



Annual Convention & Exposition

September 11-14, 2019 Palm Springs Convention Center and Renaissance Palm Springs Hotel

Palm Springs, CA

Periodic Table of Elements (Partial):

1A	2A	3B	4B	5B	6B	7B	8B	9B	10B	11B	12B	3A	4A	5A	6A	7A																																																													
1 H 1.00794	2 He 4.002602	9 F 18.9984032	10 Ne 20.1797	17 Cl 35.453	18 Ar 39.948	25 Mn 54.938044	26 Fe 55.845	27 Co 58.933195	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.38	31 Ga 69.723	32 Ge 72.64	33 As 74.9216	34 Se 78.96	35 Br 79.904																																																													
11 Na 22.98976928	12 Mg 24.3040	19 K 39.0983	20 Ca 40.078	21 Sc 44.955912	22 Ti 47.887	23 V 50.9415	24 Cr 51.9961	41 Nb 92.90638	42 Mo 95.94	43 Tc 98	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 107.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.757	52 Te 127.6	53 I 126.90547	54 Xe 131.29	55 Ba 137.327	56 La 138.90547	57 Ce 140.12	58 Pr 140.90766	59 Nd 144.242	60 Pm 144.91288	61 Sm 150.36	62 Eu 151.964	63 Gd 157.25	64 Tb 158.92535	65 Dy 162.50014	66 Ho 164.93033	67 Er 167.259	68 Tm 168.93048	69 Yb 173.054	70 Lu 174.967	71 Hf 178.49	72 Ta 180.94788	73 W 183.84	74 Re 186.207	75 Os 190.23	76 Ir 192.222	77 Pt 195.084	78 Au 196.96657	79 Hg 200.59	80 Tl 204.3833	81 Pb 207.2	82 Bi 208.9804	83 Po 209	84 At 210	85 Fr 223	86 Ra 226	87 Ac 227	88 Th 232.0377	89 Pa 231.036889	90 U 238.02891	91 Np 237.048173	92 Pu 244.064223	93 Am 243.061389	94 Cm 247.070353	95 Bk 247.070353	96 Cf 251.083288	97 Es 252.083288	98 Fm 257.103756	99 Md 258.103756	100 No 259.103756	101 Lr 262.103756	102 Rf 261.103756	103 Db 262.103756	104 Sg 263.103756	105 Bh 264.103756	106 Hs 265.103756	107 Mt 266.103756	108 Ds 267.103756	109 Rg 268.103756	110 Uub 269.103756

Membrane Cross-Section Labels:

- O_2
- Ca^{2+}
- HCO_3^-
- $Cu^{2+} + (OH)^-$
- Cu^{2+}
- $CuCO_3$
- BASIC SALTS**
- CUPROUS OXIDE MEMBRANE**
- Cu^{2+}

Chemical Structure:

$$(-CH_2-CH)_n$$
$$O=C-NH-CH_2-N(CH_3)_2$$



COOLING WATER SUBCOMMITTEE LEARNING LOUNGE AGENDA

1. WELCOME AND INTRODUCTION

2. 2019 PROJECT REVIEW

3. EXPERT PANEL DISCUSSION – Q&A SESSION:

“Program Control Responsibilities:
Shared Water Treatment Agreements”

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BIOFILM MONITORING PROJECT

1. OBJECTIVE – To complete a Comparative Study on field appropriate PASSIVE BIOFILM collection and monitoring methods
2. BENEFITS TO AWT – Provide members with insights about PRACTICAL TOOLS that can allow for quantitative biofilm measurements usable on routine service calls.
3. WORK GROUP –
 - a) Allison Bond (Premier)
 - b) Keith Johnson (Keith Johnson Consulting)
 - c) Rick Rosser (AMSA)
 - d) Derrick Vandenburg (Guardian)
 - e) John Caloritis (Metro)
4. PROJECT STATUS/UPDATE – Submitted for Board approval, with request for the first version to be posted at awt.org.

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BIOCIDE USE SURVEY

1. **OBJECTIVE** – To capture member opinions and industry trends related to the use of biocides in the water treatment industry. Completed a two-part survey over 18 months.
2. **BENEFITS TO AWT** – The report is expected to highlight patterns, market sector insights, and clarify preferences/approaches.
3. **WORK GROUP** –
 - a) Gary Garcia (Masters)
 - b) Rich Moll (Water Chemistry Consultants)
 - c) Tom Mercer (Dubois)
 - d) Ken Soeder (Jamestown)
 - e) Rick Rosser (AMSA)
 - f) John Caloritis (Metro)
4. **PROJECT STATUS/UPDATE** – Part 1 was shared in this forum in 2018, and Part 2 was recently completed. Committee expects to post to awt.org in early 2020.

