



STEPHANIE HUGHES, ChE P.E.  
Consulting Engineer / University Lecturer

Accomplished engineer, project manager and stakeholder facilitator, with broad experience in water quality, source characterization and control, chemical fate and transport, and regulatory compliance.

## RECENT PROJECTS

- For the Bay Area Clean Water Agencies (BACWA), developed a **quantitative approach** to determine regional performance relative to **dental mercury metrics** in the regional NPDES mercury watershed permit.
- Providing technical support for **Salinity Reduction Program** of the Palo Alto's Regional Water Quality Control Plant (RWQCP), identifying major salinity sources in the collection system and evaluating potential recycled water irrigation impacts to salinity-sensitive plant species.
- For RWQCP, quantifying **energy** and **greenhouse gas emission** impacts of influent variables, such as inflow and infiltration, water conservation, and use of household food waste disposers.
- Conduct mass balance analyses of individual **metals** species throughout the RWQCP collection system.
- Support BACWA and Bay Area Pollution Prevention Group (BAPPG) with **source control education**, with the goal of reducing heavy metal discharges (e.g. dental mercury, copper pipe corrosion, and pharmaceutical disposal). Prepare outreach materials and speak at community colleges, unions, and professional associations.
- Supporting San Francisco Public Utilities Commission (SFPUC) with NPDES **permit compliance**.

## WATER QUALITY AND REGULATORY COMPLIANCE CAREER HIGHLIGHTS

- Developed multifaceted approach to reduce mercury discharges to Palo Alto's RWQCP, including a multi-year, staged program to reduce dental mercury discharges as well as a consumer product take-back program that resulted in the collection of more than 100 pounds of mercury in 5 years.
- Provided technical and negotiation support for SFPUC's NPDES permit renewals for Southeast and Oceanside.
- Managed development of a pollutant prioritization strategy for SFPUC's wastewater pretreatment program.
- As Palo Alto RWQCP's Source Control Manager, initiated a series of pollution prevention measures, which included targeted outreach materials and stakeholder facilitation to reduce discharges of priority pollutants to stormwater and wastewater collection systems.
- As project manager and technical lead for brine management feasibility analysis, developed a set of recommendations and presented to local stakeholders for proposed inland groundwater desalination program.
- As Chair of Santa Clara Basin's Endocrine Disruptor Workgroup, facilitated stakeholder analysis of endocrine disruptors in reclaimed water and implications for water reuse.
- Based on teacher-identified need, created "*Sewer Science*," a hands-on high school lab modeling wastewater treatment. Collaborated with San Jose State and Water Environment Foundation to expand program throughout Bay Area, Los Angeles, New Orleans, Washington DC and Chicago.

## EDUCATION

<b>Master of Science</b> , Environmental Engineering, Stanford University	<b>1990</b>
<b>Master of Science</b> , Chemical Engineering, Stanford University	<b>1988</b>
<b>Bachelor of Science with High Distinction</b> , Chemical Engineering, University of Minnesota	<b>1987</b>

## PROFESSIONAL REGISTRATION

**Registered Chemical Engineer**, No. 6123, California



## PROFESSIONAL EXPERIENCE

**Environmental Consultant**, *self-employed, San Jose, CA* **2008 to present**

Providing NPDES, source control, and pretreatment technical support to wastewater treatment agencies and recycled water providers. Client list: BACWA, BAPPG, City of Hayward, City of San Mateo, Palo Alto Regional Water Quality Control Plant, RMC Water and Environment, Russian River Watershed Association, SFPUC, and South Bayside System Authority.

**Lecturer**, *San Jose State University and Santa Clara University* **2004 to present**

Part-time lecturer in Environmental Studies, Engineering and Chemistry. Courses have included Western Water Policy, Water Resources Management, Environmental Technology, Introduction to Environmental Engineering, Energy & the Environment, Solar Revolution, Joy of Garbage, and Hazardous Materials Management.

**Project Manager / Senior Project Manager**, *RMC Water & Environment* **2005 to 2008**

Managed water resources planning and design projects for California municipalities and special districts. Projects included recycled water infrastructure, ocean and inland desalination, NPDES permitting compliance, Sanitary Sewer Management Plans, and Integrated Regional Water Management Plans. Clients included Los Altos, Marina Coast Water District, Monterey Regional Water Pollution Control Agency, Palo Alto, Russian River Watershed Association, San Benito County Water District, San Francisco PUC, Santa Clara Valley Water District, West Basin Municipal Water District, and Windsor.

**Source Control Manager**, *City of Palo Alto Regional Water Quality Control Plant* **1999 to 2005**

Managed team of staff and contractors to identify water pollutant sources; craft cost-effective, innovative pollution prevention or pretreatment solutions; seek collaborative partners; and convey results to regulatory agencies, stakeholders, and the public. Pollutants of concern included mercury, copper, zinc, pesticides, dioxins, and emerging contaminants. Chaired Bay Area Pollution Prevention Group and Santa Clara Basin's Endocrine Disruptor Workgroup.

