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 17 San Joaquin County Flood Control and  
 18 Water Conservation District, and  
 19 Mokelumne River Water and Power Authority

20 [ADDITIONAL COUNSEL LISTED ON FOLLOWING PAGE]

21 **BEFORE THE**  
 22 **CALIFORNIA STATE WATER RESOURCES CONTROL BOARD**

23 HEARING IN THE MATTER OF 24 CALIFORNIA DEPARTMENT OF WATER 25 RESOURCES AND UNITED STATES 26 BUREAU OF RECLAMATION 27 REQUEST FOR A CHANGE IN POINT OF 28 DIVERSION FOR CALIFORNIA WATER FIX	<b>STATEMENT OF QUALIFICATIONS OF          JOHN LAMBIE</b>  <b>PART 2 CASE IN CHIEF</b>
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21  
22 Attorneys for Protestants  
23 Local Agencies of the North Delta  
24 Bogle Vineyards / Delta Watershed Landowner Coalition  
25 Diablo Vineyards and Brad Lange / Delta Watershed Landowner Coalition  
26 Stillwater Orchards / Delta Watershed Landowner Coalition  
27  
28

**JOHN LAMBIE****EDUCATION**

- MS Sediment Mechanics, 1984, Massachusetts Institute of Technology, Cambridge, Massachusetts
- BS Earth & Planetary Sciences, 1983, Massachusetts Institute of Technology, Cambridge, Massachusetts

**SPECIALIZED TRAINING**

- Groundwater Modeling, 1985, 1987, 1989, 2003, 2005, 2017
- U.S. EPA Risk Assessment- 1988
- Decision Benefit Analysis - 1998
- Data Statistics and Interpretation – 2006
- Geographic Information Systems – 2009

**REGISTRATIONS**

- |                                 |   |
|---------------------------------|---|
| Professional Civil Engineer     | CA No. C58059; OR No. 72442PE; WA No. 40125 |
| Certified Engineering Geologist | California -- No. EG 1662                   |
| Professional Geologist          | California -- No. 4607                      |
| Certified Water Rights Examiner | Oregon -- No. 72442WRE                      |

**PROFESSIONAL HISTORY**

- E-PUR, LLC**, Portland, OR  
Principal Groundwater Hydrologist, 2006-present
- S.S. Papadopoulos & Associates, Inc.**, Portland, OR  
Vice President and Principal Groundwater Hydrologist, 2002-2006
- SECOR International, Inc.**, San Francisco, CA  
Vice-President and Principal Hydrogeologist, 1991-2001
- Levine-Fricke**, Oakland, CA  
Project to Senior Associate Hydrogeologist, 1986-1991
- Environmental Research & Technology (ERT)**, Concord, Mass.  
Staff Hydrogeologist, 1984-1986

**SUMMARY OF QUALIFICATIONS**

- |   |   |
|---|---|
| • hydrogeologic conceptual models                   | • expert testimony and litigation/arbitration support     |
| • evaluation and modeling of water resources        | • water rights and water supply planning                  |
| • subsurface chemical fate & transport              | • managed aquifer recharge                                |
| • aquifer testing, and well and pump testing        | • engineering-evaluation and conceptual design            |
| • construction dewatering design and implementation | • engineering cost-benefit analysis and decision analysis |

Mr. Lambie has evaluated water availability and water use at the basin and sub-basin scale, as well as local site scale, for water resource projects using groundwater and conjunctive-use of surface and ground water. The projects have ranged from municipal and industrial water

1 pollution studies to groundwater and conjunctive use water-supply evaluations. He has  
 2 developed and enhanced techniques for hydrogeologic conceptual model development and  
 3 testing against data. Mr. Lambie has also worked on a large number of projects in which  
 4 groundwater quality impacts from man-made and naturally occurring chemicals was a key  
 5 consideration under state and federal regulations pertaining to water quality and water rights.  
 6 He has applied a variety of innovative approaches for advanced data collection, data  
 7 geospatial analysis, numerical modeling, and hydraulic testing. In addition, he has used  
 8 quantitative and structured decision analysis techniques to evaluate project cost.  
 9

