ASPE
American Society of Plumbing Engineers™
BALTIMORE

Monthly Newsletter **NOVEMBER 2021**

WWW.BALTIMOREASPE.COM

Upcoming Meeting

Date: **November 18th, 2021**

Time: **6:00pm to 8:00pm**

Place: Olive Grove Restaurant

Topic: Direct Inline Pumping (DIP)
Sump and Sewage Ejector Design

Speaker: Desmond Richelsen - AMES

Meeting Format
6-6:30 Social
6:30-6:45 Announcements and Table Tops
6:45 Dinner Served
7:00-8:00 Speaker

In This Issue

MEETING LOCATION

Olive Grove
Restaurant & Lounge

705 North Hammonds Ferry Road
Linthicum, Maryland 21090
Phone: 410.636.1385

Local Chapters are not authorized to speak for the Society.
Newsletter questions please contact Jason Eagles

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- All ads must be paid in full prior to the advertisement being included in the newsletter.
- Advertiser must provide ads in high resolution PDF format. Logo must be provided in .jpeg format 200px wide max.

•Cost per advertisement size is as follows:

Size	Per Year
Full page	$750
½ page	$500
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Please Contact Jason Eagles or Jeff Edwards

Make checks payable to Baltimore Chapter of ASPE. Please contact the chapter Treasurer with any questions.

Kathy Dwyer
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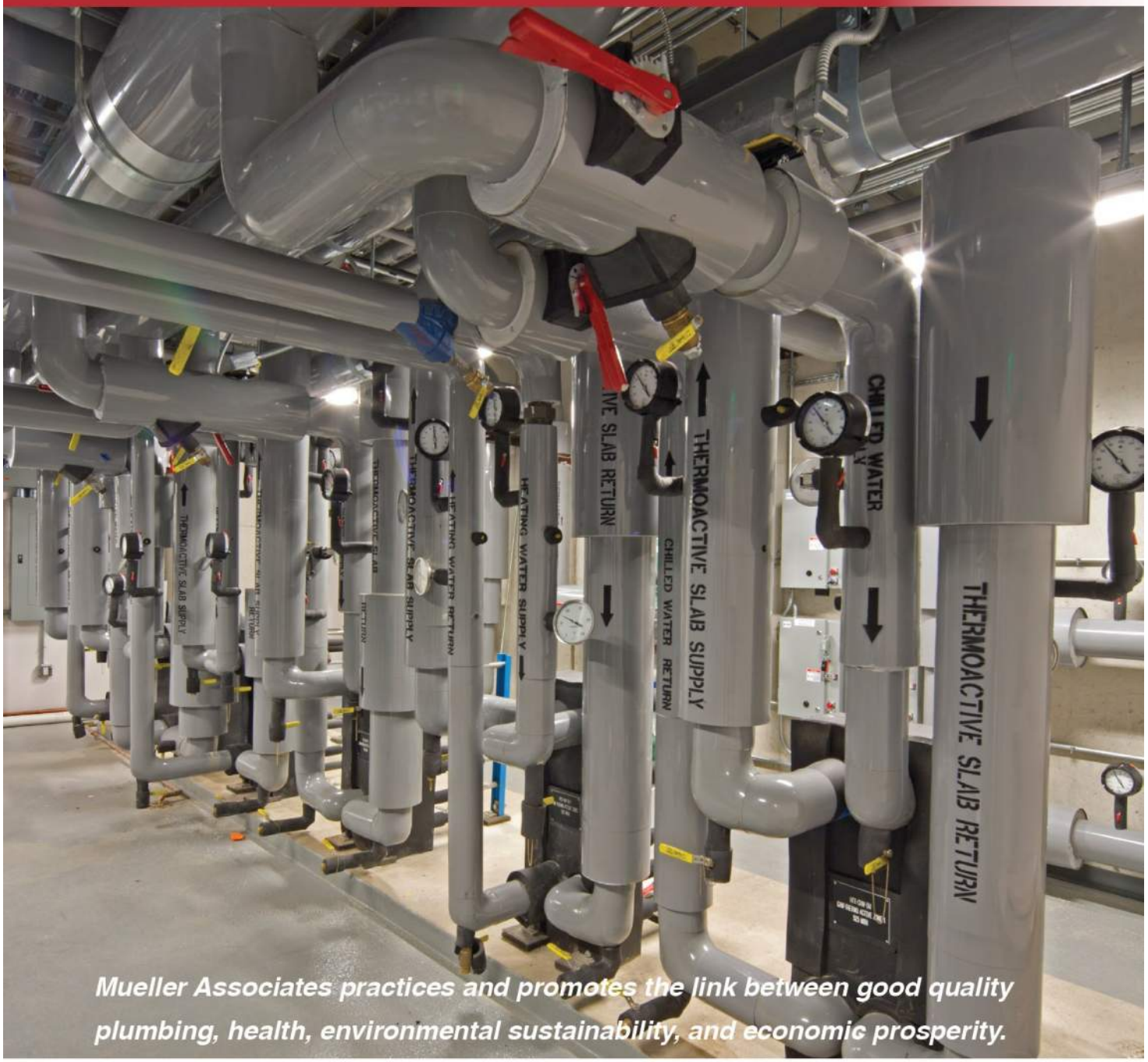

