Exhibit SWRCB-9

Dr. Sabrina M. Cook, Ph.D.

Senior Scientist, Hydrologist/Water Quality
PBS&J

Education

Ph.D., Soil Science with Water Resources Minor, University of Minnesota, 1996
M.S., Soil Science, University of Minnesota, 1989
B.S., Crop and Soil Science, Michigan State University, 1986

Professional Affiliations

Women Inspiring Leadership (WIL)

Dr. Cook has over 15 years of experience in the field of soil, water, and environmental assessment. Her technical expertise is in surface and subsurface water and chemical transport processes and transformations. She has experience with point and nonpoint source water quality issues including: Total Maximum Daily Loads (TMDLs), stormwater pollution prevention and Best Management Practices (BMPs), watershed management strategies, hydrologic and hydraulic (H&H) modeling, and water quality modeling and assessment using parametric and non-parametric statistical techniques, trends analysis, principle components analysis, regressions, correlations, and others techniques. She is also experienced in geographic information systems (GIS) applications for environmental characterization, assessment, data management, and planning, and in training GIS end-users. She is skilled in the preparation and review of environmental impact statements and assessments, permit applications, diagnostic feasibility studies, quality assurance projects plans, Stormwater Quality Management Plans (SQMPs), Storm Water Pollution Prevention Plans (SWPPPs), technical and non-technical documents, stakeholder communication, field sampling and monitoring plans, and project management. Dr. Cook has taught and developed college-level courses in environmental technology, policy, and management areas, including sections on environmental risk assessment and risk perception.

Environmental Assessment – CEQA

Stanford University Medical Center Renewal and Replacement/Stanford Shopping Center Expansion, California, City of Palo Alto. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality impacts analysis section and mitigation measures for the Draft EIR based on existing information, hydraulic modeling by the project proponents consulting, and other technical reports. She also prepared the relevant Response to Comments on the Draft EIR. The project site is located within existing developed areas and consisted of actually two separate projects; one project involved redevelopment of the Stanford University hospital campus, the other was a conceptual redevelopment of a developed shopping center. The Stanford University campus redevelopment was subject to hydrograph modification management controls, and shopping center project may or may not be subject to these regulatory requirements.

Candlestick Point–Hunters Point Shipyard Phase II EIR, San Francisco, California, San Francisco Redevelopment Agency. The San Francisco Redevelopment Agency, the Mayor's Office of Economic Development, and Lennar are proceeding with comprehensive plans for the 702-acre Candlestick Point and Hunters Point Shipyard, including more than 10,000 residential units, research and development uses, retail and community services, and a new football stadium for the San Francisco 49ers. The plans also include a new bridge over Yosemite Slough, marinas, and improved waterfront open space. The shoreline of project site includes Hunters Point Shipyard, Yosemite Slough, and Candlestick Point State Recreation Area. Project development would account for potential sea-level rise and would involve new construction in BCDC and State Lands Commission jurisdiction. Dr. Cook prepared an hydrology and water quality technical analysis appendix to address potential project effects on stormwater runoff quantity and quality. She also provided senior review and assisted in preparation of the environmental document Hydrology and Water Quality section. Issues specific to this project include

development on a superfund clean-up site, hazardous waste landfill, flooding, and areas with combined and separate storm sewer systems.

Menlo Gateway EIR, City of Menlo Park, California. The Menlo Gateway project included redevelopment of a light industrial area to primarily commercial development with surface and sub-grade parking and an outdoor kiva. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, hydrologic modeling by the project proponents, and other technical reports. Of particular concern were potential sea level rise, shallow groundwater, flooding, and floodplain fill effects, as well as alterations in stormwater runoff and drainage patterns. Dr. Cook also prepared the relevant Responses to Comments on the Draft EIR.

Exploratorium EIR, California, City and Port of San Francisco, California, Port of San Francisco. The Exploratorium proposed to relocate from the Palace of Fine Arts to the waterfront at Piers 15/17, along The Embarcadero. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, the project proponents concept plans, and other technical reports.

Highland Hospital Replacement IS/MND, Oakland California, County of Alameda. Potential hydrology and water quality effects associated with reconstruction of the Highland Hospital Acute Care Tower for seismic upgrading and additional improvements were evaluated by Dr. Cook. The project site currently drains into an under-grounded stream, which discharges to the bay. Dr. Cook calculated the potential change in runoff and identified mitigation measures; water quality and groundwater impacts would remain essentially unchanged.

Staples Ranch Specific Plan Subsequent Program and Site-Specific EIR, Pleasanton, California, City of Pleasanton. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, hydraulic modeling by the project proponents consulting, and other technical reports. The project site is located within a FEMA floodplain and levee inundation zone. Development of the project would substantially increase the amount of impervious surfaces and flooding issues exist along downstream portions of the drainage system. Based on available information, Dr. Cook used standard methods to determine the potential effect of the project on stormwater runoff and quality and groundwater recharge. She also evaluated the project proponents technical reports regarding the amount of detention necessary to prevent discharges in exceedence of existing conditions (hydrograph modification effects), unrecorded improvements that reduce existing site flooding, and effects of flood control improvements associated with an adjacent project on the flood hazard potential. The proposed project uses at the 124-acre Staples Ranch site ran the gamut from fairly specific with identified developers, to fairly open ended development. To serve both circumstances, the SEIR is both a project-specific and a program- level environmental document. The program-level portion was, by necessity, less detailed and flexible.

Oakdale General Plan Update, California, Oakdale. Dr. Cook was the lead scientist who prepared the Flood Hazards and Hydrology and Water Quality

Background Reports for preparation of the Oakdale General Plan Update. These background reports provide planners with the information on flood hazards, water supplies, hydrology, and water quality issues to guide general plan update goals, policies, and objectives for development.

Beach Edinger Corridor Specific Plan, California, Huntington Beach. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality and Utilities Wastewater sections impacts analysis, and mitigation measures for a programmatic-level Specific Plan EIR. The Beach Edinger Corridor Specific Plan area runoff drains to 12 different City watersheds before discharging into the Pacific Ocean through two major channel systems. Development in accordance to the Specific Plan would primarily involve infill and re-development. Based on the Master Plan of Drainage, potential storm drain system capacity constraints were identified throughout the corridor and various storm drains the corridor ultimately discharges to.

El Sur Ranch Water Rights Application, California, Big Sur. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality section, impacts analysis, and mitigation measures for a Water Rights Application EIR. She also prepared the relevant Response to Comments on the Draft EIR. It was previously determined that irrigation water wells within the Big Sur River floodplain were pumping riparian water, and therefore, consisted of an underflow diversion. Dr. Cook evaluated the results of several technical studies prepared from 1999 through 2008 on effects of pumping the riparian water on river flow and water quality conditions, as well as the potential effects of additional irrigation water on upland, bank, and bluff erosion. Effects on several parameters identified in comments on the IS/MND were addressed by Dr. Cook within the framework of the CEQA analysis.

The Bella Terra II EIR, City of Huntington Beach, California, City of Huntington Beach. The proposed project is a General Plan Amendment (GPA) and Zoning Text Amendment (ZTA) for mixed-use residential and commercial development. The potential development combinations result in a maximum total building area floor area ratio of 1.75 or 1,208,245 square feet (sf) of total commercial and residential development. Dr. Cook prepared the Hydrology and Water Quality section of the EIR, including mitigation measures to reduce potential impacts, based. Because the proposed project does not involve a development plan, the included mitigation measures were defined for any development project that could be implemented. However, Dr. Cook also analyzed a project Water Quality Management Plan, as related to both the regulatory requirements and effectiveness for minimizing pollutants in stormwater runoff, for an identified development option.

The Ripcurl Project EIR, City of Huntington Beach, California, City of Huntington Beach. The proposed project is a mixed-use development consisting of up to 442 units of rental housing over up to 10,000 square feet of retail space. The site is located at the southeast corner of Center Avenue and Gothard Street in Huntington Beach and drains to a storm drain system with exceeded capacities. Dr. Cook prepared the Hydrology and Water Quality section of the EIR, including mitigation measures to reduce potential impacts. She analyzed the project Water Quality Management Plan as related to both the regulatory requirements and effectiveness for minimizing pollutants in stormwater runoff.

TID Regional Surface Water Supply Project, Hughson, California, Turlock Irrigation District EIR. This project will construct a new 42.5 million-gallon per day water treatment plant south of the Tuolumne River. To supply the proposed treatment plant, water would be diverted from the river via the District's already-completed instream infiltration gallery. This gallery was constructed to divert water that is currently diverted upstream at LaGrange Dam. Dr. Cook prepared the Hydrology and Water Quality section, assessed potential impacts, and identified mitigation measures for this project. Of specific concern was the potential change in flow regime between the LaGrange Dam and the infiltration gallery extraction area. Dr. Cook calculated the potential change in flow regime based on monitoring data and expected operational requirements.

Pomona Valley Hospital Specific Plan, California, City of Pomona. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, hydraulic modeling by the project proponents consulting, and other technical reports. After much research, it was determined that the project site is located over an historic cienegas (region of groundwater upwelling) and layered groundwater system, resulting in potential groundwater vulnerability and flooding from non-stormwater runoff conditions.

George Reed Inc. Mine EIR, Merced County, California, Merced County. The proposed project is the modification of an existing conditional use permit to allow for mining below grade level, into the perched-water zone, to operate an asphalt batch plant and a Portland cement concrete (PCC) batch plant, and to change the reclamation plan's end use from agricultural to open space with wildlife and natural-occurring vegetation. Dr. Cook finalized the Hydrology and Water Quality section of the EIR and provided a peer review for the project Hydrology and Water Quality Analysis report prepared for the Proposed Project. In consultation with the project applicant's Hydrologist, Dr. Cook prepared a more extensive consumptive water use analysis to assess potential surface water and groundwater impacts associated with creation of a large free water surface.