**Environmental Consultant**, *self-employed, San Jose, CA* **1996 to 1999**

Prepared/evaluated SB 14 Hazardous Waste Source Reduction reports and Toxic Release Inventories. Developed community and school outreach programs for wastewater agencies. Clients included Department of Toxic Substances Control, City of Palo Alto, South Bayside System Authority, and Central Contra Costa Sanitary District.

**Executive Director**, *Peninsula Conservation Center (now Acterra), Palo Alto, CA* **1994 to 1996**

Developed community and industry-oriented environmental education programs, collaborating with businesses, regulators, activists, and ethnic groups. Responsible for all aspects of nonprofit administration.

**Project Manager and Engineer**, *Acurex / Geraghty & Miller, Mountain View, CA* **1990 to 1994**

Quantified hazardous air emissions and evaluated air pollution control and prevention options for wide variety of industrial operations. Prepared BACT evaluation of air pollution control options for a wood products manufacturing facility to respond to public complaints regarding odorous emissions. Evaluated dioxin and furan emissions from a secondary smelting operation and proposed operational improvements to reduce emissions.

## HONORS AND AWARDS

**Public Education award** for *Sewer Science*, Water Environment Federation (WEF) **2002**

**Public Education award** for *Sewer Science*, National Association of Clean Water Agencies (NACWA) **2002**

**Pollution Prevention Champion**, Western Regional Pollution Prevention Network **2001**

## MEMBERSHIPS

- California Water Environment Association
- Water Environment Federation
- California Science Teacher Association





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## SELECTED PRESENTATIONS, PUBLICATIONS, AND REPORTS

*Proper Copper Pipe Installation*, primary author of this tri-fold educational brochure, for BAPPG/BACWA, 2012.

*Tracking Recycled Water Salinity*, CWEA presentation, 2010.

*Dental Offices and Water Pollution Control*, co-author of this 4-page training document for dental staff, for BAPPG/BACWA, August 2009.

*Ensuring Compliance with Dental P2 in the SF Bay Mercury Watershed Permit*, presentation for California Water Environment Association (CWEA) P3S Conference, March 2009.

*Environmentally Responsible Dentistry*, presentation to Foothill College Dental Hygiene and Dental Assistants Program, presented annually, 2003 through 2009. Now presenting annually at a dozen community colleges throughout the Bay Area for BAPPG and BACWA.

*Copper Corrosion Control*, presentation co-authored with Thomas Barron, P.E., and presented to plumbing unions and engineering associations, 2003. Now presenting updated version on behalf of BAPPG and BACWA, 2008 to present.

*Lessons in Recycled Water Program Management*, presentation to WEFTEC, October 2007 and California WaterReuse Association, Newport Beach, March 2008.

*Approach and Key Steps for Initiating a Dental Mercury Program*, presentation at the BAPPG/CWEA workshop, "Creating a Dental Amalgam Program," December 2006.

*Environmental Emergence of Triclosan*, presentation at CWEA annual conference, Spring 2006.

*Emerging Contaminants and the Challenges Ahead*, presentation to the Central Valley Clean Water Agencies (CVCWA), February 2006.

*Environmental Emergence of Triclosan*, co-author of this White Paper as member of the Emerging Contaminant Workgroup, Santa Clara Basin Watershed Management Initiative, January 2006.

*Discussion Paper on Pharmaceutical Disposal to Sewer Systems*, co-author as member of the Emerging Contaminant Workgroup, Santa Clara Basin Watershed Management Initiative, February 2005.

*Dental Amalgam Recovery Program*, CWEA P3S Conference, Spring 2005.

Panel member of *Emerging Contaminants: A Bitter Pill to Swallow?* at California Water Policy 13, 2003.

*Endocrine Disruptors and Regional Water Reuse Options*, WaterReuse Association meeting, San Francisco, 2003.

*Capitalizing on SB 633 for Mercury Source Control*, presentation to Bay Area Pollution Prevention Group, and other interested groups, 2002.

*Mercury in Construction and Demolition*, presented at workshop in Eureka, CA to about 150 C&D contractors and municipal staff, 2002.

*Clean Bay Plan*, annual pollution prevention report and program plan for the Palo Alto Regional Water Quality Control Plant and the Palo Alto Stormwater Pollution Prevention Program, 2000-2002.

*Sewer Science* presentations at conferences of CWEA, North American Association of Environmental Educators, Water Environment Federation, and California Science Teacher Association, 1999 to 2004.

*Sewer Science Student Workbook*, 1998, and *Sewer Science Teacher Manual*, 1999.

*Corporate Citizenship and Public Access to SB 14*, presented to Pacific Industry and Business Association, 1997; EMAT West Conference, 1998; Government Conference on the Environment, 1999; and Alameda County Environmental Health Department, 1999.

*Biodegradability and Toxicity of Specific Refinery Wastes*, Chevron Research Company, 1987.

