



# High Purity Water Treatment

(Advanced Training)

(Classroom, 3 days)

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## Seminar Details

**Cost:** \$2,850 (ex GST)

**Length:** 3 days

**Dates:** [Visit website](#) for current offerings as well as proposed events.

**Discounts:** Group discount of 10% when registering three or more at the same time.

## Daily Schedule

Times	
<b>7:45am</b>	Registration, Coffee/Tea
<b>8:00am</b>	<b>MORNING SESSION 1</b>
<b>9:15am</b>	Stretch Break
<b>9:20am</b>	<b>MORNING SESSION 2</b>
<b>10:20am</b>	Morning Tea
<b>10:45am</b>	<b>MORNING SESSION 3</b>
<b>12:00noon</b>	Lunch
<b>12:45pm</b>	<b>AFTERNOON SESSION 1</b>
<b>1:30pm</b>	Stretch Break
<b>1:40pm</b>	<b>AFTERNOON SESSION 2</b>
<b>3:00pm</b>	Afternoon Tea
<b>3:20pm</b>	<b>AFTERNOON SESSION 3</b>
<b>4:50pm</b>	Summary and Evaluation
<b>5:00pm</b>	Day Close

In partnership with:



## Seminar Description

### David H Paul Inc. Training:

DHP has trained over 20,000 water treatment professionals worldwide since 1988. Trainees include industry, government and municipal clients.

### Seminar Description:

The purpose of this seminar is to provide attendees with a thorough understanding of high purity water treatment. It's not possible to really understand high purity water treatment without understanding basic water treatment chemistry and biology. This seminar will provide you with what you need to know.

This seminar is designed to be a fun, interesting, step-by-step approach to knowing how each technology in a high purity water treatment system works, by having a good foundation of water treatment chemistry and biology. Even if you haven't had any chemistry and biology training you won't be lost. You'll be amazed at how much you've learned even after just the first day!

This seminar incorporates David H. Paul, Inc.'s (DHP's) new training methodology for easy understanding and better retention (see below). DHP's seminars are designed to effectively train anyone regardless of previous formal education. Even if you have a Bachelor's Degree, Master's Degree or Doctorate, you will still benefit from our world-renowned, easy-to-understand training methodology.

Topics included:

- Periodic Table basics
- Atoms & Molecules
- Ions
- Chemical Bonds
- Contaminant Characteristics
- Categories of Water Contaminants
  - Ions, including pH
  - Gases
  - Organics
  - Silica
- Concentrations
- Chemical Reactions
- Raw Water
- End-Use Quality
  - Drinking Water
  - Pharmaceutical/Biotech/Beverage
  - Power Generation
  - Semiconductor/Microelectronics
- Reverse Osmosis (RO)
- RO permeate quality versus:
  - pH
  - Carbon dioxide
  - Single pass RO
  - Double pass RO
  - Caustic injection
- RO/Pre-treatment Impacts to Downstream Process
- Ion Exchange
  - Mixed-bed (MB) ion exchange
  - Electrodeionisation (EDI)
- Distillation

- Degasification
- Ultraviolet (UV) irradiation
- Water Treatment Biology
- Generic and Attendees' Ultrapure Water Systems
  - Chemistry of each step
  - Biology of each step

### Who Should Attend

Everyone who works with, designs, maintains or services high purity water treatment systems, including:

- Operators
- Maintenance personnel
- I & C Technicians
- Supervisors/Managers
- Engineers
- Original Equipment Manufacturers
- Service technicians
- More

### Why You Should Attend

#### *From a Personal Standpoint*

1. Puts you in a better position for job advancement
2. You can't get this information anywhere else
3. The instructor has decades of high purity water treatment experience
4. The instructor is a high purity water treatment consultant
5. The instructor is a professional trainer
6. The seminar covers the material in a step-by-step manner so that everyone will understand the concepts presented
7. The presentation uses a multimedia format, including many videos and animations

#### *From an Employer's Standpoint*

- Trained employees save you money by:
  1. Having the knowledge needed to identify problems at an early stage
  2. Having the ability to troubleshoot even difficult problems many high purity water treatment systems face
  3. Using this knowledge to correct problems
  4. Less down time of the water treatment system
  5. Increased system reliability
- Being able to show clients, customers and any applicable governmental agencies that your employees have been independently certified on their knowledge and proficiencies.

### What You Will Receive

Training assessed and accredited by David H Paul Inc., a world leader in high-tech water treatment training.

Training based on the extensive experience of the DHPaul trainers, who have trained around the world at countless facilities.

Interesting and easy-to-understand theory, blended with practical application gained from years of training and operator experience.

The latest in multimedia training including 3-D animations.

A highly illustrated workbook.

M/Tea, A/Tea and Lunch.

Certificate of completion.

### DHP's Training Methodology

DHP uses consulting services from Columbia University in the development of its training seminars.

DHP's training methodology includes:

- Short, interesting, interactive lecture sessions using:
  - Power Point™ slides
  - Video clips
  - Animations
- Group exercises to enhance understanding and retention
- Workshops to further enhance understanding and retention
- Optional daily open-book Knowledge Verification Exam to document what was learned

A Knowledge Verification Exam and hands-on Proficiency Verifications are given each day. Since 1988, DHP has been training water treatment personnel like you. We take you step-by-step through the knowledge and proficiencies needed for advanced troubleshooting of an RO system.

All exams are open book because nobody remembers everything for the rest of their lives...but you'll know in the future where to get the information you need in the book.

We provide a lot of repetition so that you will have no problem getting good scores. For example, to make sure that you know how to use membrane manufacturers' design software to calculate water flux rate and minimum concentrate flow rate, we:

1. First, go over the information in a Power Point™ format.
2. Second, go over the information in a membrane manufacturer's design program.
3. Third, obtain operating data from an actual RO system and compare the actual operational data to the projected values from the design software.
4. Fourth, have a workshop on the topic, which serves as a practice exam for the Knowledge Verification Exam at the end of the day. All workshops are performed in groups to aid in the learning experience. There will be no surprises on the daily Knowledge Verification Exams and they are open book.

**Knowledge Verification Exams are optional. If you don't want to be certified, you don't have to take the exams.**