

Michael C. McMaster, B.S., SME - OCT Senior Staff Instructor

TEACHING OBJECTIVES:

To instruct classes in water sources, water quality and sampling, regulations (CA. Title 22), disinfection practices, water treatment and water distribution math for Grades I – IV, Distribution system design topics, storage facilities, hydraulics, pumps and motors, instrumentation and control, water pipe and valves. Develop more water distribution and treatment academic topics to teach for Grade I-II and III – IV operators as needs develop. Prime focus is to point out some of the critical and expensive mistakes made in water and wastewater operations in the past so we can avoid repeating them.



Mike McMaster

Writes new classroom and Online workbooks for water distribution and water treatment topics as class offering are expanded in the following categories:

Water Treatment, Grades I – IV
Water Distribution, Grades I – IV
Wastewater Treatment, Grades I – II
Collections, Grades I – IV
Specialty Certification Classes

Operations Management, Supervisors.
Grades IV – V.

Subject Matter Expert (SME)

2009 - Present. Senior instructor with 10 years of in-house classroom and Outreach service;
An OCT Subject Matter Expert (SME) instructor.

EDUCATION:

1975 – Bachelor of Science California Polytechnic State University (Cal Poly)
San Luis Obispo, Ca. Natural Resources Management December, 1975.

LICENSES:

Ca. Water Distribution operator Grade D-5 #17603;
Ca. Water Treatment Plant Operator Grade T-4 #7604;
Ca. Wastewater Treatment Plant Operator license Grade 2 #5689.
Electrical Subcontractor license C-10-339851 (inactive).

EXPERIENCE:

2009 - Present **OCT Water Quality Academy, North Highlands, California**
Senior Instructor of water distribution and water treatment subject matter. Presents Courses, Classes, tutoring programs, and Certification Reviews as per scheduling within the scope of the Specialized Training programs as outlined by the State of California - Waterboards.

For over 15 years, served as a volunteer organizer and ran the Hetch Hetchy Tours for the City and County of San Francisco as a board member of the San Francisco Bay Area Water Users Association and later as contractor. Expanding the tours to include the Modesto Irrigation District and other stake holders in this water source. My involvement ended after 9-11.

**March 2008 – 2010 Lake Davis Water Treatment Plant Project;
SPH Associates - On Site Project Representative :**

The design engineer's representative onsite responsible for inspection and consulting services on a new 1.5 MGD Pall membrane drinking water treatment plant for Plumas County, Ca. and for the City of Portola, Ca. Involved with review and enforcement of design specifications with the contractor as well as design modifications for on-site applications/modifications. Worked with the California Department of Health Services (DHS) and local minor water districts in developing alternative water resources to enable their removal from the *-formally abandoned and now to be reused* water treatment and storage facilities at the Lake Davis Water Treatment Plant Project site. Working with City of Portola in operator training and with plant start up. Also working with Plumas County on a Grizzly Valley Pipeline Project that conveys water to the new water treatment Plant and carries water from the plant to the City of Portola main storage facility some 4 miles away. Also teaching for OCT during this period.

November 1999 to January 15, 2008. Operations Superintendent; North Marin Water District (NMWD), Ca.

Responsible for the Operations Division of the North Marin Water District Novato Water System (D-5 system), with Distribution System operator, Water Quality Supervisor and Water Treatment Plant Supervisor reporting directly to this position. Primary goal was to get through the design study, design and construction of a new 6 MGD water drinking water treatment plant-treating organically challenged raw water-following the then new guidelines of the IESWTR and the DBPR with a ballast sand form of enhanced coagulation-filtration and using chlorine dioxide as a primary oxidant-converting the old original plant to a GAC adsorber.

January 1996 To November 1999. Utility Superintendent, City of Pleasanton, Ca.

Responsible for the operation and maintenance of the City's water production and distribution facilities and the city wastewater collections systems (Sanitary and Storm). For water operations this responsibility included four large city owned and operated production wells (of 8,000 gallons per minute capacity-total), seven connections to the Zone 7 water system service, 19 storage reservoirs ranging from 250,000 gallons to 8 million gallons (total of 34 million gallons of water storage) some 300 miles of water main-19,267 water service connections, 8 pressure reducing stations, and nine booster pump stations (D-5 water system).

