



## Town of Jupiter, FL Membrane Replacement Project

Author: Allyson Felsburg, Town of Jupiter Utilities Compliance and Operations Manager



**NF Trains Process Floor**

In April 2022, the Town of Jupiter competitively bid a contract to furnish and install two thousand four hundred thirty (2,430) 8” diameter by 40” long nanofiltration (NF) membrane elements in five (5) 2.9 million-gallon-per-day (MGD) NF treatment trains with eighty-one (81) center-port pressure vessels per train. This contract also included furnishing fifty-four (54) 8” diameter by 40” long NF membranes for installation in one (1) NF pilot unit with nine (9) center-port pressure vessels.

The contract was awarded to Harn R/O (aka Komline-Harn) with a notice to proceed date of October 13, 2022. Due to the long lead-time for membrane elements, mobilization did not occur until the end of March 2023. Membrane installation and performance testing of all 5 NF trains was completed on October 6, 2023.

*Continued on page 3>*

# MESSAGE FROM OUR PRESIDENT

In tribute to Jimmy Buffett's song, "Changes in Latitudes, Changes in Attitudes", we are reminded that "nothing remains quite the same". With this in mind the Southeast Desalting Association (SEDA) website has a fresh look. There you can find a calendar of events, scholarship opportunities, Board of Director announcements, a membership directory and archived newsletters. Our Program Committee is also preparing for the SEDA 30-year Anniversary Symposium in Tampa, Florida! While we are planning for this special occasion, I would like to introduce changes to the Board of Directors and thank the outgoing Board members for their outstanding achievements.

The annually elected SEDA Board of Directors is a dynamic group of water industry professionals expressing the "attitudes" created from a wide range of principles and ideas voiced by each of you. This is why the membrane technology training opportunities being offered provide a new twist of technologically advanced concepts applicable to a wide variety of site locations. Our constantly growing network helps us to discover new potential geographic "latitudinal" points to host membrane technology courses.

The newly elected Board of Directors are Melissa Fernandes of American Water Company, Jon Friedrichs of JLA Geosciences Inc, Pavol Plecenik of Odyssey Manufacturing Company and Leon Liberis (our at-large representative) of Indian River County Utility. Together, they bring fresh "attitudes" to the association, and we look forward to them sharing their many decades of experience with our membership.

With extreme gratitude, I would like to acknowledge the outstanding contributions of our departing Board of Directors. Mo Malki of American Water Company, Dr. Dave MacNevin of CDM Smith, Fred Griner of JEA and Kyle Jennings of Wharton Smith have been very supportive leading our organization to what it is today. With integrity and confidence they have inspired us all to embrace the core values of SEDA.

In summary, "nothing remains quite the same" can continue leading us towards future growth. We remain strong in membership approaching 800 constituents and are financially strong. SEDA is finalizing its 5-year Strategic Plan which will help us to succeed during tough economic times while identifying goals for our growing membership to achieve.