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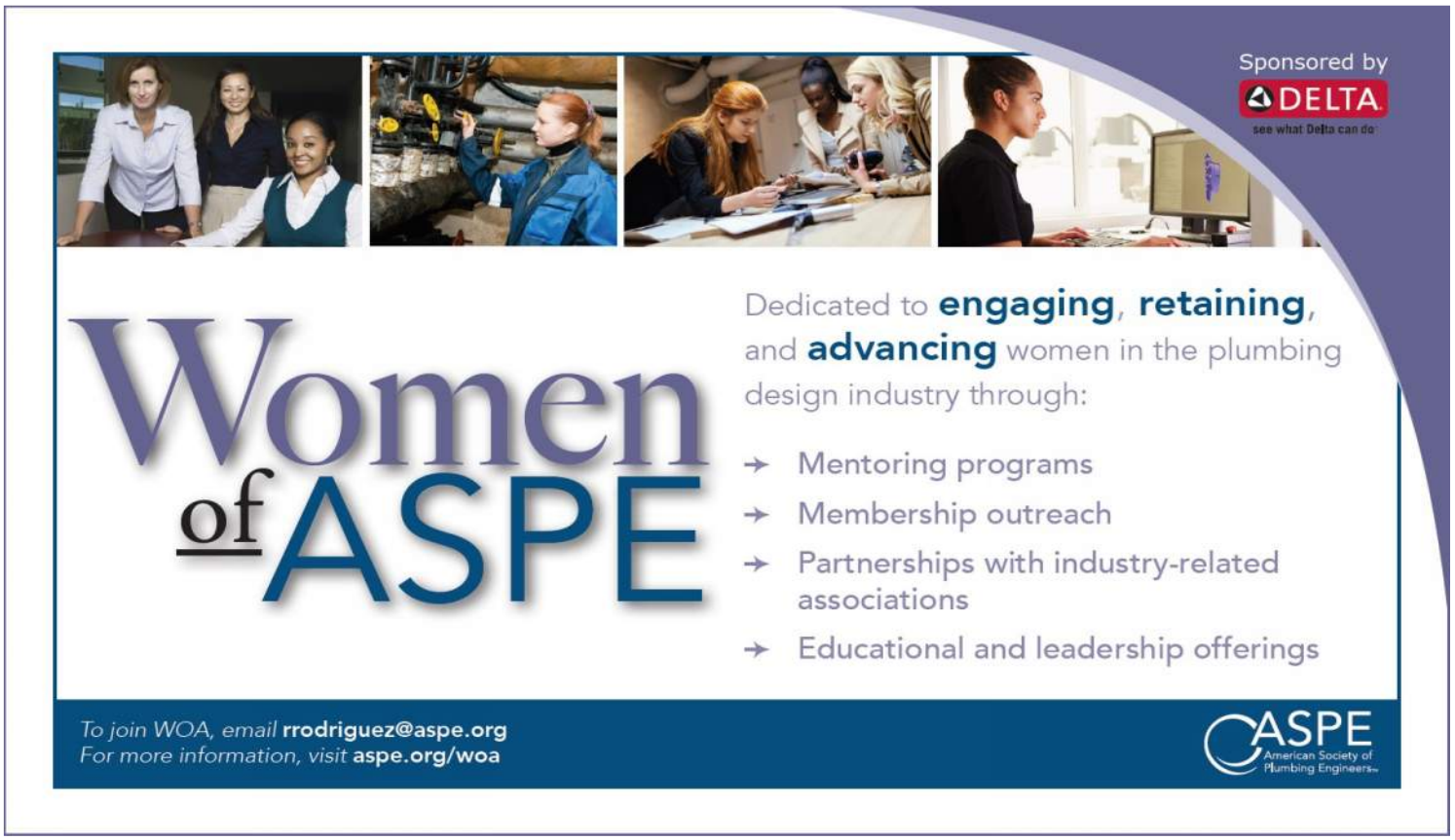
Karen Schulte, PE, CPD, LEED AP BD+C
WOA Liaison

WOA Report

As plumbing engineers, we know that our job does not exist in a vacuum and that collaboration is essential to the success of the projects that we work on. I would venture to guess that on a daily basis each one of us is collaborating both with members of our own company and with outside consultants. If you'd like to learn more about how to successfully lead the collaboration effort, ASPE national has an opportunity for you. ASPE National is hosting a WOA webinar on November 12 "Leading Collaboration: Its harder than we think because it involves conflict". The webinar, which will be presented via Zoom, is free to ASPE members and being offered twice on the Nov 12, 11am EST and 3pm EST. Visit ASPE.org; Women of ASPE page to register.

Best Regards,
Karen Schulte, PE, CPD, LEED AP BD+C



ASPE Design Guide Volume 4 Chapter 4

"The goal of the designer should be for the system to operate with as little energy as possible for a given demand."

