



Missouri Smallflows Organization

OUTHOUSE POST

A Quarterly Publication

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MSO Member Event!
SEPTEMBER 7, 2024

ATTEND THE GAME WITH YOUR GROUP!

CONGRATS TO OUR 2024 DARYEL BROCK MEMORIAL SCHOLARSHIP WINNERS!



Greene County ARPA Septic
Remediation Project



Missouri Smallflows Organization
2733 E Battlefield #132
Springfield, MO 65804

Phone: 417-631-4027

Email: contact@mosmallflows.org

MSO OFFICERS

Nick Dykes
President
(816) 580-4100

Jessi Wood
President-Elect
(816) 966-8885

Chris Nothstine
Treasurer
(660) 224-9043

Seth Coggin
Secretary
(417) 291-5722

Michael Bowers
Past-President
(417) 868-4147

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(314) 973-0377

Eric Folks
(573) 751-6095

Kerry Clark
(660) 351-4696

Brenden Murphy
(636) 629-1788

Douglas Hurrelbrink
(417) 987-9914

Kendall Nakato
(417) 421-9527

Curtis Cluckey
(816) 769-0087

WELCOME TO OUR BUSINESS PARTNER PROGRAM SUPPORTERS

Thank you for supporting MSO's goals and our organization throughout the year.

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As a BPP, your company logo and link to your website will be on the MSO website. You have a certain number of membership slots to whom you can assign anyone. Our newsletter reaches over 400 people quarterly and the list is growing. We send our newsletter via email and mail to some patrons.

We have varying levels of sponsorships based on your need. You should check out our BPP webpage (www.mosmallflows.org) for the full details.

If you would like a copy of the brochure with prices and details, you may always contact Tammy Trantham at contact@mosmallflows.org.

Let us help you get your company name out to our membership and more. Thank you for supporting Missouri Smallflows.

A NOTE FROM THE PRESIDENT

MSO Members,

I hope everyone has had a safe and productive work season so far. It is hard to believe that half of the year has passed us by so far. Time moves quickly once the freeze breaks, and spring rains end. I'll be the first to say I have had more than enough rain this year. I am sure most of you across the state would agree. Mother nature has had her fun and slowed us down a bit. Its nearing dry season though, and surely the rain will end, then our money season will begin.

The membership newly elected board members & I have been getting to know one another over the past few months. Currently you have a great group of well-rounded individuals from all aspects of the onsite industry representing you. The comradery among those involved has grown considerably every month by the conclusion of the board meeting. They have been quite busy as well. We have many exciting things we are looking forward to as an organization in the coming year. I would like to thank all the board members for the time they give to guide this organization in the right direction.

We also have several sub-committees (education, membership, scholarship, & MSO conference committee) who have been hard at work as well. Hats off to those members who have stepped up to help as well. All the committees are dedicated to helping MSO grow. MSO is currently at 536 members strong, with around 20 active members either on the board or participating in a committee. If you are interested in getting involved there is plenty of ways to do so. Feel free to reach out and Tammy or I will point you in the right direction.

We have many CEU opportunities coming up this summer and many more this fall. The conference planning for this year's conference is in full swing and it is looking to be a very exciting show this year. We have nailed down our keynote speaker for this year, sure to be an exciting surprise for everyone. We are working to incorporate some new and different types of courses too. Please keep the 2025 MSO Conference on your schedules. You won't want to miss it. Don't forget about the membership event at the Springfield Cardinals stadium this fall. It's a great time to get together with like-minded people from this organization.

I am happy to announce that the Greene County ARPA – Septic Remediation Program is nearing a very successful completion. With this program we have been able to help many families in our state with failing septic systems. Big Shout out to Tammy in helping facilitate our organizations involvement in this program.

The Greene County ARPA Septic Remediation Program has helped six families remediate failing systems. This snapshot shows how difficult it is for low-income families to afford these necessary improvements to their property. Hopefully, we can continue to show how important public funding sources are needed to help people have adequate sanitation.

As always everyone keep safety in the front of your mind and be sure to drink lots of fluids in the coming months. Studies show that approximately 75% of US adults may be chronically dehydrated. Extreme heat claimed the lives of approximately 2302 adults in the US last year. Don't be a victim of heat stroke this summer. Hope you all have a successful and profitable third quarter.

Sincerely,
Nicholas Dykes
President of MSO



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MSO Member Event - September 7, 2024

Join us for a Springfield Cardinals Baseball Game!

ATTEND THE GAME WITH YOUR GROUP!