Take care,

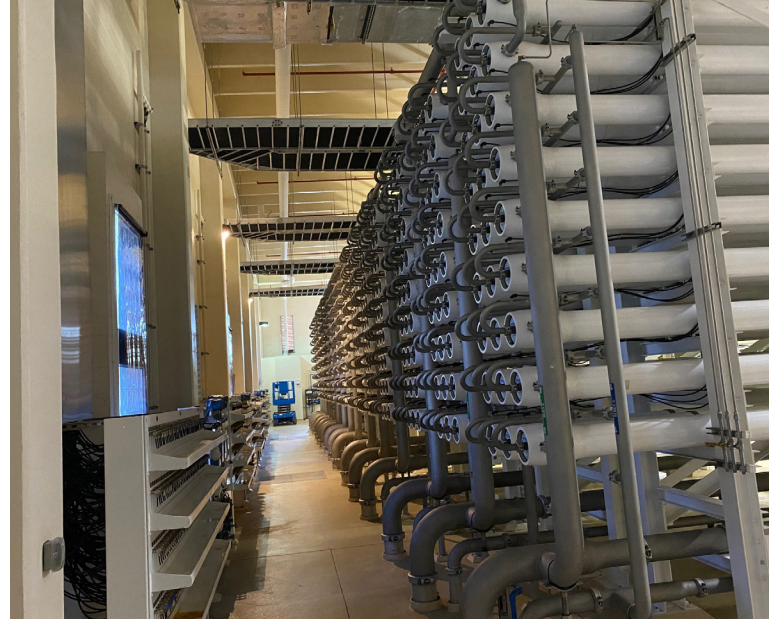
Pierre



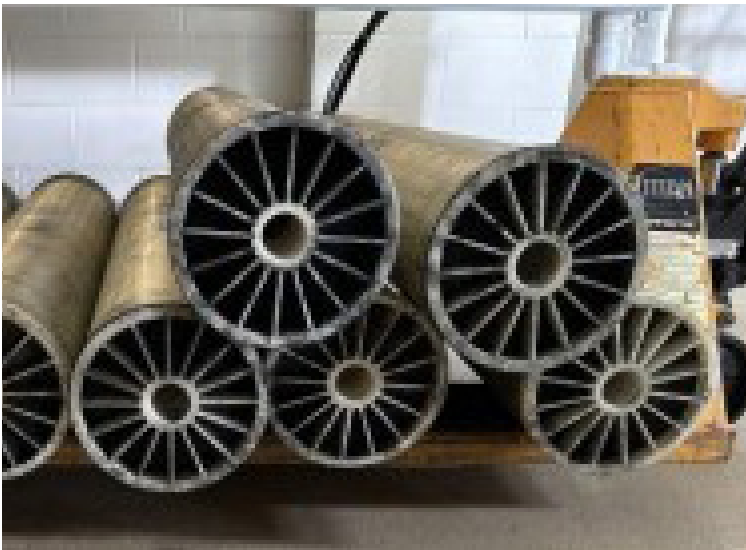


< *continued from cover*

It took roughly one month to remove old membranes, clean vessels and components, load new membranes, and perform start-up and performance testing per train. The membranes removed were DuPont NF270 elements and replaced with the same elements. This was the first time these membranes were replaced since start-up of the NF facility in 2009. These membranes lasted roughly 14 years with cleaning performed about once every one-to-two years, as determined by observations of normalized data. With installation of these new elements, an anticipated increase in productivity of the NF facility and a decrease in feed pressure from 68 psi to 58 psi was observed, resulting in energy cost savings.



The black residue pictured on the old membranes is a result of iron disulfide, or pyrite, that forms from iron and sulfide in the feedwater. This color may look alarming to some but is expected with the characteristics of the feedwater. With this project wrapping up, the Town looks forward to many years of operation with these new membranes.

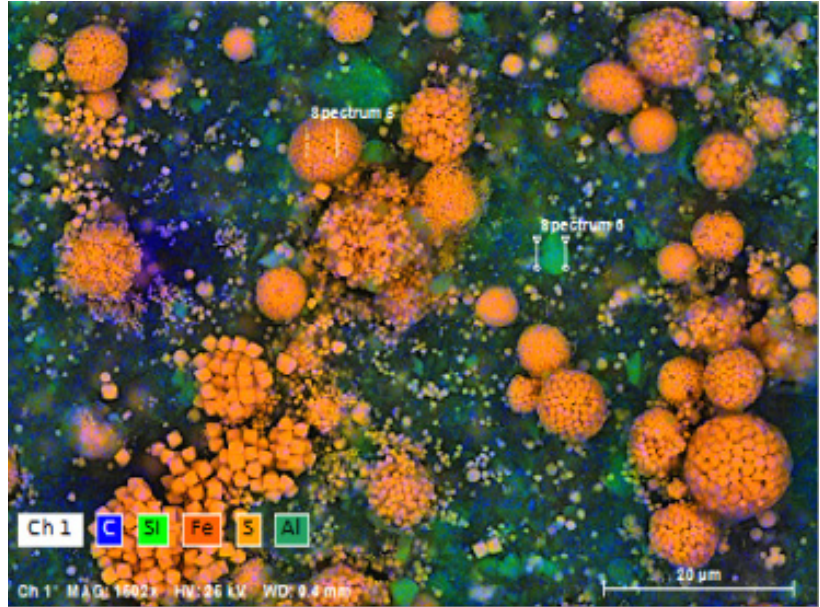


# What is pyrite and should I be worried about my black membranes?

Author: Melissa Fernandes & Giancarlo Barassi, American Water Chemicals

Pyrite, also known as iron disulfide ( $\text{FeS}_2$ ), or Fool's Gold in the mining community, might raise concerns in the membrane community.

Iron Disulfide has become a common fouling challenge for NF and RO systems in Florida. This foulant will appear black to the naked eye on the membrane feed ends and leaves. The scanning electron microscope (SEM) with energy-dispersive spectroscopy (EDS) image below reveals pyrite framboids on the membrane's surface.



Pyrite is the most common sulfide mineral. It is frequently encountered in groundwater wells and should be treated as a suspended solid. Historically, a low pH cleaning solution was applied for pyrite cleaning. Since iron disulfide is a very stable mineral, only marginal gains are achieved with low pH cleaning. AWC developed a cleaning chemical capable of effectively removing both pyrite and sulfur fouling, which should be used with other specialty cleaners to obtain the best performance recovery.



Before



After



After membrane removal



Membrane in the lab



Iron sulfide (FeS), on the other hand, is usually a corrosion byproduct of iron or steel in environments with hydrogen sulfide (H<sub>2</sub>S). Unlike pyrite, FeS does not have the same framboise shape as FeS<sub>2</sub>. An SEM/EDS is not necessarily required to give you a hint of the foulant: the black FeS foulant is not as stable as FeS<sub>2</sub>. Upon exposure to oxygen, FeS oxidizes to ferric hydroxide and elemental sulfur, changing the color from black to red. See the pictures of the element immediately after membrane removal and a few days later when it arrived in the lab!

While visual inspection can provide educated guesses about the type of foulant, it is always recommended to conduct an autopsy including a small-scale cleaning test to accurately identify the foulant and determine the most effective cleaning procedure before applying it on a larger scale in the entire plant.

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# Hazen



# City of Port St. Lucie Membrane Replacement Project

Author: Eric Dickinson, Chief Operator & Billmer Serrano, Lead Operator – City of Port St. Lucie, and Tatiana Konstantis, P.E., Kimley-Horn

In 2020, the City of Port St. Lucie conducted a 3-month membrane pilot study at the James E. Anderson RO Water Treatment Plant to determine the best membrane element to select for full-scale membrane replacement within the facility's ten (10) RO skids. Each of the RO skids are an approximate 2:1 array comprised of a minimum of thirty (30) vessels in the first stage and thirteen (13) vessels in the second stage with each vessel containing seven (7), 40" membrane elements.