### 10 **WATER RESOURCE STUDIES**

- 11 ■ ***Groundwater Modeling of Tulare Lake Subbasin, Kings County California*** —  
 12 Providing support to Amec Foster Wheeler in developing an SGMA-compliant groundwater  
 13 model of the Tulare Lake Subbasin on behalf of Kings County and its stakeholders.  
 14 Leading modeling team that is using C2VSIM to develop basin-wide land and water use  
 15 attributes for the modeling period (1996-2015). Leading discussions with DWR regarding  
 16 C2VSIM Versions and updates schedule, along with code attributes and updates for  
 17 IWFM. Work is on-going.
- 18 ■ ***Water Quantity and Quality Study for Groundwater in the Russian River Valley,  
 Healdsburg, California*** — Evaluated quantity of flow reaching Russian River from  
 19 percolation ponds made from sand and gravel aggregate mines in the river floodplain.  
 20 Changes in the groundwater and surface-water interaction were evaluated and placed into  
 21 a numerical model of the sub-portion of the basin. Evaluated water flowpaths using tracers  
 22 of fluoride and chloride, in surface water infiltrating to groundwater, and the increase in  
 23 discharge conditions to the Russian River for summer baseflow. Reviewed existing  
 24 groundwater models for the area and refined one in MODFLOW and then utilized MT3D  
 25 simulation code for chemical fate and transport to evaluate the migration and attenuation  
 26 of **nitrate** in groundwater from surface wastewater ponds. Research studies on zeroth  
 27 order decay of nitrate were used to develop nitrate degradation rates for the model, and  
 28 groundwater quality data were then used to calibrate the nitrate fate and transport model.
- ***Analysis of Water Accounting in the Draft Environmental Impact Report for  
 Groundwater Substitution Long-Term Transfers, Central and South Delta Water  
 Agencies, San Joaquin County, California*** — Ran DWR C2VSIM model to assess its  
 predictive characteristics for groundwater surface-water exchanges throughout the  
 Sacramento River Valley and the code capabilities of IWFM. Compared C2VSIM results to  
 the stated outcomes from the SacFEM Model from the Bureau of Reclamation and the  
 code capabilities of MicroFEM. Analyzed DWR CalSim II Decision Support System (DSS)  
 model and related submodels for their ability to accurately project quantity, quality, and  
 availability of surface water. Oversaw numerical modeling of groundwater extraction in the  
 USGS' STRMDEPL08 model code to evaluate whether water accounting methods and

1 DWR's conveyance loss were reasonably accurate.

- 2 ■ ***Evaluation of City Water Supply Well Field and Stormwater Program, Modesto, California*** — Modeled groundwater flow in the subbasin that surrounds and underlies  
3 Modesto, California to evaluate the regional and local flow patterns in response to  
4 extraction over the 20th century in Modesto. Localized enhanced recharge from the City's  
5 use of dry wells for storm-water runoff was evaluated for both the quantity of recharge  
6 made available and the risks to City water-supply wells from urban runoff. Numerical  
7 simulations were performed for both groundwater flow and contaminant transport using  
8 MODFLOW and MT3D to identify City wells at risk of impact from chemical release points  
9 such as the dry wells and sewer overflows, and industrial sources such as auto shops and  
10 dry cleaners. In addition, the effects of two rivers within the City were evaluated for the  
11 quantity of flow into or out of the river and the effect upon the river and groundwater  
12 quality. Project identified risks to city water-supply wells from storm-water control  
13 measures, potential sewer releases, and liberation of naturally occurring radioactive  
14 materials (NORM).
- 15 ■ ***Analysis of the Effects of Municipal and Agricultural Water Use on Groundwater, Merced, California*** — Developed and calibrated a 42-year transient groundwater model of  
16 the regional area encompassing the City of Merced, California and much of the Merced  
17 Irrigation District. Geologic information was derived from hundreds of groundwater supply  
18 well records and placed into a sedimentary texture model of a 256-square mile area using  
19 well vetted U.S. Geological Survey (USGS) binary textural analysis techniques developed  
20 for the USGS Central Valley Hydrologic Model (CVHM) and earlier studies. Generalized  
21 hydrogeologic layering from the USGS CVHM was localized to a 144-square mile area.  
22 The groundwater model then utilized the geologic textures to identify areas of projected  
23 higher and lower aquifer transmissivity for calibration. Detailed estimates of percolation  
24 recharge from agricultural canal works and impoundments aided a precise calibration  
25 using PEST of actual vs. projected groundwater elevations for a 7-year period from 1996  
26 to 2002. The calibrated model was then used to evaluate likely groundwater elevations and  
27 flow directions to hydraulic capture areas for drinking-water supply wells from 1961 to  
28 2002.
- ***Analysis of Central Valley Decision Support System Models for Water Quality, Quantity and Availability, Central and South Delta Water Agencies, San Joaquin County, California*** — Analyzed DWR CalSimII Decision Support System (DSS) model  
and related submodels for their ability to accurately project quantity, quality, and availability  
of surface water for meeting competing needs in the Sacramento River and San Joaquin  
River Delta.
- ***Hydrogeochemical Evaluation of Water Sources of Supply to Municipal Wells and Alluvial Aquifer Basin, Goleta Water District, City of Goleta, California*** —  
Groundwater chemistry for isotopes and mineral chemistry was used to evaluate the  
provenance of water from bedrock aquifers supplying the alluvial aquifer for the municipal  
water supply wellfield. Water samples from water supply wells, springs, and San Pedro  
Creek were collected and analyzed for stable isotopes of hydrogen (deuterium), oxygen,  
carbon, sulfur, and strontium and radioactive carbon14. The samples were also analyzed  
for mineral chemistry. These data were evaluated to identify the signature of bedrock  
sandstone and shale unit groundwater chemistry in the Santa Ynez Mountains above  
Santa Barbara and Goleta, as well as in on-land water-bearing faults and submarine  
groundwater seeps along faults. Multiple lines of evidence from isotopes and mineral

