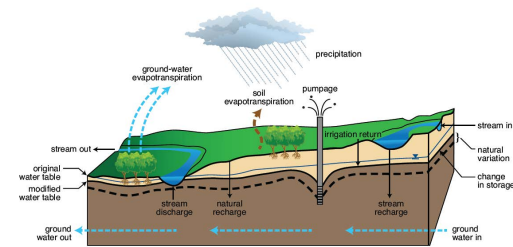
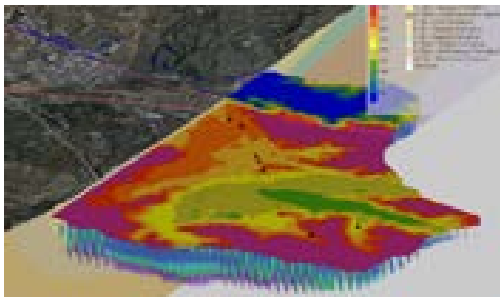


Statement of Qualifications to Participate in
Technical Advisory Group for

Implementation of the Napa Valley Subbasin Groundwater Sustainability Plan

April 1, 2022



Prepared by:



Prepared for:

NAPA COUNTY GROUNDWATER
SUSTAINABILITY AGENCY

Julie Chambon, Ph.D., P.E. (CA)

April 1, 2022

Jamison Crosby – Natural Resources Conservation Manager
Napa County Department of Planning, Building and Environmental Services
1195 Third Street - Second Floor
Napa, CA 94559

Re: Statement of Interest for Napa County Groundwater Sustainability Agency Technical Advisory Group

Dear Ms. Crosby:

I am pleased to provide my application for participation in the Napa County Groundwater Sustainability Agency (NCGSA) Technical Advisory Group (TAG) to support the NCGSA and implementation of the Napa Valley Subbasin Groundwater Sustainability Plan (GSP).

I am applying to the TAG based on my interest, expertise and experience in hydrogeology, including surface water and groundwater interaction and numerical flow models, and in engineering, including water management and supply projects. Since joining Geosyntec Consultants in 2012, I have worked on numerous hydrogeologic evaluations, including development of conceptual models, assessment of surface water/groundwater interactions, design and implementation of monitoring programs, and development and use of groundwater modeling tools to support quantitative hydrogeological analysis. I have also performed several engineering feasibility studies for groundwater extraction, enhanced groundwater recharge, and water treatment for the development of groundwater resources in throughout California.

I have abundant experience and expertise in the development, application, and review of groundwater models as tools for sustainable development of groundwater resources, engineering design of groundwater management projects, and evaluation of potential impacts. I am also very familiar with the California Sustainability Groundwater Management Act through technical support for development of Groundwater Sustainability Plans for the East Bay Subbasin and Santa Clara River Valley East Subbasin. I have worked for multiple public water agencies, including East Bay Municipal Utility District, Los Angeles Department of Water and Power, and Santa Clarita Valley Water Agency.

Recently I oversaw the development, calibration, and use of a groundwater flow model as part of the Groundwater Sustainability Plan East Bay Plain Subbasin. Because of the limited available data in the Subbasin, the model was the primary tool for development of sustainability management

criteria, and assessment of potential impacts of management projects on sustainability indicators, including seawater intrusion and depletion of interconnected surface waters.

While I am not an expert in ecohydrology, hydrology, or natural resources monitoring, I have participated in numerous discussions with other experts on those topics as part of development of GSPs. If selected, I would look forward to collaborating on those areas as part of a multi-disciplinary team of experts.

Finally, I am excited about the opportunity to work with the NCGSA to address important issues to sustainably manage groundwater, which is critical to the region's economy and welfare, protect groundwater dependent ecosystems and preserve the riparian ecosystem setting of the Napa River.

I appreciate the opportunity to provide NCGSA with this statement of qualifications for the TAG. Should you have any questions or would like further details, please do not hesitate to me at (510) 285-2657.

Sincerely,



Julie Chambon, Ph.D., P.E.(CA)

Senior Engineer

Direct: 510-285-2657

E-mail: jchambon@Geosyntec.com

Enclosures: Information, Curriculum Vitae, Michael C. Kavanaugh Letter of Recommendation,

A blue-tinted landscape photograph. In the foreground, there is a dense field of tall, thin reeds or grasses. The middle ground features a calm body of water, likely a lake, which reflects the sky and the mountains in the distance. The background consists of a range of dark, silhouetted mountains under a sky filled with soft, white clouds. The entire image has a monochromatic blue color scheme.