"At no time is a booster at 100 percent flow based on Hunter's diversity curves"

"When selecting the total flow capacity, one preferred way to evaluate the operational efficiency is to use a method that can be scientifically proven, such as the 70 percent method."

"Tanks will typically be required when the manufacturer does not utilize low flow testing algorithms to detect low flow"

"New energy standards concede that reducing the speed of a pump during most of its operational time and restarting for makeup loads is more efficient than using tanks as "water storage batteries" during low-flow conditions."

** The above is taken from American Society of Plumbing Engineers design guide volume 4 chapter 4**

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Chuck Swope, PE, CPD, LEED AP BD+C
Vice President—Technical

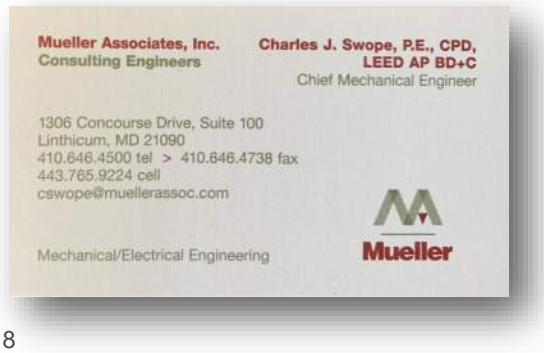
Technical Report

Another month has gotten away from us here at the Baltimore Chapter of ASPE. It feels like just yesterday that Chas Tevis of Highland Tank gave his presentation on Oil/Water Separators (not to be confused with Grease Interceptors). Chas is a great resource to reach out to on many topics and the photos shared of the underground tanks erupting from the ground were a chilling reminder of the power of water and buoyancy.

In other news, Jeff Edwards, our current chapter president of the last 5 seasons announced at our last meeting that this season would be his last. Of course, he did publicize this in the September Newsletter, but saying it out loud definitely had more of an effect. For those of you not present at last month's meeting, all current board members were present, so quorum was reached. As you may or may not know, our chapter president has typically been nominated by fellow board members and voted on by the present chapter members at a meeting. We are lucky enough to have presidents and board members stay on for many years, so we don't typically run elections often. This all being said, I was nominated by Jeff and was elected next years president unopposed. More will be announced at a future date.

As for this month's technical presentation, Desmond Richelsen will present on Sump Pump and Sewage Ejector Design, featuring Direct Inline Pumping (DIP) systems. He will cover important topics like basin size and locations, pump sizing and types, level controls and more. Desmond is a Vice President of Sales with seven years of experience fostering relationships with contractors, engineers, owners, and end users in the National Capital region commercial markets. He has extensive experience selling mechanical equipment for Plumbing, Fire Protection, and Mechanical systems in commercial buildings and site utility systems. Formally a Plumbing and Fire Protection Design Engineer with over sixteen years of experience designing sanitary waste, acid waste, effluent decontamination waste, storm sewer, domestic hot/cold water, laboratory use hot/cold water, purified water (reverse osmosis and de-ionized), vent, compressed air (medical and industrial), vacuum, natural gas, specialty gas, sprinkler, and standpipe systems in all sectors of the field, including Residential, Commercial, Industrial, Medical, Vivaria, Higher Educational, Educational, Biocontainment, and Government projects. He is well versed with the Boca building code, Southern building code, New York building code, International building code, International Plumbing code, International Fuel Gas code, National Standard Plumbing Code, WSSC plumbing and gas code, and NFPA. He is proficient with Revit AutoCAD, Autodesk Building Systems (ABS), Solid Works, Vectorworks, and ArchiCad

Best Regards,
Charles J. Swope, PE, CPD, LEED AP BD+C
Vice President - Technical



Overcoming Modern Wastewater Challenges

New residential pumping technologies are resolving the unintended consequences caused by the modern waste stream.

May 7, 2019

Today's residential wastewater stream poses more problems to plumbing systems than ever before with the proliferation of "flushable" wipes and other unconventional solids such as baby wipes, paper towels and feminine hygiene products.

Touted as modern conveniences, these products are anything but, considering the detrimental effects they can have on residential plumbing systems. Although disposable cleaning wipes and personal hygiene products should be tossed in the trash, many consumers instead flush them down the toilet, adding harmful synthetic material and artificial fibers to the wastewater stream.

Unlike toilet paper, wipes don't break up easily or quickly and can clog sewage treatment equipment and home septic systems. Clogging can occur when many wipes get stuck in the pump or if debris builds upon the flushable wipes already stuck in the system.

Consequently, residential wastewater pumps are working overtime to handle these challenges. New solutions in pump engineering are being developed to help avoid unintended consequences such as clogging and system damage caused by the modern waste stream.

Fats, cooking oil and grease (FOG) present another challenge for residential and municipal wastewater pumping stations. When poured down kitchen drains, FOG accumulates inside sewer pipe, restricting flow and causing blockages. The

This article originally appeared in Plumbing Engineer, a TMB Publishing publication. For more articles like this, please visit www.phcppros.com.

resulting buildup can lead to operational problems and the need for costly maintenance.