1 chemistry identified these groundwater signatures in the alluvial aquifer supplying the  
2 municipal wellfield.

- 3 ■ ***Managed Aquifer Recharge (MAR) Site Analysis, Stockton East Water District (SEWD), San Joaquin County, California*** — Developed local **three-dimensional geologic sediment-texture analysis** using geostatistical modeling for areas beneath and  
4 adjoining the SEWD Water Treatment Plant (WTP). The existing three-dimensional  
5 geologic textural analysis of the 170-square mile regional area was localized with existing  
6 groundwater supply well and exploratory borehole records. Additional soil borings were  
7 advanced on the adjoining 230-acre parcel for potential MAR. Reviewed detailed reporting  
8 and operational issues of Farmington Project prepared by the U.S. Army Corps of  
9 Engineers and its consultants. Evaluated 35-acre and 230-acre additions to SEWD WTP  
10 area for improved percolation of surface water for groundwater storage.
- 11 ■ ***Managed Aquifer Recharge from Stormwater Flows in Los Gatos Creek, Pleasant Valley Water District, City of Coalinga, Fresno County California*** — Prepared initial  
12 evaluations of quantity and frequency of return flows in ephemeral Los Gatos Creek to  
13 divert to adjoining gravel pits in the lower watershed. Preliminary conceptual designs to  
14 use slope profile to divert high flows (>300 cfs) safely to gravel pits with 1,000+ acre-foot  
15 capacity.
- 16 ■ ***Exploration Drilling and Testing for Potable Water Supply Well Design at Crows Landing Industrial Business Park, Stanislaus County Public Works, Newman, CA*** —  
17 Prepared background hydrogeologic and hydrogeochemical report on quantity and quality  
18 of groundwater prior to field exploration. Drilled two exploratory boreholes to 600 and 700  
19 feet with subsequent installation of 3-level test well clusters at the two locations. Performed  
20 and analyzed aquifer tests on the six aquifer zones, collected sediment samples for grain-  
21 size analysis to well-screen and filter pack design, and collected water quality samples to  
22 assess suitability of groundwater for potable supplies. Characteristics of flow for  
23 stormwater recharge via Little Salado Creek and flooding aspects are a key project  
24 component to be evaluated for non-potable and now potable groundwater supplies.
- 25 ■ ***Water Supply Development for Capra Company Vineyards, Newberg and Salem, Oregon***— Developed water rights filings for vineyard to obtain water via Temporary  
26 Transfer of existing water rights in the same watershed. Hydrogeologic analysis was  
27 performed of the similarity of impact to surface water flows from a groundwater diversion  
28 as compared to the surface water diversion subject to the Temporary Transfer. Aquifer  
testing was done to develop estimates of aquifer characteristics for water transmission;  
those parameters were used to model the streamflow depletion resulting from groundwater  
diversion both as to timing and magnitude. Two additional water supply wells were  
installed in the confined aquifer within the marine siltstones and sandstones beneath the  
vineyard with estimates of 50% of the groundwater capture resulting from streamflow  
depletion within a short period per Oregon Water Resources Department (OWRD)  
requirements for hydraulic equivalency of the points of water appropriation via groundwater  
wells (POAs) as compared to the point of diversion (POD).
- ***Water Rights Compliance Support, City of Gearhart, Gearhart, Oregon*** — Reviewed  
water rights permit conditions for City water right with Oregon Water Resources  
Department (OWRD). Utilized secure web-enabled groundwater database using Project  
Portal™ site for client and project team access. Supervised uploading and review of data  
with QA protocols. Met with client and OWRD staff to review data and methodologies for