Information

Napa County Groundwater Sustainability Agency

Response to Request for Qualifications to Participate in Technical Advisory
Group to support Implementation of the Napa Valley Subbasin Groundwater
Sustainability Plan



Julie Chambon, Ph.D., P.E.(CA) Information

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A blue-tinted landscape photograph. In the foreground, there are tall, thin reeds or grasses. The middle ground shows a calm body of water reflecting the sky and the mountains in the distance. The background features a range of mountains under a sky with scattered white clouds. The text "Curriculum Vitae" is centered over the water.

Curriculum Vitae



JULIE CHAMBON, Ph.D., P.E.(CA), Geosyntec Consultants

Dr. Julie Chambon is a Senior Engineer with over nine years of consulting experience in hydrogeology, modeling, remediation, and strategic advisement with a wide variety and scale of sites. She is responsible for managing and supporting multiple projects that include water resources assessment, hydrogeological evaluation, groundwater flow and transport modeling, groundwater monitoring, remediation performance evaluation, and site investigation and characterization. Her experience includes regional and basin-wide hydrogeological characterization and groundwater model development for groundwater resources evaluations under the California Sustainability Management Act (SGMA).

EDUCATION

Ph.D., Environmental Engineering, Technical University of Denmark, Lyngby, Denmark, 2012

M.Sc., Environmental Engineering, Technical University of Denmark, Lyngby, Denmark, 2007

M.Sc., Engineering, Ecole Centrale de Lille, Lille, France, 2007

EMPLOYMENT HISTORY

Geosyntec Consultants, Oakland, California:

- 2012 – 2013: Senior Staff Engineer
- 2014 – 2015, Professional Engineer
- 2016 – 2017: Project Engineer
- 2018 – Present: Senior Engineer

Technical University of Denmark, Lyngby, Denmark:

- 2007 – 2008, 2010: Research Assistant

HONORS AND AWARDS

National Academy of Engineering's (NAE) 2015 US Frontiers of Engineering Symposium
Selected Participant

DTU's Young Researcher Award, Technical University of Denmark, 2012

ACADEMIC, PROFESSIONAL SOCIETY OR OTHER SERVICE

Reviewer for Water Resources Research, Journal of Contaminant Hydrology, Biodegradation, Applied Microbiology and Biotechnology

PEER-REVIEWED PUBLICATIONS

- Stewart, L.D., J.C. Chambon, M.A. Widdowson, and M.C. Kavanaugh, 2022. "Upscaled modeling of complex DNAPL dissolution", *Journal of Contaminant Hydrology*, 244.
- Baelum, J., C. Scheutz, J.C. Chambon, C.M. Jensen, R.P. Brochmann, P. Dennis, T. Laier, M.M. Broholm, P.L. Bjerg, P.J. Binning, and C.S. Jakobsen, 2014. "The impact of bioaugmentation on dechlorination kinetics and on microbial dechlorinating communities in subsurface clay till," *Environmental Pollution*, 186, pp. 149-157.
- Palau J., M. Marchesi, J.C. Chambon, R. Aravena, A. Canals, P.J. Binning, P.L. Bjerg, N. Otero, and A. Soler, 2014. "Multi-isotope (carbon and chlorine) analysis for fingerprinting and site characterization at a fractured bedrock aquifer contaminated by chlorinated ethenes", *Science of the Total Environment*, 475, pp. 61-70.
- Baelum J., Chambon, J.C., C. Scheutz, P.J. Binning, T. Laier, P.L. Bjerg, and C.S. Jakobsen, 2013. "A conceptual model linking functional gene expression and reductive dechlorination rates of chlorinated ethenes in clay rich groundwater sediment," *Water Research*, 47 (7), pp 2467-2478.
- Chambon, J.C., P.L. Bjerg, C. Scheutz, J. Baelum, R. Jakobsen and P.J. Binning, 2012. "Review of reactive kinetic models describing reductive dechlorination of chlorinated ethenes in soil and groundwater," *Biotechnology and Bioengineering*, 110 (1), pp 1-23.
- Lemming, G., J.C. Chambon, P.J. Binning and P.L. Bjerg, 2012. "Is there an environmental benefit from remediation of a contaminated site? Combined assessments of the risk reduction and life cycle impact of remediation," *Journal of Environmental Management*, 112, pp 392-403.
- Manoli, G., J.C. Chambon, P.L. Bjerg, C. Scheutz, P.J. Binning and M.M. Broholm, 2012. "A remediation performance model for enhanced metabolic reductive dechlorination of chloroethenes in fractured clay till," *Journal of Contaminant Hydrology*, 131 (1-4), pp 64-78.
- Chambon, J.C., J. Baelum, P.J. Binning, P.L. Bjerg, T. Laier, C. Scheutz and C.S. Jakobsen, 2012. "Use of messenger RNA to predict microbial degradation kinetics and development of a new conceptual model for vinyl chloride dechlorination by *Dehalococcoides*," *Computational Methods in Water Resources*, Urbana-Champaign, Illinois, USA, Oral Presentation, June.