The existing membrane elements ranged in age from 15-18 years old and were in need of replacement due to age. Replacement of the elements is anticipated to provide an increase in finished water quality and a reduction in operating costs. Results of the pilot study indicated the Toray TMG20D- 440 elements provided the most efficient operating conditions while meeting the City's desired water quality goals. The City contracted with Aerex Industries Inc. in 2021 for a phased installation of a total 3,360 membrane elements for all ten (10) skids in addition to the installation of thirty-five (35) pressure vessels. Three-to-four Codeline pressure vessels were to be installed on each skid to optimize flux rates and to adjust the skid to be a true 2:1 array (32:16 pressure vessels). During installation of membrane elements, it was determined the facility needed pressure vessel replacements of the existing 445 Protec pressure vessels. In 2023, four hundred forty-five (445) Protec pressure vessels were directly purchased by the City for replacement.

Membrane element and pressure vessel replacement is currently in progress with expected completion in 2024. The first picture shows the old membrane elements removed with evidence of brown iron and sulfide deposits. This is expected due to the hydrogen sulfide levels in the raw water entering the plant. The second picture is the new membrane elements lined up to be installed within a skid.



Old membrane elements with brown iron and sulfide deposits



New membrane elements to be installed

# MOC Update

The SEDA MOC School had a productive year in 2023. We successfully hosted 8 MOCs.

MOC I, Introduction to Membrane Systems, was held in Town of Jupiter, Collier County, Mt. Pleasant, North Miami Beach and Orlando. MOC II, Advanced Training of Reverse Osmosis Systems, took place in Town of Jupiter, James City, and City of Plantation.

We are immensely grateful to all the attendees, instructors, hosts, SEDA admin, and sponsors who made these 8 MOCs possible. Let's take a moment to celebrate some of the highlights from this year:

- SEDA had the honor of hosting two out-of-state MOCs in James City Service Authority, VA, and Mt. Pleasant Waterworks, SC, showcasing the widespread reach of our MOC School.
- We were thrilled to welcome new experts to our teaching team, including plant personnel and new engineering consultants, bringing a diverse range of knowledge and perspectives to our MOCs.
- Mt. Pleasant even spiced things up with a Corn Hole Championship (held after the class, of course!) that brought instructors and attendees together for some friendly competition.

Looking ahead, we already have MOC III (UF/MF Systems) and MOC IV (MRB Systems) scheduled for 2024. If you're interested in hosting an MOC or have recommendations for future MOC locations, please don't hesitate to reach out to SEDA or our MOC chairs.

Make sure to keep an eye on the SEDA Events Calendar for more MOC Schools and updates and follow us on LinkedIn. We are excited to continue this journey with you!

## 2023 MOC SNAPSHOT

### 8 MOC SCHOOLS

#### HOSTS:

City of North Miami Beach  
City of Plantation  
Collier County  
James City Service Authority  
Mt. Pleasant Waterworks  
Toho Water Authority  
Town of Jupiter

#### SPEAKERS:

Adrian Mayoral (DNA Engineering)  
Allan Daniels (Avista Technologies)  
Andrew Newbold (Hazen & Sawyer)  
Chris Martin (Mt. Pleasant Waterworks)  
Darrell Byrer (AWC)  
David Calle (Kimley-Horn & Assoc)  
Fred Greiner (JEA)  
James Veen (Kimley-Horn & Assoc)  
Joe Elarde (Jacobs)  
Melissa Fernandes (AWC)  
Nick Easter (Jacobs)  
Raul Alfaro (Jacobs)  
Rebecca Wilder (Hazen & Sawyer)  
Rhea Dorris (Kimley-Horn & Assoc)  
Ricardo Avena (Avista Technologies)  
Ryan Popko (JEA)  
Tatiana Konstantis (Kimley-Horn & Assoc)  
Zack Poole (Collier County)

### 153 ATTENDEES

#### SPONSORS:

Avista Technologies  
American Water Chemicals  
CDM Smith  
Carollo  
Kimley-Horn & Assoc  
Mt. Pleasant Waterworks

### 66 MOC CERTIFICATIONS ISSUED





# Indian River Source Water Well & WTP Expansion Project

Author: Jon Friedrichs, JLA Geosciences, Inc. and Leon Liberus, Indian River County

Indian River County Department of Utility Services (County) operates two Reverse Osmosis (RO) water treatment plants (WTP), the North (Hobart) WTP and the South (Oslo) WTP. Both WTP's are supplied with brackish groundwater from Upper Floridan Aquifer (UFA) public water supply wells. Over time, the Oslo UFA well performance had declined prompting the County to add an additional well (S7), replace a damaged well (S4R) and rehabilitate four wells (S2, S3, S5, and S6) prior to starting an expansion of the Oslo RO WTP capacity from 8.57 MGD to 9.0 MGD. The Oslo WTP and UFA well locations are shown in Figure 1 below:

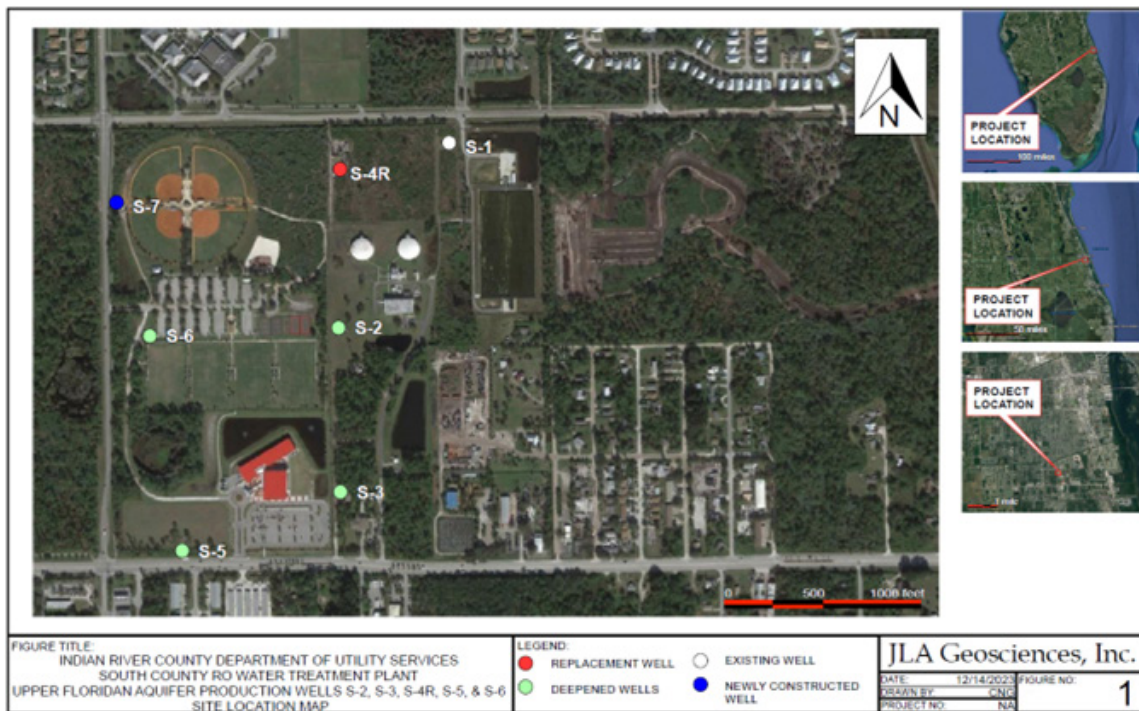


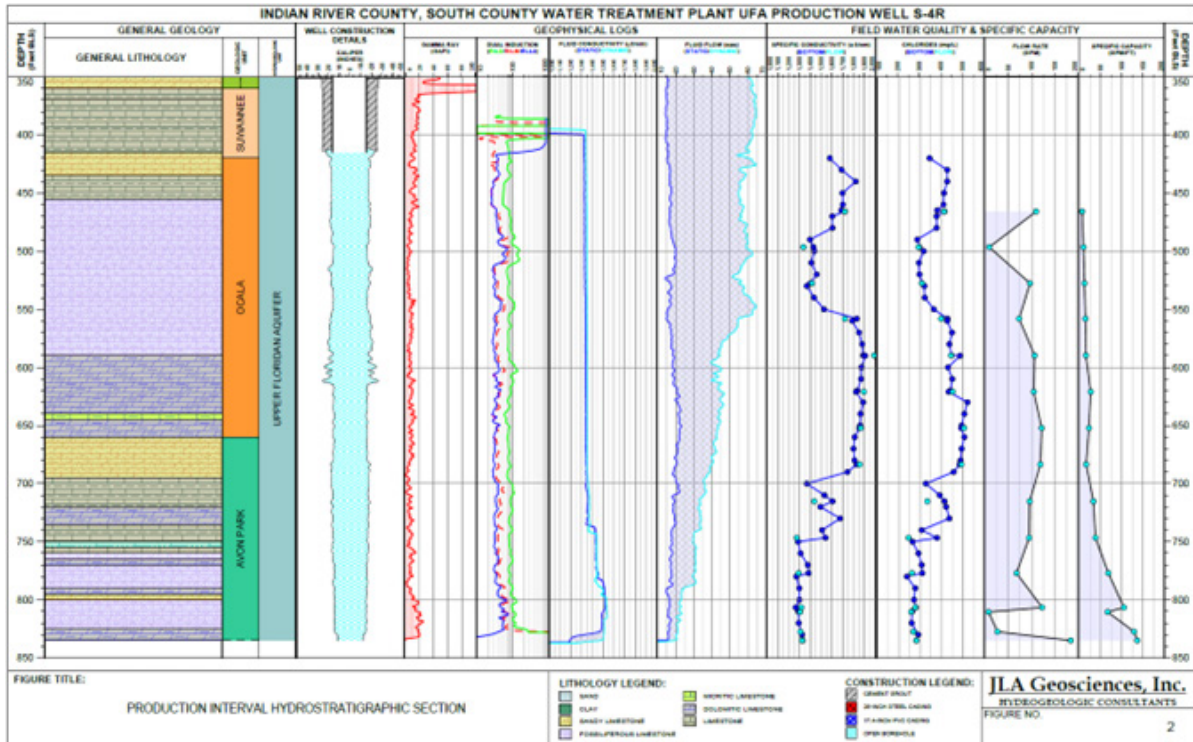
Figure 1 - Oslo WTP and UFA Well Locations

Each of the existing six (6) Oslo WTP UFA wells had a design pumping rate of 1,500 gpm (~2.2 MGD) providing a total raw water capacity of 13 MGD for the existing 8.57 MGD capacity RO WTP. Prior to starting the well rehabilitation program in 2016 total raw water production from UFA wells S1 through S6 was ~6.0 MGD or less than 50% of the original raw water capacity.