**April 1993 to January 1996. Plant Maintenance Supervisor, City of San Leandro, Ca
Water Pollution Control Plant :**

Responsible for the maintenance and renovations of the City of San Leandro's Water Pollution Control Plant (8 to 24 MGD sewer plant) and the 10 remote sanitary sewage pumping plants leading into this system. This work also included the contract maintenance of the East Bay Discharge Authority's (EBDA) de-chlorination system also located in San Leandro and all of the large system mains leading to the East Bay Discharge Authority's (EBDA) de-chlorination facility-work here was focused on all lines west of demarcation of LAVMA (Livermore Amador Valley Municipal Association) for treated wastewater discharge up to the Marina de-chlorination Plant.

**March 1985 to March 1993. Senior Supervisor; City of Mountain View, Ca.
Pumps and Wells.**

Responsible for the maintenance renovation and operation of the City of Mountain View main source connections to the San Francisco Water Department turnouts, eight city water production Wells (of the blending water type), two booster pumping plants, three large pressure reducing stations, three reservoirs—of up to 8.5 million gallons of water in storage—as well as the main sewage pumping plant in shoreline park and 4 storm water pumping operations in and around the City. Installed a new radio based SCADA system to oversee this operation. Involved with the Santa Clara Valley Water District in overseeing the MEW (Middlefield, Ellis Whisman Roads in Mountain View) superfund groundwater contamination clean-up site-at the former Fairchild Industries.

**January 1978 to March 1985: Senior Ranger, Technical Maintenance; Monterey County Parks,
and Flood Control California**

Senior Ranger for the Monterey County Parks operation at San Antonio Lake. Responsible for the operation and renovation of a new potable drinking water treatment plant , two sewer plants, 18 sewage lift stations, 30 miles of collection system with general plumbing and electrical repair work for all sites. Included the installation of 1,200 new electrical campsite risers and distribution boards. Also worked with Monterey County Flood Control operations both at Nacimiento Dam and San Antonio Dam. Worked with the engineer in getting the drinking water treatment plant up to some of the new standards required with the subsequent additional amendments to the Safe Drinking Water Act 1974. Included with this design a 380Ft.³ GAC Adsorber.

December 1975 to January 1978: McMaster Electric, San Luis Obispo, CA.

General electrical contractor, working in and around the San Luis Obispo and Santa Barbara areas doing light Industrial-commercial and residential wiring, electrical troubleshooting and repair. Note: in the summers of 1967-1969 started work as an electrician working in Lodi, Ca at Gundershaug Electric Motors rewinding small and large electric motors and installing them on Pumps, blowers, etc. While at Cal Poly worked as an electrician for the State of California Electrical Department and for Foundation Maintenance-paying my way through school.

Areas of Experience and Expertise that have become part of my classes:

- Use of Granular Activated Carbon both in meeting Disinfection By-Product Rules, in controlling taste and odors, and in VOC groundwater clean-up.
- Project management
- Enhanced Coagulation, with solids contact clarification as well as conventional treatment.
- Managing small systems on a limited budget.
- Pumps and pumping in both water and wastewater, and motors and motor control.
- Planning.
- Working with Regulators to complete projects.
- Membrane Water Treatment with Zenon, Pall and Memcore.
- Controlling pH in a treatment plant treating organically challenged water.
- Use of Ozone.
- Use of Chlorine Dioxide.
- Chlorine gas, chlorine as sodium hypochlorite, and Calcium Hypochlorite (HTH).
- Developing Wells in a confined aquifer.
- Developing Wells in an unconfined aquifer.
- SCADA and Instrumentation.
- Variable Speed Drives.
- Control Valves.
- Water Rights
- Watershed Management.
- Pipes and piping systems
- Sewer collection systems
- Proportional Integral Derivative Controls (PID).
- IESWTR,DBPR, LTESWTR (1 and 2), DBPR stage 1 and 2. And Title 22 for California.
- Building drinking water treatment plants –(been involved in 3).
- Computer Maintenance Management Systems and Preventative Maintenance
- Waste Water Treatment Operations and Maintenance.
- Collection System Operations and Maintenance.
- Teaching water and wastewater math to folks who forgot how to do it.
- History of water use and development – including wastewater.

Prime lesson learned that just because you've been working in a field for 44 years doesn't mean you can teach it. I had to learn how to teach all of this stuff-and I am still learning.