- Malaguerra, F., J.C. Chambon, P.L. Bjerg, C. Scheutz and P.J. Binning, 2011. "Development and Sensitivity Analysis of a Fully Kinetic Model of Sequential Reductive Dechlorination in Groundwater," *Environmental Science and Technology*, 45 (19), pp 8395-8402.
- Chambon, J.C., P.J. Binning, P.R. Jørgensen and P.L. Bjerg, 2011. "A risk assessment tool for contaminated sites in low-permeability fractured media," *Journal of Contaminant Hydrology*, 124 (1-4), pp 82-98.
- Chambon, J.C., M.M. Broholm, P.J. Binning, and P.L. Bjerg, 2010. "Modeling multi-component transport and enhanced anaerobic dechlorination processes in a single fracture-clay matrix system," *Journal of Contaminant Hydrology*, 112 (1-4), pp 77-90.
- Scheutz, C., M.M. Broholm, N. Durant, E.B. Weeth, T. Jørgensen, P. Dennis, C. Jacobsen, E. Cox, J.C. Chambon and P.L. Bjerg, 2010. "Field Evaluation of Biological Enhanced Reductive Dechlorination of Chloroethenes in Clayey Till," *Environmental Science and Technology*, 44 (13), pp 5134-5141.
- Owsianiak, M., A. Dechesne, P.J. Binning, J.C. Chambon, S.R. Sørensen and B.F. Smeth, 2010. "Evaluation of Bioaugmentation with Entrapped Degrading Cells as a Soil Remediation Technology," *Environmental Science and Technology*, 44 (19), pp 7622-7627.
- Lemming, G., M.Z. Hauschild, J.C. Chambon, P.J. Binning, C. Bulle, M. Margni and P.L. Bjerg, 2010. "Environmental Impacts of Remediation of a Trichloroethene-Contaminated Site: Life Cycle Assessment of Remediation Alternatives," *Environmental Science and Technology*, 44 (23), pp 9163-9169.

RELEVANT EXPERIENCE

Hydrogeological and Modeling Support, Santa Clarita Valley Water Agency, Santa Clarita Valley, California. Dr. Chambon provided hydrogeological and modeling support for Santa Clarita Valley Water Agency (SCV Water) as part of the development of the Groundwater Sustainability Plan (GSP) for Santa Clara River Valley East Subbasin and the development of future planning scenarios for management of water resources. The work included support with water budget evaluations, assessment of surface water/groundwater interactions, development of sustainability management criteria, identification of monitoring network, and development of future operating plans for use of the groundwater resource, including assessment of enhanced aquifer recharge. The GSP was submitted to the Department of Water Resources (DWR) in January 2022.

Groundwater Development and Augmentation Plan, Los Angeles Department of Water and Power, Los Angeles, California. Dr. Chambon assisted with management and technical analysis on a team developing a groundwater development and augmentation plan to enhance groundwater resources within the Los Angeles Plain south of the Elysian Narrows, including the Central, West Coast, Santa Monica, and Hollywood Basins. The work included review and assessment of hydrogeological conditions, including groundwater flow modeling; hydraulic evaluation of the distribution system; assessment of water sources for augmentation and treatment requirements; and identification of project alternatives describing potential project configurations from source water through connection to the distribution system and community benefits. The work also included development and implementation of the stakeholders' engagement strategy. Los Angeles Department of Water and Power is using the Groundwater Development and Augmentation Plan as part of [Operation NEXT](#), its new water supply initiative that aims to improve the overall water supply resiliency and reliability for Los Angeles.

