

**HAGEMANN & ASSOCIATES**  
**9372 Carmel Road**  
**Atascadero, California 93422**  
**(805) 835-3163**  
**Hagemann.associates@gmail.com**

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June 27, 2019

Los Osos Basin Management Committee  
Attention: Mr. Rob Miller  
2122 9<sup>th</sup> Street, Suite 102  
Los Osos, CA 93402

Dear Basin Management Committee,

I am excited to express my interest in the Basin Management Committee Executive Director position. My education, background, work experience and career timing make this a great opportunity for Hagemann & Associates and the Committee. My extensive managerial, budgetary and engineering experience in the water and wastewater field and specifically in the Los Osos area, provide me with a unique skill set that can be applied to the next phase of managing the Basin and implementing the requirements of the Basin Plan. My work with the Central Coast Regional Water Quality Control Board from 1987 to 2004 included extensive work on solving the Los Osos wastewater treatment plant issues and familiarized me with the Los Osos community members and the hydrogeology of the Los Osos ground water basin.

In both my previous public sector assignments and my current private sector consulting business, I work extensively with the state and local regulatory agencies and departments, as well as many local consulting firms and vendors. I have worked for appointed and/or elected Boards for most of my professional career and pride myself on providing strong and balanced staff analysis and recommendations. I have had many opportunities to not only provide staff analysis and recommendations to the Board of Directors of the agency I was working for, but frequently represented the agencies at City Council or Board of Supervisors meetings. My management style and my ability to work and collaborate with elected officials, agency officials, technical consultants and all interested parties will be very beneficial in continuing the successful overall project management of the Committee projects.

Thank you considering my application for this very interesting and challenging opportunity. My resume and firm profile is attached. I look forward to discussing this opportunity with you at your earliest convenience.

Best regards,



Brad Hagemann, PE  
Hagemann & Associates

# HAGEMANN & ASSOCIATES

## FIRM PROFILE & QUALIFICATIONS

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June 2019

### Profile

Hagemann & Associates is a sole proprietorship owned and operated by Brad and Colleen Hagemann. Brad is a registered professional engineer in the State of California with over 40 years of experience in the water, sewer and solid waste industry. Colleen is a Certificated Paralegal with over 35 years' experience in the legal industry, working as a paralegal for local law firms including Hoge, Fenton, Jones and Appel; O'Neill and O'Neill Law Firm and Hall and Hieatt, among others. For the past 15 years she has worked for Conoco Phillips/Phillips 66 as an analyst and contracts paralegal managing a team of up to 10 staff tasked with negotiating access agreements and rights of entry with private parties and public entities nationwide.

Hagemann & Associates has been in business since May 2015. The Company's office is located at 9372 Carmel Road in rural Atascadero, California.

### Project Approach and Budget Allocation

As discussed in the cover letter, Hagemann & Associates is well suited to perform the Executive Director tasks needed to successfully oversee the financial, technical and managerial operations of the Los Osos Basin Management Committee. Brad's experience and credibility earned over the past 30 years will allow him to quickly and efficiently move in to the Executive Director role. One of his strengths and skill sets is the ability to take complicated technical information and break it down in to manageable "bite size" pieces and then explain it to audiences at a level they can understand, appreciate and then form meaningful comments/observations. Brad has made many presentations to Boards, City Councils and other elected officials and has a great ability to listen well, understand others perspective and provide answers and/or recommendations that are relevant to their position.

Brad has a working knowledge of the technical and hydro-geologic aspects of the Basin and has worked extensively with many of the local technical consultants and County staff that are currently supporting implementation of the Basin Management Plan. Colleen is experienced and available to assist with negotiating access agreements and/or addressing concerns of property owners or interested parties and will also assist with preparation of meeting minutes and other support documents.

We anticipate the scope and level of effort for this engagement will continue to be on the order of 15 – 20 hours per month, with some exceptions when major milestones need to be met or if a Committee meeting is cancelled. A majority of the Executive Director’s efforts will focus on coordination of the Committee consultants, ensuring the Board members and public have the information they need in a form and format that they can understand and ensuring all the court-mandated deadlines are achieved. Fortunately, over the years, Brad has developed an outstanding working relationship with many of the consultants and vendors and he will be able to hit the ground quickly. The existing \$50,000 annual budget should continue to be sufficient for the described scope of work.

Brad is licensed Professional Civil in the State of California, # C38199. He also is certified by the State of California as a Water Treatment Plant Operator, Grade T2 (#40134) and Water Distribution System Operator, Grade D2 (#48256).

#### References

Mr. Pete Kelley, President Avila Beach Community Services District. Contact: [pedrokelley@gmail.com](mailto:pedrokelley@gmail.com); (805) 595-2526

Mr. Michael Seitz, Principal/owner, Shipsey and Seitz Law Firm. Contact: [mike@shipseyandseitz.com](mailto:mike@shipseyandseitz.com); (805) 543-7272

Mr. John Robertson, Executive Officer, Central Coast Regional Water Quality Control Board. Contact: [John.Robertson@waterboards.ca.gov](mailto:John.Robertson@waterboards.ca.gov); (805) 549-3140

**BRADLEY E. HAGEMANN, PE**  
**HAGEMANN & ASSOCIATES**  
**9372 Carmel Road**  
**Atascadero, California 93422**  
**(805) 835-3163**  
**Hagemann.associates@gmail.com**

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**EDUCATION**

- 1977 -1981      California Polytechnic State University, San Luis Obispo, California  
Bachelor of Science, **Civil/Environmental Engineering**
- 1985-1989      California Polytechnic State University, San Luis Obispo, California  
Master of Engineering, **Civil Engineering**

**PROFESSIONAL ORGANIZATIONS/VOLUNTEER ORGANIZATIONS**

Registered Civil Engineer in the State of California, # C38199. Grade 2 Water Treatment Operator; Grade 2 Water Distribution Operator. Member of American Public Works Association, and California Special Districts Association.

**PROFESSIONAL EXPERIENCE**

4/2015 – Present      **Hagemann & Associates**  
Hagemann & Associates specializes in providing management and engineering support to Special Districts, Joint Power Agencies and Utility Districts, with an emphasis on management and engineering of water and wastewater systems, regulatory compliance and development of recycled water treatment and distribution systems. Current clients include: Avila Beach Community Services District as their contract General Manager and District Engineer; Little Bear Water Company, Monterey County; Squire Canyon Community Services District (General Manager); and Independence Ranch Community Services District (General Manager).

3/2014 – 4/2015      **Wallace Group**  
**612 Clarion Court, San Luis Obispo, CA**

**Director of Public Works Administration**

Under general direction supervised the Public Works Administration Group. The Public Works Administration Group is primarily responsible for assisting clients with environmental compliance, permitting, negotiation with regulatory agencies, utility billing and handling customer service calls. The Group also provided municipalities and Special Districts with interim staff as an extension of their Public Works Department staff.

5/2008 – 2/2014      **Monterey Regional Water Pollution Control Agency (Now Monterey One Water)**  
**5 Harris Court, Bldg. D, Monterey CA 93940**

**Assistant General Manager**

Under general direction of the General Manager provided leadership and direction to Agency staff to ensure Agency missions and goals were achieved. Served as Chief Operating Officer, directly overseeing operations, maintenance, engineering and wastewater treatment plant administrative functions. Worked as the primary liaison between the Agency and the growers who utilize the recycled water for irrigation of food crops. The Agency included approximately 75 employees and a \$20 million budget.

2/2007 – 5/2008      **City of Santa Maria, Utilities Department**  
**2065 East Main Street, Santa Maria CA 93454**

**Deputy Director/Utilities Engineer:** As the Deputy Director/Utilities Engineer I was directly responsible for the Department's Capital Improvement Program, Regulatory Compliance and Engineering oversight for the City's Water, Wastewater and Solid Waste Divisions. Also acted as the Department Director in his absence and assisted with all

Department personnel and budget development and tracking. The City's Utilities Department includes approximately 85 full-time staff and 15 part-time staff.

12/2004 – 2/2007                      **City of Paso Robles, Public Works Department**  
**1000 Spring Street, Paso Robles, CA 93446**

**Water Resources/Utilities Manager:** Directly responsible for budgeting, planning and supervision of staff responsible for the operation and maintenance of the City's Water, Wastewater and Solid Waste Divisions including City owned landfill. Water Department supports an operation that includes 18 wells, five booster stations, over 12 million gallons of storage reservoirs, 120 miles of distribution pipe and 10,000 service connections. The Wastewater Department operates a 5 MGD trickling filter treatment plant that discharges to the Salinas River. The Wastewater collections department is responsible for 15 lift stations, 120 miles of collection mains serving 9,000 sewer connections.

3/2002 – 12/2004                      **State of California, Central Coast Regional Water Quality Control Board**  
**895 Aerovista Place, Suite 101, San Luis Obispo, California 93401**

**Assistant Executive Officer:** Directly supervised nine unit supervisors, who oversaw a total office staff of 65 and a \$7.8 million dollar budget. I was the primary point of contact for managing office-wide budget, staffing and personnel issues. I provided policy direction and oversight and acted on behalf of the Executive Officer in his absence for conduct of Regional Board workshops, hearings and all other Regional Board business.

8/1999 – 3/2002

**Supervising Engineer/Branch Chief:** As the Watershed Branch Chief I was responsible for the direct supervision of five senior level staff, who supervised five to eight professional staff and two clerical staff. Total Branch staff numbered approximately 40 permanent staff and eight to ten student assistants, with a budget of approximately \$4 million. I frequently made presentations to the Regional Water Quality Control Board at public hearings and represented the Regional Board and Executive Officer at Coastal Commission, State Board and other agency hearings.

2/1993 – 8/1999

**Senior Water Resource Control Engineer:** Supervised seven full-time professionals and three to five student assistants. Unit was responsible for: permit issuance, permit enforcement and surveillance of all domestic and industrial wastewater discharges within our region; management of the stormwater and non-point source programs; and management on the Morro Bay National Estuary Program and National Monitoring Program

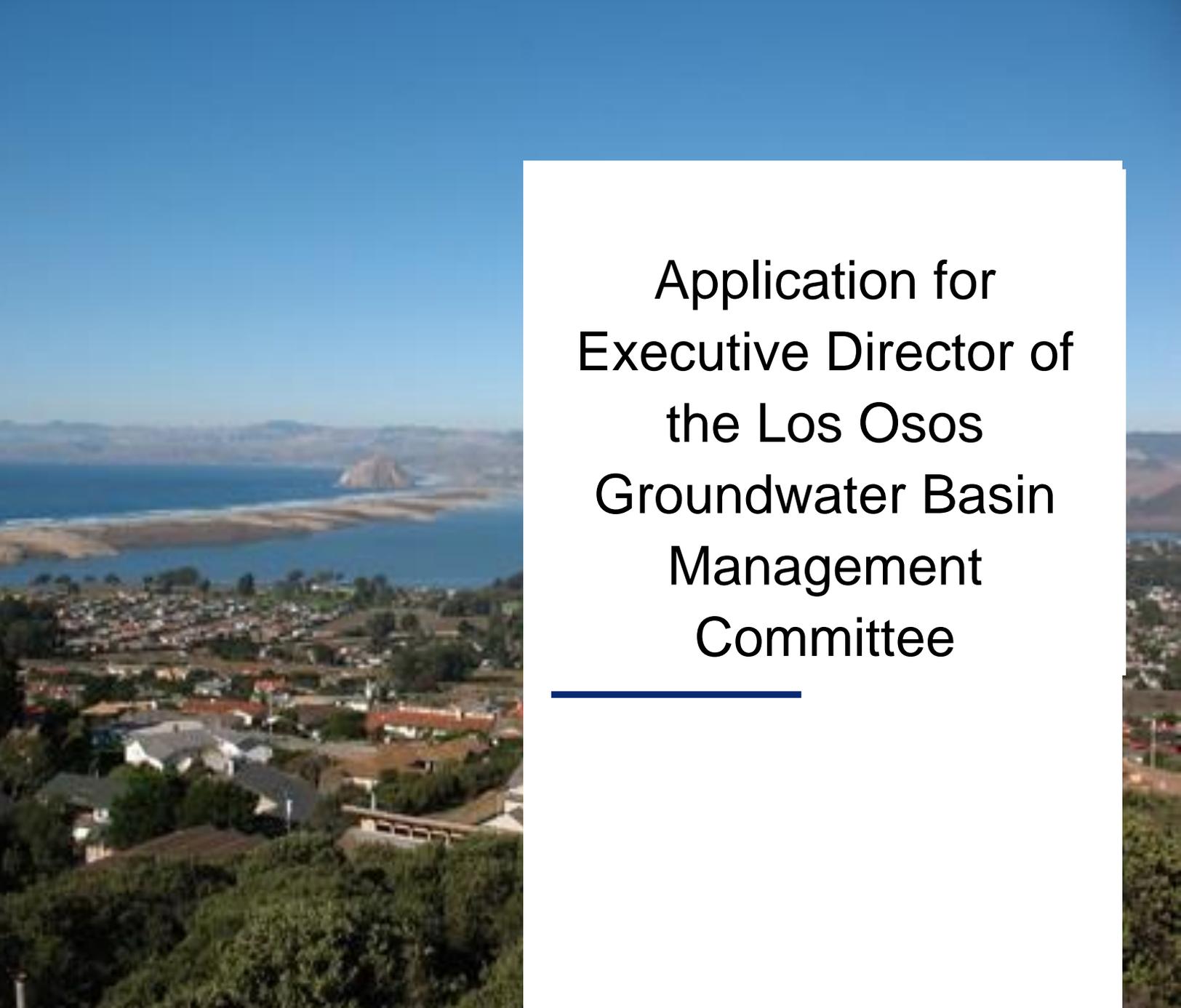
10/1987 - 2/1993

**Associate Water Resource Control Engineer:**  
Permitting and Surveillance Section & Land Disposal Section  
As the Area Engineer for Monterey County my duties included permit issuance and permit enforcement of all domestic and industrial wastewater discharges within the County.

11/1981- 10/1987                      **Department of the Air Force**  
**Vandenberg Air Force Base, California**

**Program Manager (GS 12-13):** Responsibilities included the overall management of civil engineering construction projects at Vandenberg AFB and downrange Air Force Bases.

**Design Engineer/Base Environmental Coordinator (GS 7-11):** As the Base Environmental Coordinator, responsibilities included the acquisition and management of all local, state and federal environmental permits and reporting to Base Commanders.



Application for  
Executive Director of  
the Los Osos  
Groundwater Basin  
Management  
Committee

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June 21, 2019

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James M. Bishop, P.G.

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## James M. Bishop, P.G.

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jbishop4@gmail.com  
(808) 351-2559

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### Cover Letter

June 21, 2019

Rob Miller  
Los Osos Basin Management Committee  
2122 9<sup>th</sup> Street  
Los Osos, CA 93402

Dear Mr. Miller,

I am submitting this cover letter as part of my application package for the position of Executive Director (ED) of the Los Osos Groundwater Basin Management Committee (BMC). As a resident and homeowner in Los Osos, I am concerned about the basin's water quality and water quantity problems and the long-term sustainability of the basin. As a hydrogeologist and water resources professional, I have the education and experience necessary to help lead the basin into sustainability while also balancing the disparate needs of all the basins stakeholders. I am interested in becoming the ED because it provides a rare opportunity to utilize my unique skill set to provide service to my community and to ensure a clean and reliable source of water for my fellow residents in Los Osos.

To effectively manage the basin for sustainability, the ED needs to be knowledgeable about the rather complicated technical aspects of coastal aquifer hydrogeology, to have the ability to manage the portfolio of projects that BMC has underway at any given time, and to anticipate problems before they arrive. My professional experience and education make me especially well-suited to thrive as the ED. I currently work for the Regional Water Board as an engineering geologist where I manage a variety of groundwater projects throughout the Central Coast and conduct enforcement on violations of the Water Code. Prior to working at the Regional Board, I worked for the U.S. Geological Survey as a geologist and hydrologist, working on research projects related to coastal and water resources. I have bachelor's and master's degrees in geology from the University of Hawaii, and my master's thesis focused on the hydrogeology of coastal aquifers in Hawaii. My combined education and experience make me uniquely qualified to provide substantial value to the Basin Management Committee.

The biggest challenge facing the basin, the ED, and the BMC will be to confidently determine if the basin can reliably support the additional homes and residents that are proposed by San Luis Obispo County's plans for full buildout in Los Osos. The most recent basin metrics

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indicate that the basin is moving in the direction of sustainability and will be a reliable source of water for the current population of Los Osos. The projects implemented by yourself and the members of the BMC have set a course for success based on current build out in Los Osos and one of the more straightforward responsibilities of the new ED will be to ensure that projects and metrics stay on track. However, given the County's plan for full buildout in Los Osos, the biggest challenge facing the basin, the ED, and the BMC is confidently determining the true sustainable yield of the basin and by extension, how many more people the basin can reliably support. This determination will require expertise in the technical aspects of the basin and a deep understanding of the uncertainty associated with the basin metrics, groundwater model, and modeled sustainable yield. In addition, the ED will need to have the political willpower to make a determination that will be unpopular to some portion of stakeholders, regardless of the decision made. I have the technical expertise to understand the uncertainty of the basin metrics and sustainable yield estimates. As a water resources regulator, I have experience making unpopular but ultimately correct decisions.