MSO Has 30 Tickets Available For Members To Purchase

You may bring your spouse and family
(One adult must be MSO member)

Tickets are \$30/ person
Ticket price includes 4 drink vouchers
and access to select food items

LOCATION

Champion's Club - First Base Side of the field in a Suite Box!

Contact Tammy at MSO to purchase tickets
Email: contact@mosmallflows.org
Phone: 417-631-4027

Springfield Cardinals Policies

Cashless Stadium - Bring your card to purchase items

Clear Bag Policy - No backpacks

Parking - \$10 in the lot south of the stadium
(cash and card accepted)

See the complete list here:

<https://www.milb.com/springfield/tickets/know-before-you-go>

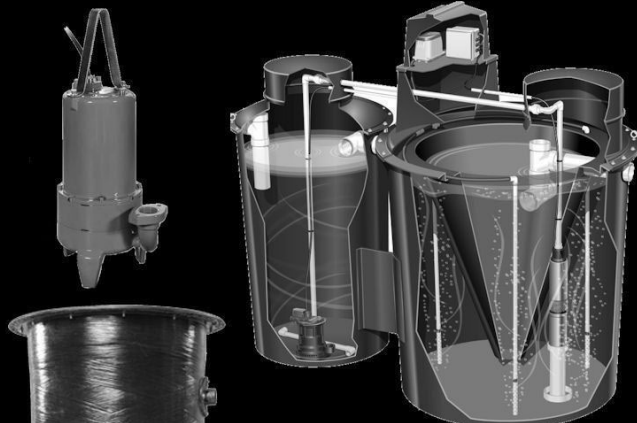
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Missouri Smallflows Organization

My AmeriCorps Experience with Missouri Smallflows Organization

By Cecilia Kayser

During my AmeriCorps service, I had the incredible opportunity to work with the Missouri Smallflows Organization (MSO). This experience has been transformative, allowing me to contribute to meaningful projects and develop skills that will benefit my career for years to come.

One of the notable projects I worked on was creating a curriculum for schools participating in career days at the MSO training center. This curriculum aimed to provide students with hands-on experiences in environmental science, water quality practices and septic tank installations. Collaborating with Tammy, we developed a program that enabled students to build a pipe system, glue pipes together, and observe the pressure differences between various pipe diameters. This interactive approach helped students understand the practical aspects of fluid dynamics and engineering.

Additionally, we incorporated soil classes into the curriculum. Using a laser level, we taught students how to measure contours, providing them with valuable skills in land surveying and environmental assessment. To enhance the learning experience, I designed a 3D-printed septic tank model for students to assemble with piping and a distribution box (d-box). This model served as a hands-on tool for explaining the interaction between groundwater and septic tanks. To further support this learning, I created a video that walked viewers through water quality practices and the science behind these systems.



One of the highlights of my time with MSO was assisting Tammy at the annual MSO conference and tradeshow. This event provided me with a behind-the-scenes look at organizing and running a large-scale event. I also had the opportunity to attend the NOWRA conference, where I engaged with both trained and emerging professionals in the industry. These interactions were invaluable, helping me build relationships and networks that I plan to maintain throughout my career.

My involvement with MSO also led to personal achievements, such as obtaining my septic tank installer license and attending various MSO classes. The soils class, in particular, has been a significant addition to my resume and has proven beneficial in my job search efforts.

Overall, my experience with the Missouri Smallflows Organization has been overwhelmingly positive and beneficial. I am deeply grateful for the opportunities I had to learn, grow, and contribute to the organization's mission. My time with MSO has not only enriched my professional skills but also reinforced my passion for environmental science and water quality. I have loved working and serving with MSO during my AmeriCorps service, and I look forward to continuing my involvement in this field.



Greene County ARPA Grant – Septic Remediation Project

Written by: Tammy Trantham, Executive Director of MSO

In 2023, the James River Basin Partnership (JRBP) was awarded a grant to help lower income homeowners remediate failing septic systems in Greene County. JRBP brought on some partners to help with this project: Missouri Smallflows Organization, Watershed Committee of the Ozarks and H2Ozarks. With the help of these partners, the program is in it's final stages of helping local residents.

At the start of the project, the partners put together an application process for homeowners to apply for funding. They had to show income-based need and a failing septic system. Once they made it through the initial application process, Greene County Resource Management conducted a site visit to evaluate the failing system. Once this was completed, the process of remediating the system could commence.