First Street Waste Transfer Station Supplemental EIR, California, City of Pomona. Dr. Cook was the lead scientist who finalized the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, hydraulic modeling by the project proponents consulting, and other technical reports. The project site is located on an old waste transfer station in an urbanized area; however, three city wellheads are located on corners of the project site. This SEIR section was required by court mandate to address deficiencies of the certified EIR.

Harbor Bay Island – Village 6 EIR, Alameda, California, City of Alameda Dr. Cook prepared the Hydrology and Water Quality section for the Draft EIR and responses to comments. This included approximation of potential peak and annual runoff and stormwater quality from the project site for both existing and proposed project conditions, impacts analysis, and mitigation measures.

Stanford Hotel and Office Complex Project EIR, Menlo Park, California, City of Menlo Park. Stanford Management Company sought to develop a 21-acre triangular site of undeveloped sloping grassland owned by Stanford University adjacent to the interchange of Sand Hill Road and Interstate 280 in west Menlo Park. The project proposal was to construct hotel

facility and a multi-building office complex with underground parking. Drainage and water quality were identified as critical issues during the EIR scoping. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR. based on existing information including the Conceptual Grading Plan and Hydrology and Drainage Report prepared by the project proponent's consultants. Using available data, reports, and standard methods, Dr. Cook calculated the potential effect of the project on stormwater runoff, groundwater recharge, flooding, and stormwater quality. At the completion of public hearings held regarding the completeness and adequacy of the EIR, under the provisions of the California Environmental Quality Act, the EIR was certified by the Menlo Park City Council.

Burlingame Downtown Specific Plan IS/MND, Burlingame, California, Kevin Gardiner & Associates. The City of Burlingame is preparing a Specific Plan to guide future development in the downtown area. PBS&J was selected as part of a consultant team led by Kevin Gardiner & Associates to provide CEQA services for the Specific Plan. The CEQA review is being undertaken in lockstep with the preparation of the Specific Plan, with the goal of pro-actively developing a self-mitigating plan. As potential impacts are identified, the Specific Plan development program and/or goals and policies are adjusted to mitigate or avoid impacts as desired by the City. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality section of the environmental document, which assessed impacts and mitigation associated with Specific Plan policies and goals.

Burlingame Safeway Mixed-Use Development IS/MND, City of Burlingame, California. Dr. Cook was the lead scientist who prepared the IS/MND Hydrology and Water Quality section for this project. The project sponsor proposes to demolish the existing Safeway and Walgreens buildings at the project site and construct a new Safeway building and a new mixed-use building. In addition, new parking would be created on the roof of the Safeway store, at a ground-level parking lot, at another surface lot, and on the street. The major issue associated with this project was that an existing, underground 4-foot by 12-foot stormwater box culvert, following the alignment of a former creek bed (Burlingame Creek), is transverse through the project site at one to eight feet below ground surface. This storm drain passes directly under the proposed Safeway structure. Because of the shallow depth, during construction, excavation and grading activities could damage this structure, causing or contributing to reduced conveyance capacity. The proposed Safeway structure would be located directly over this culvert, which would limit access in the event repairs and maintenance is required and would subject the culvert to additional static loads.

Hayward Maintenance Complex Project IS/MND, Hayward, California, San Francisco Bay Area Rapid Transit District (BART). The Proposed Project would primarily consist of acquisition and improvement to three properties on the west side of the existing Hayward Yard and the construction of a maximum 250-car storage area on undeveloped BART property on the east side of the Hayward Yard. These improvements would result in alterations in drainage paths and new impervious surfaces. Dr. Cook prepared a revised hydrology and water quality setting, impacts analysis, and mitigation measures and responses to comments based on a details review of engineering plans, project features, and consultation with the project applicant's engineers.

Elmhurst Creek Cat Ex & BA, IS/MND, Oakland, California, City of Oakland. Elmhurst Creek is currently unlined and heavily vegetated and the adjacent property owners are required by the District Court of the City of Oakland to clear and possibly realign the creek. Dr. Cook was the lead scientist for preparing the Hydrology and Water Quality section and analysis. Flow within this section of Elmhurst Creek is tidal and constricted at the downstream reach by a bridge crossing. Dr. Cook reviewed the existing hydrology and hydraulic models for completeness and soundness of approach. Based on these previous studies for existing and project conditions, she evaluated the potential benefits of the project, as well as potential impacts on water quality and downstream flow.

Coleville Military Family Housing Area (CMFHA) Facilities Improvement Project IS/ND, Coleville, California, Lahontan Region Water Quality Control Board. The proposed project is primarily intended to improve the existing wastewater treatment system serving the CMFHA and alter stormwater drainage. Although this federal facility is not required to undergo the CEQA environmental review process, the Water Board is conducting the IS/ND analysis anticipatory to issuing discretionary revised individual waste discharge requirements for the wastewater treatment system and its inputs, including any residuals from domestic supply water treatment. Dr. Cook provided senior review and editing of the project description and revised the hydrology and water quality analysis to address agency comments, provide up to date regulatory information, and clarify the potential project effects.

Malibu Middle and High School Campus Improvement Project EIR, Malibu, California, Santa Monica–Malibu Unified School District. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality section of the EIR. She worked provided technical review and worked with the project applicant's Hydrology Study and Water Quality Management Plan team to ensure compliance with regulatory requirements and provisions to minimize potential project impacts. Portions of the project site drain to an Environmentally Sensitive Habitat Area and components of the Proposed Project with the potential to affect hydrology and water quality would include the construction of a new 150-space parking lot and associated access road; Stormwater Management System upgrades; onside wastewater system upgrades; a new two-story Classroom/Library/Administration Building; new student drop off lane along Morning View Drive; a new high school commons area; a reconfigured Parking Lot A; a reconfigured Lower Parking Lot; synthetic turf on the athletic field; two new tennis courts and permanent concrete bleachers on the athletic field.

Springville Specific Plan EIR, Camarillo, California, City of Camarillo
An EIR was prepared to assess potential environmental effects associated with a specific plan for a large small scale commercial village with additional residential. This high-profile project is located on approximately 170 acres off of the Ventura Freeway (Highway 101). This is one of the last major undeveloped parcels within Camarillo along the Ventura Freeway. This development included residential, commercial, and recreational land uses. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information, including the project Drainage Report and existing drainage infrastructure conditions.

Countryside Specific Plan, Ontario, California, City of Ontario
Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information. Dr. Cook used standard methods and data to determine the potential effect of the project on stormwater runoff and quality for the impacts analysis. This specific plan is one of the first of approximately 25 specific plans that will be developed for the New Model Colony (NMC), an 8,200-acre area previously annexed to the City. As such, this EIR set the foundation for future environmental analysis that will be performed for subsequent development in the NMC. The Countryside Specific Plan proposed residential development of varying densities on former dairlylands/agricultural uses.

Central Station Specific Plan EIR, Oakland California, City of Oakland
In response to the increasing demand for flexible residential uses in the urban area near downtown Oakland and within reach of major transit facilities, BUILD West Oakland, LLC; Central Station Land, LLC; PCL Associates LLC; and HFH Central Station Village, LLC proposed to redevelop 29.2 acres of underutilized industrial land around the vacant, historic Southern Pacific 16th Street Train Station in West Oakland. The site lies within the much larger Oakland Army Base Redevelopment Project Area. The redevelopment would transform the historic industrial and transportation-related area to pedestrian-oriented, mixed-use, residential, live-work and commercial developments.
Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information. Dr. Cook used standard methods and data to calculate the potential effect of the project on stormwater runoff, groundwater recharge, and stormwater quality for the impacts analysis.

Lake Forest Opportunities Study Programatic EIR, Lake Forest, California, City of Lake Forest. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information. Dr. Cook used standard methods and data to calculate the potential effect of the project on stormwater runoff, groundwater recharge, and stormwater quality for the impacts analysis of various alternatives. She also answered questions at a public informational meeting and prepared responses to comments for the Final EIR. This project involved two watersheds and two Regional Water Quality Control Board jurisdictions with varying topography and existing land use. The project was complex not only because of the extensive geographic context, but nine land use overlays were included in the analysis to allow the City to use the document to assist in making informed decisions concerning location of the proposed sports park and community/civic center. Following certification of the EIR, PBSJ received commendations for the clarity and comprehensiveness of the document.

Santa Anita Park Mixed-Use Development Specific Plan EIR, Arcadia, California, City of Arcadia. The owners of Santa Anita Racetrack retained Caruso Affiliated Holdings to prepare a new Specific Plan and complete the development. The new Specific Plan consists of a vertical mixed-use development encompassing 53 acres. Additionally, the track proposed to consolidate existing media facilities into a new, 96,000-square-foot Simulcast Center for more efficient broadcasting of events. The Simulcast Center would be

located outside of the mixed use zone. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information including the Drainage and Hydrology Study prepared by the project proponent's consultants and water monitoring data conducted by the racetrack for their NPDES permit. Dr. Cook used standard methods and data to calculate the potential effect of the project on stormwater runoff, groundwater recharge, under-grounding of portions of the Arcadia Wash, and stormwater quality.

Dixon Downs Racetrack and Mixed Use Development Project, Dixon, California, City of Dixon. The proposed project was located on a 260-acre site adjacent to Interstate 80 in the City of Dixon. The project consisted of a phased, mixed use development program that features as its centerpiece a state of the art thoroughbred horse racing and training facility. Subsequent phases of development included a retail, office, hotel, and conference/event facilities. Of particular concern for this project were effects of the project on existing and planned regional drainage conditions; water quality effects of large-scale animal handling facilities; and groundwater effects of project demand and compliance with the requirements of SB610. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information including the Conceptual Drainage Plan and regional hydraulic modeling results prepared by the project proponent's consultants. She also prepared the responses to comments for the Final EIR for technical questions including a comparison of manure sources (horses versus cows) and their potential effects on water quality. Dr. Cook used standard methods and data to calculate the potential effect of the project on stormwater runoff, groundwater recharge, flooding, and stormwater quality.