FOG is one of the leading causes of sewer overflows and blockages, costing the wastewater industry billions of dollars annually.

New pump technology battles back

Along with public awareness campaigns to reduce the amount of nonflushable materials entering the wastewater stream, equipment manufacturers are expanding their wastewater product portfolio and technologies to combat contemporary wastewater issues. Grinder pumps and vortex impellers are among the most popular pump technologies used to address modern wastewater challenges and help avoid system damage.

- Grinder pumps.

  These pumps are a wastewater transportation device that helps transfer household waste, such as flushable wipes, to the larger sewer system. Waste from toilets or sinks flows through a home's pipes into a grinder pump's holding tank. Once the wastewater inside the holding tank reaches a certain level, the grinder pump turns on, cuts the waste materials into tiny bits and pumps the slurry to the central sewage system or septic tank.

  Outfitted with steel blades, the grinder pump cuts solids found in sewage into tiny pieces, which are then passed down the piping network before being discharged at a collection point. Residential grinder pumps are designed for continuous use and are capable of grinding domestic sewage in high-head sewage applications.

  While grinder pumps are a good choice if solids such as flushable wipes are present in the wastewater stream, it is important to understand that these pump installations still need to follow the rules of pump hydraulics. For example, a minimum scouring velocity needs to be maintained so solids are not permitted to settle down, which can cause issues further down the sewage line.

- Vortex impeller pumps.

  The design of this type of pump includes a semi-open impeller recessed into the volute section of the pump. A recessed impeller design allows for the clear passage of solids, which helps prevent stringy, cloth-like materials and abrasive solids from collecting on the impeller and eventually clogging the system.

This article originally appeared in Plumbing Engineer, a TMB Publishing publication. For more articles like this, please visit www.phcppros.com.

For example, if a pump has a 2-inch solids handling requirement, which is a common residential wastewater specification, the 2-inch sphere does not need to touch the impeller when it passes through the volute — the curved funnel that enlarges as it approaches the discharge port — of the vortex pump. If the waste material traveling through the pump is stringy, stranded or even cloth-like, a vortex impeller helps prevent the slurry from forming a twisted mess that would otherwise bind or clog the pump.

Although the vortex impeller pump is a popular choice for demanding residential wastewater applications, the impeller design has its downsides. The vortex impeller is recessed, which keeps it out of the wastewater flow path, which greatly reduces the potential for clogging. However, this same design also results in lower wire to water efficiency.

Despite the practice of backflushing, which entails running the pump backward to clear the leading edges of the impeller and push the build-up of solids through the pump's suction opening back into the sump pump, these solids return during normal operation, leading to decreased efficiency and higher operational costs.

- Self-cleaning impeller pumps.

Today, more advanced hydraulic designs are available to increase a residential wastewater pump's clog resistance and maintain pump efficiency. A revolutionary self-cleaning design, with horizontal backswept leading edges and a relief groove, is proving to be a reliable solution to prevent clogging problems.

Key to the K-impeller design is the interaction of the extreme back-swept impeller vanes and the stationary relief groove in the volute suction where the leading edge of each impeller vane is cleaned during pump rotation. The reliability of the K-impeller can be attributed to the semi-open, screw-shaped impeller that prevents clogging and facilitates the unobstructed flow of fibrous material.

The leading edge of the pump's rotating impeller passes across a stationary relief groove located in the pump suction port. The dynamic action cleans and pumps away any rags, stringy materials and solids from the impeller without compromising the hydraulic efficiency.

The self-cleaning impeller design provides a flow path through the pump, greatly reducing the risk of clogging and making these pumps a practical

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solution for residential applications. Unlike standard residential wastewater pumps, a pump with self-cleaning hydraulics will not accumulate the solid objects more likely to be found in modern wastewater.

The K-impeller's increased clog resistance results in minimized costs for operation, service and maintenance, which in turn improves overall reliability and energy efficiency.

Integrated Intelligence

In addition to newer nonclog technology, smart pumping systems are entering the residential wastewater market. Equipped with integrated intelligence, these wastewater pumping systems sense the operating conditions of their environment and provide feedback to help minimize downtime and enhance efficiency.

Smart-monitoring technologies that detect high temperatures and seal leaks or failure provide peace of mind through real-time insights into the status of the wastewater pump system, sending alerts when maintenance is required.

While dual-seal design and sensors for high temperature and seal leak detection come standard on pumps with K-impeller technology such as the GFK Series Submersible Sewage Pump, homeowners can right-size the pump installation and opt out of connecting the smart pump controls, which are more commonly used in commercial applications, reducing the installation cost dramatically.

Today, equipment manufacturers are continuously introducing new and smarter pump technologies to stay abreast of the ever-changing residential wastewater environment. With the U.S. wastewater infrastructure facing a daunting investment gap, these critical systems are at risk and leave our communities vulnerable to the consequences of system failures. The need to leverage technology to develop new, more sustainable solutions has never been more evident.