In all cases, a recent soil evaluation was conducted and the homeowner was responsible to obtaining three bids for the remediation. The homeowner was able to choose which contractor could do the work. Once the contractor was chosen, a contract was signed with the homeowner, contractor (installer) and H2Ozarks. H2Ozarks managed the funding for the project prior to reimbursement from Greene County ARPA funds.

Throughout the installation process, all inspections were completed by Greene County Resource Management to be sure work was completed accurately. They were a great partner in aiding our grant program to make it a success.

Due to the fact that remediating system is often costly, the partners decided to cap the grant aid at \$18,000 and the homeowner would have to pay any amount of that. This allowed the grant program to aid more families.

Below is a summary of the projects that have been completed thus far: *(continued on pg. 13)*

Project: Site #1	System Failure: System was exhibiting root intrusion in the lateral field and surfacing around the tank.	
System Replacement:	Low Pressure Pipe (LPP)	Grant Covered Funds: \$18,000
Cost of Project:	\$18,000	
Project: System #2	System Failure: System would not accept effluent during wet or saturated conditions. Existing tank was under the deck.	
System Replacement:	Pump to Gravity	Grant Covered Funds: \$18,000
Cost of Project:	\$22,500	
Project: System #3	System Failure: System backing up into home with water usage. Laundry was being completed at a laundromat.	
System Replacement:	Low Pressure Pipe (LPP)	Grant Covered Funds: \$17,549.74
Cost of Project:	\$17,817	

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Greene County ARPA Grant – Septic Remediation Project (continued)

Project: System #4	System Failure: System not operating during saturated and wet conditions. Grey water was being diverted to cistern. Surfacing effluent in yard.	
System Replacement:	Drip Irrigation	Grant Covered Funds: \$18,000
Cost of Project:	\$25,500	
Project: System #5	System Failure: Old metal tank (500 gallon) rusted and collapsed. Lateral field very slow to take water. Site is very tight for replacement system on space.	
System Replacement:	AES System	Grant Covered Funds: \$18,000
Cost of Project:	\$21,200	
Project: #6 (in progress)	System Failure: Failing conventional system with surfacing effluent in yard and discharging onto neighbor's property.	
System Replacement:	Conventional System w/ pump	Grant Covered Funds: \$15,403 (or up to \$18,000)
Cost of Project:	\$15,403 (estimated)	



Before: Failing system surfacing



After: Drip Irrigation System

Site had low chromasols with low slope. a pressurized system was recommended to help with even distribution

(continued on pg. 16)

RENEW YOUR MSO MEMBERSHIP!

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Greene County ARPA Grant – Septic Remediation Project (continued)



AES systems going in on very tight lot in Greene County.



Certified sand covering the AES lines

There were many lessons learned throughout this project and will help with future grants.

First, we required payment up front from the homeowner for the amount that was over \$18,000. H2Ozarks was a great partner and they handled paying the contractor upon completion of work. By working directly with the contractor, they were assured payment when the work was done. They did not have to wait for payment from both H2Ozarks and the homeowner. We found that the contractors liked knowing that the payment would be prompt, about two weeks, after the completion date.

Review the bids! We aided the homeowners in reviewing the bids as some have never done this before. Many did not realize that getting multiple bids was even an option. We learned that through a grant program we had to have a checklist of things that needed to be included for the homeowner. Including finished grade with seed and straw. This was important as a few of the customers were elderly and would not have been able to do this task.

We also required an initial maintenance agreement that the homeowner has to show proof they purchased. Some advanced treatment systems come with manufacturer warranties that the installer will provide maintenance for two years. We encouraged the homeowner to look at those but also options for ongoing maintenance. Since the homeowners are coming from failed system experiences, discussing the importance of maintenance wasn't usually a difficult conversation.

When the project was started, we believed that all of these projects would be in rural Greene County. Surprisingly, not even one was on large acreages. All of them were in suburban areas of Springfield that did not have centralized sewer access. There are several "pocket neighborhoods" that do not have sewer access or it is too cost prohibitive for the city to expand it yet. These older neighborhoods probably have more systems that need remediation. Oftentimes when we think of septic systems, we think of rural areas. However, suburban areas that are just outside city limits are served by septic systems too.

One of the stark realities of this project was showing how much funding is needed to remediate these systems. We all know they are costly, for a reason. Treating wastewater to clean it back

up requires smart installation and knowledgeable professionals that do their job well. The partners in the project had hoped to get 10-15 remediation projects completed for the funds that were awarded. We quickly realized that we would be lucky to get 6 systems completed. After the first couple of projects and bids, it became clear that remediating systems is often more costly since you have limited space and a failing system to deal with. This just reinforces the point that as in industry, we need to keep showing why we need funding to help families have adequate sanitation. Everyone in our nation, in 2024, should have safe sanitation that will not endanger public health or the environment.