Sonoma Mountain Village Planned Development Project EIR, Rohnert Park, California, City of Rohnert Park. This project included development of about 150 acres of mixed-use land on both developed and undeveloped lands using Low Impact Development project design and adaptive reuse of existing buildings. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information including the Conceptual Drainage Plan and monitoring data results prepared by the project proponent's consultants. Dr. Cook used standard methods and data to calculate the potential effect of the project on stormwater runoff, groundwater recharge, flooding, and stormwater quality. The project site drains toward two watersheds in two separate Regional Water Quality Control Board jurisdictions.

Vallejo Station Project and Waterfront Project Planned Development Master Plan EIR, Vallejo, California, City of Vallejo. The Vallejo Station Project and Waterfront Project include a variety of commercial, residential, entertainment and recreational uses, as well as public facilities and improvements to be developed in the Vallejo waterfront paralleling Mare Island Strait adjacent to the existing downtown. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information including the Drainage and Hydrology Report prepared by the project proponent's consultants. Dr. Cook worked with the proponent's hydrology consultants and City engineers to determine the potential effect of the project on stormwater runoff, storm drainage system capacity, groundwater recharge,

flooding, and stormwater quality.

Perris Warehouse EIR, Perris, California, Investment Development Services, Inc. Investment Development Services, Inc. (IDS) retained Piper-Rudnick attorneys at law and EIP Associates to prepare an Environmental Impact Report and supporting technical reports for a new warehouse/trucking distribution facility in the City of Perris, about 1 mile east of Interstate 215. The project site was a vacant, former agricultural area that had been fallow for about ten years and was no longer zoned or otherwise designated for agricultural use. Primary issues associated with development of the project included an area within the 100-year flood hazard area, existing sheetflow drainage and its resulting effects upon water quality, and the lack of drainage infrastructure serving the site and contributing drainage areas. Dr. Cook was the lead scientist who reviewed and supplemented technical reports prepared by IDS's consultants, calculated potential effects of the project on stormwater quality, including potential pollutant removals by planned stormwater quality treatment swales using the Urban Catchment Model P8, and prepared the Hydrology and Water Quality section of the EIR and responses to comments. The EIR was certified and commended for its completeness.

Huntington Beach Senior Center EIR, Huntington Beach, California, City of Huntington Beach. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality analysis section, impacts analysis, and mitigation measures for the Draft EIR based on existing information including the Conceptual Grading Plan and prepared by the project proponent's consultants. The proposed project is development of senior center and infrastructure on five acres within the City's Central Park that would result in an increase in impervious surfaces by about 75 percent. The project drainage was designed to sheet flow over undeveloped areas of the park. Using available data and standard methods, Dr. Cook calculated the potential effect of the project on stormwater runoff, groundwater recharge, flooding, and stormwater quality.

Broadway Hotel EIR, San Franciso, California, City of San Francisco. The project consisted of development of a hotel at a prominent site on the San Francisco waterfront at The Embarcadero and Broadway street. Dr. Cook prepared the Hydrology and Water Quality section of this EIR primarily in response to concerns regarding potential groundwater contamination and leakage of contaminated groundwater through the seawall protecting this area from inundation by the San Francisco Bay during construction of the project. Dr. Cook was the lead hydrology and water quality scientist who reviewed geotechnical reports, the Phase 1 environmental study, groundwater and soil sample data, sea level and monitoring well level data, and prepared the hydrology analysis to evaluate potential impacts on water quality and to prepare mitigation measures for any potential impacts.

La Canada Flintridge Tract 5364 EIR, La Canada Flintridge, California, Cit of La Canada. The project site is located in the San Rafael Hills area of La Canada Flintridge, in an area of steep canyons, open spaces, and varied species habitat. The areas have average slope of greater than 48 percent. The hydrogeology subconsultants performed a hydrological analysis of the proposed project and assessed before and after impacts of the project and proposed grading plan. Dr. Cook evaluated their analysis, reanalyzed the hydrology and impacts associated with changes to the proposed project, and evaluated potential effects on surface water and groundwater quality, in particular, the

implementation of on-site wastewater treatment systems in fractured bedrock.

Fresno District Services Plan Operations Master EIR, Fresno, California, Fresno Metropolitan Flood Control District. PBSJ (formerly EIP Associates) was retained by the Fresno Metropolitan Flood Control District to prepare a Master Environmental Impact Report (MEIR) for their District Services Plan. The analysis in the Master EIR was focused to cover land use (including recreational issues), traffic and circulation, air quality, noise, hydrology and water quality, biological resources, cultural resources, and aesthetics. Dr. Cook reviewed and revised they Hydrology and Water Quality section, evaluated the potential impact of altered flow regime on tributaries and distributaries, and evaluated the effectiveness of the existing stormwater retention pond on stormwater quality.

Orange County Water District Proposed Long Range Facilities Plan Program EIR, Orange County, California, Orange County Water District Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality section. The District's Groundwater Recharge Study and modeling effort data, along with the Groundwater Management Plan were used to assess the potential impacts of the Long Range Facilities Plan on surface water and groundwater hydrology and water quality and to identify appropriate mitigation measures. The impact analysis also included an assessment of annexation of the portions of the Irvine Ranch Water District and the cities of Yorba Linda and Anaheim that are currently not in the OCWD service area into its boundaries.

Hanson Aggregates Hanson Permanente Quarry Reclamation Plan IS/MND and EIR, Cupertino, California, County of Santa Clara. The Hanson Aggregated Pacific Southwest, Inc. company has vested rights to mine aggregate within their 3000+ acre property. In order to expand current operations, however, a new, revised Reclamation Plan is required to include additional mining area. The new Reclamation Plan requires an environmental document under CEQA. Dr. Cook was the lead scientist preparing the Hydrology and Water Quality section of this document, including impacts analysis and identification of mitigation measures.

Groveland Community Services District Wastewater Treatment Plant IS/MND, Groveland Community Services District . Dr. Cook prepared an Initial Study and proposed mitigated negative declaration for the modification of disinfection facilities at two water treatment plants owned and operated by the Groveland Community Facilities District (the GCSD). The GCSD provides potable water supplies to wholesale and retail customers within its service area that encompasses portions of Tuolumne County in the Sierra Nevada foothills serving the communities of Groveland, Big Oak Flat, and Pine Mountain Lake. The GCSD proposed to modify treatment plant processes at its Big Creek and Second Garrote water treatment plants by adding chloramination and UV disinfection capabilities. The initial study addressed the installation of the treatment equipment, chemical storage tanks, and the maintenance and operations of the new systems.

Vintage Estates EIR, Santa Clara County, California, County of Santa Clara. The cluster subdivision concept consisted of 18 two-three acre residential lots and one 580-acre open space parcel on the currently undeveloped foothills in Santa Clara County. Dr. Cook was the lead scientist to evaluate the project’s compliance with existing regulations and effect on surface water and

groundwater. The project included on-site wastewater treatment in a fractured bedrock area and construction of a water supply well. Dr. Cook analyzed percolation test data, project effects on runoff and flooding, and identified pertinent mitigaiton measures.

Palm/Industrial Distribution Center Project EIR, San Bernardino, California, City of San Bernardino. The proposed project includes the construction of a warehouse/distribution facility on a vacant lot. Dr. Cook evaluated the proposed project drainage report and water quality management plan, estimated the effects of the change in land use on stream flows and pollutant loads/concentrations with incorporation of structural BMPs, and prepared the hydrology and water quality section of the EIR.

Joint Program/Project EIR for Concept Plan No. 7 (Redlands Commons/Trojan Groves) and the Redlands Commons Development Plan, Redlands, California, City of Redlands. This project involved the separate development of two adjacent private properties that together comprised a development envelop of the City's East Valley Corridor Specific Plan. One property would be developed as mixed-use residential and the other property would be developed as commercial. Dr. Cook evaluated the preliminary Hydrology Study for the mixed-residential property and Water Quality Management Plans for each property and prepared the EIR hydrology and water quality sections. Using standard methods, she estimated the potential proposed project effects on conversion of vacant land and abandoned orchards to urban land uses and the likely effectiveness of the Water Quality Management Plans in reducing potential surface and groundwater contamination.

Cosumnes River Bridge at Rancho Murieta Initial Study, Rancho Murietta, California, Ranch Murietta Community Services District. The purpose of this project is to comply with the original ordinance and to connect the North and South pedestrian trails, essentially connecting the north and south communities comprising Rancho Murieta via a pedestrian/bike bridge across the Cosumnes River. Dr. Cook evaluated the project applicant's hydraulics report on the effect of proposed bridge structurs on the 100-year flood hazards and prepared the Initial Study hydrology and water quality checklist evaluation.