1 establishing permit benchmark conditions.

- 2 ■ ***Evaluation of Water-Supply Well Hydraulic Efficiency and Well Pump Replacement***  
3 ***Design for Whitman College, Walla Walla, Washington*** — Evaluated step-drawdown  
4 test data from existing pump to determine non-linear head losses. Designed pump intake  
5 depth within existing well to provide sufficient depth to intake to enable the 900 gpm flow  
6 rate being sought by the college for peak demand periods. Sized the pump and motor and  
7 provided specifications for vendor solicitation. Oversaw pump break-in period to ensure  
8 power curve was matching the pump-curve.
- 9 ■ ***Evaluation of Groundwater and Surface Water Exchange along the Willamette River***  
10 ***Greenway, Eugene, Oregon*** — Analyzed the movement of surface water to groundwater  
11 via hyporheic exchange of water across the boundaries of the Willamette River and  
12 adjoining sloughs and flood channels near Goodpasture Island. The hydraulic grade or  
13 slope of both surface water and groundwater exchanges were evaluated and quantified for  
14 hearings regarding encroachment and filling of the Goodpasture Island Channel by a  
15 private developer based upon a building permit issued by the City of Eugene.
- 16 ■ ***Water Supply Master Plan for the Town of Windsor, California*** — In partnership with  
17 RMC Water and Environment developed a staged approach to supplemental groundwater  
18 supply wells for Town of Windsor's Water Master Plan. The hydrogeology of the area  
19 surrounding the town was evaluated along with the engineering analysis of locations of  
20 greatest need in the water distribution system to develop recommended locations for well  
21 siting and an approach to staged evaluation of aquifer storage & recovery (ASR) of water.
- 22 ■ ***Design of Drinking Water Wells, Town of Windsor, California*** —Designed two drinking  
23 water supply production wells within the existing water-supply system. Well designs,  
24 specifications, and bid documents were each developed. Assisted in selection of  
25 installation contractor. Construction oversight was performed on the two (2) production  
26 wells installed to depths of 750 feet with 10-inch-diameter casing and soft steel to stainless  
27 steel screens.
- 28 ■ ***Sustainable Groundwater Supply Analyses, Mojave Desert, California*** —Performed  
multi-modal data analysis to establish the reliable groundwater supply available in a sub-  
basin of the Antelope Valley Adjudication Area. Existing groundwater production wells  
were instrumented with electronic pressure transducers and flow meters. The data were  
telemetered to remote offices in Oregon and Minnesota during long term groundwater  
extraction and utilization. Seasonal variability was recorded along with climatic signals of  
weather and plant evapotranspiration to enable firm quantification of water resource  
quantity, quality and sustainability. Testified at the water rights adjudication as to the  
quantity of water in the sub-basin and its connection to the broader area of adjudication.
- ***Managed Aquifer Recharge (MAR) Site Analysis, Eastside Water District, Stanislaus***  
***County, California*** — Evaluated recharge site selection for storm water flow to best  
available MAR site locations. Developed local geostatistical model of sediment-textures  
from area beneath the Eastside Water District and regional data from a 900+ square mile  
area. The analysis utilized USDA soil data, USGS data and studies to estimate hydraulic  
conductivity across the region. Optimal locations for percolation of surface water to  
groundwater were then developed with the other project team members using stormwater  
drainage patterns, geologic structure maps, hydraulic conductivity maps, and canal  
conveyance proximity as selection criteria. Peak flow in design was 60 cubic feet per  
second.