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Nikita Patel, EIT, MBA
AYP Liaison

AYP Report

Thank you to all who were able to attend our first in-person AYP social event at the Autobahn Speed Racing Center in Jessup, MD. As we work to put together more events for the remainder of our season, please continue to read this segment in the newsletter to see if there's anything you might be able to attend.

Thanks,

Niki


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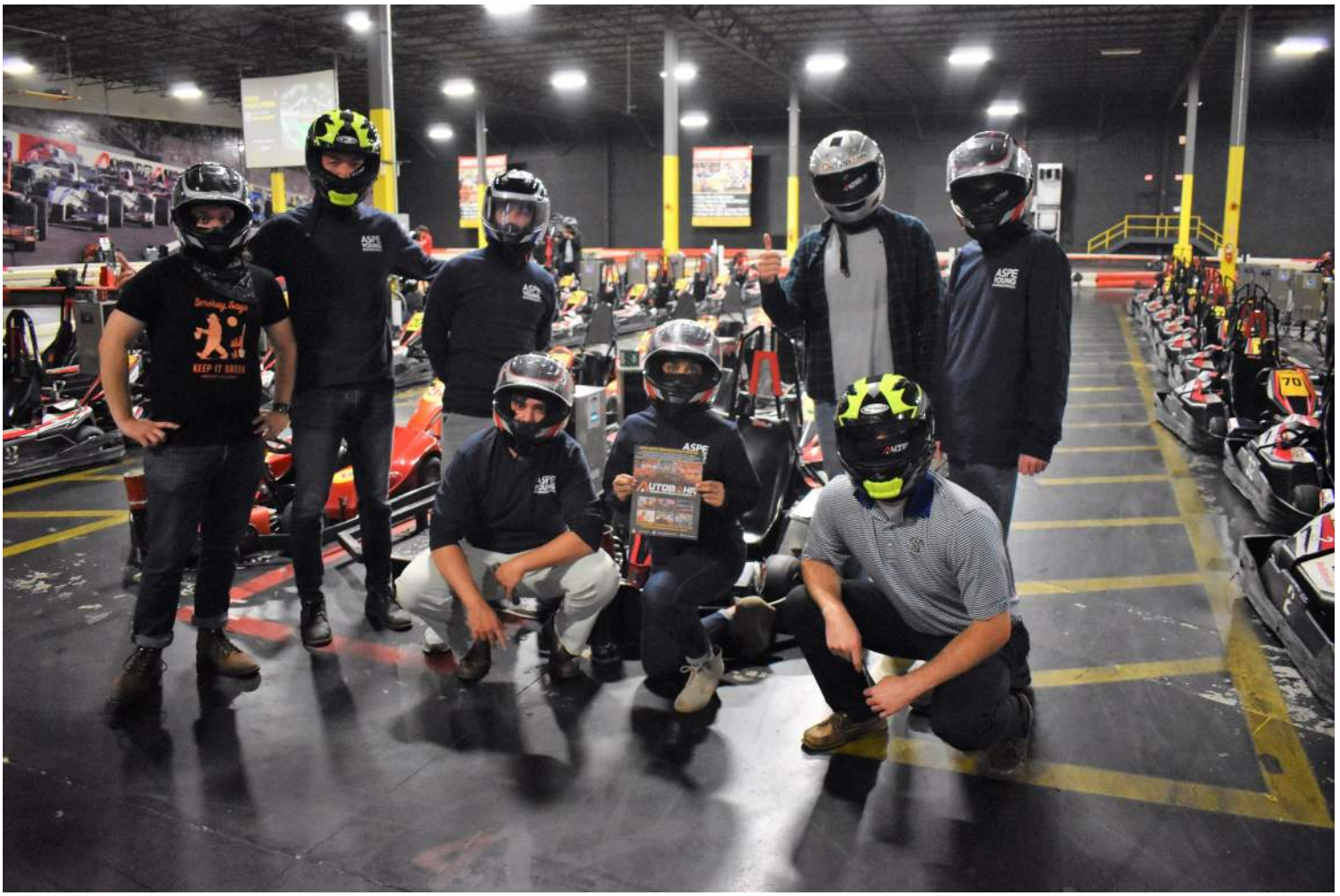