Meet the Board Member - Chris Nothstine

Hello fellow wastewater professionals, my name is Chris Nothstine and I am the current Treasurer for the Missouri Smallflows Organization. I have been an MSO member off and on for nearly 25 years and joined MSO to learn more about wastewater treatment and dispersal, particularly through continuing education classes and the annual conference. When I started my own consulting business two years ago (after 20+ years working for an excavation and wastewater contractor) I had the freedom to invest more time in MSO and was excited to join the Board, getting to work with a talented, fun group of people. My business is in Maryville and I cover all of northwestern Missouri, providing soil evaluations and consulting/engineering design for onsite wastewater treatment and dispersal systems. On rare occasions, I have ventured east near Kirksville and as far south as Harrisonville. I enjoy traveling in Missouri and often take time to travel the backroads (gravel and dirt) as I work, appreciating the natural beauty of our state. I love being outdoors and find pleasure and satisfaction driving forest service roads, camping and canoeing in southern Missouri, usually with my lovely wife. One of my favorite hobbies is keeping honeybees and checking/working them every few weeks.

As an engineer, I enjoy the fact that each site is a puzzle of sorts to be solved. While some are easy, the challenging sites are more satisfying to design. I believe one of the primary challenges in our industry today remains the fervent protection of streams, lakes and aquifers in Missouri, while attempting to provide efficient, cost-effective onsite wastewater treatment and dispersal.

It often seems the smaller commercial projects present a few more challenges. One system I designed was installed on the higher slopes of a storm detention basin, slightly above the 100-year floodplain. To facilitate placement of better soils and mitigate steep slopes, a 4' tall wall was constructed in the bottom of the detention basin to retain imported soil. The improved slope allowed installation of the new dispersal field, utilizing pre-treatment, a buffer layer of sand, borrow soils and drip dispersal. The success of this project was early coordination with and careful installation by a conscientious contractor, coupled with a client that chose to invest the needed capital for the improvement. I hope to be courteous, honest and sincere in my professional and personal interactions, helping others whenever I can and I appreciate the opportunity to participate in the Missouri Smallflows Organization. Thank you all for your continued efforts in our growing industry and thank you Tammy for your continued effective leadership.



LISTING OF MSO CLASSES

PLEASE REGISTER AT LEAST TWO WEEKS PRIOR TO THE CLASS!

Call our office to register at 417-631-4027

Or find the Registration Form on our website: www.mosmallflows.org

Basic Soils & How to Read a Soils Report Location: Jefferson City, Cole County Health Dept. Date: August 27, 2024 Half day class: 8:30 AM—2:00 PM DHSS General CEUs = 5 Select: Basic: 5, Advanced: 5, Inspector: 0, OSE: 5, Perc Tester: 2 Member price: \$150 Non-member price: \$235	Wastewater Pathogens Location: Jefferson City, Cole County Health Dept. Date: August 28, 2024 Half day class: 8:30 AM—1:30 PM DHSS General CEUs: 4 Select: Basic: 1.0, Advanced: 1.0, Inspector: 1.0, OSE: 0 Member price: \$150 Non-member price: \$235
Basic Soils & How to Read a Soils Report Location: Imperial, Ganey Engineering Date: September 25, 2024 Full day class: 8:30 AM—2:00 PM DHSS General CEUs = 5 Select: Basic: 5, Advanced: 5, Inspector: 0, OSE: 0 Member price: \$150 Non-member price: \$235	Onsite Pumps, Panels & Electrical Location: Imperial, Ganey Engineering Date: September 26, 2024 Full day class: 8:30 AM—1:30 PM DHSS General CEUs: 4 Select: Basic: 3.5, Advanced: 3.5, Inspector: 3.5, OSE: 0 Member price: \$150 Non-member price: \$235
Types of Drainfields & Water Management Location: Liberty, Clay County Health Department Date: October 3, 2024 Full day class: 8:30 AM - 4:30 PM DHSS General CEUs: 7.5 Select: Basic: 5.5, Advanced: 6, OSE: 1 Member price: \$150 Non-member price: \$235	Onsite Pumps, Panels & Electrical Location: Liberty, Clay County Health Department Date: October 4, 2024 Full day class: 8:30 AM - 1:30 PM DHSS General CEUs = 4.0 Select: Basic: 3.5, Advanced: 3.5, Inspector: 3.5, OSE: 0 Member price: \$150 Non-member price: \$235
Inspecting Tanks, Lagoons & LPP Location: Camdenton, Mid-County Fire Department Date: October 16, 2024 Full day class: 8:30 AM - 3:30 PM DHSS General CEU: 5 Select: Basic: 0, Advanced: 0, Inspector: 5, OSE: 0 Member price: \$150 Non-member price: \$235	Trickling through Media Filters Location: Camdenton, Mid-County Fire Department Date: October 17, 2024 Full day class: 8:30 AM - 3:30 PM DHSS General CEU: 6 Select: Basic: 0, Advanced: 6, Inspector: 4, OSE: 0 Member price: \$150 Non-member price: \$235