I want to be clear that I am personally unbiased with respect to whether Los Osos should grow or not. I see benefits and drawbacks to growth. As someone who has friends trying to buy homes in San Luis Obispo County and as someone who may want to move out of my starter home at some point, I understand that additional housing supply in Los Osos may relieve some of the incredible cost pressure of the current housing market. However, I also understand that the basin is the only reliable and cost-effective source of water and it is imperative that the population of Los Osos reflect what the basin can reliably provide, even in periods of prolonged drought. If selected as the ED, I would use science-based decision making whereby I let the information and data speak for itself. I would merely implement the Basin Plan, ensure that projects are on track, and continue to make sure the sustainable yield estimates are updated with the best available information.

I understand that the BMC and the ED will be unpopular to some portion of the public, regardless of the decisions that are ultimately made. Los Osos has notoriously active public participation, and whoever accepts the role of ED will need to have thick skin. I am aware of both the technical and political challenges facing the ED and am willing to accept them because I think the BMC is providing incredible value to the community and I would be honored to be able to contribute my expertise. Please feel free to contact me if you have questions or would like to schedule an interview and thank you for your consideration.

Sincerely,  
James M. Bishop

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## Firm Profile

James M. Bishop, P.G.

[REDACTED]  
(808) 351-2559

[jbishop4@gmail.com](mailto:jbishop4@gmail.com)

### Firm Profile and Statement of Qualifications

I am a licensed California Professional Geologist (#9696) with extensive experience working on groundwater and surface science and management for both federal and state agencies. I currently am employed as an Engineering Geologist for the Central Coast Regional Water Quality Control Board. I have thorough knowledge of federal and state laws and regulations related to groundwater and surface water quality and quantity. In addition, I have a breadth of experience in the following areas: enforcing the California Water Code; working with Groundwater Sustainability Agencies as part of the Sustainable Groundwater Management Act; developing, leading, and managing scientific research studies related to groundwater, surface water, and coastal resources; managing contracts of up to \$250,000; publishing peer reviewed scientific journal articles and technical reports; writing grants; and coordinating with multiple government agencies and private entities to accomplish common goals.

### Firm Structure

Although this is a “Firm Profile”, I am not a firm but rather a sole proprietor. As a sole proprietor, I have little overhead and can perform the role as executive director at a cost savings relative to someone accepting the role on behalf of a firm. The administrative responsibilities associated with the executive directorship, such as meeting minutes, processing invoices, and drafting non-technical documents, will be delegated to an independent contractor that specializes in these types of activities. If I am selected as the executive director, I will obtain a business license from San Luis Obispo County and commercial insurance for general liability and errors and omission. In addition, I will require

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that my subcontractor carry general liability insurance with me named as an insured and I will enter into a hold harmless contract with the subcontractor.

## **Mission Statement**

My mission is to help lead the Los Osos groundwater basin into sustainability while considering and balancing the disparate needs of all of the basins' stakeholders.

## **My Story**

In 2007, I graduated from Hawaii Pacific University with a degree in finance and immediately had a job working for a local financial advising firm. Things were going well until the 2008 recession hit. The economic crisis left me without a job and with a bad taste in my mouth for the finance industry. After taking some time off from professional pursuits, I decide to return to school to pursue a degree in geology. I received my Bachelor of Science degree in Geology and Geophysics from the University of Hawaii, then went straight into a master's degree at the same university with a focus on the hydrogeology of coastal aquifers. My master's thesis focused on identifying the source and quantifying the flux of nutrients to coastal waters via groundwater discharge. This project combined numerical groundwater modeling, geochemical fate and transport modeling, and land use analysis and I published the results of this work in the *Journal of Hydrology*. After finishing my master's degree, I immediately got a job as a geologist working for the U.S. Geological Survey (USGS) in Santa Cruz, California, where I led a research study to characterize coastal change that resulted from Hurricane Sandy on New Jersey barrier islands. After publishing the results of this work in a USGS Open-File report, I was hired as a hydrologist with the USGS's Water Mission Area conducting research on the fate and transport of contaminants in San Francisco Bay and the Sacramento River delta. At the Water Mission Area, I conducted numerical modeling of selenium and mercury transport in the Bay and Delta which informed the development of a Total Maximum Daily Load for selenium in San Francisco Bay. However, my government salary just wasn't cutting it in Palo Alto, where my office was located, so when a position opened up at the Regional Board in San Luis Obispo, my wife and I leapt at the opportunity. At the Regional Board, I have primarily worked on either large groundwater projects of office-wide importance or on regulating cannabis cultivation and enforcing violations of the water code.

My wife and I have lived in Baywood ever since we arrived in San Luis Obispo County and love this community. We are laying down roots here; we bought a house in Baywood in 2017 and are expecting our first child later this year. I plan to live in Los Osos for a long time, possibly forever, and am concerned about the water quantity and water quality problems here. I recently joined the Utility Advisory Committee because I want to be involved in the management of water resources in the community. My formal education in coastal aquifer hydrogeology combined with my experience with water resource management and the fact that I am a homeowner in the prohibition area of Los Osos makes me uniquely suited to

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serve as the Executive Director of the Basin Management Committee and I feel an obligation to serve my community.

### **Ongoing projects at the Regional Board**

- Project lead on multi-agency groundwater isotope and contaminant sampling in agriculturally-dominated groundwater basins in the Central Coast.
- Project lead on an evaluation of the impacts of reverse osmosis wastewater discharge on groundwater quality in Carpinteria.
- Regional groundwater monitoring program developer.
- SGMA/GSA liaison for the Regional Board.
- Development of the newly formed cannabis cultivation regulatory program.
- Outreach and education of cannabis cultivators via public meetings in Santa Barbara and Santa Cruz counties.
- Training and mentorship of new cannabis program staff.
- Regulation of cannabis cultivation and enforcement of violations of the water code.

### **Completed Projects at the Regional Board**

- Project lead on septic system risk and impacts in the Santa Ynez groundwater basin.
- Project lead on regional groundwater nitrate evaluation.
- Agricultural order groundwater regulatory requirement developer.
- Project lead on neonicotinoid pesticide source identification and quantification in surface waters near Santa Maria, CA.

### **Projects completed at other agencies**

- Lead numerical modeler on 10-person team to evaluate the source, transport, and fate of selenium and mercury in the San Francisco Bay and Sacramento River delta.
- Lead scientist on monthly research cruises to collect water, sediment, and biological samples in the San Francisco Bay/Delta.
- Project lead on an evaluation of coastal change on New Jersey barrier islands as a result of Hurricane Sandy.
- Contributing author to a study to identify and characterize tsunami sediment deposits in California and Hawaii.
- Project lead on evaluation and quantification of the source and flux of groundwater nutrients to coastal waters on Maui, Hawaii.
- Contributing author to study to evaluate the impacts of groundwater nutrients on invasive algae growth and coral reef health.
- Lead remote sensing analyst on a study to quantify the extent and temperature of thermal plumes created by the discharge of cooling water from power generation plants in Hawaii.
- Lead geophysicist on a project using electrical resistivity tomography to image the depth to groundwater at west Hawaii Beaches.
- Lead grant writer for grant of \$25,000 from the U.S. Geological Survey to use geochemical data to delineate aquifer boundaries in Tutuila, American Samoa.

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- Lead hyperspectral imagery analyst on project using drones to automatically identify targets of interest for defense applications.
  - Project lead on evaluation of the use of radar data from a lunar satellite to map lunar mineral resources at higher resolution.

## Professional References

- 1) Name: Diane Kukol  
Agency: Regional Water Quality Control Board  
Department: Irrigated Lands Regulatory Program, Groundwater Unit  
Title: Senior Engineering Geologist  
Relationship: Diane is currently one of my two direct supervisors.  
Phone: (805) 542-4637  
Email: [Diane.kukol@waterboards.ca.gov](mailto:Diane.kukol@waterboards.ca.gov)  
Dates that I worked for Diane: 3/1/2019 - present
- 2) Name: Arwen Wyatt-Mair  
Agency: Regional Water Quality Control Board  
Department: Cannabis Cultivation Regulatory Program  
Title: Senior Water Resources Control Engineer  
Relationship: Arwen is one of my two direct supervisors  
Phone: (805) 542-4695  
Email: [Arwen.WyattMair@Waterboards.ca.gov](mailto:Arwen.WyattMair@Waterboards.ca.gov)  
Dates that I worked for Arwen: 5/1/2018 - present
- 3) Name: Robin Stewart  
Agency: U.S. Geological Survey  
Department: Water Mission Area  
Title: Research Hydrologist  
Relationship: Robin was my direct supervisor at the USGS in Menlo Park  
Phone: (650) 329-4550  
Email: [arstewar@usgs.gov](mailto:arstewar@usgs.gov)  
Dates I worked for Robin: 3/21/2016 – 7/28/2017
- 4) Name: Bruce Richmond  
Agency: U.S. Geological Survey  
Department: Pacific Coastal and Marine Science Center  
Title: Research Geologist  
Relationship: Bruce was my direct supervisor at the USGS in Santa Cruz  
Phone: (831) 460-7483  
Email: [brichmond@usgs.gov](mailto:brichmond@usgs.gov)  
Dates I worked for Bruce: 8/1/2015 – 3/19/2016

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# Approach

The following section describes how I will approach the requirements of the Executive Director of the Los Osos Groundwater Basin Management Committee (BMC). The subheadings below correspond to the different items described in the *Scope Of Work* section of the Request for Qualifications (RFQ). For the items below, I provide examples of work experience I have that relates to the task described in the RFQ, then explain how I would approach the task if selected as the executive director.

## **Developing agenda packets and facilitating meetings**

Part of my job in the cannabis cultivation regulatory program involves hosting meetings to inform growers about the new cannabis cultivation regulation. My experience putting together these meeting is directly applicable to the executive director's task of facilitating meetings and developing agendas. When I organize cannabis cultivation meetings, I create meeting agendas and presentations, invite and coordinate with a variety of different agencies that regulate cannabis, find meeting spaces, notify growers about the meetings, ensure the audio/visual equipment is working, and delegate the creation of outreach materials to staff from the Water Board's Office of Public participation. I also act as the master of ceremonies at these meetings. Organizing these events has provided valuable experience that will allow me to facilitate successful BMC meeting.

If I a selected as executive director of the BMC, I will prepare all BMC meeting agendas and circulate these agendas to BMC members for review prior to publication. These agendas will be publicly posted to the San Luis Obispo County website at least 72 hours in advance of the meeting, per the requirements of the Brown Act. I will delegate the task of agenda packet creation to the administrative assistant that I hire, after I provide a detailed outline of what the agenda packet needs to include. I will thoroughly review all work done by the assistant prior to publication. However, I understand that portions of the meeting agenda packet likely will not be able to be delegated and as such, I will write those portions myself. Meeting minutes will be transcribed by the administrative assistant, based on audio recording from meetings. I will review the minutes for accuracy and thoroughness prior to publication and ensure that minutes are loaded to the San Luis Obispo County website, per the requirements outlined in the Stipulated Judgement.

As meeting facilitator, I will act as a discussion guide for the group while also ensuring that discussion doesn't violate the requirements of the Brown Act. Prior to the meeting I will help clarify the goals of the meeting. I will control the proceedings by making sure the agenda is adhered to, making sure discussion stays focused, and monitoring the time of public comment. As meeting facilitator, I will encourage discussion, ask questions, and provide clarity. During public comment, I will remain calm, respectful, and courteous, regardless of the content of the comment or manner in which the comment is communicated. Finally, I will

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take notes throughout the course of the meeting and will make sure the audio recording is converted to meeting minutes.

### **Administrative staff of the BMC**

As the administrative staff person for the BMC, I will communicate and coordinate with the different parties of the BMC. I will be responsible for managing and distributing information and documents amongst the different parties. I will also coordinate scheduling of meetings, project deliverable dates, financial obligations among the parties. I would assist staff from the different parties with development and review of various documents. I would communicate regularly with the BMC directors and the staff from the entities that make up the BMC. Email or telephone correspondence would likely suffice in most cases, though an occasional in-person meeting could be coordinated as needed.

### **Understand technical aspects of Basin Plan and BMC**

I have extensive experience working on groundwater quality and quantity problems including formal education and scientific investigations relating to the hydrology of coastal aquifers. My experience and education make me especially well-suited to understand and communicate the technical aspects of the Los Osos Groundwater Basin Plan. I have taken graduate level coursework in numerical groundwater modeling, then put this coursework to use by conducting groundwater modeling in Hawaiian aquifers for my master's work. I published the results of this work, which included the modeling, in a peer reviewed scientific journal article. I have experience creating risk models of septic system impacts to groundwater and of identifying the impacts of these systems in coastal aquifers using a variety of geochemical tracers. I have experience identifying and quantifying fresh groundwater discharge to coastal waters. I've utilized geophysical methods to image the movement of seawater in and out of coastal aquifers. I am also experienced at communicating to a wide variety of audiences; I have presented technical information at scientific conferences to subject matter experts and at community meeting to non-specialists.

In addition to my technical experience, I have direct experience utilizing basin planning. The Regional Board has a basin plan for the Central Coast Region which I commonly utilize for decision making, planning, and enforcement. When we evaluate discharges of waste to land, we compare discharge water quality to that laid out in our basin plan, which helps us to understand how a discharge may impact water resources. When I have conducted basin-scale analysis of groundwater quality, I look to the water quality guidelines in the basin plan as a point of reference. However, I also understand that basin plans occasionally need updating due to new information refinement in understanding, or the need for better resolution. Basin plan amendments can be cumbersome but ultimately are worthwhile. My experience at the Regional Board has provided valuable insight into the benefits of basin planning, how to utilize these plans in implementation, and, if necessary, how to amend a basin plan.

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## **Program manager for BMC Projects**

At the Regional Board, I am currently leading multiple large, long-term projects of office-wide importance while simultaneously managing the day-to-day tasks required by the two different regulatory programs I work in. Effectively managing and completing multiple projects takes excellent organization, time management, and people management skills and a broader understanding of the office-wide goals so that I can prioritize my time and resources. These skills are directly applicable to the role of program manager for the BMC.

As program manager for the BMC, I will effectively manage a portfolio of individual projects to ensure the broader goals of the BMC are being accomplished. I will closely monitor the progress of individual projects and provide direction to consultants or vendors if these projects are not on track for success. I will coordinate projects that have interdependencies so that one project doesn't hold up progress on another. I will manage BMC resources to ensure efficient and cost-effective delivery of projects. I will manage the BMC budget so that there aren't cost overruns or budgeting shortfalls. I will manage the various stakeholders involved in the BMC's different projects.

## **Management of consultants and vendors**

As program manager for BMC projects, I would be responsible managing the consultants and vendors hired by the BMC and ensure deliverables are adequate, on time, and within budget. I have direct experience conducting this type of activity. At the Regional Board, I am currently managing a \$250,000 contract with Lawrence Livermore National Laboratory (LLNL) to conduct laboratory analysis and produce a technical report that interprets the laboratory data and incorporates existing data. I wrote the contract between the Regional Board and LLNL and am responsible for reviewing and approving quarterly invoices. In addition, I am responsible for collecting and shipping the samples to LLNL, verifying laboratory QC/QA data, ensuring that the technical reports is submitted by the deadline, and working with LLNL to make sure the report includes all the elements described in the contract.

As the executive director of the BMC, I would communicate frequently with contracted consultants to ensure that deadlines and contractual obligations are being met and projects are on budget. I would require regular status updates on project progress from consultants and would review spending to ensure that project budgets are on track. I would request drafts of reports or sections of reports early and often so that any if any problems arise, they can be addressed far in advance of the project deadline. I would review all reports prior to publication. I would have administrative assistant compile all public comments to report contents, then I would personally respond to the comments, after input from the BMC directors.

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## **Oversee financial operation**

My degree in finance will prove valuable for overseeing the financial operation of the BMC. I have taken college level coursework in accounting, finance, financial products, and economics. During my time working for a financial advising firm, I learned about the benefits and drawbacks of different financial products and how the tax environment, economic situation, and tolerance for risk may influence the type of financial product chosen. As a graduate student and scientist working for the USGS, I led large research projects. This required managing budgets for purchasing equipment and supplies, paying for analytical costs, travel expenses, and staff wages. This experience will be valuable for managing the financial operation of the basin management committee.

In order to effectively manage the BMC's finances, I will conduct financial planning, evaluate different financial scenarios, and maintain detailed records of costs incurred and money spent. In order to maintain financial solvency, I will closely monitor costs incurred, money spent, and future monetary obligations and will reconcile my record keeping with that done by the law offices of Brownstein Hyatt Farber Shrek (BHFS). I will work closely with BHFS to make sure they have received all invoices. Prior to committing to future spending, I will conduct a financial scenario analysis to evaluate both the financial and non-monetary benefits and drawbacks of the various scenarios. I will assume responsibility for all financial activities, including budgetary functions, invoicing, and record keeping.