Development of Groundwater Sustainability Plan, East Bay Municipal Utility District, East Bay Plain, California. Dr. Chambon was the project manager and lead modeler for Geosyntec on the Luhdorff & Scalmanini, Consulting Engineers consulting team that is engaged by the East Bay Municipal Utility District and City of Hayward Groundwater Sustainability Agencies to prepare the GSP for the East Bay Plain Subbasin in compliance with California's Sustainable Groundwater Management Act. As part of this work, Dr. Chambon oversaw the development of an updated hydrogeological conceptual model based on compiled environmental data and previous modeling efforts, and development and calibration of an updated numerical groundwater flow model that was used to assess sustainability yield, develop sustainability management criteria, assess surface water connectivity, and identify monitoring network. The model was also used to assess potential management projects, including increased extraction and enhanced aquifer recharge, and quantify potential impacts on sustainability indicators including seawater intrusion and depletion of interconnected surface waters. Dr. Chambon attended technical advisory and stakeholder meetings for this project. The GSP was submitted to the Department of Water Resources (DWR) in January 2022.

Evaluation of Influence of Sea Level Rise on Groundwater Conditions, Margin of San Francisco Bay, Brisbane, California. Dr. Chambon oversaw the compilation of hydrogeologic conditions and development and application of a groundwater model to predict the influence of sea level rise on groundwater conditions along the San Francisco Bay Margin. The model was used to predict changes in groundwater levels that were utilized for designs of landfill closure and for design of drains to manage the shallow groundwater. The evaluation was documented in a report submitted to the San Francisco Bay Area Regional Water Quality Control Board.

Ocean Water Desalination Subsurface Intake Study, West Basin Municipal Water District, El Segundo, California. Dr. Chambon led the development of a guidance manual and tool for assessing feasibility of subsurface intakes for desalination facilities. Dr. Chambon compiled and evaluated geologic, hydrogeologic, geotechnical, and offshore geophysical data in the vicinity of the proposed desalination facility at El Segundo. The developed screening feasibility tool was applied to the El Segundo site to determine potentially feasible subsurface intakes and to design field investigations for additional characterization. The subsurface intake study was used to support the preparation of the Environmental Impact Report by West Basin Municipal Water District, in accordance with the California Ocean Plan.

PFAS Impacts to Municipal Drinking Water Supply, City of Issaquah, City of Issaquah, Washington. Geosyntec is conducting a multi-year, multi-task characterization of PFAS impacts to the groundwater drinking water supply for the City of Issaquah, following detection of PFAS compounds, including perfluorooctanesulfonic acid (PFOS) in drinking water supply wells in 2013. As part of this work, Dr. Chambon led the development and calibration a cross-section groundwater flow and PFAS fate and transport model to evaluate pumping strategies for the City, document contaminant migration and implications of source removal/interim actions for soil and groundwater, and required production rates for the City's water supply wells to maintain hydraulic containment (a pump and treat system) to control the PFAS plume.

Hydrogeologic Critical Aquifer Recharge Area (CARA) Delineation, City of Issaquah, City of Issaquah, Washington. Dr. Chambon led the development and use of a numerical groundwater flow model to support hydrogeologic delineation of the CARA for the City of Issaquah. The model was developed using MODFLOW, and backward and forward particle tracking using MODPATH was used to delineate 1, 5, and 10 year capture zones for the City water supply wells. The modeled capture zones were combined with an evaluation of recharge zones to develop CARA delineation.