- 1    ■    ***Analysis of Orange County Water District (OCWD) Managed Aquifer Recharge (MAR), Orange County, California*** — Analyzed infiltration data from percolation ponds  
2    and weired segments of the Santa Ana River utilized by OCWD for managed aquifer  
3    recharge. Data analysis included stable isotope studies, conservative tracer studies  
4    (Xenon gas) and other means used to evaluate time of travel and fate of recharged  
5    groundwater. Empirical data analytics were used utilizing non-linear drift kriging for  
6    geospatial analysis of aquifer response to percolation areas and water-supply production  
7    pumping. Developed methods for data correlation on water level response changes using  
8    a variety of statistical techniques, results were incorporate to groundwater elevation  
9    mapping for flow directions over a 6-year period.
- 10   ■   ***Water Supply Study, USF&W Lower Klamath National Wildlife Refuge, Klamath  
11    Basin of Oregon and California*** — developed an overall water budget for the Tule Lake  
12    sub-basin of the Upper Klamath Basin on behalf of the U.S. Fish & Wildlife Service  
13    (USF&W) in light of the Klamath Basin adjudication. Built and calibrated a 3,600-square  
14    mile steady-state groundwater model of the surface and groundwater system of the entire  
15    Tule Lake sub-basin. Evaluated the feasibility of long-term groundwater supply to augment  
16    seasonal wetlands in the USF&W Refuges. Gathered data from U.S. Geological Survey  
17    and water resource agencies from Oregon and California on water demands in the area,  
18    irrigated acreage, hydrogeology, and groundwater elevations. Developed novel method for  
19    calculating net recharge from rainfall in a closed basin using published watershed  
20    techniques. Water rights adjudication is pending, along with further analysis of alternate  
21    supply option(s).
- 22   ■   ***Evaluation of Background Arsenic Concentrations in Groundwater and Threat to  
23    Groundwater Supply Wells, Snohomish, Washington*** — Analyzed background arsenic  
24    concentrations in groundwater aquifer (Vashon Outwash) and then analyzed the complex  
25    groundwater flow system in area of Cross Valley Water District with water supply wells  
26    operating and not operating. Developed Washington State Model Toxics Control Act  
27    (MTCA) evaluation of arsenic bearing soils at former industrial property to assess potential  
28    for past and future leaching of arsenic. Complex evaluation of arsenic speciation and  
29    chemistry for client was developed for approval by the Dept. of Ecology.
- 30   ■   ***Evaluation Well Hydraulic Efficiency for Groundwater Injection and Production  
31    wells, Gila County, Arizona*** — A recharge system was established to provide water for  
32    the Arizona Department of Transportation (ADOT) SR 260 construction activities between  
33    Payson and Heber, Arizona. Work conducted included evaluation of annual maintenance  
34    of wells and the hydraulic efficiency of the wells, along with quantities of water produced  
35    and injected. Conformance with the water rights permit conditions were assessed and  
36    reported.
- 37   ■   ***High-Volume Water Supply Availability Analyses in Faribault, Northfield, and  
38    Janesville, Minnesota*** — In partnership with Summit Envirosolutions evaluated large  
39    long-term aquifer tests to support water rights applications to Minnesota Dept. of Natural  
40    Resources for industrial uses. Tests involved monitoring of numerous nearby domestic and  
41    municipal water supply wells using real-time processing of groundwater elevation data  
42    from pressure transducers in the operating wellfields to evaluate local and background  
43    water level influences. Extraction rates ranged from 1,000 to 2,000 gpm over periods of 2  
44    weeks or more. Hydraulic parameters for the bedrock aquifers were estimated along with  
45    estimates of projected drawdown and capture area for planned long term operation.



**DECISION ANALYSIS SUPPORT**

Mr. Lambie has worked on cost allocation among responsible parties for large contamination projects in a variety of states using economic cost theory and pollution legal liability bases.