## **Ensure completion of annual reports**

As executive director of the BMC, I will make sure that the annual reports are finished and made publicly available by the deadline laid out in the Stipulated Judgment. I have extensive experience leading large scientific research studies that had hard deadlines for the publication of reports that described the study's findings. These experiences taught me how to closely manage my own time and the time of other parties working on the project so that deadlines were met. As executive director for the BMC, at the beginning of each reporting period I will schedule deadlines for each of the major elements that go into the annual report, then gauge progress for each of these elements as the reporting year progressed. Elements that were either time sensitive or anticipated to take a long time, would be prioritized. If particular elements of the annual report were behind schedule, I would work with the consultants and BMC members to expedite the portions of the annual report that were behind schedule.

## **Supervise web posting**

The Stipulated Judgment requires that meeting minutes and annual reports be published to a web page. I would work closely with San Luis Obispo County staff to ensure that these documents are published as quickly as possible to the county website. I would also review the published material for accuracy and readability.

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## Compliance with Brown Act

As a staff person at the Regional Board and as a member of the Los Osos Community Services District Utilities Advisory committee, I am subject to the requirements of the Brown Act and am familiar with the requirements of the Act. As executive director of the BMC, I would ensure that all meeting complied with the requirements of the Brown Act. This includes making sure that all meetings continue to be publicly available, meeting agendas be published at least 72 hours in advance, and I would ensure that only items included on the agenda would be discussed and acted on, except when allowed under special circumstances. I would also make sure that I did not discuss BMC matters with BMC members in a manner that violated the Brown Act, e.g. informal or serial meetings. If Public Records Act Requests were made, I would respond to them quickly. Exception to the Brown Act for closed sessions would be considered carefully and would only be allowed after approval from legal counsel.

## Represents BMC to other agencies

As executive director of the BMC, I would be proud to represent the BMC to other agencies. I currently work at the Regional Board and have a good relationship with the staff people there who regulate the Los Osos Wastewater Treatment Facility and the few remaining on-site wastewater treatment systems in Los Osos. I regularly interface with staff from DWR while acting as a SGMA liaison for the Regional Board, so further interaction with DWR would be an extension of what I already do. As part of my cannabis cultivation regulation, I frequently interface with staff from other state or local agencies or with law enforcement and am experienced representing the Regional Board to these agencies. This experience would be valuable as I represent the BMC to other agencies.

# Scope of Work

As executive director of the Los Osos BMC, I will perform the activities described below. I will perform additional work as needed in order to accomplish the goals of the BMC.

- In consultation with the BMC chair, prepare agenda packages for up to 8 public meetings, similar to the documents referenced above.
- Perform the broad function of acting as the administrative staff of the BMC, including communicating with staff members from the BMC parties as needed. BMC Exec Director RFQ Page 3 of 4 March 20, 2019
- Understand the technical aspects of the Basin Plan and various BMC activities and projects, though the consultant does not need to be a licensed groundwater hydrologist.
- Act as the overall program manager for BMC projects. The detailed technical work will be managed and performed by BMC consultants under the direction of the Executive Director.

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- Oversee the financial operation of the BMC, including recommending an annual budget and processing invoices. Prospective consultants are encouraged to review the financial updates and budgets contained within the various agenda packages to understand the scope of this work. The law office of Brownstein Hyatt Farber Schreck (BHFS) performs the accounting function for the BMC, including the payment of approved invoices.
  - Ensure timely completion of the Court-mandated Annual Report, including the filing of required information to the DWR website by April 1st of each year.
  - Manage BMC consultants and vendors including scope, schedule, budget, BMC comments, and the publishing of approved work products.
  - SLO County staff currently maintain the BMC website. Work with County staff to ensure that documents and agenda packages are published timely and accurately.
  - Function as staff (including clerk) during BMP public meetings, including appropriate technical input on questions from both Directors and the public. Ensure that the meeting venue and audio/visual services are coordinated.
  - Oversee the BMC's compliance with the Brown Act, with input from legal counsel provided by the BMC parties.
  - Prepare detailed minutes of all public meetings, similar to the current minutes.
  - Represent the BMC as directed to other entities, including DWR, RWQCB, and other agencies.

## Budget Allocation for Executive Director Services

If hired as executive director of the Los Osos BMC, I would ask for a rate of \$150/hour for my services. For the services of administrative assistant, a rate of \$50/hour would be reasonable. The current executive director, Rob Miller, indicated that the time commitment for an executive director is approximately 8-12 hours a month. I estimate the administrative assistant will spend 4 hours transcribing meeting minutes after each meeting, and there are approximately 8 meetings as year, which yields 32 hours per year. If this time is allocated over 12 months, administrative assistant will spend approximately 2.5 hours per month. In addition, the administrative assistant may provide up to 2 hours per week of additional administrative assistance, or approximately 10.5 hours per month, after factoring in the time for transcription of meeting minutes. Annual costs for the services of executive director, including the administrative assistant, are shown in table 1 below.

Table 1. Budget allocation for services of executive director.

Position	Hourly rate	Approximate hours per month	Approximate monthly cost	Approximate annual cost
Executive Director	\$150	10	\$1,500	\$18,000
Administrative Assistant	\$50	10	\$500	\$6,000
<b>Annual Total</b>				<b>\$24,000</b>

## Licenses

California Professional Geologist #9696



THIS CERTIFICATE IS THE PROPERTY OF THE STATE OF CALIFORNIA. IN THE EVENT OF ITS SUSPENSION, REVOCATION, OR INVALIDATION FOR ANY REASON, IT MUST, UPON DEMAND, BE RETURNED TO THE BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS.

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# Curriculum Vitae

## Education

**M.S. in Geology and Geophysics – Hydrogeology** **July 2015**  
**University of Hawaii at Manoa** **Honolulu, HI, USA**  
Thesis: Connecting land use to submarine groundwater discharge nutrient flux.

**B.S., Geology and Geophysics** **May 2012**  
**University of Hawaii at Manoa** **Honolulu, HI, USA**  
Thesis: Exploring the use of radar as a higher resolution method for mapping TiO<sub>2</sub> in lunar basalts.

**B.S.B.A. Finance** **August 2006**  
**Hawaii Pacific University** **Honolulu, HI, USA**

## Research and Professional Experience

**Engineering Geologist** **August 2017 to Present**  
**Central Coast Regional Water Quality Control Board** **San Luis Obispo, CA**  
Supervisor: Diane Kukol (Irrigated Lands Groundwater Unit) and Arwen Wyatt-Mair  
(Cannabis Cultivation program)

- I am developing a regional groundwater quality monitoring program in agricultural regions of the Central Coast. This will be implemented as part of the new agricultural regulatory order in 2020.
- Act as a liaison between the Central Coast Water Board and the Groundwater Sustainability Agencies that formed as a result of Sustainable Groundwater Management Act.
- Using data from 10,000 wells in the region, I Analyzed groundwater quality and nitrate concentration trends in agricultural regions of the Central Coast.
- I am managing a \$250,000 grant with Lawrence Livermore National Laboratory for groundwater age dating and nitrate source assessment in Central Coast groundwater basins.
- Developed and proposed new regulatory requirements for agricultural producers that are intended to protect groundwater quality.
- Conducted analysis on the impacts of on-site wastewater treatment systems on groundwater quality in the Los Olivos area of Santa Barbara County.
- Inspect and regulate cannabis cultivation operations in the Central Coast region. Coordinate with the California Department of Fish and Wildlife, local law enforcement, and county District Attorneys on inspections and enforcement.

- 
- Evaluate the impacts of reverse osmosis wastewater discharge to land from cannabis and cut flower facilities in the Carpinteria groundwater basin.

**Hydrologist**

**March 2016 – July 2017**

**U.S. Geological Survey – National Research Program**

**Menlo Park, CA**

Supervisor: Robin Stewart, PhD

- Use physics-based numerical transport modeling to understand the source, transport, and chemical transformation of selenium and mercury in San Francisco Bay and the Sacramento-San Joaquin River Delta.
- Combine transport modeling with ecosystem and food web models to understand factors controlling selenium and mercury bioaccumulation.
- Conduct laboratory analysis of selenium concentration in water, particulate, and biota.
- Act as lead scientist on monthly research cruises to collect field data.
- Understand how changing state and federal environmental regulations may affect the concentration of contaminants in the San Francisco Bay/Delta.
- Provide scientific information to aid regulatory agencies in decision making related to State TMDL in the San Francisco Bay/Delta.
- Results of this work were presented in an oral presentation at a scientific conference and are being prepared for submission to a scientific journal.

**Geologist**

**August 2015 – March 2016**

**U.S. Geological Survey – Pacific Coastal and Marine Science Center**

**Santa Cruz, CA**

Supervisor: Bruce Richmond, PhD

- Investigated the geologic record of tsunamis and hurricanes in Hawaii, California, and New Jersey.
- Conducted investigations to characterize the deposits and to understand the coastal change after an event.
- Provided data sets and recommendations to USGS and NOAA researchers conducting storm and tsunami inundation probability modeling.
- Produced a USGS Open-File Report documenting interpretations from field work and analysis of physical changes to New Jersey barrier islands that resulted from Hurricane Sandy.

**Graduate Research Assistant**

**2012 – 2015**

**Department of Geology and Geophysics, University of Hawaii at Manoa**

**Honolulu, HI**

Advisor: Craig R. Glenn, PhD

Thesis Project

- Used numerical groundwater models (MODFLOW and MODPATH), GIS, stable isotopes, major dissolved ions, and statistical techniques to determine the source, transport, and fate of groundwater nutrients.
- Quantified groundwater flux to the coast using geochemical ( $^{222}\text{Rn}$ ) mass balance modeling.

- Investigated the connection between injection wells and coastal waters using dye tracers, stable isotopes, and radioisotopes.
- Conducted algal bioassays and benthic mapping to quantify the impact of submarine groundwater discharge on biota.
- Published two scientific journal articles based on this work.

**Coastal Ocean Thermal Infrared Mapping Project:**

- Conducted an aerial thermal infrared mapping project at two of Hawaiian Electric Company's generating stations to assess the character of the thermal plume created by the cooling effluent that discharged to the ocean.
- I collected and processed the data, created georeferenced thermal infrared images with 0.5° C temperature resolution, and wrote portions of an environmental impact statement for Tena Environmental and Hawaiian Electric Company.

**Groundwater Imaging Using Electrical Resistivity:**

- I measured electrical resistivity in the subsurface to image the depth to groundwater in the Kiholo area of West Hawaii Island.
- Conducted the field work, processed data, and created the figures for the electrical resistivity portion of this project, which is a major part of an upcoming publication.

**Graduate Teaching Assistant**

**Igneous/Metamorphic Petrology and Structural Geology** **Spring and Fall, 2015**  
**Department of Geology and Geophysics, University of Hawaii at Manoa** **Honolulu, HI**

- Provided instruction for upper division students and majors.
- Taught classes as needed by professors.
- Graded lab assignments, held office hours, and provided assistance with homework and lab assignments.
- Organized and led field trips.

**Hyperspectral Image Analyst** **May - December, 2011**  
**NovaSol** **Honolulu, HI**

Supervisor: Keith Nakanishi

- Analyzed near-infrared hyperspectral images collected by drones to identify targets of interest for defense applications.
- Wrote Matlab code to test and modify target detection algorithms.
- Conducted laboratory experiments to test and calibrate hyperspectral cameras.
- Used field spectrometers to collect target spectra, then incorporated that spectra into detection algorithm

**NASA Space Grant Fellow** **August 2010 - May 2011**  
**NASA Space Grant, University of Hawaii at Manoa** **Honolulu, HI**  
 Supervisor: Jeffrey J. Gillis-Davis, PhD

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Project: Exploring the use of radar as a higher resolution method for mapping TiO<sub>2</sub> in lunar basalts

- Applied traditional and geospatial statistics to various radar data products from NASA's Lunar Reconnaissance Orbiter to find trends and anomalies that may be indicative of high TiO<sub>2</sub> concentrations in lunar regolith.
- Use radar backscatter data to create maps of TiO<sub>2</sub> concentrations on the lunar surface. Ground-truthed these maps with existing coarse-resolution TiO<sub>2</sub> maps.
- Mosaicked radar images together to create larger maps and to increase the signal to noise ratio of the data.

## **Community Service**

Board Member - Los Osos Community Services District Utilities Advisory Committee

## **Publications**

La Selle, S., Richmond, B., Jaffe, B., Nelsom, A., Griswold, F., Arcos, M., Chague, C., **Bishop, J.M.**, Bellanova, P., Kane, H., Lunghino, B., and Gelfenbaum, G., 2019. Sedimentary evidence of prehistoric distant-source tsunamis in the Hawaiian Islands. *Sedimentology*, DOI:10.1111/sed.12623

Amato DW, **Bishop JM**, Glenn CR, Dulai H, Smith CM, 2016. Impact of Submarine Groundwater Discharge on Marine Water Quality and Reef Biota of Maui. *PLOS ONE* 11(11): e0165825. doi: 10.1371/journal.pone.0165825

**Bishop, J.M.**, Richmond, B.R., Zaremba, N.J., Lunghino, B.D., and Kane, H.K., 2016, Hurricane Sandy washover deposits on southern Long Beach Island, New Jersey: U.S. Geological Survey Open-File Report 2016–1090, 14 p., <http://dx.doi.org/10.3133/ofr20161090>.

Zaremba, N.J., Smith, K.E.L., **Bishop, J.M.**, Smith, C.G., 2016, Ground-penetrating radar and differential global positioning system data collected from Long Beach Island, New Jersey, April 2015: U.S. Geological Survey Data Series 1006, <http://dx.doi.org/10.3133/ds1006>.

**Bishop, J.M.**, Glenn, C.R., Amato, D.A., Dulai, H., 2015, Effect of land use and groundwater flowpath on submarine groundwater discharge nutrient flux, *Journal of Hydrology: Regional Studies*, doi:10.1016/j.ejrh.2015.10.008

Glenn, C.R., Kelly, J.L., **Bishop, J.M.**, 2013. Thermal infrared mapping of HECO power plant effluent plumes at Kahe and Waiau generating stations, prepared for Tenera Environmental Services and Hawaiian Electric Company, 2 parts, 16 pages.

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**Bishop, J.M.**, 2013. Submarine Groundwater Discharge on Maui, Ka Pili Kai Magazine, University of Hawaii Sea Grant College Program, v. 35, pp 5-6.

**Bishop, J.M.**, Gillis-Davis, J.J., 2011. Study of 12.5cm Radar as a Means of Mapping TiO<sub>2</sub> in Lunar Basalts, Undergraduate Fellowship Reports, pp. 8-13. Hawaii Space Grant Consortium, Honolulu. [http://www.spacegrant.hawaii.edu/reports/23\\_SUM10-SP11/JBishop\\_S11.pdf](http://www.spacegrant.hawaii.edu/reports/23_SUM10-SP11/JBishop_S11.pdf)

## **Oral Presentations**

**Bishop, J.M.**, Wyatt-Mair, A., Barricarte, M., 2018. Groundwater quality conditions and nitrate impacts to groundwater in agricultural areas. Presented at the Central Coast Water Board quarterly board meeting, San Luis Obispo, CA, May 11, 2018.

**Bishop, J.M.**, Stewart, A.R., Lucas, L.V., 2016. Three dimensional chemical transport modeling of selenium in the San Francisco Bay-Delta. Abstract 0846-000072 presented at the Fall 2016 meeting, Bay-Delta Science Conference, Sacramento, CA, USA, November 15-17.

Stewart, A.R., **Bishop, J.M.**, Johnson, R.C., Feyrer, F., 2016. Regional selenium exposure of Adult Sacramento Splittail in the San Francisco Estuary. Presented at the Fall 2016 meeting, Bay-Delta Science Conference, Sacramento, CA, USA, November 15-17.

**Bishop, J.M.**, Richmond, B.R., Zaremba, N.Z., Lughino, B.L., Kane, H., 2015. Hurricane Sandy washover deposits on southern Long Beach Island, New Jersey. Abstract 74262 presented at the 2015 fall meeting, American Geophysical Union (AGU), San Francisco, CA, USA, December 14-20.

**Bishop, J.M.** Hanauma Bay Education Series Presentation: *Connecting Land Use to Submarine Groundwater Discharge Loads within Coastal Zones of Maui*. Hanauma Bay Education Center, Honolulu, HI, USA, December 12, 2013.

## **Poster Presentations**

**Bishop, J.M.**, Amato, D.W., Glenn, C.R. 2014. Linking land use to submarine groundwater discharge nutrient fluxes on Maui, Hawaii, Abstract 28419 presented at the 2014 fall meeting, American Geophysical Union (AGU), San Francisco CA, USA, December 14-20.