Senior Review, California, Throughout State, Various Clients. Dr. Cook Cook has performed senior reviews of EIR Hydrology and Water Quality Sections and Hydrology, Hydraulics, and Water Quality Technical Reports including:

- Uptown Newport Village Conexant Site Hydrology and Groundwater Monitoring Reports, City of Newport Beach
- Teso Viejo Specific Plan EIR, Madera County.
- Hollywood Park Redevelopment Project EIR, Hydrology Study, and Water Quality Management Plan, City of Inglewood
- City of Pleasanton General Plan Update EIR, City of Pleasanton
- Richmond Transit Village Initial Study, City of Richmond
- Western University of Health Sciences Campus Expansion Project Technical Report and Appendices, City of Pomona
- South San Francisco Ferry Terminal Project EIR/EA, City of South San Francisco
- Baltimore Ravine Specific Plan EIR, Aurburn
- Glen Park Specific Plan IS/MND, City of San Francisco

- University/65th Street Transit Center IS/MND, City of Sacramento
- San Carlos Retail Project Focused EIR, City of Palo Alto
- Fairfield-Vacaville Train Station Project IS/MND, City of Fairfield
- Kaiser Permanente San Leandro Medical Center/Mixed Use Retail Development IS/MND, City of San Leandro
- Laguna Niguel Gateway Specific Plan EIR, Laguna Niguel

Water Quantity

The Ripcurl Project Preliminary Hydrology Report, City of Huntington Beach, California, City of Huntington Beach. The proposed project is a mixed-use development consisting of up to 442 units of rental housing over up to 10,000 square feet of retail space. The site is located at the southeast corner of Center Avenue and Gothard Street in Huntington Beach. For the storm drain section of the Wet Utilities Technical Report, Dr. Cook estimated project site peak runoff and storm drain system capacity to determine potential existing deficiencies and proposed project impacts. The Applied Engineering Software (AES) program was used, which incorporates the County of Orange Modified Rational Method, including potential effects on street flow and compliance with City design standards and Master Plan of Drainage. Based on the Wet Utilities Technical Report, the City of Huntington Beach requested a more detailed preliminary hydrology study to determine street flow design capacity flow rates, exceedence flow rates, project site contribution to exceedences, and potential mitigation. Dr. Cook prepared and ran an AES model (modified rational method) to determine these flow rates and prepared the Preliminary Hydrology Report for the City based on available information.

Mill Creek In-stream Flow Evaluation, Ukiah, California, Recovery Operations Specialty Services. This project consisted of evaluating the diversion potential for Mill Creek and to suggest minimum flows that would allow for diversion and yet not affect the steelhead, Coho salmon, and Chinook salmon. There were three reservoirs on the system and sections of the creek were losing reaches. Dr. Cook served as hydrology modeling project lead and developed the hydrologic regime model and flow duration curves for the Mill Creek system based on the limited existing flow data. Minimum flows and diversion quantities were determined to support water rights and potential fish habitat conditions.

El Dorado Irrigation District Recycled Water Seasonal Storage Project, El Dorado Hills, California, El Dorado Irrigation District. The proposed project would construct up to two surface storage reservoirs to seasonally store tertiary-treated recycled water for use on landscape during the summer irrigation season. Storage of recycled water would reduce the amount of flow in both Deer Creek and Carson Creek. Based on limited flow measurements and effluent monitoring, Dr. Cook prepared a hydrology and water quality analysis of the potential effects of reduced discharge in these two creeks and ultimately, the Cosumnes River, for critical wet, wet, average, dry, and critical dry conditions. During the dry season, there is no discharge to Carson Creek and a minimum instream flow was required by the NPDES permit for discharge to Deer Creek during the dry season. Dr. Cook worked closely with the project aquatic biologist to assure that this analysis supported impacts assessment for both stream geomorphology conditions and flow regimes for aquatic life support and habitat.

Rancho Cucamonga TT Map Drainage Report, Rancho Cucamonga, California, City of Rancho Cucamonga. The Tentative Tract Map Project involved the conversion of a former aggregate mine site to a residential development with thirty single-family residential units. Key features of the proposed development include the following: thirty single-family residential units, infrastructure improvements necessary to serve the proposed development, private open space, community open space amenities, and trails. Dr. Cook served as the project hydrologist and modeled the potential project impacts on hydrology using the AES program (San Bernardino County Modified Rational Method). Based on limited site design characteristics, she prepared a preliminary Drainage Report and list of data needs from the proponent's engineers to more effectively evaluate post-project conditions and hydrology.

Wetland Mitigation Flow Modeling, Town Center West, California, The Mansour Company. Prior to Atkins, as lead scientist, Dr. Cook used HEC-RAS to model hydraulic conditions of wetland mitigation ponds to and to assist in their design in order to mitigate erosive flow conditions. She also used the HEC-RAS model to help size culverts for a bridge crossing in order to maintain acceptable flow conditions for two new development areas in the Town Center West development area.

Environmental Assessment - NEPA

CUCWD Diamond Fork System Supplemental Environmental Impact Statement, Salt Lake City, Utah, Central Utah Water Conservancy District. This project is a transbasin water conveyance system to supply irrigation water and for the exchange of municipal and industrial water as part of the Central Utah Project. Changes in flow regimes within conveyance structures and river systems that would result from project alternatives necessitated analysis of impacts on physical and chemical aspects of water quality within the study area. Prior to Atkins, in coordination with the project hydrology team, Dr. Cook was the principle specialist who prepared the water quality section and supplemental Water Quality Technical Memorandum.

Proposed Sloan Hills Mineral Material Sales EIS, Nevada, U.S. Department of the Interior Bureau of Land Management. The BLM Las Vegas Field Office is proposing the sale of mineral materials on two parcels of land, which would ultimately involve mining and processing a formation of high-grade limestone and dolomite that are located in the areas proposed for sale. This EIS analyzes five alternatives for potential mining operations. Dr. Cook edited the Water Resources affected environment and analysis and responded to agency comments. She also ensured that groundwater modeling provided results for all alternatives and updated the Groundwater Technical Report based on the provided modeling results.

Clark County Multiple Species Habitat Conservation Plan Amendment EIS, Clark County, Nevada, U.S. Fish and Wildlife Service. The EIS is to analyze a proposed amendment to the Clark County Multiple Species Habitat Conservation Plan. The amendment would authorize an additional 225,000 acres of development within the County and provide coverage for up to 21 species. Dr. Cook prepared the Water Resources Affected Environment.

VA Hospital Menlo Park, City of Menlo Park, California, U.S. Department of Veterans Affairs. The U.S. Department of Veterans Affairs proposed

constructing a geriatric-psychiatric nursing home facility at the Veteran Affairs Medical Center in Menlo Park. The environmental document evaluated the proposed facility in compliance with the National Environmental Policy Act (NEPA) and completed an Environmental Assessment/Finding of No Significant Impact (EA/FONSI). Dr. Cook was the lead scientist for evaluating potential hydrology and water quality impacts and preparing the EA/FONSI section and mitigation measures. Because of groundwater contamination in the region, Dr. Cook evaluated the potential that dewatering during construction may alter the groundwater gradient and affect capture of a contaminated groundwater plume at a location further down gradient. She also evaluated potential surface water – groundwater interactions.

VA Hospital Palo Alto, City of Palo Alto, California, U.S. Department of Veterans Affairs. Dr. Cook was the lead scientist for evaluating potential hydrology and water quality impacts and preparing the EA/FONSI section and mitigation measures.

Environmental Assessment – Transportation (CEQA/NEPA)

San Jose to San Francisco High Speed Transit Corridor Hydrology and Water Quality Technical Report and Environmental Document Section Senior Review, San Francisco Bay Area Peninsula, California, HNTB. The voters of California in 2008 and the federal government in 2009 approved substantial funding to advance the development of a high-speed train (HST) connecting San Francisco and Los Angeles in less than 2 hours and 40 minutes. PBS&J was selected to lead the environmental impact report/environmental impact statement (EIR/EIS) for the section of the system that would operate between San Francisco and San Jose. Because of site constraints, the selected alternatives consist of various vertical profile options in different areas along the corridor. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality Technical Report to evaluate potential effects of shallow depth to groundwater, day-lighted and underground creek crossings, areas prone to flooding, water quality pollution potential, and sea level rise in accordance with the California High Speed Rail Authority protocols. This effort required close coordination with GIS and engineering support teams. Dr. Cook also provided senior review and prepared portions of the environmental document hydrology and water quality section to ensure the document was technically sound.

Anaheim Fixed Guideway Corridor Study Hydrology and Water Quality Technical Report, City of Anaheim, California. A new east-west automated, elevated people mover system is proposed that will connect a regional transit hub, known as ARTIC, to the Anaheim Resort area, which includes Disneyland, the Anaheim Convention Center, and various retail centers. The 3.5-mile-long project is envisioned to operate as a high-capacity system providing convenient and efficient transfers to Metrolink, Amtrak, bus rapid transit (BRT), local bus, and future California high-speed train services connecting at ARTIC. Tasks being provided by PBS&J include preparation of the alternatives analysis (AA), environmental impact report (EIR), environmental impact study, and conceptual engineering that conforms to the Federal Transit Administration's (FTA) New Starts process. Dr. Cook was the lead scientist who prepared the Hydrology and Water Quality Technical Report to support preparation of the environmental document and provided senior review for the environmental document section.

BART to Livermore, Alameda County, Wilbur Smith Associates. The City

of Livermore has requested BART to assist in developing viable alternatives for the extension of BART services into the city. BART specifically requested that PBS&J be engaged to lead the environmental effort. The program-level EIR considered three primary routes with multiple variations. All alignments would start in the median of I-580 and extend eastward towards Livermore. The key terminus options that determine the BART alignment include the I-580 median near the ACE overcrossing and near Downtown Livermore. Dr. Cook evaluated potential impacts associated with nine alternative routes and prepared the Hydrology and Water Quality EIR section in accordance with BART requirements, BART facility standards, and Caltrans requirements.

MacArthur Boulevard/SR-55 Interchange Ramp Widening Project, Santa Ana, California. This project is a locally funded project in the Caltrans right of way in the City of Santa Ana, California. This project is required as mitigation for the proposed mixed-use development, MacArthur Place South. Because no environmental review of this mitigation measure had been prepared, a Water Quality Assessment Technical Report (WQR) and Initial Study/Mitigated Negative Declaration (IS/MND) was required by Caltrans. This analysis included predictions of the proposed project effects on pollutant loads with incorporation of the selected best management practices (BMPs). Dr. Cook was the lead scientist who prepared the WQR and IS/MND Hydrology and Water Quality section according to Caltrans and the City of Santa Ana protocols.