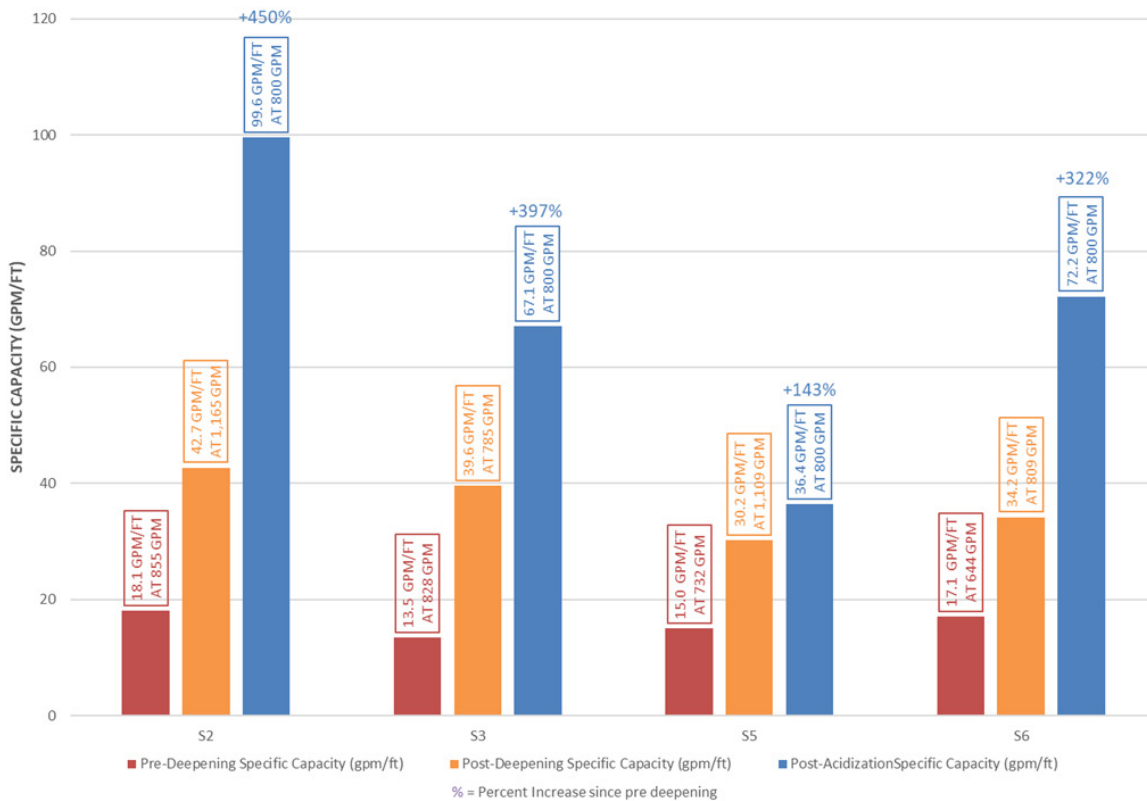
To improve the UFA well production, the County implemented a multiphase approach to restore the lost UFA well production and add additional raw water capacity. Work began with the construction of a new well S7 in 2016 and the replacement of well S4 in 2017. During the drilling of replacement well S4R, JLA identified a higher producing section within the Upper Floridan Aquifer, situated below the previously utilized production interval and exhibiting similar water quality parameters. The well S4R completion interval included this deeper production interval with 410 feet of open hole and a total depth of 830 feet. The hydrostratigraphic section showing the geophysical logs and lithology of replacement well S4R production interval can be seen in Figure 2.

Based on the success of S4R, the County modified the rehabilitation scope for the remaining 4 wells to also include deepening of the production intervals prior to acidization. Between 2018 and 2021 UFA Wells S2, S3, S5, and S6 boreholes were deepened from original depths between 670 feet BLS and 738 feet BLS to depths between 820 feet BLS and 855 feet BLS. Following borehole drilling each well was acidized with 4,000 gallons of 32% (20° Baume) hydrochloric acid (HCl). The borehole deepening and acidization rehabilitation approach resulted in specific capacity increases ranging between 143% (S5) and 450% (S2). Additionally, each of the rehabilitated wells, replacement well S4R and new well S7 were capable of meeting the 1,500 gpm designed point pumping rate with raw water SDI values less than 1.0 and sand concentrations <0.1 ppm. Post rehabilitation specific capacities can be seen in Figure 3 on the next page.





**Figure 2 - UFA Replacement Production Well S4R**



**Figure 3: Specific Capacity Pre and Post Deepening and Acidization**

The addition of well S7, revitalization of well S4R and the rehabilitation of wells S2, S3, S5, and S6 increase raw water production from ~6 MGD to 13 MGD prior to the ongoing Oslo RO WTP expansion. The collection of water quality and flow test data during the exploratory drilling of the well S4R production interval provided the County with new information about UFA water quality and production at the Oslo WTP site. Utilizing this new information, the County was able to adjust the scope of an ongoing well rehabilitation project to maximize performance gains in their existing wells. The County's multi-phase approach which included adding new well facilities (S7), replacing damaged wells (S4R) and rehabilitating existing wells (S2, S3, S5 and S6) more than doubled raw water production capacity for the Oslo WTP RO plant expansion.