**Bishop, J.M.**, Amato, D.W., Glenn, C.R. 2014. Connecting land use to submarine groundwater discharge nutrient fluxes on Maui, Abstract 1077 presented at 2014 spring meeting, Association for the Sciences of Limnology and Oceanography (ASLO), Honolulu, HI, USA, February 23-28.

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**Bishop, J.M.**, Gillis-Davis, J.J., 2011. Exploring 12.5cm radar as a higher resolution method for mapping TiO<sub>2</sub> in lunar basalts, poster session, Abstract presented at the 2011 Lunar and Planetary Sciences Conference, Houston, Texas, USA, March 7- 11.

## **Conference Presentations by Co-authors**

Windham-Myers, L., Stewart, A.R., Marvin-Dipasquale, M., Lucas, L.V., **Bishop, J.M.**, Fleck, J., Martyr-Koller, R., 2016. The Delta Doughnut: A Persistent Pattern for Methylmercury Metrics, oral presentation at the Fall 2016 meeting, Bay-Delta Science Conference, Sacramento, CA, USA, November 15-17.

Griswold, F., Richmond, B.R., Gelfenbaum, G., Jaffe, B., La Selle, S., **Bishop, J.M.**, Chague-Goff, C., Bellanova, P., LeVeque, R., Sugawara, D., Nelson, A., 2016. Summary of Paleotsunami Investigations in Aliomanu, Anahola, Kauai. Poster session presented at the 2016 American Geophysical Union Fall meeting, San Francisco, CA, December 12-16.

La Selle, S., Richmond, B., Arcos, M., Jaffe, B., Lunghino, B., Kane, H., **Bishop, J. M.**, Habel, S., 2016. Searching for a paleotsunami record in the Hawaiian Islands. Poster session presented at the 2016 American Geophysical Union Fall meeting, San Francisco, CA, December 15.

Amato, D.W., **Bishop, J.M.**, Smith, C.A., Glenn, C.R., 2014. Using marine algae as bioindicators of anthropogenic nutrient pollution Hawaiian coastal waters, poster presentation at 2014 spring meeting, Association for the Sciences of Limnology and Oceanography (ASLO), Honolulu, HI, USA, February 23-28.

## **Relevant Skills**

**Software:** ArcGIS, Groundwater Modeling System (MODFLOW and MODPATH ), Watershed Modeling System (GSSHA), Matlab, R, ENVI, IDL, DELWAQ, Visual MINTEQ, SigmaPlot, Microsoft Office (Excel, PowerPoint, Word), Adobe Design (Illustrator, InDesign, Photoshop).

**Laboratory:** Selenium concentration in biota, water, and particulate using hydride generation mass spectrometry, N and O isotopic composition of dissolved nitrate using the 'denitrifier' method, H and O isotopic composition of water using a Picarro L2130-i analyzer, C isotopic composition of dissolved inorganic carbon (DIC), Pb-210 sediment core dating by gamma ray spectroscopy, chlorophyll pigment analysis using spectrophotometric analysis, major dissolved ion analysis, radon-222 activity analysis.

**Geophysical:** Electrical resistivity operation and processing using AGI Advanced Geosciences Supersting R8/IP geophysical resistivity imaging system; Seismic Refraction operation and analysis using GeoMetrics Geode 24 channel seismic recorder; Thermal

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infrared camera installation, operation, georeferencing, and data processing using a FLIR Systems Inc. Photon 320 uncooled microbolometer array camera and an inertial navigation system/global positioning system.

## **Grants**

USGS Water Resources Research Council: Geochemical delineation of aquifer boundaries and assessment of groundwater quality on Tutuila Island, American Samoa. Dulaiova, H., **Bishop, J.M.**, Shuler, C. Funding period July 2015 – July 2016, \$24,465.

## **Awards**

University of Hawaii Department of Geology and Geophysics Graduate Student Achievement Scholarship, Spring 2015.

Graduate Student Organization Travel Award Grant to attend the American Geophysical Union (AGU) meeting in San Francisco, CA, Dec. 14-20, 2014.

EPSCoR Wyoming Watershed Modeling Short Course award to attend a watershed modeling course at the University of Wyoming in Laramie, June, 2014.

Geological Society of America Graduate Student Research Grant, Spring 2013.

Exemplary Academic Achievement Scholarship, University of Hawaii at Manoa. Fall 2011, Spring 2012.

School of Ocean and Earth Science and Technology (SOEST) Student Ambassador, Spring 2011, Fall 2011.

Lunar and Planetary Institute travel award to attend the Lunar and Planetary Sciences Conference, March 7-11, 2011.

## **Reviewer for the Following Scholarly Journals**

Journal of Hydrology

## **Professional Organization Memberships**

Groundwater Resources Association of California	2017 - present
National Groundwater Association	2013 - present

**Qualifications Statement to Provide Professional Services**

**EXECUTIVE DIRECTOR  
LOS OSOS GROUNDWATER BASIN  
MANAGEMENT COMMITTEE**



MONSOON CONSULTANTS

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MONSOON CONSULTANTS

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breely@monsoonconsultants.com**

Mr. Rob Miller, P.E., Executive Director  
Los Osos Groundwater Basin  
Basin Management Committee  
2122 9<sup>th</sup> Street, Suite 102  
Los Osos, CA 93402

**Re: QUALIFICATIONS STATEMENT TO PROVIDE PROFESSIONAL SERVICES AS EXECUTIVE DIRECTOR FOR THE LOS OSOS GROUNDWATER BASIN MANAGEMENT COMMITTEE**

Dear Mr. Miller:

Thank you for the opportunity to submit this Statement of Qualifications (SOQ) to provide Professional Services to the Los Osos Groundwater Basin Management Committee as Executive Director. As a matter of introduction, I am Blaine Reely, the President / CEO and Principal Engineer & Hydrologist with Monsoon Consultants (Monsoon). Should the Management Committee select Monsoon to provide the requested services, I will serve as your primary contact for the firm. We are a San Luis Obispo based firm, providing civil engineering & hydrology services to clients in both the public and private sectors. Our office is located in downtown SLO, from which we serve clients throughout the Central Coast as well as other regions of the country. Our strengths are innovation, creativity and collaboration. We are fast, efficient, affordable, fun, energetic, and we absolutely love to work with other talented professionals. We make every effort to work as an extension of your staff and we will work hard to create and maintain a seamless working relationship between the Basin Committee Members, agency staff, consultants, and our staff.

In conjunction with the preparation of the attached SOQ, I have reviewed the following documents:

- Los Osos Groundwater Basin Plan
- Stipulated Judgement
- BMC Rules and Regulations
- 2018 Annual Monitoring Report

In addition, I attended the June 19, 2019 Special Board Meeting of the Basin Management Board of Directors. Based on my review of the scope of work described in the Request for Qualifications (RFQ); the documents referenced above; my observations during the Special Board Meeting; and my conversations with yourself and staff from Cleath-Harris Geologists, I am confident that Monsoon can successfully provide the requested professional services. I am hopeful that after you have the opportunity to review the information presented in the attached SOQ, you will agree with me.

As a final note, I would like to take this opportunity to thank the Basin Management Committee and others that will review the information contained in this SOQ. I am hopeful that you each will find that our team proves to be a good fit for the role of Executive Director.

Respectfully submitted

MONSOON CONSULTANTS

*Blaine T. Reely*

Blaine T. Reely, Ph.D., P.E.  
President, Monsoon Consultants

June 26, 2019  
Date



# MONSOON CONSULTANTS

CIVIL ENGINEERING / HYDROLOGY

## QUALIFICATIONS STATEMENT TO PROVIDE PROFESSIONAL SERVICES AS EXECUTIVE DIRECTOR FOR THE LOS OSOS GROUNDWATER BASIN MANAGEMENT COMMITTEE

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## FIRM PROFILE

Monsoon Consultants has been providing civil engineering and hydrology services to clients in the public and private sectors since 2002. Our primary focus is in the area of water resources, with expertise in both surface water and groundwater. We have worked with a broad spectrum of clients and completed projects throughout the United States and internationally. Our founder, Dr. Blaine Reely, has been practicing for 40 years and combines his gray-haired experience with the talent and youthful energy of Monsoon's exceptionally competent staff of professional engineers, scientists, technicians, and support staff. Our team possesses an unquenchable thirst for science, technology, and knowledge, allowing us to provide solutions consistent with new approaches and practices in civil engineering and hydrology.

Our corporate offices are located in San Luis Obispo, California from which we support our clients in the western United States. We also maintain a presence in Tucson, Arizona and Norman, Oklahoma, where we serve our clients in the southwest and mid-continent regions. Because of the nature of the company's organizational structure, although the majority of its staff live in and around our home office, some of our staff and associates are deployed from various locations throughout the southwest United States. You will find our staff to be innovative while utilizing a collaborative approach to each challenge. We pride ourselves on staying ahead of the curve by applying the most current analytical tools and practices.

Monsoon Consultants offers the custom and creative services of a "boutique" firm while providing the capabilities, staffing, licensing, and financial stability of a "big box" firm. Our clients truly enjoy the experience they have working with our team. This is the work that we are passionate about. We have created a place where work, inspiration and life's pursuits are equal and integrated organically, whether we are in the office, playing in the ocean or on the mountain. This spirited approach enables us to provide powerful solutions to exceed every client's expectations.

Monsoon Consultants has experience providing services to various public agencies in a similar role to that which the Los Osos Groundwater Basin Management Committee is considering. One of these agencies is the San Miguel CSD, for which Monsoon Consultants has served as the District Engineer since 2016. In that role, we work closely with District Board members, management and utility staff to ensure that the Districts water and wastewater infrastructure and services are maintained at a superior level. Some of the significant accomplishments that we have contributed to during our tenure at the District include the following:

- Preparation of the 2017 Water & Wastewater Utility Masterplan
- Contributor to the Capital Improvement Plan & Budget for the past 3 years.
- Technical advisors to the Water & Wastewater Rate Study team which culminated in the passage of a new water and wastewater rate schedule in the summer of 2018. Our firm was intimately involved in the Prop 218 process and made numerous presentations to the District's customers.
- Preparation of the 2012 Sanitary Sewer Management Plan (SSMP) Audit and the preparation of the current 2018 SSMP.
- Technical advisor to the San Miguel Groundwater Sustainability Agency (GSA) and the GSA's staff member responsible for overseeing the development of the Paso Robles Groundwater Basin Groundwater Sustainability Plan (GSP).
- Preparation of the San Miguel WWTP Expansion Planning and Engineering Report, which resulted in Board approval for plans to replace the existing 0.2 MGD aerated treatment pond system with a new 0.6 MGD Membrane Bioreactor (MBR) treatment system which will be capable of meeting Title 22 recycled water quality standards for groundwater recharge and / or for use as an agricultural irrigation supply.
- Principal negotiator for the District with a consortium of large vineyard growers to create an opportunity for delivery of tertiary recycled wastewater effluent to vineyards in proximity to San Miguel. The terms of the future agreement will result in an income source for the District and agreements on the part of the vineyard operators to reduce pumping of existing irrigation wells to enhance sustainability of the Paso Robles groundwater basin in the vicinity of San Miguel.

We believe that Dr. Blaine Reely, with support from members of Monsoon staff, is qualified to successfully fulfill the role of Executive Director for the Los Osos Groundwater Basin Management Committee. We have included the resume for Dr. Reely in a subsequent section of this SOQ. Other staff resumes can be provided upon request.

## REFERENCES

Wade Horton – SLO County Administrative Officer (whorton@co.slo.ca.us)	805-781-5011
Rob Roberson – General Manager San Miguel CSD (rob.roberson@sanmiguelcsd.org)	805-467-3388
Kelly Dodds – Director of Utilities San Miguel CSD (kelly.dodds@sanmiguelcsd.org)	805-467-3388
Eric Tambini – Water Resources Manager Santa Ynez River WCD (etambini@syrwd.org)	805-688-6015
Nick DeBar – Director of Public Works – City of Atascadero (ndebar@atascadero.org)	805 470-3424
Scott Duffield – General Manager Heritage Ranch CSD (scott@heritageranchcsd.ca.gov)	805-227-6230

## APPROACH

As the Executive Director of the Los Osos Groundwater Basin Management Committee (BMC), Dr. Reely, with the support of his firm's staff, will assume the responsibility of overseeing the administration, programs, community outreach and strategic plans of the BMC in accordance with the Los Osos Basin Plan and the requirements of the 2015 court approved Stipulated Judgment. It is understood that this position reports directly to the Board of Directors consisting of representatives from the Los Osos Community Services District, Golden State Water Company, S&T Mutual Water Company, and the County of San Luis Obispo. If selected, Dr. Reely will immediately reach out to each of the BMC members, member agency staff and consultants to initiate a professional relationship and develop an understanding of the issues, concerns, goals and limitations as they relate to each of the individual BMC member agencies. We understand that the key to a successful relationship is good and effective communication. Providing clear and concise communication between the Monsoon team and the BMC members, agency staff and consultants will be of paramount importance to our team. We also understand that every new endeavor requires a period of learning and orientation, but we will make every effort to ensure that this "onboarding" period is as short a possible and does not disrupt the mission of the BMC.

## SCOPE OF SERVICES

It is understood that the successful firm will be expected to provide, at minimum, the following scope of services:

1. In consultation with the BMC chair, prepare agenda packages for up to 8 public meetings.
2. Perform the broad function of acting as the administrative staff of the BMC, including communicating with staff members from the BMC parties as required.
3. Develop an comprehensive understanding of the technical aspects of the Los Osos Basin Plan and various BMC activities and projects.
4. Act as the overall program manager for BMC projects. It is understood that the detailed technical work will be managed and performed by BMC consultants under the direction of the Executive Director.
5. Oversee the financial operation of the BMC, including recommending an annual budget and processing invoices. It is understood that the law office of Brownstein Hyatt Farber Schreck (BHFS) performs the accounting function for the BMC, including the payment of approved invoices.
6. Ensure timely completion of the Court-mandated Annual Report, including the filing of required information to the DWR website by April 1st of each year.
7. Manage BMC consultants and vendors including scope, schedule, budget, BMC comments, and the publishing of approved work products.
8. It is understood that SLO County staff currently maintain the BMC website. The Executive Director will work with County staff to ensure that documents and agenda packages are published timely and accurately.

9. Function as staff (including clerk) during BMP public meetings and provide appropriate technical input on questions from both Directors and the public. Ensure that the meeting venue and audio/visual services are coordinated.
10. Oversee the BMC's compliance with the Brown Act, with input from legal counsel provided by the BMC parties.
11. Prepare detailed minutes of all public meetings, in a format that is consistent with BMC requirements.
12. Represent the BMC as directed to other entities, including DWR, RWQCB, and other agencies.

## FEES

It is understood that the successful firm shall bill for the services of an Executive Director on a Time and Materials basis and that the BMC annual budget currently includes \$50,000 annually for these fees. Based on our understanding of the scope of services to be provided, we are of the opinion that the current budgeted amount is sufficient.

Our 2019 billing rates are as follows:

### **Labor Rates**

Principal Engineer / Hydrologist	\$150 / Hr
Senior Engineer / Hydrologist	\$140 / Hr
Staff Engineer / Scientist	\$120 / Hr
Engineer / Scientist In-Training	\$95 / Hr
Senior CAD / GIS Technician	\$115 / Hr
Staff CAD / GIS Technician	\$90 / Hr
Technical Writer / Editor	\$75 / Hr
Researcher / Administrative Support Staff	\$75 / Hr

Note: Routine office costs such as computer usage, telephone charges, office supplies, travel, incidental postage, copying, and faxes are included in the hourly rates. Additionally, our staff does not bill for the time required to travel to and from BMC meetings.

## COMPANY LICENSES AND PERMITS

Monsoon Consultants maintains a valid business license in the City of San Luis Obispo (among other Cities) and several of our staff maintain professional licenses (i.e. Professional Engineer) in California along with several other states. We would be happy to provide copies of these licenses and permits at your request.

## RESUMES OF KEY STAFF

### **BLAINE T. REELY, PHD, PE**

**Education**      Ph.D., Civil Engineering, Oklahoma State University  
M.S., Civil Engineering, University of Arizona  
B.S., Geological Engineering, University of Arizona

#### **Registrations/Affiliations**

Licensed Civil Engineer in CA, AZ, CO, IL, KS, MS, NV, NM, OK, OR, and TX.  
Licensed Geological Engineer in Arizona  
Member:      American Public Works Association  
American Society of Civil Engineers  
American Water Works Association  
Water Environment Federation  
Floodplain Management Association

#### **Biographical Summary**

Blaine Reely grew up in California, spending his early years in Orange County and then moving to the Monterey Bay area where he spent his teenage years. It was along the central coastal region of California that he acquired his love of the outdoors, spending many hours hiking, fishing, and exploring. After finishing high school, and before enrolling at the University of Arizona in Tucson, he worked for the California Division of Forestry (CDF) as a wild land fire fighter. At U of A, Blaine earned a bachelor's degree in geological engineering and a master's degree in civil engineering. Later he transitioned to Oklahoma State University where he earned a PhD in civil engineering/hydrology. Blaine has three grown children and lives in Templeton, California.