Missouri
Smallflows
Organization



Online Courses available for CEUs in Missouri!

Continue your education from the comfort of your office or home!

In partnership with NOWRA, Missouri Smallflows Organization has online courses available for onsite wastewater professionals to earn more CEUs for their license renewal. You can read all about these courses on our website with CEU summaries.

<http://www.mosmallflows.org/online-classes.html>

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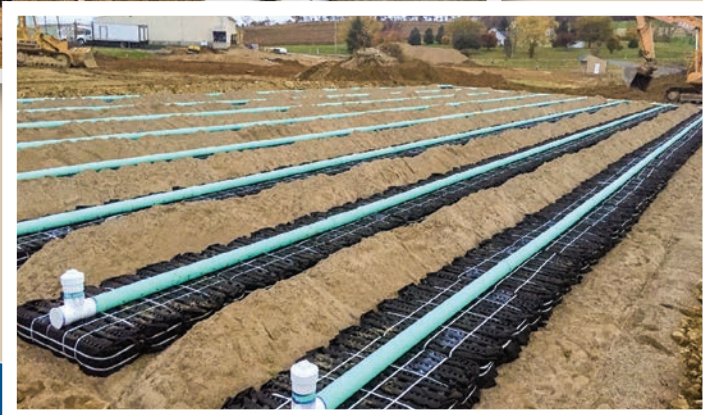
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To see complete course listings go to the MSO website.

<http://www.mosmallflows.org/online-classes.html>

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Legislative Update – HB 2083 By Tammy Trantham, Executive Director

At the close of the 2024 Legislative Session, HB 2083 did not make it through the Missouri Legislature. MSO is working with DHSS to bring this back to the forefront of the next legislative session. DHSS is in favor of putting this on their recommendation to go to the Missouri legislature again this year since there was no opposition last year. It is likely that we will have the same bill sponsor in the House and Senate.

MSO will publicize when this bill is introduced in the fall session. We will lean on members support again to write letters or testify at the public hearing to promote these changes.

INDUSTRY SUPPORT IS AN IMPORTANT PART OF THE PROCESS!

The requested two changes are:

1. Phasing out percolation tests by January 2026. Only soil morphology reports will be used after this point for permitting systems.
2. Removing the verbiage (set in place in 1996) that sets the permit application fees to \$90. This will enable the counties that operate under a participation agreement with DHSS and state to adjust permit fees to “reasonable fees” to help only cover costs associated with administering permitting rules.

Make sure you are signed up for email updates and your membership is up to date with MSO to hear about this when the opportunity comes up. We will notify members via email as it is typically very short notice on the public hearing and testimony.

SAVE THE DATE
FOR THE MSO SOILS CLASS
2024

The annual soils class for professionals will be held at Bradford Farms on October 11 near Columbia.

More details will be coming soon and registration will open later this summer. This class typically includes a brief classroom portion, sponsored lunch, and field work.

There will be soil pits for hands-on training and discussions. We hope you mark your calendar and watch the MSO email updates for registration information.

HEAT RELATED ILLNESSES

WHAT TO LOOK FOR

WHAT TO DO

HEAT STROKE

- High body temperature (103°F or higher)
 - Hot, red, dry, or damp skin
 - Fast, strong pulse
 - Headache
 - Dizziness
 - Nausea
 - Confusion
 - Losing consciousness (passing out)
- Call 911 right away-heat stroke is a medical emergency
 - Move the person to a cooler place
 - Help lower the person's temperature with cool cloths or a cool bath
 - Do not give the person anything to drink