# WELCOME TO OUR NEW MEMBERS



**BRANDON POWERES**  
CITY OF POMPANO BEACH

**KEVIN HADDEN**  
CITY OF POMPANO BEACH

**ROBERT METZ**  
CITY OF POMPANO BEACH

**MOHAN THAMPI**  
CAP ENGINEERING

**SYDNEY VALLIANT**  
CAPE FEAR PUBLIC UTILITY AUTHORITY

**STEVE SIMMONS**  
RWS WATER DEPT. / DARE COUNTY

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# Regulatory Update – Water and Wastewater PFAS Disposal Rules

Author: Pierre Vignier, City of Port St. Lucie, and Allyson Felsburg, Town of Jupiter

**Who:** US Environmental Protection Agency (EPA)

**What:** Compensation, Environmental Response, Comprehensive and Liability Act (CERCLA)

**When:** Proposed Hazardous Substance Designation for PFAS compounds under CERCLA to be finalized Spring 2024

**Where:** All public water systems and wastewater treatment facilities with waste streams containing per- and polyfluoroalkyl substances (PFAS).

**Why:** PFOS and PFOA are manufactured substances that persist in the environment. Studies have found that exposure to these chemicals have resulted in negative effects on a human's immune system, cardiovascular system, development, and in some cases have caused cancer. The proposed cleanup liability imposed on water and wastewater systems will increase operating costs with the required management of treatment of wastes like coagulated sludge, lime softening sludge, bio-solids and PFAS- containing treatment media. Reverse osmosis concentrate streams may fall under release and disposal requirements, increasing the liability risk to utilities.

**How:** The CERCLA is a federal Superfund program with the goal of aiding communities in facilitating the cleanup of hazardous pollution across the country.

## Resources:

American Water Works Association (2023). Water Systems Could Face Costly PFAS Waste Rules, Journal AWWA, Volume #115, Number 9, pg#6

Florida House of Representatives (December 7, 2023). Water Quality, Supply & Treatment Subcommittee, (December 7, 2023), meeting packet

PFAS CERCLA Comment Letter Final. (2022, November 7). Wateruse.org. Retrieved December 12, 2023, from <https://wateruse.org/wp-content/uploads/2022/11/PFAS-CERCLA-WateReuse-Comment-Letter.pdf>

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SYSTEMS INC.

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Jupiter, Florida 33458  
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[www.jlageosciences.com](http://www.jlageosciences.com)

# MEMBER SPOTLIGHT

1. **How did your career in the Water or Wastewater Industry get started? And how did it evolve over the years to your retirement?**

I began my career in 1989 as a trades mechanic. My late father, William McHugh, encouraged me to pursue a trainee position. After that I continued to obtain licensing and advanced to eventually be both an A Water Treatment plant Operator as well as an A Wastewater Treatment plant Operator. I began teaching CEU's seminars as well a Residence course in the early 2000's. I consider helping younger people to get a start in this career my true calling. It is very rewarding to see some of my students as operators, lead operators, and even a directors or two!

2. **How long have you been a member of SEDA?**

I became a member of SEDA in 2004.

3. **What/who prompted you to join SEDA? How did you get involved in SEDA on a deeper level? Explain your history with SEDA.**

Eugene Pennetti, formerly of the City of Miramar, really fought for me to attend MOC schools and to start teaching courses as well. As Membrane plants became more of the norm there was a need for operators to help with start ups and just getting the plants right. Once I met Mo Malki and his staff from AWC I was able to get involved in cleaning seminars as well as many other areas of need that daily operators require. I was fortunate enough to be able to help set up seminars at Coral Springs Improvement District as well as the Seminole Tribe of Florida. I would be remiss without mentioning Trudy Gomez, Operations Manager for the Seminole Tribe of Florida, his unique management style taught me to never settle for mediocrity. Also a very special thank you to Bryan Fogle for nominating me but mostly for his friendship.

4. **How did being a member of SEDA benefit you? What did you enjoy the most about SEDA?**

SEDA was and still is the main organization that offers something of value to operators. This industry is ever changing and seems to be going in a direction that involves engineers, IT professional and generally people with higher levels of education. An organization like SEDA continues to offer front line operators knowledge and skills to keep them in this industry and also institutional knowledge to call upon when things don't go as planned. Usually at three o'clock in the morning when the operators are at the controls. These skills prove invaluable. I enjoy the seminars and practical working knowledge that SEDA has taught and also allowed me to pass on to future operators.



**Michael McHugh**



5. **What do you enjoy doing in your free time?**

I love to fish, read books, cooking, and spending time with my family. I also enjoy tutoring operators that are either just starting out or are advancing their licenses. Jean Sanchez, Henry Coreano, Lionel Gros-Ventre and Ruben Bailey are just a few of the people that I have been able to help obtain their licenses in the last year. That is what I think I enjoy the most.

6. **What is the most recent book you have read or concert you have been to?**

I read a lot, “The eyes of the invisible” by Dave Eggers, “America Before” by Graham Hancock, and “Holly” by Stephen King. Last concert was “Skinny Puppy” on my birthday! It was an amazing show!

