

Process Solutions

Water and Process Fluid Purification

THE BIG 3-0!

Remember when you were younger and 30 seemed **old**? Well, as hard as it is to believe, **Process Solutions, Inc.** is celebrating our 30th anniversary this year! It's been an interesting, sometimes wild ride through good times and some not-so-good times. Through it all, the company has grown and adapted to industry trends and the needs of our customers.

To celebrate, we are planning a series of special events to recognize those who are responsible for our success – our customers! These Customer Appreciation events will take place in various cities throughout the region over the course of 2024. Invitations will be sent out as the details of each event are finalized.

We would like to take this opportunity to thank all of you who have contributed to our success over the last 30 years with your confidence in us and your continued business. We couldn't have done it without you!!

Introducing MCAPS!!

A while ago we announced that we were expanding our facility and building an in-house membrane cleaning plant – and it's finally up and running! There were a few surprises along the way, but we worked through them and we are now cleaning membranes regularly.

Our process, **Membrane Cleaning and Preservation Services**, is very similar to the one used by *Avista Technologies*, includes before and after cleaning testing of each membrane for flow, differential pressure and rejection, plus cleaning with both high and low pH cleaners. Cleaning is performed using *Avista* cleaners, and each element has preservative added, then sealed in individual plastic bags and boxed for shipment. A report is generated with test results by element serial number and sent to the customer.

If you've never sent your membranes out for cleaning but want to give it a try, contact your **Process Solutions Inc.** sales representative!!



Process Solutions' in-house membrane cleaning plant is up and running!



About Our Organization...

At **Process Solutions, Inc.** we're committed to being your full-service supplier of water treatment products, systems and services. We do this by providing our customers with high quality products, great service and *all at competitive prices*. Please feel free to call us with your feedback and suggestions as to how we can be of service to you.

Safety Awards!

We are thrilled to share the news that we have been chosen as one of the winners for Avetta's 2023 Supplier Awards! **Process Solutions Inc.** has been recognized as a Safety Star. Avetta values a safer, more sustainable work environment, and as their customer, we do, too. We are committed to building a safer and stronger business and we look forward to our continued partnership.

We have also been recognized as a Diversity Champion. Avetta looks to partner with companies who strive to be safe, inclusive and welcoming to all people, embracing diversity, equality, and inclusion.

For those unfamiliar with Avetta, it is a platform that offers supply chain management and risk mitigation solutions to their clients. Avetta works with clients and suppliers to ensure that the companies performing work on customer sites are qualified, licensed and safe through vetting of their safety statistics and programs. Avetta also connects clients with qualified suppliers to help them get the services they need with the assurance that the company they are selecting to perform on-site work is fit for duty before the project begins.

Avetta's vetting process generally consists of identified safety criteria, questionnaires and documents regarding safety statistics, insurance and audits, and compliance status. In addition to the initial vetting process, suppliers must maintain and update their safety records and documents for each client to be considered compliant. This assures that any given client is dealing with suppliers who have met and maintained their safety standards to perform work on site.



It's That Time Again.....

A lot of you have been asking when we'll be doing this again, and now it's time. *Good to the Last Drop...A User's Guide to Membrane Technology* has been scheduled for the week of April 15, 2024 at the following locations:

| | |
|---------------------|-----------------------|
| Tuesday, April 16 | Louisville, KY |
| Wednesday, April 17 | Indianapolis, IN |
| Thursday, April 18 | Cincinnati/Dayton, OH |



"Good to the Last Drop" will be offered the week of April 15, 2024.

For those who have not yet attended one, these are practical and technical seminars for those trying to get the most productivity from their membrane systems. The presentation will focus on optimizing membrane life and system performance; and will address such topics as system operating guidelines, pretreatment, optimizing your cleaning techniques, troubleshooting, and controlling biological contamination.

As always, *Avista Technologies* and *DuPont Water Solutions (a.k.a. Filmtec)* will be participating, sharing their insights and expertise in membrane applications.

Invitations will be going out when the time gets closer, but please pencil in these dates on your calendar. In the meantime, if you have questions or want further information, please contact us at **513-791-3338**!

The Mystery of Tank Internals?

Well, it's a mystery and it isn't. When we get into rebed projects and open up the tank, we find all sorts of distributor designs. There's a wide variety and they all have their pros and cons – and the OEM who built the system generally considers their design proprietary. Internal distribution systems are integral to a wide variety of water treatment applications: filtration, softening and deionization. In many cases the performance of an existing system can be improved by upgrading the distribution system if the vessel design permits.

In reality there's a lot of science that goes into engineering these, which is why we ask so many questions when a replacement is needed. For industrial applications, distribution systems (at least the better ones) take into account flow rate; pressure drop; number, size, orientation and spacing of the holes in the laterals and whether or how they are screened. This can vary with the size of the pressure vessel as well. The goal is to provide uniform flow through the media/resin bed and avoid channeling.

In small diameter fiberglass tanks, we frequently see a basket-type strainer for the distribution system, since FRP tanks normally don't have a manway to install them. These may be installed at the end of a riser pipe or screwed into the tank head.

The Inverted "H" design relies on directing the service and rinse flows off the upper tank head for distribution of flow. This is the lowest cost design and typically seen in smaller, commercial grade systems. The downside of this design is that it is a poor collector of backwash flow.

The hub-radial design consists of a center hub with radial laterals (similar to a bicycle wheel). These provide good flow distribution and backwash water collection in vessels 60" diameter and smaller, the cost is moderate. However, above 60" diameter, the ends of the laterals are too far apart to provide uniform flow, so typically a header-lateral configuration is used for larger diameter tanks.

The header-lateral design consists of a center header with laterals that reach to the sidewall of the tank. These provide the best flow distribution and backwash collection however are the highest cost design, typically 15-20% higher than the hub-radial style.

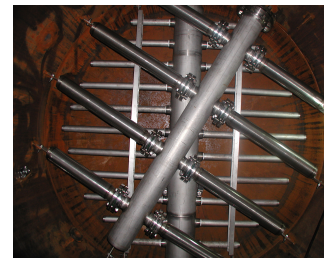
For some applications a header with dropped laterals is used, which consists of a center header with laterals extending to the bottom of the dished head. This utilizes the volume of media in the bottom head, but particles can become trapped and not effectively backwashed out.

In older systems, we sometimes see strainers embedded in concrete in the bottom head or the false bottom of the vessel, so there is no need for a gravel support bed. However, the strainers can become plugged over time or broken – and replacing them can be a huge undertaking!

To determine whether your system performance could be improved by an internal distribution upgrade, contact your **Process Solutions, Inc.** sales representative!



Hub-radial distributor design



Header-lateral underdrain



Who Says It's Not Easy Being Green ?

If you would prefer to save a tree and receive our newsletter electronically, please email us at sales@psiwater.com and we'll add you to our electronic distribution list. Thank you!

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