- ***Puente Valley Superfund Site, California*** — Evaluated impacts of chlorinated solvent releases on groundwater. Assisted in numerical model analysis using MODFLOW and MT3D of potential impacts to water supply wells. The basin-wide model included evaluation of some 50 separate source sites using inverse source-fitting solutions. Alternative remediation approaches were evaluated, and recommendations regarding compliance and cost-allocation were provided to the client and legal counsel.
- ***Merced, California*** — Provided litigation support to group of dry cleaners sued by the City of Merced, California for potential impacts to water supply wells. Evaluated groundwater impacts and modeled potential outcomes technically and financially.
- ***Acme Solvent Superfund Site, Rockford, Illinois*** — Performed detailed groundwater fate and transport modeling for a wide range of chemicals at this waste disposal site in support of a human health risk assessment (nearby resident water supplies were affected and the decision to replace currently unaffected supply wells was pressing). Completed the Conceptual Site Model for exposure pathways supported by numerical modeling. Used detailed numerical forecasting and probabilistic techniques to estimate likelihood of impact to other residential
- ***Phone Manufacturing Facility, Shreveport, Louisiana*** — Developed decision-tree structure to evaluate pilot testing of competing technologies for remediating a chlorinated solvents plume. Potential cost outcomes for overall remediation were evaluated using @RISK™ to identify the most promising technologies for long-term cost reduction. A staged approach for testing of technologies was used to prioritize the lowest expected cost outcomes from the decision analysis framework.
- ***Napa River Flood Control Improvement Project, Napa, California*** — Using RemedyDefender™, modeled the costs for a large-scale excavation and treatment of oil-contaminated soil. Cost increases for scope enlargement were correlated with lower unit cost of performance to demonstrate that project had reasonable cost stability enabling the client to move forward.
- ***Natural-Gas-Processing Sites, Central United States*** — Evaluated remedial costs for purchaser of 18 large natural-gas processing plants from Texas through Wyoming and Utah. PortfolioDefender™ was used to model the cost growth expected with scope uncertainties, the probable timing of facility closure, and required conformance to environmental standards. Project was successful in controlling risk using remediation cost-cap insurance on this \$1.4 billion acquisition.

**GROUNDWATER, SEDIMENT AND SOIL CONTAMINATION PROJECTS**

- ***Analysis of Shallow Aquifer and Principal Aquifer Hydrogeology in Orange County Water District's (OCWD) Forebay Region for Managed Aquifer Recharge, Orange County, California*** — Evaluated potential for chlorinated solvents, nitrate, perchlorate, and 1,4-dioxane to migrate from the Shallow Aquifer into the drinking water supply aquifer. Utilized a very large database of groundwater elevation and concentration data to evaluate groundwater flow paths and spatial changes in chemical concentration to determine chemical degradation and natural attenuation rates in the field. Data modeling was used to validate findings from empirical data.

- 1   ▪ ***Hillview-Porter Site Soil and Groundwater Remediation, Palo Alto, California*** —  
2   Evaluated two of nine sites involved in this large regional groundwater contamination  
3   investigation that involved RI/FS reports and a Remedial Action Plan. Each site was  
4   characterized using innovative techniques such as the BAT discrete-sampling technique  
5   and installation of multi-port monitoring wells. Developed a complex series of groundwater  
6   and surface-water flow numerical models to evaluate sustainable flows and complex  
7   discharge patterns to surface water induced by structural deformation of the subsurface.  
8   Developed a site-specific groundwater remediation plan for each of the two sites based  
9   primarily on the numerical modeling evaluations in MODFLOW and PATH3D.
- 10   ▪ ***Teledyne/Spectra-Physics Superfund Site, Mountain View, California*** — Managed and  
11   oversaw performance of all aspects of the CERCLA compliance program for Spectra-  
12   Physics. Conducted extensive investigations of soil and groundwater affected by  
13   chlorinated solvents. Fate and transport analysis of chlorinated solvents and their  
14   degradation products revealed a variety of sources in the area including sewer lines.  
15   Applied groundwater numerical and soil chemical transport models to establish  
16   remediation alternatives for on-site and off-site areas.
- 17   ▪ ***Klamath River Dam Removal Evaluations, Siskiyou County, California*** —  
18   Reviewed state and federal sediment testing for the estimated 20 million cubic yards of  
19   sediment in the reservoir impoundments behind the four lower dams currently scheduled  
20   for removal. Sediment transport issues post removal, as well as sediment quality data and  
21   data collection programs, have been reviewed. Sediment testing for heavy metals, dioxins,  
22   wood treating chemicals, and other semi-volatile and volatile organic chemicals are being  
23   done under the Sediment Evaluation Framework (SEF) for the Pacific Northwest derived  
24   from the Puget Sound Dredged Disposal Analysis (PSDDA) and other federal sources  
25   such as the U.S. Army Corps of Engineers Dredged Materials Management Plan.