7. **What are you enjoying most about retirement?**

My retirement was short lived. I’m now the Utility Plant Manager for the Micosukee Tribe. During the three months of my retirement I fished almost everyday, caught up on some of my reading, and baked a lot of cakes and cookies. My wife is happy to get me back to work!

8. **What advice to you have for the younger generation in the beginning years of the their careers in Water/Wastewater and SEDA?**

Stay hungry. Knowledge is power. Obtain all of your licensing that you can, even if your current employer discourages it. Ask questions. Chances are if you don’t understand something then there are others that don’t as well. Most of all do not settle for normalcy. Make yourself great, everyday. Be ready when opportunity knocks, believe in yourself and GO FOR IT!

# SAVE THE DATE 2024 ANNUAL SYMPOSIUM

30TH ANNIVERSARY EDITION

JUNE 2ND - 5TH, 2024

TAMPA, FLORIDA

CALL FOR PRESENTERS IS NOW OPEN!





# ANNUAL AWARDS 2024

*Do you think your plant has what it takes to be Plant of the Year??*

*Do you have a co-worker that goes above and beyond??*

## NOMINATE THEM

### **2024 Awards**

***Outstanding Large Membrane Plant Operations Award (>5MGD)***

***Outstanding Small Membrane Plant Operations Award(<5MGD)***

***Outstanding Operator Award***

***and many more!!!***

***Awards will be presented at the Annual Symposium,  
in Tampa, June 2-5, 2024***

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QUESTIONS ??? CONTACT THE SEDA OFFICE AT (772)781-7698

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# Upcoming Events

## UPCOMING MEMBRANE OPERATORS CERTIFICATION MOC I, II & III

### MOC III

February 13-15

Palm Coast, FL

### MOC I

March 26-28

Cherry Point, NC

### MOC I

April 30 - May 1

Jacksonville, FL

Lunch Provided

## UPCOMING WORKSHOPS

February 6-8

Hands On Membrane Cleaning

Village of Wellington, FL

March 18

Optimizing Energy Efficiency in Brackish PO Systems

North Port West, FL

April 10

Operating & Troubleshooting of RO Systems

Lake Worth, FL

April 23

Pretreatment Workshop

North Spring, FL

All attendees receive CEU's  
Lunch Provided

The logo for JAWS (Joint Water Association of the Southeast) features the word "JAWS" in a large, bold, blue, sans-serif font. Above the letters, there is a stylized blue graphic of a shark's mouth with sharp teeth, set against a white background with a thin blue border.The advertisement for Avista Technologies features a background image of a green, porous, biological-looking structure. On the left, the text reads "Complex Foullants Demand Complex Cleaners." Below this is a row of five colored squares containing the letters S, C, Fe, Mn, and Cr. On the right, the text says "LEARN MORE AT AVISTATECH.COM" in blue and black. Below that is the Avista Technologies logo, which includes a stylized water drop icon and the text "Avista TECHNOLOGIES". Underneath the logo is the tagline "Creative Chemistry. Smart Solutions." and the copyright notice "© 2018 Avista Technologies, Inc. All rights reserved. AD\_SEDA 02.2018".

# HELP WANTED - Join a SEDA Committee!

Author: Ryan Popko, JEA

SEDA has a number of committees that are led by our board members. However, you don't need to be on the board to participate in a committee. If you are interested in getting involved in any of our 2024 committees, please reach out to the Michele Miller (admin@southeastdesalting.com) or one of the committee chairs below:

## **Finance:**

The finance committee prepares plans for financing activities and an annual budget to govern SEDA's operation. Modification of dues rates, event registration rates, event sponsorship rates, alterations to financial plans, and budget amendments are reviewed by the finance committee which are submitted with accompanying recommendations to the Board for action.

Chair: Allan Clum, aclum@mpwonline.com

## **Legislative:**

The legislative committee tracks information concerning legislation proposed for consideration in the Congress, in the State Legislatures, or by other governments affecting the interest of SEDA and its members. When appropriate, the committee prepares position documents on behalf of and for consideration by the Board. The committee disseminates that information in the SEDA Recovery Zone newsletter and presents updates at the annual SEDA Symposium.

Chair: Pierre Vignier, pvignier@cityofpsl.com

## **Membership:**

The membership committee seeks and reviews applications for membership in the three different membership Divisions: 1 – Public Agencies, Industrial Users, Water Suppliers, 2 – Manufacturers, Suppliers, Consulting Firms, and 3 – Individuals, Libraries, Students and Affiliates of Division 1 or 2. The membership committee seeks to obtain the widest possible participation among qualified applicants and makes membership recommendations to the board and membership is approaching the milestone of 1,000 members.

Chair: Nick Black, nick.black@kimley-horn.com

## **Membrane Operator Certification:**

SEDA founded the Membrane Operator Certification (MOC) program in the 1990's and the committee is responsible for updating content and implementing training for operators as well as utility managers and others in the industry focused membrane treatment. The program has grown to include four different modules, each three-days in duration: I – Introduction to Membrane Systems, II – Advanced Training of NF/RO Systems, III – Advance Training of MF/UF Systems, and IV – Advance Training of MBR Systems. The MOC committee organizes the MOC events including coordination with host facilities, scheduling speakers and administering the comprehensive examination.