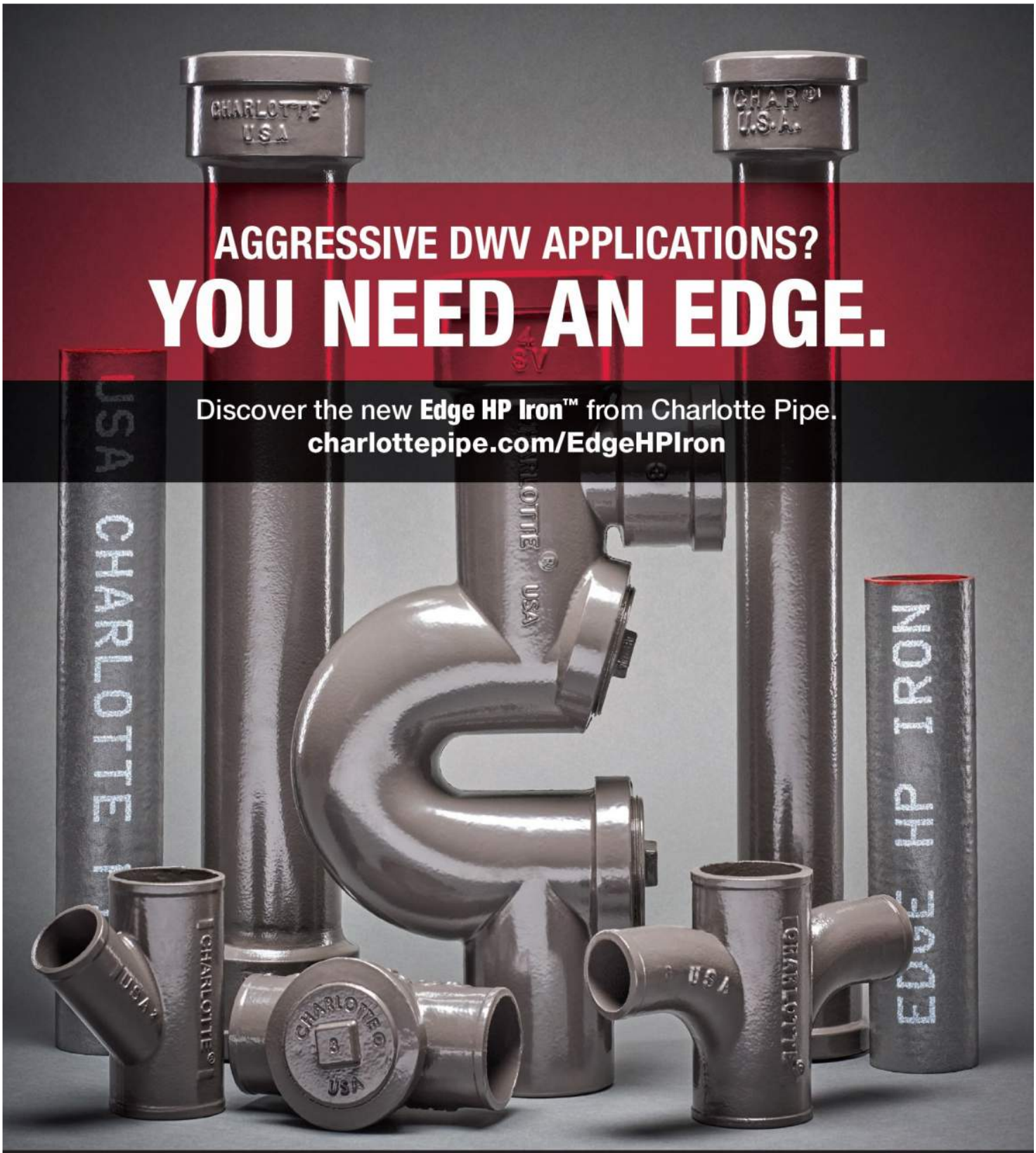

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Brian Crisp, CPD
Vice President - Membership

Membership Report

Hello again folks! We have a couple meetings under our belt, it's been good to see our members in person. I can attest that the crab cakes are as good as ever - If you're comfortable, please join us at the Olive Grove once again. We are also looking for volunteers to join the Board, if interested please contact us to discuss.

We successfully awarded some folks their Membership Tenure Awards. Thanks to Steve Watkeys for attending and Lance Reynolds (see below for his superb hand-modeling skills) for accepting on behalf of Eric Sellers. We encourage those accepting awards to attend (and have your meeting registration paid by the Chapter). But if you are unable to attend, we can send you your deserved award in the mail.

In terms of attendance, Baltimore is holding steady at 110 members. If you or anyone you know is interested in joining, or at least hearing about the benefits of membership, please don't hesitate to reach out to me. You can also join directly at https://www.aspe.org/join.

Brian Crisp, CPD
Vice President, Membership

How to comply with the Energy Code C404.5.1 (requiring a maximum of only 24" of non-circulating pipe length).