In the 35+ years that Blaine has been a professional engineer, he has worked for an international mining and natural resources company; been a civil engineer with a national transportation engineering firm; been the public works director for the City of Enid, Oklahoma (population of approximately 50,000); owned and managed a multi-state engineering firm that provided civil engineering, hydrology and environmental services (Envirotech Services, Inc.) to a wide range of governmental and corporate clients; and contributed to the design and construction of themed attractions worldwide. Under his leadership, his former firm was named to the Inc 500 list of fastest growing companies in the United States. In 2002 he started Monsoon Consultants in Arizona, and then expanded to the central coast (where he resides) in 2005. Blaine is frequently commissioned to perform forensic engineering investigations and often serves as an expert witness in litigation matters. He also occasionally serves as an adjunct professor at the University of

Arizona and CalPoly-SLO, where he periodically teaches water resources, geotechnical engineering and contract administration.

## **Experience**

2002 to Present **Monsoon Consultants**

**United States / International**

*President and CEO*

Monsoon Consultants was founded by Blaine in 2002. Since its inception, Monsoon Consultants has been providing civil engineering and hydrology services to clients in the public and private sectors throughout the United States and internationally. Blaine combines his gray-haired experience with the talent and youthful energy of Monsoon's exceptionally competent staff of professional engineers, scientists, technicians, and support staff to provide a broad spectrum of services to a very diverse client portfolio.. He has assembled a team which possesses an unquenchable thirst for science, technology, and knowledge, which allows the firm to provide solutions consistent with modern approaches and practices in civil engineering and hydrology.

Blaine works from the corporate offices which are located in San Luis Obispo. Through his leadership, the firm has consistently gained market share and achieved profitability. Corporate successes have been achieved through the identification and implementation of clear and concise, object-oriented planning; efficient operational execution; team work; open and creative communication; a passionate commitment to quality; and a firm belief that members of an organization should enjoy their workplace and have a reason to smile openly and often.

The primary focus of his company is to provide state of the art engineering and related technical consulting services to governmental and private sector clients. Specific areas of expertise include transportation systems; water supply, treatment & distribution; wastewater collection & treatment; storm water management & flood control; site development; utility infrastructure engineering; geological / geotechnical engineering; hydrology; and hydrogeology. The majority of work provided by Monsoon Consultants involves public works projects. As the company's Principal Engineer, Blaine is responsible for managing all project related work and leading the technical and support staff. A partial list of some of the projects in which Blaine has been involved include the following:

- San Miguel Community Services District – District Engineer (December 2016 – Present)
- Paso Robles Groundwater Basin GSA Cooperative Committee – Staff Member
- City of Atascadero On-Site Wastewater Treatment Systems (OWTS) Local Area Management Plan (LAMP) – Principle Author (Note: The LAMP was approved by the RWQCB in late 2018)
- San Luis Obispo County OWTS Local Area Management Plan - Contributor

- City of San Luis Obispo – Managed a design program for multiple sanitary sewer replacement projects to eliminate existing railroad utility crossings within the City limits.
- USDA National Resource Conservation District (NRCS): Managed the design team for the rehabilitation and expansion of five (5) large earthen flood control dams in Oklahoma.
- Water Authority of Jordan / Hashemite Kingdom of Jordan - Performed extensive site surveys and pumping plant performance testing to assess systems efficiencies. Based on the results of the investigation, a water resource development strategy and operating templates were developed to efficiently meet customer water demands and minimize operational costs. Developed monitoring protocols and provided training to Water Authority operations staff. Project funding was partially secured through the U.S. Agency for International Development (USAID).
- Government of Thailand: Provided technical consulting services to the government of Thailand in association with the planning and feasibility assessment of groundwater recharge projects. Project funding was partially secured through the United States Trade & Development Agency (USTDA).
- Government of Sri Lanka: Provided technical consulting services to the government of Sri Lanka in association with the planning and feasibility assessment of groundwater recharge projects. Project funding was partially secured through the United States Trade & Development Agency (USTDA).

In addition to the more traditional areas of practice summarized above, Blaine has unique experience in the development and implementation of cost reduction strategies for water utilities. His research is in the area of applied optimization to water and wastewater utility operations. He is the principal developer of the Water Resources Energy Management System (WREMS) which has been used to analyze and optimize water utility operations worldwide. Blaine has published numerous papers in the areas of water utility operational analyses and energy cost savings strategy implementation. The primary focus of his efforts in this area have been to provide operational assessments and optimization modeling of water and wastewater systems with an overall goal of helping the utility define an optimal operating strategy for the overall system. Current research indicates that almost every water / wastewater agency has the potential to reduce annual energy costs by up to 30%, although in many cases those agencies have not done so simply because a clear set of instructions detailing how to capture maximum energy cost savings is not available. Most water agencies are operationally very complex and therefore, defining how a system can be operated to minimize energy costs is often very difficult to accomplish, requiring experience and knowledge many agencies do not possess. Opportunities to reduce energy costs within a water / wastewater utility can generally be segregated into operational (i.e., behavioral) modifications and equipment (i.e., physical) modifications. Dr. Reely has worked extensively with water and wastewater agencies throughout California and the world and has developed a successful modular approach



recruitment. During Blaine's tenure at Envirotech, the company was recognized by INC magazine as one of the 500 fastest growing companies in the United States. A partial list of some of the projects in which Blaine has been involved include the following:

- Principal author of a successful proposal to PG&E, under their "Power Savings Partners" program, which resulted in the award of two (2) Demand-Side Energy Management (DSM) projects which offered energy efficiency measures to PG&E water utility customers. Dr. Reely subsequently managed the contracts that were based on a "pay for performance" model which afforded the water utility customers the opportunity to receive payment for reductions in energy usage and peak demand reduction. The two customers that participated in the project included the City of Watsonville and the Soquel Creek Water District. Each of the participating customers achieved 15% savings annually compared to the pre-implementation baseline energy cost model. The projects involved performing comprehensive energy audits on each system, performing pump performance testing and evaluations, development of optimal operating strategies and O&M manuals for each system, and implementing energy savings measurement and verification audits on a quarterly basis for 3-years. Dr. Reely applied the Water Resources Energy Management System (WREMS) to analyze and optimize water utility operations.
- Performed numerous storm water drainage and flood studies for both public sector and private sector clients throughout the western United States. These studies typically included hydrologic and hydraulic modeling and often resulted in the preparation of LOMR, CLOMR, LOMA or CLOMA.
- Performed detailed hydrologic/hydraulic modeling and geotechnical engineering as part of a design of improvement to Doublecreek #2,3 & 5 flood control dams in Washington County, OK in accordance to recommendations from the NRCS Supplemental Watershed Plan. Dr. Reely utilized hydrologic and hydraulic models including NRCS TR-20, SITES, and HEC-RAS software in conjunction with the project design & analysis. Specific improvements included replacement of the existing conduit principal spillway with a new conduit spillway and inlet tower. In addition, the auxiliary spillways were widened. Toe drains and filter diagrams were incorporated into the renovated structure and a plunge basin was designed. Seepage analyses were performed. A design report, construction drawings, technical specifications, contract documents, and engineer's estimate comprise the project deliverables.
- Performed a comprehensive Demand Response (DR) and Energy Efficiency study for a total of eight (8) PG&E / Humboldt Water District customers which are located in California's Redwood Coast. The study focused on the customer's potable water distribution and pumping systems, with the goal of identifying electrical and mechanical systems within any of the customer's water systems which could be eligible for participation in PG&E DR programs. Possible measures and / or retrofits included changes in equipment and operations to enhance overall energy efficiency and to facilitate efficient shifting of electrical loads to off peak periods. As part of Dr. Reely's scope of work, he examined PG&E rates and Demand Response / Energy Efficiency programs and recommended appropriate combination for the Customers to implement recommendations resulting from the analysis. The eight participating customers were selected because each of

their individual water systems are interconnected through a system of water distribution pipelines. Because of the interconnectivity between these water agencies, it was determined that through interagency cooperation, the cumulative ability of these systems to operate in a more energy efficient manner and to respond to signals for demand response was significantly enhanced.

- Conducted hydrologic and hydraulic analyses for the NRCS, contributing to the preparation of the Supplemental Watershed Plan for the referenced structures. Specific responsibilities included developing watershed hydrologic models using NRCS TR-20, SITES, and HEC-RAS software. Principal spillway hydrographs (PSH) were developed to establish the size of the principal spillway, which permitted a 10-day reservoir drawdown. In addition, the freeboard hydrograph (FBH) was developed to establish the top of the dam crest and the auxiliary spillway hydrograph (ASH) was developed to establish the geometry of the auxiliary spillway. Reservoir stage/discharge relationships were developed, utilizing bathymetric/topographic survey data and the magnitude of the wave action was quantified to determine dam freeboard requirements. Dam breach analyses were performed under “PMP and “Sunny Day” conditions, using HEC-RAS. The results of the hydrologic and hydraulic analyses were integrated into the Sandstone Creek #16A Supplemental Watershed Plan and the Cobb Creek #2 Supplemental Watershed Plan.

1988 to 1992 **City of Enid**  
*Public Works Director*

**Enid, Oklahoma**

As the Public Works Director for a municipality with a population of approximately 50,000, Blaine managed an annual \$11 million operating and capital improvements budget while leading nine municipal operating departments. The public works departments included:

- Street Department
- Wastewater & Water Pollution Control
- Traffic Control
- Solid Waste Collection & Landfill
- Water Department
- Facility & Building Maintenance
- Fleet & Transit Services
- Parks & Recreation
- Storm Water & Flood Control

In his role as Public Works Director, Blaine assembled an ambitious, loyal, and innovative management team. Together, Blaine and his staff created and implemented numerous programs and services resulting in substantially improved public opinion, reversing the declining trend previously experienced. All achievements were made in a “zero-growth” budget environment and were funded internally through innovation, increased efficiency, and employee motivation. Blaine’s departments received numerous meritorious awards from federal, state, and public interest groups as a direct result of the achievements made under his leadership. This position required excellent communication and negotiation

skills demanding interaction between elected officials, bureaucrats, contractors, public, and employees of varying skill levels. A partial list of achievements that were made under Blaine's leadership includes the following:

- U.S. EPA Region 6 Consent Order Resolution: As Director of Public Works for the City of Enid, the city was under a consent order by the USEPA for historic discharges of untreated wastewater into the receiving stream. The consent order was in place before Blaine came to the city, but it was his responsibility to comply with its terms and conditions. The principle problem was related to a significant inflow and infiltration (I&I) problem which existed within the municipal sanitary sewer collection system. The City was facing significant financial penalties and based on a consultant's report it was estimated that it would require around \$20M to bring the system into compliance. The city did not have the financial resources to undertake the recommended improvement program in the short term and public support for passing a capital improvement bond issue was absent. After studying the details of the individual historical untreated wastewater releases, Blaine determined that something close to 95% of the total volume of discharged wastewater had occurred at one of two locations. Although there had been dozens of other release locations, the total volume of released wastewater at those locations was minimal. Blaine developed a capital improvement plan that addressed those two locations quickly to be followed by a long term plan that permitted the city to address those other problem locations over a 7 year period. The USEPA agreed with his proposal, modified the consent order accordingly and the City of Enid achieved compliance within 5 years. No additional taxes or assessments were passed on to the citizens of Enid.
- Dr. Reely was the principal author of the successful Demonstration Grant proposal to EPA Region 6 and subsequently managed an EPA Wellhead Protection Demonstration Grant funded project for the City of Enid, Oklahoma. Initial role included authoring the proposal and grant application to the EPA which was funded in the amount of \$100,000. The City's water supply was derived from 153 wells which produce groundwater from three (3) aquifers. The Enid water supply is the largest in the State of Oklahoma which is entirely dependent on groundwater. Dr. Reely served as project manager with a multi-agency team that included professionals from the City of Enid and the Oklahoma Water Resources Board (OWRB). The scope of work included a comprehensive data acquisition and interpretation component utilizing a GIS data management platform. The OWRB developed aquifer vulnerability index mapping for the entire project area covering several hundred square miles. Aquifer hydrogeological characterizations were developed utilizing published data and supplemented with the results from extensive aquifer testing. Delineation of the wellhead protection areas were established utilizing the EPA WHPA model. Subsequently, a contaminant source inventory of the watershed was performed utilizing desktop methods with a statistically derived field verification component. The project team developed a water quality monitoring program and trained municipal staff in the application of contingency and response protocols

based on water quality indicators. Developed a public awareness program and facilitated several workshops and public meetings with private and corporate participants. Managed documentation and technical transfer activities which included numerous public meetings and formal presentations to the Oklahoma Water Resources Board and the EPA.

- Development of a Linked Optimization – Simulation Aquifer Management Program: Evaluated available geologic, well log, pumping test, and well production data to determine long-term impacts to three source aquifers located in western Oklahoma. Led the development of an aquifer management program, which utilized linear programming techniques to optimize water production operations while simultaneously achieving aquifer management goals. The linked optimization – simulation model integrated LINDO, a commercially available optimization package with MODFLOW, a public domain finite difference ground water modeling package. Dr. Reely led the system installation and start-up services in conjunction with municipal operations staff and provided post-installation training. Post-installation operations confirmed the recovery of the aquifer and resulted in an operational cost savings of approximately 27 percent.
- City-Wide Flood Hazard Mapping & Mitigation Program: At the request of the City Council, Dr. Reely lead a team of staff and consultants that performed hydrologic and hydraulic analyses, including comprehensive modeling, to evaluate the potential for flood related impact to the community. Based on the results of the analyses, areas throughout the community were identified as flood hazard prone areas. Subsequently, a community-wide storm water management & flood mitigation plan was developed which included an extensive list of projects and management actions, which when implemented would result in a significant reduction in potential flood hazards in the community. After the project was complete, Dr. Reely worked with City management and legal, to draft Flood Mitigation ordinances and regulations which were adopted, implemented and provided a method of revenue generation to fund the projects. The work also resulted in new FEMA Flood Hazard mapping for a significant portion of the community.

1985 to 1988 **Howard, Needles, Tammen, and Bergendoff**  
*Project Manager*

**Tulsa, Oklahoma**

Blaine managed the design and construction of numerous public works and transportation projects, including airport runways and taxiways; interstate highways; turnpikes; and commercial buildings. This position required management of creative teams comprised of architects, engineers, designers, technicians, and construction personnel. Individual project budgets (design and construction) ranged from \$2 million to \$65 million. A partial list of some of the projects in which Blaine was involved include the following:

- Taxiway X-RAY–Tulsa International Airport

- Extension to Runway 18R-36L–Tulsa International Airport
- Airport Drainage System Improvements–Tulsa International Airport
- SH 33 Interchange on Turner Turnpike–Oklahoma Turnpike Authority
- Terminal Toll Stations on Turner Turnpike–Oklahoma Turnpike Authority
- Cherokee Turnpike Feasibility Study & Preliminary Design–OK Turnpike Authority
- Ada–Henrietta Turnpike Feasibility Study & Preliminary Design–OK Turnpike Authority
- Pavement Condition Assessment – 5 Turnpikes – OK Turnpike Authority

### **Educational Experience (Instructional)**

University of Arizona, Tucson, AZ.: Lecturer, CE 407 “Issues in Professional Engineering Practice”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 584 “Lateral Support Systems”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 586 “Design & Analysis of Deep Foundations”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 336 “Water Resources Engineering”

Cal Poly University, San Luis Obispo, CA, Lecturer, CE 264 “Environmental Fluid Mechanics”

LOS OSOS GROUNDWATER BASIN  
BASIN MANAGEMENT COMMITTEE

June 27, 2019

STATEMENT OF QUALIFICATIONS FOR

# PROFESSIONAL SERVICES AS EXECUTIVE DIRECTOR





June 27, 2019

Rob Miller  
Executive Director  
Basin Management Committee  
2122 9<sup>th</sup> Street, Suite 102  
Los Osos, CA 93402

**SUBJECT: STATEMENT OF QUALIFICATIONS FOR PROFESSIONAL SERVICES AS EXECUTIVE DIRECTOR**

Dear Mr. Miller,

Water Systems Consulting, Inc. is pleased to present this Statement of Qualifications (SOQ) for professional services as Executive Director for the Los Osos Groundwater Basin Management Committee (BMC). The BMC is seeking the Executive Director to act as its chief executive officer and provide administrative and technical services.

The BMC needs a reliable, knowledgeable, and local resource that it can rely upon to meet the goals of managing the water resources in the Los Osos Groundwater Basin (Basin) and address water quality degradation of the Upper Aquifer and seawater intrusion into the Lower Aquifer.

