being conducted at the oil production facility operated by PXP in Culver City. Inspector Joseph Liaw is currently in the process of gathering data for a possible public nuisance violation against PXP.

INSPECTOR:

signature

DATE:

SUPERVISOR:

signature

DATE:

South Coast Air Quality Management District

Air Quality Complaint Report

Complaint 181920

Receive By:	GRACEN on 2/7/2006 21:26:00	Assignment No:	923048
Assign By:	mohann on 2/8/2006 07:47:47	Inspector:	JOSEPH LIAW (JL05)
Dispatch On:	2/7/2006	Instruction:	
Team:	C		
Type:	ODORS		
Description:	METHANE GAS ODOR		

Instance Start Date:

Instance End Date:

Complainant

First Name: Last Name:
Address:
Phone:

Alleged Source

Name: UNKN
Address: UNKN, CULVER CITY, CA 90230 (Sector LF)

Actual Source

Name: PLAINS EXPLORATION & PRODUCTION CO, LP ID: 133987
Address: 5640 S FAIRFAX AVE, LOS ANGELES, CA 90056 (Sector LF)

Disposition

NV on 2/21/2006 14:05:48

Inspector Comment

Complaint nos. 181919 - 181924, 181927, 181944, 181958

On 2/7/06, at 2250 hours, I arrived at the _____, which is the home of the complainant. While waiting outside the home, I detected a noticeable crude oil odor. I met with _____ to discuss the nature of the complaint. She informed me that she has noticed a crude oil odor since Monday, 2/6/06. Also, the odor has been especially bad during the evening I met with her. After briefly discussing the nature of the odor, _____ asked if she could have a neighbor come by and join the conversation. The neighbor, _____, had also called in a complaint (#181922) regarding the same odor nuisance. _____ stated that it was a crude oil odor. I informed them that I was also detecting the odor that they described. After this, I explained AQMD Rule 402 regarding public nuisance to them. I informed them that I would need to verify that the source of the odor before any enforcement actions could be taken. After our discussion, I informed them that I would contact them with my findings and left at 2350 hours.

After leaving the complainant's home, I started driving along Flaxton St. to the northeast corner of the neighborhood. I was able to detect a stronger crude oil odor the closer I drove to Plains Exploration and Production Company ("PXP"). PXP (FID# 133987) is located on 5640 S. Fairfax Ave. in Los Angeles. The facility is located northeast from the complainant's home. Since it was close to midnight during my surveillance, it was difficult to find the fence line for the PXP oil field. Therefore, I was only able to drive to the corner of Flaxton St., and Youngworth Rd., which is the northeast corner of the neighborhood. After this, I left the area and headed to PXP.

At 2350 hours, I entered PXP and met with Al Deacon (323-855-3203), Production Operator, to discuss the odor complaints. When asked if there were any active drilling, Mr. Deacon pointed out that there were three drilling rigs in operation. We drove around to each of the three, and I was able to detect odors at each location. When we drove to the third location, I was able to detect a very strong crude oil odor. The well site is identified by PXP as Vickers VIC2-1234. From this well locating, I was able to see West Los Angeles College. Based on my observation, the College is located only a few hundred yards southwest of the well. In regards to _____, West LA College is just north of her. Mr. Deacon and I stopped at the site and met with Jason Crawford (661-201-9014), Drilling Foreman, to discuss the odor. Mr. Crawford informed me that the strong crude oil odor is coming from the two shakers. Basically, when drilling fluid is pumped down the bore, the fluid pushed product back up to the surface. However, the liquid that comes back up contains gas from the formation. For this particular well, the formation starts at 6512 feet and bottoms out at 9357 feet. After they completed drilling, the next process is called the logging operation, which lasted for 36 hours in this case. This is the process necessary to gather information about the well and the formation. During this process, drilling fluid re-circulates continuously down the hole. According to Mr. Crawford, once the drilling fluid gets down to the depth of the formation, gas gets entrenched in the fluid. Once the fluid gets back to the surface, it is directed to either of the two shakers, which is an open pit that shakes the liquid to separate the drilling mud from the gas. As

INSPECTOR: _____
signature

DATE: _____

SUPERVISOR: _____

signature

DATE: _____

South Coast Air Quality Management District

Air Quality Complaint Report

a result, the gas is released to the atmosphere. Mr. Crawford stated that the odor can be very strong during this process. Also, he does not know of any device or operation in which the emissions from the shakers are not open to the atmosphere.

From 2/8 to 2/15/06, I met with several complainants who also experienced the odor nuisance in the evening of 2/7/06. In addition, several complainants referred additional neighbors who experienced the odor. In total, I was able to get 12 witnesses to fill out a public nuisance complaint form.

On 2/17/06, at 1015 hours, I returned to PXP and met with Candace Salway (323-298-2266), Environmental & Regulatory Compliance Supervisor, and Patrick Gorski (323-298-2241), EH&S Advisor, to discuss the incident. Ms. Salway and Mr. Gorski explained the process of logging operation and the necessity to perform the process. Among the information gathered during this operation is the potential production of the particular well as well as information about the formation. In addition, they reiterated that they do not know of any practice that can eliminate the emissions from the process. However, they have already begun to research on ways to eliminate this odor problem in the future. Also, during our meeting, I got a better timeline of the incident. The logging operation started around 0600 hours on 2/7/06. During the logging operation, information is gathered from the surface and continues down until the bottom of the formation. According to the operation logs, the logging operation reached 7,000 feet below the surface around 2000 - 2100 hours the same day. During this time, the drilling liquid is in the zone of the formation. Therefore, this is the time in the operation that is referred to as "bottoms up" by PXP operators. During this time, gas and other products are pumped back up to the surface along with the drilling fluid. Therefore, this is the time when the odors would be the strongest. The logging operation then concluded at around 0230 hours on 2/8/06. After removing the logging equipments, the well is completed by installing the casing pipes and cementing the hole. This process lasts for roughly 12 hours. According to Ms. Salway and Mr. Gorski, there normally is not a strong odor during this process. I explained to Ms. Salway and Mr. Gorski that there were many complaints in the neighborhood of a strong crude oil smell during the time when the facility was performing "bottoms up". In addition, I was able to verify the odors coming from the drilling operations during the "bottoms up" time period. Therefore, I informed Ms. Salway and Mr. Gorski that PXP is in violation of Rule 402 for causing a public nuisance. I issued NOV P37137 to Plains Exploration & Production Company and personally issued the notice to Candace Salway, Environmental & Regulatory Compliance Supervisor.