Interstate 215 Widening Project, Riverside County, Riverside County Transportation Commission (RCTC). This project is a federally funded project in the Caltrans right of way from the City of Murrieta to the City of Perris in Riverside County, California, required to alleviate existing and future congestion along the highway corridor. A Caltrans Water Quality Technical Report (WQR) was required to examine potential impacts of the project on water resources. This project includes widening of the I-215 corridor from four mixed-flow lanes to six-mixed flow lanes. Five existing flood control/river crossing would also be widened to accommodate the new mixed flow lanes and a new box culvert would be installed at the Paloma Valley Wash crossing to add needed hydraulic capacity that would allow design flows to cross the freeway at that location. The accumulated sediment under the San Jacinto River Bridge, Salt Creek Bridge, and the Romoland Flood Control Crossing would be removed within the State right-of-way to restore the hydraulic capacity under these bridges/crossings. This project was located in California Regional Water Quality Control Board Regions 8 and 9 (Santa Anna and San Diego) and two major watersheds (San Jacinto River Watershed and Santa Margarita River Watershed). Dr. Cook was the lead scientist who prepared the WQR in order to provide a technical report that would satisfy Caltrans protocols and serve as a basis for the CEQA/NEPA environmental review.

Jepson Parkway, Vacaville, Fairfield and Sonoma County, California, Solano County Transportation Authority (STA). The Jepson Parkway Project is a federally funded project to improve roadway corridors and provide better access from Interstate 80 to the City of Fairfield and along the project corridor. Dr. Cook evaluated the existing information and technical reports, identified data gaps, and prepared the Water Quality and Hydrology sections of the EIR/EIS in accordance Caltrans protocols.

State Route 152/State Route 156 Improvement Project, Gilroy, California, Santa Clara Valley Transportation Authority (VTA). The Route 152/156

intersection, located just southeast of Gilroy, is a major congestion point for commute, recreation and truck traffic traveling between I-5 in the Central Valley and U.S. Route 101 in Santa Clara County. A focused corridor study of the intersection was undertaken by VTA to look at alternatives for addressing congestion and safety issues. A Negative Declaration in compliance with the California Environmental Quality Act (CEQA) and a Finding of No Significant Impact in compliance with the National Environmental Policy Act (NEPA) was prepared for this project. Dr. Cook was the lead scientist for preparing the Hydrology and Water Quality sections of these documents. She evaluated the project engineers hydrology studies to determine potential runoff and flooding impacts, and used standard methods to determine potential effects on water quality.

Exposition Phase Corridor Phase II Water Resources Report, California, Cities of Los Angeles, Culver City, and Santa Monica, Exposition Metro Line Construction Authority (ETA). The proposed project is a light rail transportation project linking the Culver City Expo corridor to Santa Monica. The project involved alternative alignment sections, three cities, two watersheds, an atypical regulatory environment, and a maintenance facility. A portion of one alignment alternative was also located in a FEMA Special Flood Hazard Area that the community wanted to use for stream day-lighting and restoration, which was not feasible. Dr. Cook was the lead scientist who prepared the Water Quality Technical Report and EIR Hydrology and Water Quality section. She also consulted with the project engineers, PBS&J engineers, ETA personnel, and others to identify constraints, mitigation, and potential solutions to the flooding issue.

Environmental Assessment - Other

Union City SF Bay Trail Environmental Services, Union City, California, East Bay Regional Park District and Caltrans. Environmental studies and permitting assistance are required for constructing a 2.5 mile segment of the San Francisco Bay Trail in Union City along the margins of the SF Bay Estuary. Dr. Cook was the lead scientist for preparing the Hydrology Report and Caltrans Location Hydraulic Study and she assisted in preparation and review of the CEQA Initial Study Hydrology and Water Quality impacts assessment.

Beach Edinger Corridor Specific Plan Sewer Analysis, California, Huntington Beach. Dr. Cook was the lead scientist for preparing the Sewer Analysis Report for the Beach Edinger Corridor Specific Plan; an approximately 7 mile long corridor in the City of Huntington Beach. The sewer analysis involved an analysis and assessment of existing flows and capacities as well as potential build-out capacity exceedences of design criteria. The Sewer Analysis Report essentially involved preparation of a preliminary sewer master plan for the Beach Edinger Corridor Specific Plan.

The Bella Terra II Wet Utilities Technical Study and EIR, City of Huntington Beach, California, City of Huntington Beach. The proposed project is a General Plan Amendment (GPA) and Zoning Text Amendment (ZTA) for mixed-use residential and commercial development. Dr. Cook was the lead scientist who assessed the general potential for impacts to storm drain system capacity exceedence and water quality in the Wet Utilities Study including the effectiveness of a project Water Quality Management Plan, as related to both the regulatory requirements and effectiveness for minimizing

pollutants in stormwater runoff, for an identified development option. Dr. Cook also finalized the water supply and sewer system analysis portions of the Wet Utilities Study.

The Ripcurl Project Wet Utilities Technical Study Storm Drain System Section and EIR, City of Huntington Beach, California, City of Huntington Beach. The proposed project is a mixed-use development consisting of up to 442 units of rental housing over up to 10,000 square feet of retail space. The site is located at the southeast corner of Center Avenue and Gothard Street in Huntington Beach. Dr. Cook was the lead scientist who assessed the general potential for impacts to storm drain system capacity exceedence and water quality in the Wet Utilities Study. She analyzed the project Water Quality Management Plan as related to both the regulatory requirements and effectiveness for minimizing pollutants in stormwater runoff.

Union City SF Bay Trail Environmental Services, Union City, California, East Bay Regional Park District and Caltrans. Environmental studies and permitting assistance are required for constructing a 2.5 mile segment of the San Francisco Bay Trail in Union City along the margins of the SF Bay Estuary. Dr. Cook was the lead scientist for preparing the Hydrology Report and Caltrans Location Hydraulic Study and she assisted in preparation and review of the CEQA Initial Study Hydrology and Water Quality impacts assessment.

Sacramento Natural Gas Storage Project PEA, Sacramento, California, Sacramento Natural Gas Storage, LLC. PBS&J prepared the the Sacramento Natural Gas Storage Project Proponent's Environmental Assessment (PEA), which described the environmental impacts of converting an existing natural gas reservoir into a storage facility. This facility would includes drilling several wells into the reservoir for injection, withdrawal, and observation; and construction and operation of a natural gas pipeline and related facilities, including an electric compression station, which would move gas between SMUD and PG&E's pipeline systems and the storage facility. Dr. Cook was the lead scientist for assessing potential hydrology, water quality, and groundwater impacts associated with the project, as well as identifying appropriate mitigation measures. The analysis included discussion of potential impacts associated with horizontal direct drilling under a major flood control channel, as well as potential impacts of changing drainage and dewatering operations on water quality.

Pacifica Quarry Re-use Constraints and Opportunities Analysis, Pacifica, California, Peebles Atlantic Development Corporation. Dr. Cook prepared the hydrology and water quality opportunities and constraints analysis for an 87-acre former quarry site that was zoned for commercial development by the City of Pacifica. The goal of this planning study is to provide guidance to the client in determining strategies for optimal site design and environmental permitting and to facilitate subsequent discussions with the resource agencies.

Hazardous Materials Remediation Site Closure Request Evaluations, California, San Bernardino County. Dr. Cook is the lead scientist for reviewing contaminated soil and groundwater site closure request documents for compliance with the San Bernardino County Fire Department (local lead agency) requirements and whether or not closure is warranted.

El Rancho San Benito Agricultural Resources Report, California, City of Holister, DKM Associates, LLC. Dr. Cook was the Project Manager and

preparer of the El Ranch San Benito Agricultural Resources Report, originally using the LESA model, LCC, Storie Index, FMMP classifications, and Williamson Act Lands for determining impacts to agricultural resources by development. Dr. Cook worked with GIS staff, the client engineer, and field survey staff to determine potential development impacts using the various metrics. The LESA model or FMMP are the acceptable methods for determining CEQA impacts. It was decided on that the FMMP classification would be the metric for analysis, aside from impacts to Williamson Act lands, however the most current map did not necessarily accurately classify lands; some classifications, in part, depend on whether or not the land has been used for irrigated crops in the past 4 years, as well as other conditions. Based on historical records, Dr. Cook also performed the analysis to determine which lands would actually meet FMMP classification criteria and the overall impacts to agricultural lands.

Airport South District Area Alternative Urban Areawide Review, Bloomington, Minnesota, City of Bloomington. Because of the highly urban nature of the Airport South District (ASD) the major environmental issues identified for consideration were stormwater quantity and quality entering the state protected U.S. Fish and Wildlife Service Refuge located within the Minnesota River Valley Floodplain. Prior to Atkins, as Project Manager, Dr. Cook was responsible for conducting water quality modeling to determine effects of future development scenarios on stormwater reaching Long Meadow Lake, and to assess BMP efficacy for minimizing impacts.

Lakeland Sand and Gravel Mine Expansion and Reclamation Plans Environmental Impact Report Review, Stillwater, Minnesota, County of Washington. Prior to working with Atkins, Dr. Cook was the Project Manager providing technical assistance to Washington County in reviewing the CAMAS, Lakeland Sand and Gravel Mine Expansion and Reclamation Plans EIR. She was responsible for assessing the DEIR and FEIR technical completeness, organizational completeness, and accuracy of results and recommendations. She also represented the County at public meetings and hearings, and in responses to DEIR and FEIR comments. The EIR was determined adequate in May 2000 and commended for its completeness of analysis.