WSC is exceptionally qualified and experienced to support the BMC to deliver its mission. WSC's proposed Executive Director, Daniel Heimel, is a Los Osos resident who is helping other communities on the Central Coast address groundwater quality issues due to nitrates and seawater intrusion. He understands the local community, the challenges the BMC is facing, and how to be an effective leader and manager in complex stakeholder environments. WSC's anticipated approach includes the following elements:

- **Proactive BMC Facilitation and Coordination.** WSC will focus on providing necessary and timely information to the Stipulating Parties to keep them informed of Basin conditions and coordinate the appropriate collaborating opportunities to allow them to continue to work effectively together.
- **Continued Focus on Data-Drive Decision Making.** WSC will work with key technical, managerial and legal personnel who have been involved in the development of the Basin Plan to continue to look for opportunities to improve the understanding of Basin hydrogeologic conditions and utilize adaptive management to continue preventing seawater intrusion.
- **Disciplined Program Management.** Managing an organization such as the BMC requires focused and diligent program management to keep costs within budget and initiatives on schedule. WSC will leverage its experience as program managers on other water resource programs of all sizes to effectively manage the BMC financial operations.
- **Enhanced Communication and Outreach Support.** There is an opportunity to increase the community's engagement in water related topics through enhanced outreach and communication about water issues. WSC has communications and outreach experts with experience building community support for similar programs around the Central Coast.
- **Continued Identification and Pursuit of Grant Funding and Low-Interest Financing Opportunities.** WSC has a long history of success in identifying opportunities, pursuing and obtaining grant funding for water resource projects. WSC will bring this experience to assist the BMC in identifying potential key opportunities that may provide outside funding to offset the costs borne by the local community to maintain clean, safe, and reliable drinking water.



We hope this proposal demonstrates our interest and commitment to provide Executive Director services to the BMC. If you have any questions on any aspect of this proposal, please feel free to contact WSC's proposed Executive Director, Daniel Heibel, at (805) 457-8833, ext. 104 or [dheibel@wsc-inc.com](mailto:dheibel@wsc-inc.com), or WSC's Principle in Charge and Vice President, Joshua Reynolds at (805) 457-8833, ext. 107 or [jreynolds@wsc-inc.com](mailto:jreynolds@wsc-inc.com). Joshua is authorized to represent WSC in negotiations and sign contracts or agreements. Thank you again for your consideration, and we look forward to your response.

Sincerely,

Water Systems Consulting, Inc.

A handwritten signature in black ink that reads "Daniel Heibel". The signature is written in a cursive style with a clear, legible script.

Daniel Heibel, PE, MS  
Project Manager

A handwritten signature in black ink that reads "Joshua Reynolds". The signature is written in a cursive style with a clear, legible script.

Joshua Reynolds, PE, MS  
Principal in Charge / Vice President

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**Firm Profile**

## WSC is Your Premier Water Resources Consulting Firm

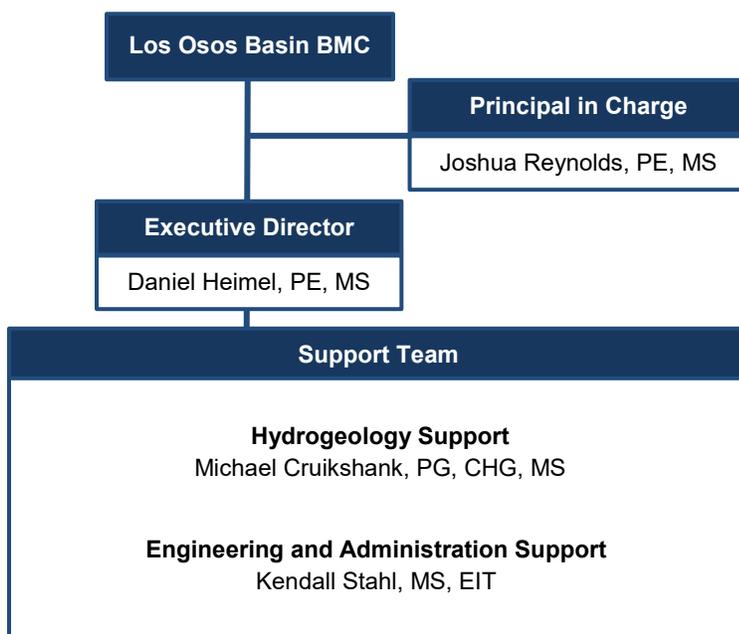
Water Systems Consulting, Inc. (WSC) is a full-service engineering consulting firm that specializes in innovative and sustainable solutions, relationship building, and bringing value to our clients. We thrive and grow from the philosophy that people come first and that all water has value.

Our expert staff of more than 55 employees provides program management, funding, communications, and engineering services to public agencies throughout California. We serve special districts, counties, cities, investor-owned utilities, and regulatory agencies from our nine offices in California and Oregon, including our San Luis Obispo headquarters. We thrive in staff extension and funding support roles for our clients. Our staff are working on vital water, wastewater, and recycled water projects throughout San Luis Obispo County. This experience gives us a holistic perspective on the important impact that the decisions and work of the BMC and its Executive Director will have on residents, businesses, and agriculture in the coming years.

WSC’s proposed Executive Director, Daniel Heimel, is involved in various water resources projects on the Central Coast and throughout San Luis Obispo County which gives him the insight necessary to efficiently lead the BMC and assist its members in completing and managing its myriad tasks. Mr. Heimel and his team are familiar with the requirements needed to manage a groundwater basin in compliance with state regulations, complete annual reports, and provide program and project management to the Committee.

WSC has the technical expertise to support Mr. Heimel as he helps guide the BMC through the activities described in the scope of work in the RFQ and subsequent projects. Our team of engineers and hydrogeologists is familiar tackling projects involving water quality degradations due to contaminants such as nitrate and are experienced working with groundwater basins at risk to seawater intrusion. Detailed resumes for WSC’s proposed staff in the organizational chart below are included in Appendix A.

At WSC, we only succeed if you do. We are focused on delivering value and will work tirelessly on your behalf to achieve the results that the community of Los Osos expects and deserves.



**Water Systems Consulting Inc.**

**Address:**  
805 Aerovista Place, Suite 201  
San Luis Obispo, CA 93401

**Mr. Heimel’s Phone Number:**  
(805) 457-8833, ext. 104

**Mr. Heimel’s Email:**  
[dheimel@wsc-inc.com](mailto:dheimel@wsc-inc.com)

**Years in Business:**  
11

Executive Director  
Los Osos Groundwater Basin - Basin Management Committee



## Experience

Founded in San Luis Obispo County, WSC has spent more than a decade helping local agencies plan, fund, and deliver vital water resources projects. WSC's proposed Executive Director, Daniel Heimel, has led projects addressing water quality degradation in Coastal California aquifers and has developed action plans and various infrastructure projects to prevent and mitigate seawater intrusion. WSC's engineers and hydrogeologists, including Mr. Heimel, are currently supporting San Luis Obispo City and County to develop and manage the San Luis Obispo Valley Basin Groundwater Sustainability Plan. Mr. Heimel has also supported the County's efforts to assess supplemental supply options for the Paso Robles Groundwater Basin.

Mr. Heimel has served in similar roles to the Executive Director position for multiple agencies and will be an effective and important resource to the BMC. The BMC needs an effective administrator who can lead meetings, manage projects, communicate with stakeholders, and guide Basin management activities. Mr. Heimel has successfully demonstrated his ability to do just that for other agencies in San Luis Obispo County, including the Northern Cities Management Area Technical Group, City of Pismo Beach, and County of San Luis Obispo. He will be supported by a team of engineers, hydrogeologists, planners, and communications specialists to help the BMC achieve its mission.

### Water Resources Consulting Services – *Northern Cities Management Area Technical Group*



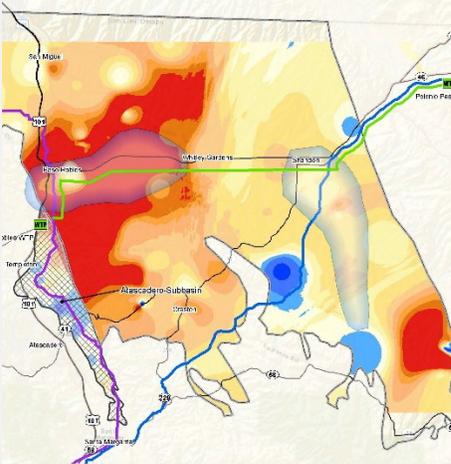
WSC's proposed Executive Director, Mr. Heimel, has provided water resource planning support services for the Northern Cities Management Area Technical Group for almost 10 years. WSC developed numerous decision support tools to allow the agencies to manage their drought impacted water supplies and pathways for continued water service to their customers while preventing further degradation of their groundwater supply from seawater intrusion. After the detection of seawater intrusion into the coastal aquifer in 2009, WSC developed a water supply, production, and delivery model that allowed the agencies to maximize surface water deliveries and reduce groundwater pumping during a critical period for the groundwater basin. This tool incorporated constraints for available supply, treatment capacity, conveyance pipeline capacity, seasonal system demand and intertie delivery capacity, and provided the agencies with optimized delivery scenarios to best protect and prolong their water supply sources and limit groundwater pumping.



WSC's services include meeting planning and facilitation, water resources engineering support, and special project development and management. WSC also performs stakeholder outreach and communication, including public meeting presentations, consultant procurement and management, technical review of the annual reporting process required by the groundwater basin adjudication, and conducting multiple specialty technical studies to support ongoing water resource management. Additional work included helping form the NCMA-NMMA Management Area Technical Subcommittee, developing a Deep Well Index and monitoring program, outreach to the agricultural community for collaboration and support, funding and financing support, San Luis Obispo County Resource Management System Support, broad scope adjudication support, and strategic plan development. WSC also served as technical advisor for the Santa Maria Groundwater Basin Characterization Study.

**Key Staff:** Daniel Heimel (Program Manager), Joshua Reynolds (Technical Advisor), Kendall Stahl (Staff Engineer), and Michael Cruikshank (Hydrogeologist)

## Paso Basin Supplemental Supply Study – *San Luis Obispo County Flood Control and Water Conservation District*



To aid the San Luis Obispo County Flood Control and Water Conservation District (District) in evaluating options to address declining groundwater levels in the Paso Robles area, Mr. Heimel performed a supplemental supply evaluation of the potential to utilize water from the State Water Project (SWP), Lake Nacimiento, and recycled water to restore the water supply/demand balance in the Paso Robles Groundwater Basin. This evaluation included development of a supplemental supply model to characterize the quantity of water available (annually and seasonally), available capacity within existing infrastructure to deliver the water, cost to purchase capacity and deliver water in existing conveyance pipelines, and costs to construct distribution pipelines to other infrastructure for direct delivery and groundwater recharge. The supplemental supply analysis was coordinated closely with the groundwater modeling team to determine the quality of supplemental water required and to analyze the benefits of the supplemental water delivery scenarios being evaluated.

WSC’s evaluation additionally included a detailed analysis of historic costs paid by the existing District SWP subcontractors to help quantify the potential buy-in cost to the SWP system for future customers. This analysis was completed to assist the District in future negotiations for the sale of its “Excess Allocation” of SWP water.

**Key Staff:** Daniel Heimel (Project Manager)

## San Luis Obispo Valley Basin Groundwater Sustainability Plan – *County of San Luis Obispo*



WSC is managing the development of the San Luis Obispo Valley Basin Groundwater Sustainability Plan (GSP) for the County of San Luis Obispo. WSC is responsible for project administration, the Projects and Management Actions chapter, implementation of the Communications and Engagement Plan, and is involved in developing the integrated groundwater-surface water model. Mr. Heimel has a significant role on the GSP team and is leading the development of the Projects and Management Actions chapter of the GSP.

Throughout the project, WSC has a leadership role scheduling, administering, and facilitating numerous public meetings and workshops. Tasks include developing staff reports, agendas, presentations, and outreach materials to a broad spectrum of public and private stakeholders.

WSC is also working with the BMC’s hydrogeologist, Cleath-Harris Geologists (CHG), on the Basin Setting chapter of the GSP, and the development of a monitoring network and monitoring plans. Through our work together on the GSP and other projects in San Luis Obispo County, WSC and CHG have a strong working relationship and are comfortable collaborating.

**Key Staff:** Michael Cruikshank (Project Manager), Daniel Heimel (Task Lead)

## References

Client Name	County of San Luis Obispo
Contact Individual	Ms. Courtney Howard, PE, Water Resources Division Manager
Telephone	(805) 781-1013
Email	<a href="mailto:choward@co.slo.ca.us">choward@co.slo.ca.us</a>
Description of Services	WSC has developed numerous water resources documents for the County of San Luis Obispo, including developing the San Luis Obispo Valley Basin Groundwater Sustainability Plan, Paso Basin Supply Options Study, Enhanced State Water Project Delivery Assessment, and Lopez Reservoir Low Reservoir Response Plan.

Client Name	City of Pismo Beach
Contact Individual	Mr. Benjamin Fine, PE, Public Works Director / City Engineer
Telephone	(805) 773-7037
Email	<a href="mailto:bfine@pismo beach.org">bfine@pismo beach.org</a>
Description of Services	WSC has provided as-needed engineering services to the City of Pismo Beach since 2009 and is currently the Program Manager for the \$30 million Central Coast Blue Project, an indirect potable reuse project that will provide purified water to recharge the Santa Maria Groundwater Basin to protect against seawater intrusion. Additionally, WSC developed the Recycled Water Facilities Planning Study, prepared a well condition assessment, developed the Water Master Plan Update, and completed the City's 2015 Urban Water Management Plan.

Client Name	City of Arroyo Grande
Contact Individual	Ms. Teresa McClish, Community Development Director
Telephone	(805) 473-5464
Email	<a href="mailto:tmclish@arroyo grande.org">tmclish@arroyo grande.org</a>
Description of Services	WSC has provided as-needed engineering services to the City of Arroyo Grande since 2010. WSC has also completed multiple planning and design projects for the City, including the 2005, 2010 and 2015 Urban Water Management Plans, Supplemental Hydraulic Modeling, and the City's Water and Sewer Master Plan Updates. The City is a member of the NCMA Technical Group for which Mr. Heimel is providing similar services to what is in the BMC's executive director scope.

## Understanding and Approach

### Project Understanding

The community of Los Osos has faced numerous water and wastewater challenges over the last several decades. However, with the construction of the Los Osos Wastewater Project and development of the Basin Plan and the Interlocutory Stipulated Judgement (ISJ) it has recently cleared some significant milestones toward achieving clean, safe, reliably drinking water for the community. Additionally, through extensive water conservation and other water resource initiatives, the community has been able gain a foothold against seawater intrusion and hopefully can leverage this position to gain back access to portions of the Los Osos Valley Groundwater Basin (Basin) that were previously contaminated. These achievements have been accomplished through effective collaboration amongst the County of San Luis Obispo, Golden State Water Company, Los Osos Community Services District and S&T Mutual Water Company (Stipulating Parties).

### Project Approach

WSC's approach to the position of Executive Director will be to continue to facilitate and support the ongoing collaboration amongst the Stipulating Parties to continue implementation of the Basin Plan and compliance with the ISJ. We anticipate that can be achieved through an approach that includes the following elements:

- Proactive BMC Facilitation and Coordination
- Continued Focus on Data-Driven Decision Making
- Disciplined Program Management
- Enhanced Communication and Outreach Support
- Continued Identification and Pursuit of Grant Funding and Low-Interest Financing Opportunities

#### Proactive BMC Facilitation and Coordination

Coming to agreement on the ISJ and the Basin Plan has been achieved through significant collaboration by the Stipulating Parties and this level of cooperation is what is required for the implementation of the Basin Plan and the protection of Los Osos's groundwater. As the Executive Director, WSC will focus on providing necessary and timely information to the Stipulating Parties to keep them informed of Basin conditions and coordinate the appropriate collaboration opportunities (e.g. meetings, subcommittee meetings, and workshops) to allow them to continue to work together effectively. Clear and consistent communication is key to coordinating efforts of numerous parties or stakeholders. WSC has extensive experience facilitating collaboration among a large group of stakeholders to achieve complex, multi-jurisdictional water resource projects and will leverage this experience to effectively facilitate collaboration amongst the BMC.

#### Northern Cities Management Area Technical Group

WSC and Mr. Heimel have been providing facilitation and water resource engineering support for almost 19 years for the NCMA TG. This has included coordinating and facilitation over 300 meetings among six stakeholder agencies to assist them in managing their groundwater supply and preventing seawater intrusion.



## Continued Focus on Data-Driven Decision Making

The Stipulating Parties have invested significant time and effort in developing the current understanding of the Basin. These efforts have yielded a groundwater model and series of key metrics that can be utilized to assess the health of the Basin. These toolsets are excellent examples of the type of data-focused analysis that will be required to make informed decisions about how to best prevent seawater intrusion and protect the communities' water supply.

WSC will work with key technical, managerial, and legal personnel that have been involved in the development of the Basin Plan to continue to look for opportunities to improve the understanding of Basin hydrogeologic conditions and utilize adaptive management to continue preventing seawater intrusion. These opportunities could include modifications to the Basin monitoring plan, development of additional metrics to analyze Basin trends, investigation of emerging technologies (e.g. aerial geophysics) or any number of potential opportunities to enhance the Stipulating Parties understanding of the Basin.