HEAT EXHAUSTION

- Heavy sweating
 - Cold, pale, and clammy skin
 - Fast, weak pulse
 - Nausea or vomiting
 - Muscle cramps
 - Tiredness or weakness
 - Dizziness
 - Headache
 - Fainting (passing out)
- Move to a cool place
 - Loosen your clothes
 - Put cool, wet cloths on your body or take a cool bath
 - Sip water
- Get medical help right away if:**
- You are throwing up
 - Your symptoms get worse
 - Your symptoms last longer than 1 hour

HEAT CRAMPS

- Heavy sweating during intense exercise
 - Muscle pain or spasms
- Stop physical activity and move to a cool place
 - Drink water or a sports drink
 - Wait for cramps to go away before you do any more physical activity
- Get medical help right away if:**
- Cramps last longer than 1 hour
 - You're on a low-sodium diet
 - You have heart problems

SUNBURN

- Painful, red, and warm skin
 - Blisters on the skin
- Stay out of the sun until your sunburn heals
 - Put cool cloths on sunburned areas or take a cool bath
 - Put moisturizing lotion on sunburned areas
 - Do not break blisters

HEAT RASH

- Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)
- Stay in a cool, dry place
 - Keep the rash dry
 - Use powder (like baby powder) to soothe the rash



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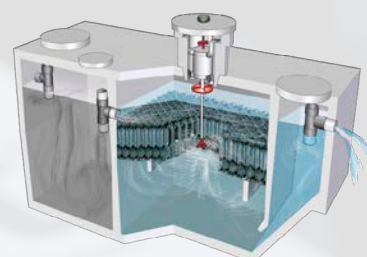
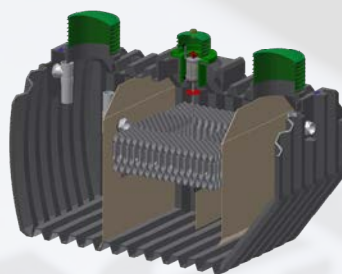


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- Home must be located in a priority watershed
- Homeowner must have proof of failing system



For more information, please visit the
the H2Ozarks website at
www.h2ozarks.org/moseptic
or follow the QR code.



This project is made possible by pass-through funding from the USEPA to the Missouri Department of Natural Resources, through the 2022 Clean Water State Revolving Fund Capitalization Grant. The US EPA has provided 100% of the \$2,575,000 award in federal funds.

Congratulations to our 2024 Daryel Brock Memorial Scholarship Winners!

Ella Folks of California, Missouri, daughter of Eric Folks, is one of the recipients of the Daryel Brock Memorial Scholarship. Ella is graduating from California High School and plans to attend Ozarks Technical Community College. She has shown great leadership qualities throughout her high school career. Congratulations Ella and best of luck in your studies.

Gabrielle Shern of Columbia, Missouri, daughter of Kyle Shern, is one of the recipients of the Daryel Brock Memorial Scholarship. Gabrielle is graduating from Christian Fellowship school and plans to attend University of Missouri. She has shown great leadership qualities throughout her high school career. Congratulations Gabrielle and best of luck in your studies.

Thank you to our members for supporting this scholarship at the annual MSO Convention and through membership dues.

NOWRA Conference in Spokane, Washington

The Onsite Wastewater Mega-Conference is a national, collaborative effort between the National Onsite Wastewater Recycling Association (NOWRA), the National Association of Wastewater Technicians (NAWT), and the State Onsite Regulators Association (SORA).

The Mega-Conference is the largest event of its kind and offers onsite/decentralized professionals the highest quality education and training available. The 2024 Onsite Wastewater Mega-Conference will be held October 20 - 23, 2024 in Spokane, Washington in cooperation with NOWRA's state affiliates, the Washington On-Site Sewage Association (WOSSA) and the Oregon Onsite Wastewater Association (O2WA).

Join us as early as Saturday, October 19 to take part in a golf tournament that will support NOWRA's Emerging Professionals Scholarship Fund. The conference will open with detailed updates on EPA activities, NOWRA's current research initiatives, NOWRA's lobbying activities before Congress, and perspectives from industry thought leaders. The conference will feature multiple tracks of technical sessions with potential to earn continuing education credits, a busy exhibitor's hall, an oral and poster presentation contest for emerging professionals, an evening social event, and two field trip options for the last day.



Onsite | **2024**
Wastewater Spokane, WA
Mega-Conference

Celebrating Tomorrow's Environment
Clean Water for the Future

The conference planning committee is in the midst of reviewing presentation abstracts and setting the agenda.

Registration for attendees and exhibitors will open in early July.

See conference information here:

<https://www.nowra.org/conference/mega-conference/>



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