Additional projects (prior to working with Atkins) include:

- Phase I Property Transfer Site Visits, Various Locations, Minnesota, North Dakota, Verizon Wireless
- Root Zone Water Quality Management Model Evaluation, St. Paul, Minnesota, USDA-ARS
- Agricultural Best Management Practices Effect on Atrazine Fate and Transport, St. Paul, Minnesota, U.S. Department of Agriculture-Agricultural Research Service

Water Quality/Water Quantity Assessment/Water Modeling

Sheldon Hills Baseline Stormwater Monitoring Report, California, City of Sacramento, JTS Communities. The Sheldon Hills rezoning ordinance requires a Storm Water Pollution Prevention Plan (SWPPP) and a polymer treatment

system for the removal of suspended solids from discharges related to construction of the development. Existing stormwater runoff turbidity and other typical physical water quality parameters were monitored to provide an evaluation of baseline water quality conditions for determining potential runoff water quality conditions collected in compliance with the SWPPP. Dr. Cook evaluated the baseline monitoring data

Laguna Niguel Specific Plan Water Quality Assessment, California, City of Laguna Niguel. The City of Laguna Niguel Specific Plan intended to incorporate some stream/channel restoration features to improve water quality. Dr. Cook was part of the team to determine potential in-channel and riparian design features that could be used to enhance habitat and stream functions. Including in this hydrologic regime was a large retention basin intended to act as a dry season wetland. Dr. Cook was also responsible for water quality modeling to estimate existing and proposed project effects on stormwater quality, and hence, stream/channel water quality. Originally, XP-SWMM was the intended model; however, data was insufficient to populate the model for estimating baseline conditions. Therefore, P8 was used, with the pollutant concentrations module adjusted such that concentrations in runoff from each land-use type were similar to the Los Angeles County EMC values.

Otay Water District North District Recycled System Development Project Summary of Watershed Conditions, Water Quality Requirements, and Potential Permitting Issues, California, Sweetwater River, Otay Water District. The Otay Water District wishes to dispose of recycled water in a different watershed than originally permitted. This watershed drains to a public water supply under management and operation of the Sweetwater Authority. Additionally, along the Sweetwater River, where recycled water could be applied, the depth to groundwater is shallow, resulting in both runoff and groundwater quality potential issues associated with use of recycled water. Dr. Cook evaluated several old reports, geologic conditions, surface conditions, regulatory requirements, permitting issues, and potential effects of recycled water applications in the Sweetwater River Watershed. She prepared summary was prepared for the Otay Water District, including data gaps and constraints.

Lower Tule Water Quality Monitoring Plan, Tule River, California, Southern California Edison. Dr. Cook was the project manager and lead scientist for preparing the Water Quality Monitoring Program (WQMP) for the Lower Tule River Hydroelectric Project (FERC No. 372) to assist Southern California Edison (SCE) with their FERC licensure requirements. Requirements of the WQMP included, at a minimum, a benthic macroinvertebrate (BMI) monitoring program. Dr. Cook developed the WQMP in coordination with regulatory agencies and SCE personnel and integrated the existing NPDES water quality monitoring and reporting program (Hydro Division Station Order No. 1.55) into the WQMP in order to maximize efficiency of both programs. As part of the WQMP, Dr. Cook also prepared a Field Sampling and Monitoring Plan including: site locations, standard operating procedures/protocols, abbreviated Quality Assurance Project Plan, schedule, and reporting protocols. Coordinating with other staff, she used their extensive knowledge of water monitoring programs, aquatic life habitat conditions, and BMI assessments to select appropriate monitoring locations and to devise an effective strategy. This WQMP was submitted to the State and Regional Water Quality Control Board for review prior to being submitted to FERC.

Amador Water System Transmission Project Focused EIR and Section 7 Compliance, Amador County, California, Amador Water Agency.
This project included the preparation of a focused EIR for the Amador Water Agency. A detailed hydrological analysis of the effects that the loss of canal leakage would have on local water sources and vegetation and wildlife was also conducted. Two potential alternatives for the transmission project were evaluated at an equal level, including continued use of the existing canal and construction of a new underground pipeline. Dr. Cook served as project lead responsible for qualitative and quantitative water quality impacts assessment, including effects on the wastewater treatment plant discharges, and groundwater isotope study review.

National Pollutant Discharge Elimination System Temperature Modeling, Folsom, California, Aerojet Corporation. To obtain a National Pollutant Discharge Elimination System permit for discharge of treated groundwater into surface water systems, a water temperature impacts assessment was conducted. Prior to Atkins, as project lead, Dr. Cook was responsible for analysis that included temperature and flow monitoring for input parameters and calibration of riverine water temperature models and reservoir mixing model. Dr. Cook used limited monitoring data, CEQUAL2E (for the river system) and CORMIX (for Folsom Lake) to determine potential effects of discharge waters.

Benthic Macroinvertebrate Data Report Reviews, Various Locations, California, Pacific Gas and Electric, El Dorado Irrigation District, Squaw Valley. Prior to working with Atkins, Dr. Cook periodically reviewed and edited Benthic Macroinvertebrate (BMI) data reports. This included data analysis for potential trends and comparison with reference site data for all CDFG metrics and their potential environmental significance.

Fish Kill Emergency Response, Detroit, Michigan, U.S. EPA Region 5.
Spring of 2001, a fish kill was reported in a pond linked to the Frank and Pope Drain, Detroit, MI. Prior to Atkins, as a part of the task force to determine the likely cause, Dr. Cook, lead scientist, provided technical assistance in determining which water quality parameters to measure, data assessment, determination of cause, and final report quality assurance/quality control. The likely cause of the fish kill was suspected to be low dissolved oxygen, which was supported by water quality measurements. The sudden drop in dissolved oxygen was likely because of an unintended release from the airport water detention ponds that normally contain large amounts of deicing fluid-impacted waters.

Airport Fill Material Impacts on Water Quality, Cleveland, Ohio, U.S. EPA Region 5 Prior to joining Atkins, water in a few outfalls from the airport was discovered to be milky-white during spring, 2001and anaerobic conditions were also observed further downstream. Water quality parameters were measured and Dr. Cook was consulted to determine what the possible cause of these conditions was. The suspected cause was industrial slag fill material used during construction of an additional airport runway that was placed below the natural shallow ground water table. Shallow ground water leached through the quicklime containing material. Further test were recommended to support this hypothesis.

Hydrogeomorphic Assessment, Rio Del Oro, California. Prior to Atkins, Dr. Cook prepared the HGM-type assessment for the Rio Del Oro development, as

requested by the Army Corps of Engineers. In lieu of a regional guidance, Dr. Cook used the Clairain dissertation factors for vernal pool functions and modified protocols to compare vernal pool functions with seasonal wetland depression functions.

Watershed Management

Rice Creek Watershed Management Engineering Services, Rice Creek Watershed, Minnesota, Rice Creek Watershed District. Prior to joining Atkins, Dr. Cook was the principal scientist for water quality modeling, statistical, and qualitative assessment of annual stream monitoring results, and for long-term water quality trends analyses of streams and lakes within the District. In addition to water quality evaluation, Dr. Cook evaluated potential effects of water treatment devices for pollutant removal efficiencies. She was responsible for the Stormceptor(tm) evaluation project that was designed to determine the pollutant removal efficiency of an in-line stormwater treatment device in order to provide the District with enough information to evaluate its cost-effectiveness for meeting water pollution reduction goals. Dr. Cook has also modeled the potential pollutant removal efficiencies of restored wetlands and other BMPs in order to assist the District in cost-benefit analysis for minimizing exposure of District water bodies to urban and rural stressors.

Prior Lake-Spring Lake Watershed Management Engineering Services, Prior Lake, Minnesota Prior Lake-Spring Lake Watershed Management District. Prior to joining Atkins, working closely with the District Administrator, Dr. Cook was the principal scientist for conducting water quality modeling, statistical, and qualitative assessment of annual stream monitoring results, and for characterizing long-term water quality trends of streams and lakes within the District. Additionally, she assessed the potential phosphorous removal success of a chemical (Ferric Chloride) treatment system constructed to reduce phosphorous loads to Spring Lake and the overall pollutant removal effectiveness of this device in conjunction with an associated reconstructed wetland.

Vermilion River Watershed Management Engineering Services, Vermilion River Watershed, Minnesota, Vermilion River Watershed Management Commission. Dr. Cook was the principal scientist for water quality modeling, statistical, and qualitative assessment of annual stream monitoring results, and for long-term water quality trends characterization of Vermillion River outlet discharge prior to working with Atkins.

Shingle Creek Watershed Management Engineering Services, Shingle Creek Watershed, Minnesota, Shingle Creek Watershed District. Prior to Atkins, Dr. Cook characterized the nutrient cycling processes in Upper Twin Lake using the models BATHTUB and FLUX populated with monitoring data. The goal of this study was to examine the potential for internal phosphorous source in this shallow, hypereutrophic, urban lake, and to characterize its subsequent effects on water quality improvement if external sources were reduced.

Lackawanna 2000 Water Quality Monitoring Program, Scranton, Pennsylvania, City of Scranton and U.S. EPA. The Lackawanna 2000 project was a federal grant project to assess potential abandoned acid mine drainage impacts on the Lackawanna River and mitigation measures. Several small and

large outfalls of mine drainage occurred within the river corridor. Dr. Cook was the lead scientist for the Water Quality Monitoring Plan, including preparation of the Field Sampling and Monitoring Plan, Standard Operating Procedures, and most Quality Assurance Project Plans for the monitoring effort before joining Atkins. She worked with local monitoring subconsultants and laboratories to ensure appropriate sampling and monitoring techniqes, as well as coordinating the wet season monitoring efforts and preliminary assessment of water quality data.