### City of Pismo Beach - Central Coast Blue

WSC is working as the program manager and design engineer for the City of Pismo Beach's Central Coast Blue project. Central Coast Blue is an indirect potable reuse project that will capture wastewater currently discharged to the ocean and utilize it to recharge the groundwater basin to prevent seawater intrusion.

Some key elements of the Central Coast Blue that are applicable to the Los Osos Basin include:

**WHY GROUNDWATER RECHARGE?**

Central Coast Blue will create a new source of water for the region. By recycling water that would have been discharged to the ocean and injecting purified water into the Santa Maria Groundwater Basin, Central Coast Blue will protect our groundwater supplies from seawater intrusion and increase the Five Cities communities' resilience to drought.

Groundwater is one of our most important natural resources and sources of water. Groundwater depletion can lead to a number of negative impacts, including seawater intrusion. Lower groundwater levels can increase potential for seawater intrusion, or the movement of ocean water into fresh groundwater, and the risk of groundwater contamination from salt.

Water from Central Coast Blue will increase the quantity and quality of water in the Santa Maria Basin.

**Benefits**

The Five Cities communities are partnering on Central Coast Blue to create a lasting water resource that will support our community by helping to re-charge a natural resource currently discharged to the ocean. Central Coast Blue will provide a new reliable, drought-proof source of recharge for the groundwater basin, increase groundwater supply availability, and protect against further seawater intrusion.

**Did you know?**

Groundwater is the world's largest freshwater source. Millions of gallons of groundwater are drawn each day from California's aquifers, accounting for more than half of the state's water supply. On the Central Coast, the communities of Monterey, Cambria, and the Five Cities are looking to replenish groundwater supplies with purified water to protect against seawater intrusion, similar to projects that have been in operation in Los Angeles and Orange County for decades.

- Development of a deep well index or metric to assist in assessing the threat of seawater intrusion
- Construction of a groundwater model to analyze different potential scenarios and predicting impact on seawater intrusion
- Utilization of aerial geophysics to locate the freshwater/seawater interface at different depths in the aquifer both on and offshore
- Analysis of different groundwater pumping scenarios to reduce impact on coastal groundwater levels and the threat of seawater intrusion
- Potential formation of a Joint Powers Authority or other governance authority to equitable share costs and benefits of groundwater protection

## Disciplined Program Management

Managing an organization such as the BMC requires focused and diligent program management to keep costs within budget and initiatives on schedule. WSC will leverage its experience as program managers on other water resource programs of all sizes to effectively manage the BMC financial operations.

Timely completion of the Annual Report is required to maintain compliance with the ISJ and this will be managed through targeted scheduling of early deliverables, identification of critical path items and close collaboration with the Annual Report consultant to provide sufficient review and comment time to the Stipulating Parties, other stakeholders, and the public. Earned Value Reporting can also be a useful tool for early identification of potential budget or schedule variances for specific projects and provide time to make project approach modifications to avoid schedule and/or budget overruns.

### Northern Cities Management Area Technical Group (NCMA TG)

WSC has provided oversight of the development and on-time submission of the last 8 NCMA Annual Reports to the Court. Additionally, WSC has ensured that the NCMA agencies' required information for Sustainable Groundwater Management Act (SGMA) compliance has been uploaded to the Department of Water Resources for the last 5 years by the deadline.

## Enhanced Communication and Outreach Support

The future of development and the character of the community of Los Osos is focused around water supply availability. There is an opportunity to increase the community's engagement in water related topics through enhanced outreach and communication about water issues. As a community, Los Osos has achieved multiple key milestones in recent years and there are opportunities to highlight these achievements. Additionally, further informing the community about the threat of seawater intrusion and the challenges associated with nitrate contamination could assist in obtaining additional support for implementation of the Basin Plan. WSC has a dedicated communications and outreach team that successfully supports clients by conveying complex technical information and motivating action by key stakeholders, the public, and funding and regulatory agencies.

## Continued Identification and Pursuit of Grant Funding and Low-Interest Financing Opportunities

Grant funding can provide significant outside resources to assist in reducing the financial burden on the community for the implementation of Basin Plan projects. WSC has a long history of success in identifying opportunities, pursuing and obtaining grant funding and low-interest financing for water resource projects. WSC will bring this experience to assist the BMC in identifying potential key opportunities that may provide outside funding to offset the costs borne by the local community to maintain clean, safe, and reliable drinking water.

Several potential programs that could provide grant or low-interest financing for Los Osos are listed below:

- U.S. Department of Agriculture (USDA)
- Clean Water State Revolving Fund (CWSRF) Seawater Intrusion Control (SWIC) Program
- Prop 1 Groundwater Grant Program (Round 3)
- U.S. Bureau of Reclamation Title XVI Program
- Integrated Regional Water Management (IRWM)

**THE BIG BEAR VALLEY WATER SUSTAINABILITY PROJECT WILL:**

- Align our natural resources for water supply sustainability.
- Protect the east and west side habitat and species.
- Promote a thriving community through enhanced recreation.

**RECOVER NEARLY 600 MILLION GALLONS OF WATER ANNUALLY TO:**

- Recharge the groundwater basin with up to 500 million gallons per year.
- Support 1.6 million gallons per day of residential and commercial water use.
- Increase Big Bear Lake levels by nearly seven feet over ten years.

**The current water cycle is broken.**  
Our only water source enters the Valley as precipitation and is exported as treated wastewater.

**Now, thanks to the Big Bear watershed, high quality water is available to be used for recreation, agriculture, and industry.**

**High quality water will be flowing through the Big Bear Watershed, providing a new water source for the community and a new source of recreation.**

**Water from the new water source will be used to recharge the groundwater basin, providing a new source of water for the community and a new source of recreation.**

**This project recovers a lost water resource, closes the water loop, and keeps water in the Big Bear Valley.**

WSC has helped secure more than \$237 million in grants and low-interest financing

WSC helps our clients identify grant and low-interest financing programs that their projects may be eligible for and has funding application experts who can help complete the application process. Our team has helped clients receive more than \$31 million in grants, \$200 million in low-interest loans, \$6 million in principal forgiveness.

## Scope of Work

### TASK 1.0 BMC ADMINISTRATION

#### 1.1 BMC Administration

- Perform BMC administrative tasks necessary for facilitate BMC activities, including but not limited to:
  - (1) Coordination with BMC Board Members, Stipulating Parties, and the public
  - (2) Coordinate with San Luis Obispo County staff so that documents and agenda packages are published to the BMC website in a timely and accurate manner

#### 1.2 Financial Oversight

- Oversee financial operation of the BMC, including recommending an annual budget and processing invoices.
- Coordinate with the law office of Brownstein Hyatt Farber Schreck (BHFS) which performs the accounting function for the BMC, including the payment of approved invoices.

*Deliverables: Updated BMC financial updates and proposed budgets.*

#### 1.3 BMC Representation

- Represent the BMC as directed to other entities, including DWR, RWQCB, and other agencies, as needed.

### TASK 2.0 BMC MEETINGS

#### 2.1 Meeting Coordination

- In consultation with the BMC Chair, coordinate up to 8 public BMC meetings.
- Coordinate with Audio/Video consultant to ensure that the BMC meeting venue and audio/visual services properly performed.

#### 2.2 Agenda Preparation

- In consultation with the BMC Chair, prepared agenda packets up to 8 public BMC meetings.

*Deliverables: BMC Meeting agenda packets*

#### 2.3 Meeting Attendance

- Function as staff (including clerk) during BMC public meetings, including providing appropriate technical input on questions from both Directors and the public.
- Oversee the BMC's compliance with the Brown Act, with input from legal counsel provided by the BMC parties.

#### 2.4 Meeting Minutes

- Prepare detailed minutes of all public meetings.

*Deliverables: BMC Meeting minutes*

## TASK 3.0 PROGRAM MANAGEMENT

### 3.1 Annual Report Management

- Provide program management for the BMC on the Annual Report, including management of scope, schedule and budget, collection and incorporation of BMC and other comments, and publishing of approved work products.
- Participate in coordination meetings with the Annual Report consultant to provide work direction, receive project updates, and review consultant interim work products and deliverables.
- File required information to DWR's website by the April 1<sup>st</sup> deadline.

### 3.2 BMC Project Management

- Provide program management for the BMC on other projects, including management of scope, schedule and budget, collection and incorporation of BMC and other comments, and publishing of approved work products.
- Participate in coordination meetings with BMC consultants to provide work direction, receive project updates, and review consultant interim work products and deliverables.

## Budget Allocation Recommendation

Based on WSC's review of the requested scope, our initial input is that the BMC budget allocation would likely need to be increased from the current budgeted amount depending on the level of effort anticipated for certain tasks that are not that clearly defined (i.e. Broad functioning as Admin Staff of the BMC, project management for BMC projects, representing the BMC as directed to other entities). Better definition of assumptions associated with these tasks would allow for a more defined estimate of the anticipated level of effort for the Executive Director position.

WSC looks forward to discussing the details associated with the Executive Director position with the BMC and identifying a budget allocation that meets the needs of the BMC and the Executive Director position.

## Licenses and Permits



# BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS



This Is To Certify That Pursuant  
To The Provisions of Chapter 7, Division 3 of The Business and Professions Code

## Daniel Eric Heimel

IS DULY LICENSED AS A  
PROFESSIONAL ENGINEER  
IN  
CIVIL ENGINEERING

In The State of California and Is Entitled To All The Rights and  
Privileges Conferred In Said Code

WITNESS OUR HAND AND SEAL

Certificate No C 80762

This 24th day of December, 2012, at Sacramento, California.

BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS, AND GEOLOGISTS



Executive Officer

President



# BOARD FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS



This Is To Certify That Pursuant  
To The Provisions of Chapter 7, Division 3 of The Business and Professions Code

## Joshua Holland Reynolds

IS DULY LICENSED AS A  
PROFESSIONAL ENGINEER  
IN  
CIVIL ENGINEERING

In The State of California, and Is Entitled To All The Rights and  
Privileges Conferred In Said Code

WITNESS OUR HAND AND SEAL

Certificate No C 65400

This 27th day of June, 2003, at Sacramento, California.

BOARD FOR PROFESSIONAL  
ENGINEERS AND LAND SURVEYORS



Executive Officer

President



# BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS



This is to Certify that Pursuant  
To the Provisions of Chapter 12.5, Division 3 of the Business and Professions Code

*Michael James Cruikshank*

IS DULY CERTIFIED AS A

Hydrogeologist

In the State of California, and is Entitled to all the Rights and  
Privileges Conferred in Said Code

WITNESS OUR HAND AND SEAL

Certificate No. HG 994

This 30<sup>th</sup> day of December, 2014, at Sacramento, California.

BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS, AND GEOLOGISTS



  
Richard B. Moore, P.L.S. – Executive Officer

  
Kathy Jones Irish – Board President



**BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS, AND GEOLOGISTS**



This Is To Certify That Pursuant  
To The Provisions of Chapter 12.5 Division 3 of The Business and Professions Code

**Michael James Cruikshank**

IS DULY LICENSED AS A

**PROFESSIONAL GEOLOGIST**

In The State of California and Is Entitled To All The Rights and  
Privileges Conferred In Said Code



WITNESS OUR HAND AND SEAL

Certificate No GEO 8854

This 17th day of May, 2011, at Sacramento, California.

**BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS, AND GEOLOGISTS**

Interim Executive Officer

President

Appendix A. Resumes

## Daniel Eric Heimel, MS, PE

### Education

MS, Civil and Environmental  
Engineering, Cal Poly San Luis  
Obispo

BS, Environmental Science,  
California State University Chico

### Professional Registrations

Professional Engineer – Civil,  
California, No. C80762

### Operator Certifications

SWRCB Registered D4 Operator  
#28472

SWRCB Registered T2 Operator  
#26014

### Professional Affiliations

American Water Works  
Association, Member

Air & Waste Management  
Association, Member

### Professional Experience

Mr. Heimel has spent most of his 17-year career providing engineering and operations support for municipal water agencies and specializes in water resources and hydraulic modeling. Prior to joining WSC, he worked for two public water utilities, and his experience includes evaluation of supplemental water supply options, groundwater recharge facility management, water quality data analysis, program management, master planning, hydraulic modeling, GIS implementation, sampling plan development and implementation, water quality and water supply watershed monitoring, groundwater recharge facility operations and management, and water quality data analysis.

### Representative Projects

**Water Resources Consulting Services, Northern Cities Management Area Technical Group, San Luis Obispo County. Project Manager.** Provided as-needed engineering services for the City of Arroyo Grande, City of Grover Beach, City of Pismo Beach, and the Oceano Community Services District. Developed numerous decision support tools to allow the agencies to manage their drought impacted water supplies for continued water service to their customers while preventing further degradation of their groundwater supply from seawater intrusion. Coordinated monthly meetings of the Northern Cities Management Area Technical Group. Additional work included helping form the NCMA-NMMA Management Area Technical Subcommittee, developing a Deep Well Index and monitoring program, outreach to the agricultural community for collaboration and support, funding and financing support, San Luis Obispo County Resource Management System Support, broad scope adjudication support, and strategic plan development.

**San Luis Obispo County Flood Control and Water Conservation District, Paso Basin Supply Options Study, Project Engineer.** Identified potential supply options for the Paso Robles Groundwater Basin that could be delivered using existing State Water Project (SWP) infrastructure. Developed updated buy-in cost estimates for purchasing additional capacity within the Coastal Branch pipeline. Identified capacity limitations for each section of the Coastal Branch pipeline and quantified unutilized capacity, based on analysis of historical delivery data. Completed a fatal flaw analysis to identify SWP supply options for further evaluation (i.e. rough screening). Further developed the identified SWP supply options and compared them against potential recycled water and Nacimiento supply options to identify preferred supplemental water supply options for the Paso Basin.

**City of Pismo Beach, Central Coast Blue, Pismo Beach, CA. Program Manager.** Providing Program Management, Preliminary Design, Funding, and Environmental Document Support services for the Indirect Potable Reuse project that will recover secondary effluent from the City of Pismo Beach and the South San Luis Obispo County Sanitation District's wastewater treatment plants, a resource currently discharged to the Pacific Ocean. The advanced treatment facility will use microfiltration or ultrafiltration, reverse osmosis, and ultraviolet radiation and advanced oxidation process before being injected into the Santa Maria Groundwater Basin to supplement groundwater supplies and protect the basin from seawater intrusion. Construction is expected to begin in 2019.

**San Luis Basin Groundwater Sustainability Plan, County of San Luis Obispo. Task Lead.** Leading the development of the Projects and Management Actions chapter of the GSP and supporting other aspects of GSP development, including communications and outreach, and the Basin Setting chapter, which is being developed by Cleath-Harris Geologists.

**Northern Cities Management Area, Fiscal Year 2014-15 Water Supply, Production and Delivery Plan, Central Coast, CA. Project Manager.** Prepared a water supply, production and delivery plan for Northern Cities Management Area agencies, which is comprised of the City of Arroyo Grande, City of Grover Beach, City of Pismo Beach and Oceano Community Services District. Developed spreadsheet model to identify the most reliable scenario for potable water supply and delivery while considering implications of contractual surface water allocations and declining groundwater basin yields. Evaluated intertie pipeline capacity between two separate potable water distribution systems using a merged hydraulic model of the two systems. Developed shared cost structure for implementation, operation and maintenance of the intertie pipeline.

**Santa Barbara County Water Agency, Long Term Supplemental Water Supply Alternatives Report. Project Engineer.** Identified and evaluated potential supplemental surface water supply alternatives for the Santa Barbara County Water Agency (SBCWA). Analyzed historical State Water Project (SWP) deliveries through the Coastal Branch pipeline to identify estimates of available capacity and underutilized SWP supplies. Investigated potential opportunities to increase surface water storage through expansion of existing dams or construction of new reservoirs. Evaluated sediment removal alternatives for existing reservoirs to increase capacity and yield. Developed planning level cost estimates for proposed supplemental water supply alternatives. Participated in inter-regional, regional, and intra-regional stakeholder meetings to identify, discuss, review, and receive feedback on potential supplemental water supply alternatives.

**South San Luis Obispo County Sanitation District, Satellite Water Resource Recovery Facility & Groundwater Recharge Planning Study. Project Manager.** Will evaluate the development of a Satellite Wastewater Resource Recovery Facility to allow the District to recover this water resource and put it to beneficial use in a groundwater basin threatened by seawater intrusion. This study will provide recycled water to offset potable demands. It will also provide the District with new upstream treatment capacity and increased redundancy for its existing treatment plant. Prepare a grant application to the SWRCB to cover 50% of the cost of the study. This study will focus on economic feasibility of a SWRRF compared to other supplemental water supply alternatives and the evaluation of multiple recycled water alternatives including: 1) landscape irrigation; 2) agricultural irrigation; and/or 3) groundwater recharge through surface recharge and/or irrigation wells.