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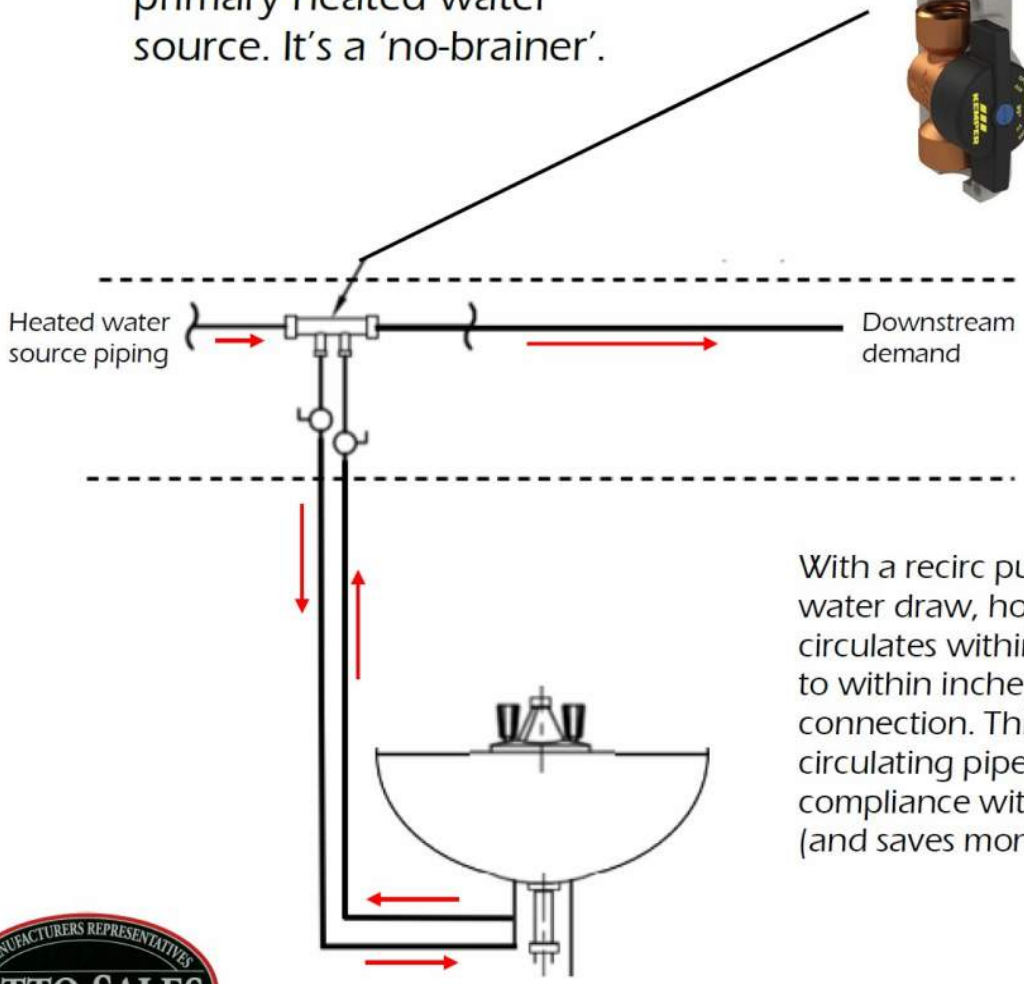
Flow-Splitter
Figure 651 06 XXX



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Kathy Dwyer
Treasurer

Treasury Report

I want to tell all of you I appreciate your diligence in using the website to register for the monthly meetings. It makes the job of greeter so much easier. So thank you and yes I have noticed!

I am happy to report our chapter is in solid financial position. We have had many supportive companies step up and advertise which is much appreciated. I hope you will support those who support ASPE.

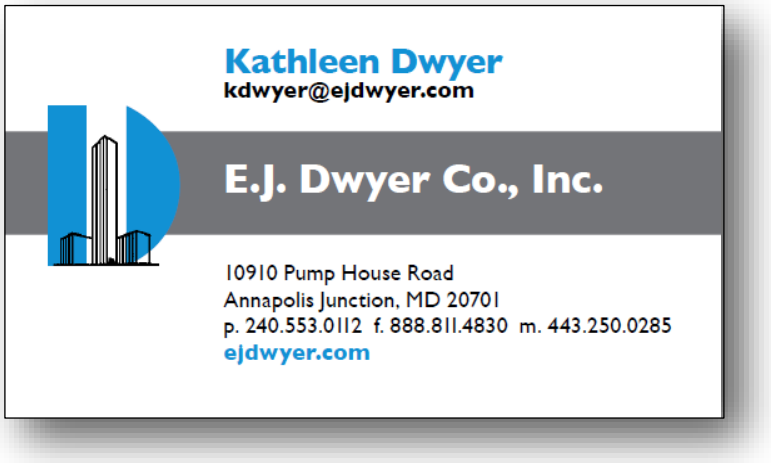
Please remember to stop by our tabletops! The raffles are all possible because of the price of tabletop.