Total Maximum Daily Loads/Tiered Wasteload Allocations

Governor Bond Lake TMDL, Greenville, Illinois, Illinois Environmental Protection Agency and U.S. EPA Region 5. Governor Bond Lake is a reservoir in southern Illinois that was 303(d)-listed for failure to meet aquatic life support, swimming, recreation, and overall uses. Stressors contributing to impairment include nutrients, siltation/sediment, and excessive algal growth. This is a rural watershed with only nonpoint source stressors. Dr. Cook developed the TMDL for the Illinois Environmental Protection Agency prior to joining Atkins. As project lead, Dr. Cook used monitoring data, GIS, and several models (FLUX, GWLF, BATHTUB, and PROFILE) to model water quality loads, lake cycling, and nutrient processes to determine nutrient load reduction requirements in order to meet lake water quality objectives. She performed model calibration, data collection, coefficient determination and selection, and QA/QC in addition to public meeting presentations, preparation of technical and informational reports, scenario testing, BMPs assessment and feasibility, and stakeholder involvement. She determined the load allocations and prepared the TMDLs and final Draft TMDL document. This was the first non-point source TMDL for the State of Illinois.

Chippewa Creek Fecal Coliforms TMDL, Chippewa Creek Watershed, Minnesota, Minnesota Pollution Control Agency and U.S. EPA Region 5. Chippewa Creek is a tributary to the Minnesota River in rural western Minnesota. Consistently high fecal coliforms loads have resulted in swimming designated use impairment. An HSPF model was being developed as part of the Minnesota River Basin Modeling Project. Fecal coliforms data were incorporated into the HSPF hydrology model in order to develop the TMDL. Prior to Atkins, Dr. Cook was the lead scientist and Technical Project Manager for updating and calibrating this model for the fecal coliforms analysis, which included coefficients determination, source assessment, and load allocation approach, analysis, and preparation of the final Draft TMDL document.

Fecal Coliforms Total Maximum Daily Loads, Prairie Creek and Chippewa Creek, Minnesota, U.S. Environmental Protection Agency Region 5. Consistently high fecal coliforms loads resulted in swimming designated use impairment. As project lead, Dr. Cook updated and calibrated the Hydrologic Simulation Program Fortran (HSPF) model for the fecal coliforms analysis. Dr. Cook was the lead scientist and Technical Project Manager for evaluating the current HSPF model suitability for TMDL development and for finalizing the TMDL before joining Atkins. This project also involved coefficients determination, sources assessment, and analysis and preparation of the final Draft TMDL document.

Minnesota River Basin Modeling for TMDLs, Minnesota River Basin, Minnesota, Minnesota Pollution Control Agency. Dr. Cook served as the

main liaison in Minnesota between company HSPF technical model experts and state regulators before joining Atkins. Company model experts were tasked with finishing the Minnesota River Basin model, calibrating existing watershed models, updating data sets, and performing scenario testing and analysis. Dr. Cook provided a regional understanding of processes, issues, and agroecoregions, and served as a local stakeholder contact and technical model contact for the client.

Cahaba River Modeling Study, Cahaba River, Alabama, County of Jefferson. Dr. Cook was the Technical Project Manager for the Cahaba River Modeling Study before joining Atkins. Portions of the Cahaba River had been listed (303d) as water quality impaired for the stressors pathogens and nutrients. The Cahaba River Wastewater Treatment Plant is a point source discharger to the Cahaba River and current wasteload allocations are based on low flow conditions; but, higher loads during wet weather do not necessarily impose any additional risk to the river system. Because of the seasonal nature of river flows, the initial primary purpose of this study was to assess the current effects of discharges on wet weather, in-stream water quality and to develop support for a tiered waste load allocation scheme. Following the first wet weather season, the County requested that the study be extended to more accurately characterize dry weather conditions and gather additional stressor source information during wet weather. Dr. Cook finalized the Field Sampling and Monitoring Plan, coordinated monitoring and data collection efforts, prepared and managed the monitoring data database, analyzed wastewater effluent and in-river water quality and flow data, and collaborated with the hydrology modeling subconsultants to develop the data set for loading analysis. Dr. Cook also cooperated in developing and presenting a water quality modeling and TMDL workshop for County personnel in anticipation of TMDL development for the listed sections.

Stream Restoration

Chicken Ranch Slough Restoration Project, Sacramento, California, Fulton-El Camino Recreation and Parks District. This project involved assisting to restore bed habitat, bank stabilization, streambed realignment, revegetation with native species, and all permitting. Prior to Atkins, as project lead, Dr. Cook's responsibilities included designing the restoration, assisting in preparation of the grant application, review of the HEC-RAS model, and working with engineers, vegetation specialists, and landscape designers to help restore the portion of the slough that passes through Howe Park, Sacramento.

Esmeralda Creek Restoration Planning, El Dorado County, El Dorado Irrigation District, California. The historical rerouting of Esmeralda Creek to bypass the El Dorado Diversion Canal removed the creek from its natural watercourse, resulting in severe bank erosion and physical habitat impacts. Prior to Atkins, Dr. Cook prepared the restoration project scope and overall approach to return flows to the natural streambed and to mitigate impacts of bypassing the canal.

Unnamed Coastal Tributary Restoration, Pebble Beach, California, Garvin and Associates. In order to comply with a California Coastal Commission requirement for development of a small property, Dr. Cook prepared a stream restoration plan for a 200-foot section of an ephemeral stream prior to working with Atkins. This plan included stepped weirs to create riffle-run habitat, bank

slope stabilization using revegetation and stabilizing structures, stream bed realignment, and stream bed erosion protection.

Watershed Management

Dry Creek Watershed Coordinated Resource Management Plan, Placer County, California, Dry Creek Watershed Council. The Plan was initiated by a citizen collaborative and the Dry Creek Conservancy through a state funded grant. Primary issues and concerns within the watershed were conflicting. Before joining Atkins, Dr. Cook was the lead hydrologist and water quality specialist who prepared hydrology and water quality assessments, reviewed and edited the biology assessments, assisted to finalize the Administrative Draft, worked with the collaborative in preparation of the Public Review Draft, Final Plan, and to address comments, technical issues, and watershed management.

Land Management Program, Prior Lake/Spring Lake Watershed District, Minnesota. Before joining Atkins, Dr. Cook was the Project Manager and Engineer for the Prior Lake/Spring Lake Watershed Management District (PLSLWD Inventories for Land Management and for the Land Management Program. The purpose of these programs is to initiate a comprehensive system for land management decision making with regard to watershed improvement priorities and protection. The land inventory was conducted to support the management program by helping to prioritize land management pursuits. This inventory consolidated available information in a GIS structure to enable spatial assessment of priority areas and opportunities. Dr. Cook also performed monitoring and GIS data analysis in support of the land management program.

Vermilion River Watershed Management Plan, Vermilion River Watershed, Minnesota, Vermilion River Watershed Management Commission. Dr. Cook collaborated on finalizing the Vermilion River Watershed Management Plan (Dakota County, MN) prior to joining Atkins. She was responsible for completing the soil and water quality sections of this plan, analyzing lake and stream water flow and quantity monitoring data, and assessing potential impacts of altered operations and development within the watershed.

Cross Lake Watershed Management Plan, Cross Lake Watershed, Shreveport, Louisiana, City of Shreveport. Prior to Atkins, Dr. Cook finalized the Cross Lake Watershed Management Plan, including preparation of the Tributary Monitoring Program Quality Assurance Project Plan (QAPP), associated Standard Operating Procedures (SOPs) and GIS. The Cross Lake Watershed Management Plan was created to assess current water quality conditions and resources, to evaluate management priorities for the lake, to determine lake sensitivity to exposure from various potential stressors, and to recommend best management practices for maintaining and improving water quality. Dr. Cook was also responsible for review, analysis, and Quality Assurance/Quality Control of the resulting Tributary Monitoring Program results.

Quality Assurance/Quality Control

Water Quality Monitoring for TMDL Development, Pocatello, Idaho, Idaho Department of Environmental Quality. Before working with Atkins, Dr. Cook was the QA/QC Officer and primary laboratory contact to coordinate

efforts between two projects being conducted for the Idaho Department of Environmental Quality. One project involved a water quality monitoring project to collect baseline data for water quality impairment assessments. The project was also designed to support a concurrent selenium risk assessment project.

Lackawanna 2000 Water Monitoring Program, Scranton, Pennsylvania, City of Scranton and U.S. EPA. Prior to joining Atkins, Dr. Cook was the scientist responsible for data quality assurance and control for the Lackawanna 2000 Program Monitoring Task. The Lackawanna 2000 Program used a watershed approach to evaluate Abandoned Mine Drainage (AMD) and Combined Sewer Overflow (CSO) problems along the Lackawanna River (Scranton, PA) to develop alternatives for improving water quality and to implement improvements. Dr. Cook prepared several of the Program's EPA approved Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs), including the Biomonitoring Study QAPP. She also conducted data quality review, analytical laboratory review and auditing, and research project design review.

Additional Projects

Prior to working with Atkins, Dr. Cook has completed several QAPPs and SOPs and has been responsible for QA/QC review for other watershed monitoring studies including:

- Dry Creek Watershed Citizen Water Quality Monitoring Program, Dry Creek Watershed, Placer and Sacramento Counties, Dry Creek Watershed Council

- Watershed Monitoring Data Reports, Rice Creek Watershed, Minnesota; Prior Lake - Spring Lake Watershed, Minnesota; Coon Creek Watershed, Minnesota; Vermillion River Watershed, Minnesota; Minnehaha Creek Watershed, Minnesota; Cross Lake Watershed, Louisiana; and other projects.

Stormwater Pollution Prevention and Best Management Practices

Pierce College Stormwater and Prop O, Pierce College, California, Los Angeles County Community College District. Dr. Cook was the lead scientist for sizing and assessing the potential efficacy of stormwater swales and detention Best Management Practices (BMPs) at reducing pollutants in stormwater and reducing erosion potential. Dr. Cook delineated catchments and land use using GIS and calculated the annual pollutant load using the P8 Urban Catchment Model. Pollutant concentrations in stormwater were roughly calculated using City of Los Angeles event mean concentrations as a function of land use. Based on the pollutant load and design storm flows, she recommended stormwater Best Management Practices (BMP) and prepared and conceptual plan for the BMPs.