INSPECTOR: signature

DATE: _____

SUPERVISOR: signature

DATE: _____

**CULVER CITY FIRE DEPARTMENT
INCIDENT REPORT**
Universe: NONE Population: NONE Repeat Set: NONE

INCIDENT ID#	20081016
INCIDENT DATE	03/22/2008
DATE REPORT ENTERED	03/25/2008
RECORD COMPLETE	Y
DISPATCH TIME	08:08:55
ROLLOUT TIME	08:10:44
ARRIVAL TIME	08:14:12
RESPONSE (IN MIN)	3
CODE 3 RESPONSE	Y
JURISDICTIONAL STATION	11
SHIFT	B
REPORTED BY	DELAPUENTE WHITE
UNITS ON SCENE	E1 B1 R1
SITUATION FOUND	413 Oil or other combustible liquid spill
MUTUAL AID	N None or no mutual aid involved
METHOD OF ALARM	
ADDRESS/LOCATION	9800 JEFFERSON BL
ZIP CODE	90232
NUMBER OF PERSONNEL	6
ENGINES USED	1
OTHER VEHICLES USED	2
SPECIFIC PROPERTY USE	
ACTION TAKEN	43 Hazardous materials spill control and confinement 41 Identify, analyze hazardous materials
AREA OF FIRE ORIGIN	
LEVEL OF FIRE ORIGIN	
FORM OF HEAT	
IGNITION FACTOR	
MATERIAL TYPE	
MATERIAL FORM	
IGNITION FACTOR	
EXTINGUISHMENT METHOD	
TOTAL DOLLAR LOSS	
NUMBER OF STORIES	
FLAME DAMAGE	
SMOKE DAMAGE	
TYPE CAUSING MOST SMOKE	
TYPE CAUSING MOST SMOKE	
AVENUE OF SMOKE TRAVEL	
DETECTOR PERFORMANCE	
SPRINKLER PERFORMANCE	
OCCUPANT LAST	
FIRST	
ADDRESS	9800 JEFFERSON BL
PHONE	3105588838
RESPONSIBLE PARTY	
ADDRESS	9800 JEFFERSON BL
PHONE	
EQUIPMENT INVOLVED	
RIC NARRATIVE	RIC NOT NEEDED
INCIDENT NARRATIVE	E1 notes: E1 WAS DISPATCHED TO A HAZ MAT INVESTIGATION ABOVE THE DOG PARK AT CULVER CITY PARK. ON OUR ARRIVAL WE FOUND CRUDE OIL RUNNING OUT OF THE PXP OIL FIELD. E1 REQUESTED B1 ADVISING AN UNKNOWN QUANTITY OF THE PRODUCT HAD MADE ITS WAY INTO

THE STORM DRAIN SYSTEM. E1 CONSTRUCTED AN EARTHEN DAM TO STOP THE FLOW INTO THE STORM DRAIN. WE ALSO GAINED ACCESS TO THE OIL FIELD IDENTIFIED THE PIPE LEAKING AND A RATE OF RELEASE. THE LEAK WAS FLOWING AT A RATE OF APPROXIMATELY .5 GALLONS / MIN. B1 ARRIVED AND ASSUMED COMMAND AT 0830. R1 WAS DISPATCHED TO LA BALLONA CREEK TO ASSESS THE EXTENT OF THE RELEASE. NO PRODUCT HAD REACHED THE CREEK. PXP PERSONNEL ARRIVED ON SCENE AND SHUT DOWN THE WELL SUPPLYING THE LEAKING PIPE. E1 CREW REMAINED ON SCENE AND ASSISTED PXP WITH DYKING THE PRODUCT. PXP CREWS BEGAN CLEAN UP, E1 CLEARED.

B1 notes:

B1 dispatched to Culver City Park for a confirmed (E1) release of crude oil from a well owned by Plains Exploration & Production Company (PXP). Upon arrival established command, appointed a safety officer, developed a written incident action plan, site safety plan, and made the proper notifications. The release of product was stopped at approximately the time B1 arrived onscene. R1 determined that no product had reached La Ballona Creek and this was confirmed later by LA County Flood Control personnel.

Clean up was started by PXP personnel and upon the arrival of a private contractor, Ancom Marine, a full scale clean up was conducted. the storm drain system was cleaned by Ancom under the supervision of LA County Flood Control and Culver City Public Works personnel.

Notifications: La County Health Haz Mat, DES Warrig Center (inc# 08-2247), and the National Response Center (Inc# 865747). City Council was notified via the Fire Chief. Other communications included the Coast Guard, State Dept of Fish & Game.

LA County Health Haz Mat personnel were onscene along with State Department of Oil & Gas.

Timeline

0808 initial displach
0828 B1 onscene & assumed command
0828 Release stopped
0915 Notifications complete
0948 Full scale clean up begin by contractor - Ancom Marine
1143 Command turned over to Culver City Public Works