ON-LINE MONITORING PROJECT

1. **OBJECTIVE** – To develop a paper entitled “Demystifying Cooling Water On-Line Monitoring & Control Platforms”
2. **BENEFIT TO AWT** – To provide the membership with the plain facts and a “user’s guide” associated with this sector which is growing in demand and complexity
3. **WORK GROUP** –
 - a) Saurabh Banerjee (Pulsafeeder)
 - b) Tim Keister (ProChemTech)
 - c) Vincent O’Reilly (Metro)
 - d) Paul Peacock (Lakewood)
 - e) John Caloritis (Metro)
4. **PROJECT STATUS/UPDATE** – Paper is 75% Complete and expected to be submitted for Board review and approval by end of year.

MICROBIOLOGICAL MONITORING PROJECT

1. **OBJECTIVE** – To produce a resource document that puts all Microbiological Monitoring tools in one place for members to identify, reference and source.
2. **BENEFIT TO AWT** – A three-part spreadsheet illustrates Biocide Tests, Field Tests and Laboratory Methods and provides relevant descriptive/background information for each.
3. **WORK GROUP** –
 - a) Eric Liimatta (Albermarle)
 - b) Kristin Majeska (Idexx)
 - c) Tom Mercer (Dubois)
 - d) Rich Moll (Water Chemistry Consultants)
 - e) Shivy Selvaratnam (Weas Engineering)
 - f) John Caloritis (Metro)
4. **PROJECT STATUS/UPDATE** – Project now complete and submitted to the Board for approval at this meeting. Expectation is for posting on awt.org/Cooling



SHARED WATER TREATMENT

EXPERT PANEL DISCUSSION

LIABILITY REDUCTION THROUGH UP-FRONT CLIENT AGREEMENTS

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Project Background – Shared Water Treatment (Ken Soeder – Jamestown Chemical)

PROJECT CONSIDERATIONS –

1. Tool Developed to ensure WT program success and to minimize WTSC liability
2. Outlines Necessary WT Program Workflow Requirements broken down by size and/or system complexity
3. Involves the Client in the process and taking ownership over program administration
4. Provides a template for potential contractual use by AWT members
5. Project has roots in earlier unfinished work previously aimed at development of a WT Specification

WORK GROUP –

- ❖ Ken Soeder (Jamestown)
- ❖ Gary Garcia (Masters Co.)
- ❖ Anthony Selby (Water Consultants, Inc.)
- ❖ Keith Johnson (Keith Johnson Consultants)
- ❖ John Caloritis (Metro)

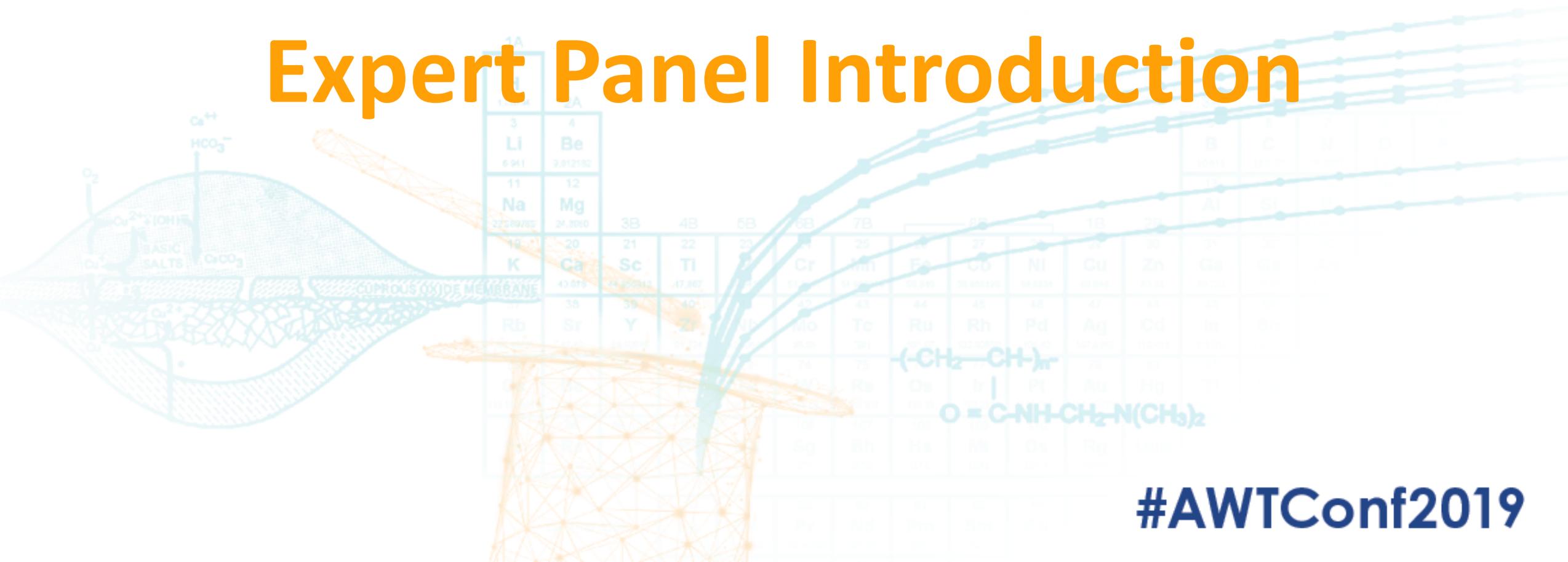


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Expert Panel Introduction



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Jay Farmerie, CWT

Cyrus Rice Water Consultants, Inc.