**Alameda County Water District, Groundwater Recharge Facilities Operations and Maintenance Management. Project Engineer.** Developed a recharge monitoring database to track all operations of the Alameda Creek diversion facilities and groundwater recharge ponds. Directed maintenance of meters and valves at the recharge facilities. Compiled data and created regulatory reports related to the groundwater recharge operations. Oversaw watershed water quality monitoring and used GIS to spatially analyze water quality data.

**County of San Luis Obispo, Coastal Branch Capacity Assessment. Project Engineer.** Performed a capacity analysis on the Coastal Branch pipeline to determine the potential for additional State Water Project deliveries to the Central Coast. Coordinated a Scenario Development Workshop for SWP contractors to determine the specific modeling scenarios to be used in the capacity assessment. Oversaw monthly progress report meetings with the County of San Luis Obispo and the Central Coast Water Authority. Analyzed numerous demand/deliver scenarios to determine the pipeline's maximum capacity.

## Joshua H. Reynolds, MS, PE

### Education

MS, Civil and Environmental  
Engineering, California  
Polytechnic University, San Luis  
Obispo, CA  
BS, Civil Engineering, California  
Polytechnic University, San Luis  
Obispo, CA

### Professional Registrations

Professional Engineer - Civil,  
California, No. C65400

### Professional Affiliations

American Society of Civil  
Engineers, Member

### Professional Experience

Mr. Reynolds has 18 years of experience leading water resources engineering projects on the Central Coast. His experience includes providing as-needed engineering and project management services for special districts, which includes organizing and leading meetings, and managing project implementation. He specializes in pipeline design, hydraulic analysis, pump station design and analysis, construction administration, city engineering, and water and sewer master planning. His experience allows him to identify and analyze initial project concepts, prepare construction documents, and monitor construction of the project through project completion.

### Representative Projects

**Central Coast Blue, City of Pismo Beach, Pismo Beach, CA. Technical Advisor.** Providing program management and design engineering services for the development of an Indirect Potable Reuse (IPR) project to recharge the Santa Maria Groundwater Basin. The project will provide advanced treatment, including micro/ultra-filtration, reverse osmosis and advanced oxidation, and injection of the advanced purified water into the groundwater basin to maintain groundwater levels and prevent seawater intrusion. The project is being funded by approximately \$30 million in regional, state, and federal funding initiatives.

**North Pleasant Valley Desalter Project, City of Camarillo, Camarillo, CA. Program Manager.** Providing Program Management services for a new Desalter Facility that will treat 4,500 AFY of brackish groundwater and yield up to 3,800 AFY of potable water using Reverse Osmosis technology. The project will allow the City to more than double its local water supply. Brine from the RO treatment will be disposed of through an existing brine pipeline and ocean outfall. Tasks include supporting property purchase, annexation, CEQA preparation, design coordination and review, grant application development and more. The facility is expected to be operational in Spring 2020.

**City of San Luis Obispo, Capacity and Connection Fee Study, San Luis Obispo, CA. Project Manager.** Performed a lift station life cycle energy cost and savings analysis to update their 2013 water and sewer impact fees development data. Evaluate the energy cost associated to the City lift stations and catchment cost savings from reduced sewer inflow and infiltration reduction. Developed unit hydrographs for 10 year 24-hour storm event to model program and infrastructure renewal strategy.

**Replenish Big Bear, Big Bear Area Regional Water Agency, Big Bear, CA. Technical Advisor.** Evaluated conceptual recycled water use alternatives to retain treated water and create a sustainable water resource to augment the potable water supply. Alternatives were analyzed based on treatment and regulatory requirements of use, water supply yield, social and environmental benefits, and life cycle cost. Project includes assisting in the procurement of state and federal funding to support the implementation of a cost-effective project.

**Heritage Ranch Community Services District, District Engineering Services, Paso Robles, CA. District Engineer.** Heritage Ranch Community Services District is responsible for providing domestic water and sewer service for the community of Heritage Ranch. Responsibilities as District Engineer include plan checking of improvement plans submitted by developers; consultation for operations and maintenance of water and sewer facilities; development of standard specifications and drawings; review of proposed ordinances; updating water and sewer connection fees; existing facility condition review; and the design and construction administration of a gallery well expansion.

**Cayucos Sanitary District, Cayucos Sustainable Water Project, Cayucos, CA. Project Engineer.** Provided Program Management services, which include: schedule management; stakeholder outreach coordination; meeting coordination and facilitation; action item/data request/project decision tracking; and sub consultant management, to assist the Cayucos Sanitary District (District) in evaluating and identifying alternatives for the development of a Water Resource Recovery Facility (WRRF) to treat sewage from its collection system and to provide a beneficial use for the treated wastewater. Additionally, completed the Phase 1 initial tasks for the Cayucos Sustainable Water Project. These initial tasks include: project chartering, beneficial use analysis, wastewater characterization, siting analysis, funding and financial strategy, and wastewater collection system evaluation.

**City of King City, City Engineering Services, King City, CA. City Engineer.** King City is a growing community of 14,000 people located in the Salinas Valley. Responsibilities as City Engineer include plan checking of improvement plans submitted by developers; plan checking subdivision maps; coordinating/enforcing conditions of approval for tentative tract maps and other proposed developments; consultation for operations and maintenance of sewer collection and treatment, storm drain, and street facilities; development of standard specifications and drawings; review of proposed ordinances; and existing facility condition review and capacity assessment.

**Nipomo Community Services District. Development Review, Nipomo, CA. Project Manager/ Project Engineer.** Performed plan reviews for proposed developments to ensure projects are conforming to District standards; updated District Standards and Specifications; designed Hetrick Avenue waterline upgrades for a 900 LF 12-inch PVC potable water line; assessed capacity of the Black Lake Water Booster Station and recommended improvements to remedy existing deficiencies.

**Nipomo Community Services District, Plan Check and Inspection, Nipomo, CA. Project Manager/ Project Engineer.** Responsible for reviewing development plans submitted to the District seeking permits to build public improvements for housing and commercial developments. Plans were reviewed for adherence to District Standards, comments letters are delivered and tracked. Also, inspected the actual improvements when installed and prepare inspection reports for the District.

**San Miguel Community Services District, District Engineering Services, San Miguel, CA. Project Engineer.** Assisted District Engineer by reviewing improvement plans submitted by developers, and evaluating water and sewer system capacity to serve proposed development prior to issuing will serve letters.

**Descanso Community Water District, 2011 Comprehensive Planning Study. Project Manager.** Performed a comprehensive analysis of the Descanso Community Water District's water system. Investigated and evaluated integrated treatment systems for the removal of iron, manganese and radon at the District's two production wells. Reviewed demand projections, supply availability, water quality data, and production records to develop a 20 year CIP plan for the District.

**On-Call Construction Management Services, City of Morro Bay, Morro Bay, CA. Resident Engineer.** Performed on-call construction management services for several of the City's water and wastewater infrastructure improvement projects including upgrades to two (2) of the City's sewer lift stations, installation of new forcemain, gravity sewer rehabilitation and new water distribution pipelines.

# Michael Cruikshank, PG, CHG, MS

## Education

MS, Civil and Environmental Engineering, California State University, Fullerton, CA

BS, Geology, California State University, Fullerton, CA

## Professional Registrations

Professional Geologist, California, No. 8854

Certified Hydrogeologist, No. 994

Engineer-in-Training No. 142007

## Professional Affiliations

National Groundwater Association, Member

Groundwater Resources Association of California, Southern California Branch Treasurer

WaterReuse, Member

## Professional Experience

Mr. Cruikshank is a certified hydrogeologist and engineer with more than 12 years of professional experience. He has technical expertise in hydrogeologic basin analysis, water resource planning, and evaluating water quality. Mr. Cruikshank has managed projects in large stakeholder environments and assisted in the development of groundwater and surface water models that are used to make important water resource management decisions. His technical experience includes hydrologic data analysis, piezometric data collection and interpretation, production and monitoring well installation, well design, aquifer testing and analysis, managing field data collection programs, geographical information systems (GIS) applications, data management, data visualizations, and report graphics.

## Representative Projects

**San Luis Obispo Valley Basin Groundwater Sustainability Plan, County of San Luis Obispo. Project Manager.** Managing the development of the San Luis Obispo Valley Basin Groundwater Sustainability Plan (GSP) for the County of San Luis Obispo. Responsible for project administration, the Projects and Management Actions chapter, implementation of the Communications and Engagement Plan, and is involved in developing the integrated groundwater-surface water model. He is scheduling, administering, and facilitating numerous public meetings and workshops. Tasks include developing staff reports, agendas, presentations, and outreach materials to a broad spectrum of public and private stakeholders.

**Central Coast Blue, Northern Cities Management Area Technical Group, Pismo Beach, CA. Senior Hydrogeologist.** Managed the development of a groundwater flow model focused in the Northern Cities Management Area (NCMA) of the Santa Maria Groundwater Basin (SMGB). SMGB is a coastal aquifer that has observed increased chloride concentrations in previous prolonged droughts and been drastically impacted by the current drought. The NCMA agencies significantly reduced their groundwater pumping to combat the threat of seawater intrusion, however, due to extended drought conditions coastal groundwater levels have continued to decline. As a result of decreased groundwater pumping, the NCMA agencies increased their reliance on local surface water reservoirs and imported supplies which are also sensitive to drought conditions, to meet the water demands of the NCMA. Central Coast Blue is a One Water regional recycled water project that will develop a sustainable water supply and protect the SMGB from seawater intrusion by creating a seawater barrier through a series of wells that will inject advanced treated recycled water that is currently treated and discharged to the ocean. The Phase 1B model will be used to quantify pre-and post-project sustainable groundwater yield estimates; quantify Division of Drinking Water (DDW) residence time analysis results, and update municipal groundwater pumping strategies to leverage Central Coast Blue implementation.

**Groundwater Sustainability Plan, Fox Canyon Groundwater Management Agency, Ventura County, CA. Senior Hydrogeologist.** Developed groundwater balances used in the Groundwater Sustainability Plans (GSP's) for the four groundwater basins within the Agency's jurisdiction: (1) Las Posas; (2) Arroyo Santa Rosa Valley; (3) Pleasant Valley; and (4) Oxnard. GSP regulations require that each Plan include a water budget for the basin. The budget accounts for and assesses the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current, and projected water budget conditions, and the change in the volume of water stored. DBS&A's Distributed Parameters Watershed Model (DPWM) is being applied to evaluate key groundwater balance components including groundwater recharge by deep percolation of precipitation and irrigation and mountain front recharge.

**PCE Plume Characterization, Proposition 1 Groundwater Grant Program, Round 2 Concept Proposal, City of San Luis Obispo, San Luis Obispo, CA. Senior Hydrogeologist.** Led the development of a Proposition 1 Groundwater Grant Program conceptual planning proposal to characterize the PCE plume impacting many of the City of San Luis Obispo's production wells. The scope of work will include the development of a calibrated fate and transport model to investigate and delineate the existing PCE plume in the Basin underlying the City. The model will be used to develop a greater understanding of the hydrogeologic characteristics of the Basin. The groundwater model will allow the City to use multiple water resources to meet water supply needs and continue to use groundwater to enhance the resiliency of the City's water supply portfolio.

**Six Basins State of the Basin Report, Six Basins Watermaster, Claremont, CA. Senior Hydrogeologist.** Constructed hydrogeologic cross sections, created several historic regional groundwater elevation contours maps, evaluated aquifer parameters, mapped the depth to bedrock, analyzed groundwater in storage and developed yield through GIS applications. Created the associated report graphics.

**Recharge Master Plan Update and Implementation, Chino Basin Watermaster, Chino Basin, CA. Staff Engineer.** The investigation determined the existing recharge capacity for imported and recycled waters and the future recharge capacity requirements. The report included conclusions and recommendations for future recharge projects and future supplemental water supply sources.

**San Juan Basin Groundwater Management Plan and Facilities Plan Update, San Juan Basin Authority, San Juan Capistrano, CA. Senior Hydrogeologist.** Completed a comprehensive hydrogeologic assessment of the groundwater basin that included recalculating the storage capacity of the groundwater basin in order to provide a clear understanding of the basins groundwater resources. The updated plan represents the most comprehensive "state of the basin" assessment ever done for the San Juan Basin.

**Groundwater Sustainability Plan, Arlington Basin, Western Municipal Water District, Riverside, Ca. Senior Hydrogeologist.** Mr. Cruikshank is the project manager for WSC as part of a two-firm team that was selected to develop the GSP for the Arlington Basin. Mr. Cruikshank is responsible for developing the sustainability criteria and implementation projects needed to achieve sustainability. This project is anticipated to begin in 2019.

**Ventura River Integrated Groundwater/Surface-water model, California State Water Resources Control Board, Ventura County, CA. Senior Hydrogeologist.** Provided hydrogeologic services for the development of an integrated groundwater/surface water model for the Ventura River watershed. He worked on the geologic analysis that will be used to assign three-dimensional model layer geometry, initial model hydraulic properties and the conceptual hydrogeologic models for the Upper Ventura, Lower Ventura, Ojai, and Upper Ojai groundwater basins. This work is ongoing and the study is anticipated to be completed by March 2020.

**2013 Chino Basin Groundwater Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement, Chino Basin Watermaster, Chino Basin, CA. Senior Hydrogeologist.** Assisted in the update and recalibration of the Chino Basin groundwater and surface water model. The basin geometry and layering was updated to take into account newly drilled wells. The surface water model was improved to account for improved resolution of land use data and refined historical/ planning estimates of the deep infiltration of precipitation and applied water. The model was used to determine the safe yield of the basin, the safe yield created by desalter wells and reoperation and the state of hydraulic control.

## Kendall Stahl, MS, EIT

### Education

MS, Civil and Environmental Engineering, University of Adelaide

BS, Environmental Engineering, California Polytechnic State University, San Luis Obispo

AA, Mathematics – Physics, Allan Hancock College

### Professional Registrations

Engineer in Training, No. 1560998

### Professional Experience

Ms. Stahl is an Engineer-in-Training with environmental engineering experience specializing in hydrology and hydraulics analysis and water resources planning. She has experience in water quality assessment and groundwater contamination analysis, designing water treatment systems, water resources engineering, and flood modeling. Her graduate studies focused on water security analysis, water demand management optimization, with an emphasis on characterizing the drivers of household water demand.

### Representative Projects

**Water Resources Consulting Services, Northern Cities Management Agency Technical Group (NCMA TG), Various Agencies, CA. Assistant Engineer.** Provided as-needed engineering services for the NCMA TG. Coordinated monthly meeting, interfaced with local and statewide regulatory agencies as an authorized agent of the NCMA TG. Tasks include preparing monthly agendas, updating the monthly groundwater production report and database, reviewing their Annual Report, developing a comparison summary of Annual Reports from the NCMA and NMMA, drafting a Case Management Conference Statement, preparing GIS exhibits and excel graphics for the NCMA Case Management Conference.

**GSA Formation, City of Arroyo Grande, Arroyo Grande, CA. Staff Engineer.** Support the City in preparing a Groundwater Sustainability Agency (GSA) formation notification for the California Department of Water Resources for the intent to undertake sustainable groundwater management in accordance with the Sustainable Groundwater Management Act. The GSA formation notification included the preparation of boundary maps, stakeholder lists, and support coordination with adjacent local agencies forming a GSA.

**Central Coast Blue, City of Pismo Beach, Pismo Beach, CA. Assistant Engineer.** Supporting WSC's program management team for an Indirect Potable Reuse project that will recover secondary effluent from the two wastewater treatment plants, a resource currently discharged to the ocean. The advanced treatment facility will use microfiltration or ultrafiltration, reverse osmosis, and ultraviolet radiation and advanced oxidation process before injecting the treated water into the Santa Maria Groundwater Basin to supplement groundwater supplies and protect against seawater intrusion.

**Water Resources Analysis Technical Memorandum, Avila Beach Community Services District, Avila Beach, CA. Staff Engineer.** Prepare draft technical memorandum for the Avila Beach Community Services District. Evaluation and assembly of water resource reliability data, supply and demand characterization, and conditional dry and average supply and demand comparison information.

**Drivers of Seasonal Water Use and Optimal Demand Management Strategies, Adelaide, South Australia. Master's Project.** Determined the drivers of seasonal household water use using high resolution monitoring data from metropolitan Adelaide. Performed an evaluation of household seasonal water need versus water use to optimize demand management opportunities with a multi-criteria analysis.

**Cayucos Sanitary District, Wastewater Resource Recovery Facility Design, CA. Staff Engineer.** Contributing to the design of the 1.2 MGD Water Resource Recovery Facility (WRRF) as part of the Cayucos Sustainable Water Project. Develop designs, prepare project mechanical plans sections, details, and specifications as lead process engineer for the WRRF closed-Vessel ultraviolet disinfection, effluent pump station and 8-inch force main, and 300,000 gallon recycled water tank and onsite recycled water booster station, and an 8-inch fire protection distribution system.