Hansen Dam Environmental Study, Los Angeles, California, Mountains Recreation and Conservation Authority. The purpose of this project was to create a creation/restoration plan for a severely degraded wetland that is adjacent to a newly created parking lot within the Hansen Dam Recreational Areas. The parking lot drains into Critical habitat for the least Bell's vireo and is impacting the water quality of this habitat. Using the Urban Catchment Model,

P8, and information on the Los Angeles drainage system, Dr. Cook sized and determined wetland removal efficiencies for runoff from adjacent residential, transportation, and commercial areas entering the Hansen Dam Reservoir and adjacent wetlands. She used the wet detention pond design feature and P8 to estimate runoff and calibrated pollutant transport parameters to approximate the City of Los Angeles runoff coefficients.

Lincoln Crossing Stormwater Best Management Practices, Lincoln, California, City of Lincoln. Prior to joining Atkins, Dr. Cook prepared post-construction BMP criteria and analysis for regional developments in areas that do not have existing design criteria. Caltrans guidelines, City of Sacramento guidelines, and modeling were used to determine effective BMP designs.

National Pollutant Discharge Elimination System Phase II Water Quality Best Management Practices, Mossdale Landing, Pacific Union Homes and TCN Luckey Properties. Two large development projects within the City of Lathrup area needed to comply with the NPDES Phase II Stormwater General Permit requirement. The City of Lathrup had not yet completed their Stormwater Management Plan required for coverage under the permit. Prior to joining Atkins, Dr. Cook was the lead scientist that assisted the developers in preparing site-specific stormwater management plans, including P8 Urban Catchment modeling for assessment of efficacy, in order to comply with potential regulations. She worked with both City personnel and developers to prepare a plan that would meet with approval by both parties.

Folsom Gateway Stormwater Best Management Practices, El Dorado County, California. Before working with Atkins, Dr. Cook assessed stormwater quality Best Management Practices (BMPs) designed by the project engineer were assessed to determine suitability for water quality treatment. Since no standards or guidelines exist for the local municipality, Dr. Cook used the City of Sacramento criteria to assure reasonable effectiveness**.**

El Granada Pipeline Transmission Project Phase III, El Granada and Half Moon Bay, California, Coastside County Water District. Dr. Cook was the lead scientist and prepared the Stormwater Pollution Prevention Plan (SWPPP) for the approximately 3 mile-long water supply pipeline project, primarily along Highway 1 in San Mateo County. The project included jack and bore operations under four water courses. Dr. Cook delineated BMPs using GIS and prepared the SWPPP according to the Caltrans template so that the client could obtain a Caltrans easement, which was granted with no revisions to the document.

Additional stormwater quality BMPs projects (prior to joining Atkins) include:

- Quail Ridge Residential Development Stormwater Pollution Prevention Plan, Sacramento County
- Sterling Pointe Residential Development Stormwater Pollution Prevention Plan, Placer County
- City of New Brighton Stormwater Best Management Practices, Rice Creek Watershed District, Minnesota

- Central Lathrop Specific Plan Environmental Impact Report Water Quality Technical Report Analysis, Richland Planned Communities
- Auburn Honda Stormwater Best Management Practices, Richland Planned Communities
- Wetland Mitigation Ponds, Towns Center West
- Watershed District Engineering, Rice Creek Watershed District, Minnesota
- Prior Lake-Spring Lake Watershed Management District, Minnesota
- Vermillion River Watershed Management Commission, Minnesota
- Phase I Property Transfer Site Visits, Various Locations, MN, ND

Permitting - California

Dr. Cook has also prepared Clean Water Act Section 401 Water Quality Certification permit applications, Army Corps of Engineers 404 permit applications, and California Department of Fish and Game Streambed Alteration Agreement (1602) applications prior to joining Atkins. Some projects include:

- Morvai Permitting, Sacramento County, Morvai Properties
- Highway 65 Self-Storage Permitting, Placer County
- Highland Reserve South Permitting, Placer County
- McKim Homes Permitting, McKim Homes

FERC

Weber Dam Operations, El Dorado, California, El Dorado Irrigation District.
Dr. Cook worked with El Dorado Irrigation District and CDFG personnel to develop Weber Dam operations rules to maintain minimal flows and yet also meet delivery requirements before working with Atkins. This process involved technical review of analysis of non-impacted flows and rule curves based on historical climate patterns in addition obtaining a consensus on operations.

U.S. Federal Energy Regulatory Commission Project 184, El Dorado and Amador Counties, California, El Dorado Irrigation District. Prior to Atkins, Dr. Cook served as the project hydrologist to coordinate activities between and needs of various ecological and physical assessment teams that are working on studies to support relicensing Project 184 on the South Fork American River and for the Weber Creek Restoration efforts.

Lower Tule Water Quality Monitoring Plan, Tule River, California,

Southern California Edison. Dr. Cook was the project manager and lead scientist for preparing the Water Quality Monitoring Program (WQMP) for the Lower Tule River Hydroelectric Project (FERC No. 372) to assist Southern California Edison (SCE) with their FERC licensure requirements. Requirements of the WQMP included, at a minimum, a benthic macroinvertebrate (BMI) monitoring program. Dr. Cook developed the WQMP in coordination with regulatory agencies and SCE personnel and integrated the existing NPDES water quality monitoring and reporting program (Hydro Division Station Order No. 1.55) into the WQMP in order to maximize efficiency of both programs. As part of the WQMP, Dr. Cook also prepared a Field Sampling and Monitoring Plan including: site locations, standard operating procedures/protocols, abbreviated Quality Assurance Project Plan, schedule, and reporting protocols. Coordinating with other staff, she used their extensive knowledge of water monitoring programs, aquatic life habitat conditions, and BMI assessments to select appropriate monitoring locations and to devise an effective strategy. This WQMP was submitted to the State and Regional Water Quality Control Board for review prior to being submitted to FERC.

Geographic Information Systems

Governor Bond Lake Nutrient and Sediment Total Maximum Daily Loads, Greenville, Illinois, Illinois Environmental Protection Agency and U.S. Environmental Protection Agency Region 5. Governor Bond Lake is a reservoir in southern Illinois that was 303(d)-listed for failure to meet aquatic life support, swimming, recreation and overall uses. Prior to joining Atkins, as project lead, Dr. Cook modeled water quality loads, lake cycling, and nutrient processes to determine nutrient load reduction requirements in order to meet lake water quality objectives.

Additional projects (prior to joining Atkins) include:

- Subwatershed Delineations, Illinois, Minnesota, Indiana, California
- Land Management Inventory, Prior Lake-Spring Lake Watershed District, Minnesota
- Urban Stormwater System Model Database, City of Coon Creek, Minnesota
- Lake Macrophyte Survey, Rice Creek Watershed District, Minnesota
- Cross Lake Watershed Management Plan, City of Shreveport, Louisiana
- Digital Elevation and Terrain Modeling, University of Minnesota, St. Paul, Minnesota
- Geographic Information System Orthorectification, University of Minnesota, Minnesota
- Geographic Information System Instruction, Richard Stockton College, New Jersey
- Aerojet Temperature Modeling, Folsom, California
- Urban Stormwater System Model Database, Minneapolis, MN
- Digital Elevation and Terrain Modeling, University of Minnesota, St. Paul, Minnesota
- GIS Orthorectification, University of Minnesota, St. Paul, Minnesota
- GIS Instruction, Richard Stockton College, New Jersey

Publications

Cook, S. M. F. and Linden, D. R., "Use of Rhodamine WT to Predict Atrazine Dilution Factor in Short-Term Transport Studies," Journal of Environmental Quality, Vol. 26, 1997, pp.1438– 1440.

Barber, C., Sinton, J., and Cook, S. M. F., Environmental Issues Laboratory Manual, The Richard Stockton College of New Jersey, 1997.

Cook, S. M. F. and Linden, D. R., "Effect of Food Type and Placement on Earthworm (Aporrectodea tuberculata) Burrowing and Soil Turnover," Biology and Fertility of Soils, Vol. 21, 1996, pp. 201– 206.

Cook, S. M. F. and Linden, D. R., "Immunoassay Suitability for Measuring Atrazine in a Silt Loam Soil," in Clean Water-Clean Environment - 21st Century: Team Agriculture - Working to Protect Water Resources, Proceedings of conference, Kansas City, Missouri, March 5 -8, 1995, pp. I-45–I-48, published by the American Society of Agricultural Engineers (ASAE), St. Joseph, Michigan, No. 2, March 1995.

Cook, S. M. F., Gupta, S. C., Woodhead, T., and Larson, W.E., "Soil Physical Constraints to Establishment of Mung Beans (Vigna radiata [L.] Wilczek) in Paddy Rice (Oryza sativa L.) Soils," Soil and Tillage Research, Vol. 33, 1995, pp. 47– 64.

Cook, S. M. F., Gupta, S. C., Maghari, S.G., and Larson, W.E., "Influence of Soil Physical Properties on Mung Bean Emergence and Growth in Rice Coils," in Transactions of the 14th International Congress of Soil Science, Kyoto, Japan, Vol.1, August 12– 18, 1990, pp. I-164–I-169.

Courses Taught

- Environmental Issues, The Richard Stockton College of New Jersey
- Environmental Issues Laboratory, The Richard Stockton College of New Jersey
- Introduction to Environmental Pollution, The Richard Stockton College of New Jersey
- Soil and Water Quality, The Richard Stockton College of New Jersey
- Basic Skills Math, The Richard Stockton College of New Jersey
- Soil Conservation and Land Use Management (Teaching Assistant), University of Minnesota
- Soil Physics (Teaching Assistant), University of Minnesota
- Soil Physical Properties and the Environment (Teaching Assistant), University of Minnesota