Contact Information:

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EXPERTISE AND SKILL:

➤ Water Treatment – Certified Water Technologist (CWT)

- Cooling Towers/Process Waters, Closed Loop Systems, Boiler Water & Wastewater Systems
- Water Treatment Chemistry: Formulations / Scale, Corrosion & Microbial Control;
- Metallurgical Interpretations on pipe & system failures as it relates to water-based systems;
- Treatment program effectiveness and conformance to regulatory requirements
- Expert Witness in 30+ Water Treatment cases

➤ NACE – Task Group Chairman of “Preoperational Cleaning Standard” & “Monitoring Cooling Water Systems Standard Development”

- Enhanced Tubes in shell and tube heat exchangers and chillers.

➤ ASTM – Standards Development for D19 Water and D22 Legionella Testing Protocols

PROFESSIONAL BACKGROUND:

- **Cyrus Rice Water Consultants, Inc. 1994 - Present**
- **GLA Water Consultants, Inc 1992 - Present**
- Great Lakes Associates, Inc., 1987-1994 (Water Management Group)
- Merck & Company, 1977-1987 (Calgon Corporation)
- Combustion Engineering, 1975-1977
- Association of Water Technologies (AWT): Past President (2005)
- AWT / Ray Baum Memorial Water Technologist of the Year Award (2009)
- BS Chemistry (DeSales University)/ Masters in Business & Science (Robert Morris University)

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Adam Green

***Water Treatment, Construction
& Infectious Disease Litigation***

Contact Info:

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Relevant Expertise

Chairman, Water Technology & Water Treatment Group

Water Treatment

- Consulted and defended litigation arising from issues incident to shared responsibility between owners, managers, maintenance staff and water treaters on a national scale
- Successfully defended multi-million dollar lawsuits involving corrosion related failures of mechanical equipment and condenser water systems for the past 18 years
- Consulted and defended disputes arising from a litany of failure modes and causes including operational errors, design issues, improper commissioning, passivation, inadequate cycling, over-firing, improper layup, dead legs and inadequate flow

Legionella & Infectious Disease

- Defense and complete dismissal of water treaters from multiple Legionella fatalities
- Successfully argued the issue of legal duty and responsibility to US Appellate Courts

Professional Background

- Baker Donelson Bearman Caldwell & Berkowitz, PC: December 2000 to present
- Author/Presenter, AWT, CTI, IADC, ASPE

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Michael J. Highum, CPCU



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Michael J. Highum, CPCU – As Vice President and Partner of McGowan Insurance Group, Mike directs and spearheads all marketing and public relations initiatives for the firm. In addition to his account executive duties, Mike oversees the agency's specialty practice groups including Chemical & Environmental and Life Science & Technology. He also regularly speaks and consults on a wide variety of risk management related topics. Responsible for the public image of the firm, Mike enhances the agency's lasting impact not only in the community, but across the nation.

Vice President/Partner

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W.E. (Bill) Pearson II, CWT

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Arthur Freedman Associates, Inc.

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EXPERTISE AND SKILL:

➤ WATER TREATMENT – Certified Water Technologist (CWT)

- Cooling Towers/Process waters, Closed Loop Systems, Boiler Water Systems,
- Water Treatment Chemistry: Formulations / Scale, Corrosion & Microbial Control

➤ *LEGIONELLA* – SME Consultant / Expert Witness

- ASHRAE SSPC-188 / Legionella Standard, Vice Chair
- ASHRAE SPC-514 / Building Pathogens Standard (NSF)
- AWT Legionella Guideline, author / Task Force, Chair
- CTI GDL-159 / Legionella Guideline, Chair
- ASSE / Legionella Water Management Specialist – Qualifications Standard committee

PROFESSIONAL BACKGROUND:

- **Independent Consulting: Jan/2018 – to present**
- Special Pathogens Laboratory: Sr. VP Business Development / Apr'16-Jan'18
- Southeastern Laboratories, Inc: VP / Consulting-Technical Services / Sep'75-Mar'16
- Association of Water Technologies (AWT): Past President (2003)
- AWT / Ray Baum Memorial Water Technologist of the Year Award (2005)
- BS Biology / Medical Biochemistry

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Question & Answer Session