Chairs: Ricardo Avena, ravena@avistatech.com

Melissa Fernandes, mfernandes@membranechemicals.com

## **Newsletter:**

The newsletter committee is responsible for creating and publishing the quarterly membership newsletter – The Recovery Zone. The committee manages a call for articles, edits the articles, compiles and formats the newsletter including upcoming events and advertisements. Content includes topics such as the president's message, legislative updates, event recaps, facility and member spotlight and SEDA quiz. Recently, the Recovery Zone has gone from a hard copy print edition to a digital edition.

Chair: Ryan Popko, popkrr@jea.com





### **Nominations and Elections:**

Nominations and elections committee propose a slate of directors for the annual Board of Directors election cycle consisting of active members that are and are not Board members. The committee conducts the election, which is distributed to every active member for voting, closes the polls, tallies votes, and announces the results of the election. All three membership Divisions are voted on each year. Board of Directors are elected or appointed to serve a term of two-years with approximately one-half of the total number elected or appointed each year. SEDA encourages members that want to dedicate their service to the membership to be considered for election to the Board.

Chair: Ryan Popko, [popkrr@jea.com](mailto:popkrr@jea.com)

### **Program:**

The program committee is responsible for preparation of the annual symposium and other events where appropriate. The committee considers the objectives of SEDA and the technical interests of the members in creating programs. The annual symposium requires several different tasks including but not limited to negotiating with host hotels, scheduling the plant tour, developing the technical program and speakers, hands-on training sessions, awards luncheon and other aspects like the networking events.

Chair: Allyson Felsburg, [allysonf@jupiter.fl.us](mailto:allysonf@jupiter.fl.us)

### **Public Relations:**

The public relations committee is responsible for developing and implementing programs which inform and educate the public and SEDA's membership as to the positive benefits of desalting and membrane processes. Public relations also manages SEDA's branding and social media channels.

Chair: Jennifer Ribotti, [Jennifer.ribotti@tetrattech.com](mailto:Jennifer.ribotti@tetrattech.com)

### **Technology Transfer:**

The tech transfer committee is responsible for generating and conducting programs of technology transfer designed to increase the knowledge of and interest in desalting, water reclamation and other fields of interest to our members. The 1-day tech transfer events include classroom and hands-on learning, each covering a different topic such as membrane cleaning, post treatment, troubleshooting, chemical pretreatment, pilot plant operations, instrumentation & controls, or raw water supply.

Chair: Karla Berroteran, [kberroteran@wellingtonfl.gov](mailto:kberroteran@wellingtonfl.gov)

### **Awards/Scholarships:**

The awards and scholarships committee is responsible for updating the criteria for annual awards for operator, treatment plant and scholarship awards. The committee advertises, receives and reviews the awards that are presented at the annual SEDA Symposium.

Chair: Nate Litteral, [nlitteral@tequstra.org](mailto:nlitteral@tequstra.org)

### **By-Laws and Policies:**

The by-laws and policies committee is responsible for maintaining and updating SEDA's rules and policies including the associations mission statement, membership dues, meeting requirements, elections, directors, officers, committee roles and responsibilities, deposits and funds, records and reports.

Chair: Karla Berroteran, [kberroteran@wellingtonfl.gov](mailto:kberroteran@wellingtonfl.gov)

# SEDA QUIZ

By: Fred Greiner, JEA  
H2.O Purification Manger

1. When using a detergent in the CIP cleaning process which of the follow statements are true? (Reference - TSB107.27 Page 7)
  - A. Flushing with a higher pH permeate can reduce foaming problems
  - B. Cleaning with a detergent is used calcium sulfate scale removal
  - C. Flushing with a lower pH permeate can reduce foaming problems
  - D. Cleaning with a detergent is used for iron and manganese removal
2. \_\_\_\_\_ fouled membranes should not use a low pH clean-up first since this material will congeal (or thicken). (Reference - TSB107.27 Page 7)
  - A. Feed side of pressure vessel
  - B. Concentrate end of pressure vessel
  - C. First stage
  - D. Thrust rings are only used on high pressure systems
3. Which direction should the thrust ring be installed on an end cap? (Reference – codeline users guide)
  - A. Membrane module
  - B. Membrane Stack
  - C. Membrane Unit
  - D. Membrane Bundles
4. Which of these are not recognized as a symptom of a chemical fouling situation? (Reference – MOC module II pg 116)
  - A. Loss of permeate flow
  - B. Decrease in salt rejection
  - C. Increase in differential pressure
  - D. Decrease in SDI
5. \_\_\_\_\_ is the maximum log removal value (LRV) that can be reliably verified by a direct integrity test; also applicable to some continuous indirect integrity monitoring methods (EPA 2005 membrane guidance manual pg 31)
  - A. Sensitivity
  - B. Resolution
  - C. Upper Control limit
  - D. Frequency
6. Which of these are NOT one the (3) performance criteria that any direct integrity test must of an MF/UF system according to LT2ESWTR? (EPA 2005 membrane guidance manual pg 38)
  - A. Sensitivity
  - B. Resolution
  - C. Redundancy
  - D. Frequency
7. Your profiling results shown an elevated conductivity in Pressure vessel-18 (second stage) only. Your second set of samples confirmed the previous results. What steps should you take next?
  - A. Run an SDI
  - B. Perform a permeate flush
  - C. Perform a second stage cleaning only
  - D. Probe the vessel in question

Answers can be found on the SEDA website at  
<http://www.southeastdesalting.com/members-only/quiz/>

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