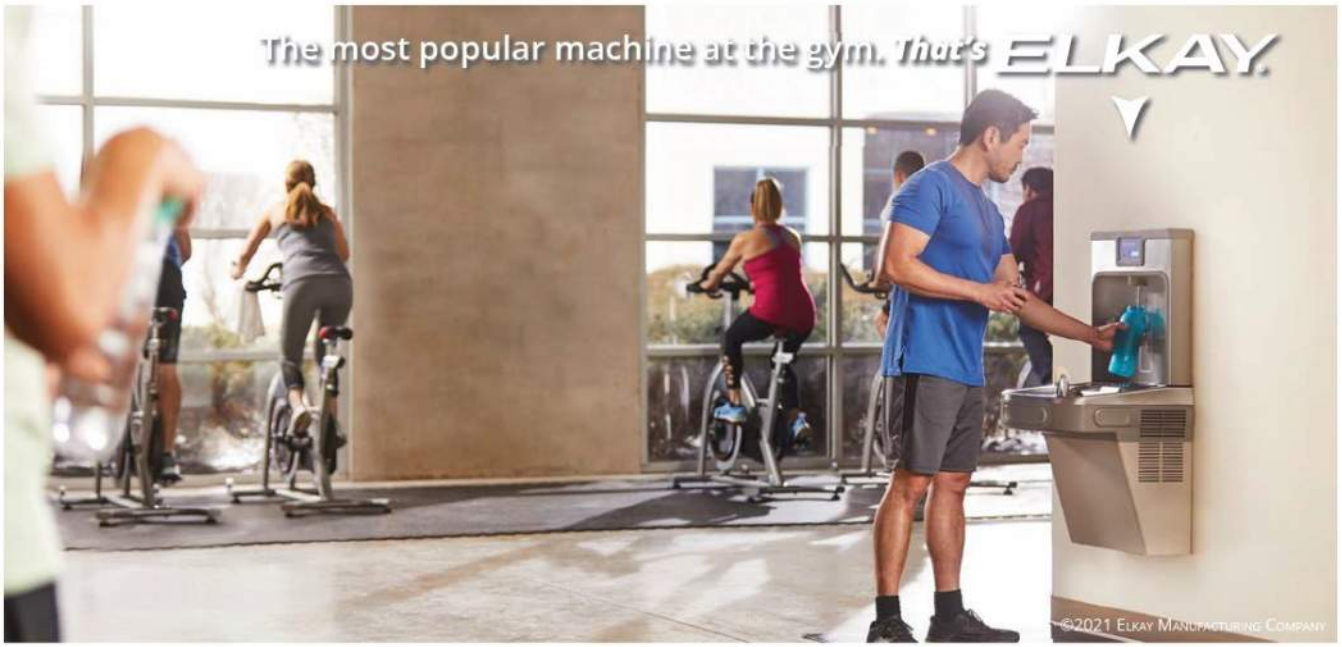
Please let myself or any of the board members know if we can assist you in anyway. I am always ready to hear your favorite foods and preferences as well.

I look forward to seeing all of you in a couple of weeks.

Thanks,

Kathy





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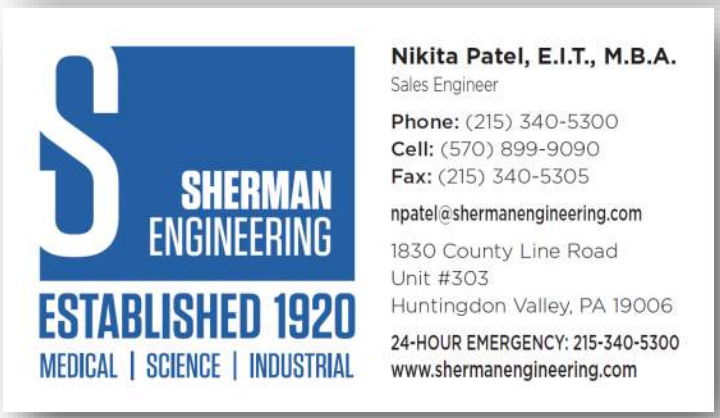

2021-2022 ASPE Baltimore Chapter Meeting Schedule

Date: **September 22nd, 2021**
Speaker: Bay Associates
Topic: Heat Pump Water Heater Technology

Date: **October 27th, 2021**
Speaker: Highland Tank
Topic: Oil/Water Separators

Date: **November 18th, 2021**
Speaker: Ames
Topic: Direct Inline Pumping Systems
Sump and Sewage Ejector Design

Date: **December 10th, 2021**
Holiday Party –TBD

Date: **December 15th, 2021**
Speaker: Joyce Agency
Topic: Pressure Reducing Valves

Date: **January 26th 2022**
Speaker: STH
Topic: Fire Pumps

Date: **February 20-26th, 2022**
Engineer's Week

Date: **February 23rd, 2022**
Speaker: Prof. Ken Isman
Topic: ESFR and Cloud Ceilings

Date: **March 23rd, 2022**
Speaker: Otto Sales
Topic: Wastewater Systems

Date: **April TBD, 2022**
Event: Annual Golf Outing

Date: **April 27th, 2022**
Speaker: Charlotte Pipe
Topic: Hands-on Starter Fittings

Date: **May 25th, 2022**
Speaker: EJ Dwyer
Topic: Emergency Fixtures

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Monthly Sponsorship Opportunities

The Baltimore Chapter of ASPE continues to have successful meetings and is looking to continue improving throughout the year.

The Chapter has the following sponsorship opportunities for each month:

Tabletop Presentations: $100 to provide a tabletop presentation of equipment or material relative to the plumbing profession. The tabletops will be set up from the beginning to the end of the monthly meeting and provides the opportunity to provide a brief (under 5 minutes) presentation.

Please make checks payable to the Baltimore Chapter of ASPE.
Contact Jeff Edwards or Kathy Dwyer if interested
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