## 16   PROFESSIONAL SOCIETIES

17   Association of Groundwater Scientists and Engineers (AGWSE in NGWA)  
18   American Water Works Association (AWWA)  
19   Groundwater Resources Association of California (GRAC)  
20   American Council of Engineering Companies (ACEC)

## 21   PUBLICATIONS AND PRESENTATIONS

- 22   **Tonkin, M., J. Lambie, 2017, The Multiple Roles of Environmental Data in the SGMA,**  
23   Presented orally by **J. Lambie** at the Groundwater Resources Association of California  
24   SGMA Conference on Tools for Developing a Groundwater Sustainability Plan,  
25   Modesto, California, May 3-4, 2017.
- 26   **Lambie, J., M. Tonkin, S. Overton, 2016, Hydrogeologic Conceptual Models-Developing,**  
27   **Testing, and Communicating,** Presented orally at the Groundwater Resources  
28   Association of California Groundwater Sustainability Plan Development Symposium,  
29   Sacramento, California June 9 and 10, 2016
- 30   Tonkin, M.J. , J. Kennel, W.A. Huber, and **J. Lambie**, 2015. Multi-Event Universal Kriging  
31   (MEUK), *Advances in Water Resources* v. 87, pp. 92-105.

- 1 **Lambie, J., D. Dahl, M. Tonkin, M. Karanovic, 2013. Automated Quasi-Real-Time**  
2 **Assessment of Water Movement from Managed Aquifer Recharge (MAR)**  
3 **Facilities, (Poster) Groundwater Resources Association, Managed Aquifer Recharge in**  
4 **the Urban Environment Symposium, May 22-23, 2013, Burlingame, California.**
- 5 Moore, G., **J. Lambie, K. Kauffman, 2012. Sedimentary Texture Analysis for Optimal Siting**  
6 **of Managed Aquifer Recharge Basins, Northern and Eastern San Joaquin County,**  
7 **California, Abstract Published for Presentation at 2012 Groundwater Symposium for**  
8 **the International Association for Hydro-Environment Engineering and Research (IAHR),**  
9 **hosted by the Kuwait Institute for Scientific Research, November 19-21, 2012 Safat,**  
10 **Kuwait.**
- 11 **Lambie, J. and J. Dustman, 2009. Numerical Analysis of Ground Water and Surface Water**  
12 **Using Real Time Data, National Groundwater Association Annual Symposium, April**  
13 **20-22, 2009, Tucson, Arizona.**
- 14 **Lambie, J., 2009, Application of Real-Time Imaging of Groundwater Data from Sensors**  
15 **to Improve Water-Resource Utilization of Groundwater Aquifers, January 26, 2009,**  
16 **American Water Works Water Resources Symposium, Portland, Oregon.**
- 17 **Lambie, J. and M. Harrington, 2007. A Re-examination of Groundwater Flow in Stratified**  
18 **Aquifers Induced by Vertical Recirculation Wells (Abstract and Presentation).**  
19 **Washington Hydrogeology Symposium, May 1-3, 2007, Tacoma, Washington.**
- 20 Agostinho, A. M, Sturman, P.; **Lambie, J.;** Camper, A.; Pulcini, E.; James, G., 2007, **Removal**  
21 **and control of biofilms in dental unit waterlines using electrolyzed water, (Poster)**  
22 **American Society on Microbiology (ASM), Biofilms 2007 Conference March 25-29,**  
23 **Quebec City, Quebec, Canada, Poster A289, Topic: Prevention and Treatment of**  
24 **Biofilms.**
- 25 **Lambie, J., J. Orolin, T. Buschek, R. Benkosky, and R. Cochran, 2001. Remediation of**  
26 **MTBE and Petroleum Hydrocarbons in Groundwater at a Fuel Storage Terminal.**  
27 ***Contaminated Soil Sediment and Water*, December 2001, pp. 6-10.**
- 28 **Lambie, J., J. Orolin, T. Buschek, R. Benkosky, and R. Cochran, 2001, Remediation of**  
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