Multiple Remedies including Groundwater Extraction and Treatment for Potable Use and Surface Water Discharge, Confidential Client, San Gabriel Basin, California. Dr. Chambon is the project manager for multiple remedies at San Gabriel Valley Superfund Site. The project includes development of a conceptual site model, groundwater flow model, designing and implementing a 1,500 gallon per minute (gpm) groundwater extraction and treatment system with treatment for potable use. Constituents to be treated include volatile organic compounds (VOCs), perchlorate, 1,4-dioxane, nitrate, metals, and total dissolved solids. The potable end use includes associated permitting with the California Division of Drinking Water (DDW) under 97-005 Process Memo. Dr. Chambon is also the lead modeler on this project. The FEFLOW model covered the entire San Gabriel Basin and consisted of 17 layers. Following model calibration, 30-year transient predictive simulations were performed to evaluate potential well field configurations

for two proposed groundwater extraction systems. The model was also used to evaluate potential re-injection design for the remedy. Dr. Chambon is also leading interactions with regulatory agencies, including USEPA and DDW, on model and remedy design review and approval.

Numerical Model Calibration for Assessment of Water Supply Impacts, Crystal Geysers, Cartago, California. Dr. Chambon reviewed and updated an existing groundwater flow model and performed steady-state calibration. The model was used to estimate the impacts of future pumping scenarios on groundwater level, spring flow, and other water supply wells in the area. The modeling results were included in the Groundwater Mitigation and Monitoring and Reporting Plan and contributed to the approval of the Crystal Geysers project.

Recharge Feasibility Study, Newhall County Water District, Castaic, California. Dr. Chambon led the feasibility evaluation of infiltration basins of recycled water and downgradient extraction for potable use. Dr. Chambon developed and calibrated the flow model and used it to assess multiple infiltration and extraction alternatives, including travel times to extraction wells and comparison with DDW regulations. The feasibility assessment was presented to the client and other stakeholders.

A blue-tinted landscape photograph. In the foreground, there are tall, thin reeds or grasses. The middle ground shows a calm body of water reflecting the sky and the mountains in the distance. The background features a range of mountains under a sky with scattered white clouds. The entire image has a monochromatic blue color scheme.

Letter of Recommendation

April 1, 2022

Ms. Jamison Crosby
Natural Resources Conservation Manager
Napa County Department of Planning, Building and Environmental Services
1195 Third Street
Napa, CA 94559
Jamison.crosby@countyofnapa.org

RE: Letter of Support for Dr. Julie Chambon to Serve as a participant on the Technical Advisory Group (TAG) for the Napa County Sustainability Agency (NCGSA)

Dear Jamison:

I am submitting this letter of support for the selection of my Geosyntec colleague, Dr. Julie Chambon to serve on the proposed TAG in support of the implementation of the Napa Valley Subbasin Groundwater Sustainability Plan (GSP). I have worked with Dr. Chambon for nearly ten years since she joined Geosyntec following completion of her PhD work at the Technical University of Denmark. As a senior member of the Geosyntec team, I rely on the expertise and energy of younger staff who, in most projects, carry the bulk of the hard work needed to bring any project to a successful conclusion. Success as a consultant is defined by exceeding the client's expectations in terms of the quality of the product, meeting all project schedule deadlines, completing the required scope of work under budget, and communicating the results to stakeholders, both verbally and orally in a concise, transparent and credible manner.

In all the seven projects where Dr. Chambon has assisted me involving groundwater contamination issues, she has excelled in each of the categories defining a successful consulting project. I also have over four decades of experience as a consulting engineer and have worked directly with several dozen exceptionally qualified consultants in many different disciplines, and Dr. Chambon ranks in the top five percent of this cohort. Even amongst such a group, her commitment to meeting schedules within budgets is extraordinary. Her reliability and dedication to the highest quality of the work product makes her a highly sought-after consultant, both within Geosyntec and external clients for any assignment in her areas of expertise.

Ms. Jamison Crosby
April 1, 2022
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Dr. Chambon's qualifications to serve on the TAG are also highly relevant to the areas of expertise desired, including applications of hydrogeological principles to groundwater water supply issues, and to assessment of engineered systems to meet the goals of the GSP. She is also thoroughly familiar with issues surrounding implementation of GSPs. She is particularly adept at the development, evaluation and critical assessment of hydrology or hydrogeology models, given her experience using such models to inform decisions on water supply development within the current California requirements, groundwater recharge, groundwater remediation, and groundwater quality protection.

I enthusiastically support her candidacy to serve on the TAG. As she has for me over the past decade, I am sure she will also exceed your expectations you may have for TAG members.

Sincerely yours,

A handwritten signature in blue ink that reads "Michael Kavanaugh". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Michael Kavanaugh, PhD, P.E., BCEE, NAE
Senior Consultant