

# Spotlight

A publication of Spotts, Stevens and McCoy



SPOTTS | STEVENS | MCCOY

SUMMER 2022

## Our work touches everyday life.

From the water you drink to the air you breathe to the buildings and communities where you live, work and play.

Spotts, Stevens and McCoy is a family-owned regional engineering, environmental, and surveying firm serving local and global clients. We engineer solutions for a better world. Our work touches everyday life; from the water you drink, to the air you breathe, to the buildings and communities where you live, work and play.

### EXPERTISE

- Building Engineering
- Site and Civil Engineering
- Survey, Data Capture and Modeling
- Water and Wastewater Engineering
- Construction Phase Services



## Summer Tips



### Roof and Foundation Tip

Now is the time to check your gutters or roof drains to make sure that sudden high intensity rain event doesn't cause problems.

Clogged gutters from spring time seed droppings can wreak havoc on the foundations of your home.

Clogged roof drains can lead to ponding on flat roofs which can cause sagging of a flat roof structures.

### FOR MORE INFORMATION

[Jeff Thoms, PE](#)  
[Technical Manager,](#)  
[Structural Engineering](#)

## Myth or Fact: Utility Companies are Against Solar Power?

MYTH! Switching to solar is beneficial to both the environment and your local utility companies. Your switch can offer less stress on utilities' infrastructure and contribute to less carbon emissions produced by the generation of electricity via power plants. Many utility companies actually offer incentives or discounts for switching to solar energy.



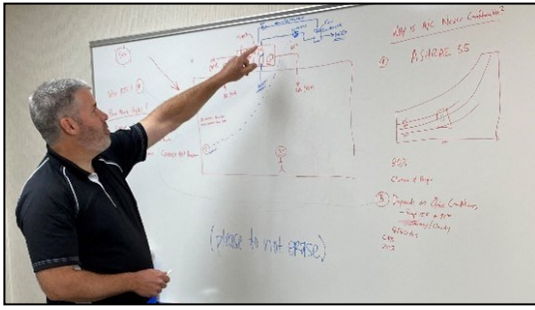
### Pool Owners

Now that your pool is open, keeping an eye out for leaks is important, particularly for those with in-ground pools. The damage caused by pool leaks is especially concerning because it's usually hidden from view and can take time to develop. Things such as settling pool deck slabs, shifting plumbing and, in some extreme cases, sinkhole development can put a damper on your favorite summer perk.

If filling the pool is a daily routine, or an area of lawn next to the pool is unusually green when there's been no rain, it may be time to check your pool for leaks.



## SUMMER Q & A: How does air conditioning work?



**Manager, Mechanical Engineering, Andrew Wengerd, PE, CFPS, LEED AP** describes how air conditioning works.

These include lighting that emits heat, any other equipment within the building, how many people will be in the space, and the activities they are expected to be doing in that space. We even consider the minutest details such as what the attire in the space will be. Once we are able to quantify all of the loads and the needs of the space we specify the equipment that will be put into place.

**Q: The equipment gets installed, then how does it actually make the space cool?**

**A:** Let's use your local big-box retailer as an example. There are many different types of equipment to cool the air - We would expect to see a roof top unit for this type of space. First, all of that warm air is drawn out of the space into the air handling unit on the roof. Included in that unit there is also an outdoor air component because we always want fresh air to be drawn in as well. These two air streams (the return air from inside the building and the fresh air) will mix, and go through a filter for cleaning.

Next, is the refrigeration system where the air is cooled. The refrigeration circuit includes a compressor, condenser, thermal expansion valve, and evaporator coil. Here, the air is cooled down to roughly 55 degrees. And then that air is supplied back into the space.

**Q: So air conditioning isn't really making new air?**

**A:** Air conditioning is really all about moving heat. The heat enters the building through those internal and external loads. Then the heat is transferred to the air. Ultimately, what we're trying to do is get the heat into the refrigeration circuit and the heat is discharged back to the atmosphere at the condenser level. Air conditioning isn't making new energy, or creating anything, we're just moving the heat from the building back to the outside.

**Q: What about other types of buildings, maybe ones where people aren't?**

**A:** At SSM we have extensive expertise with providing similar services to data centers. This type of space is a great example that it isn't just people that need to stay cool. Data centers house large computer servers which are especially unique because they not only give off a lot of heat, but they thrive in a cool environment. For this reason, extra attention to moving that warm air is especially important.

**Q: How would the setup of a data center look different from the retailer?**

**A:** Different than the rooftop unit of the retailer example, computer room air handling units (CRAH) normally supply air below a raised floor. Server racks are often arranged like aisles in a store, facing each other. So, two fronts face each other and two backs face each other. Computer room air handling units supply air up between the server racks. The air is then returned to the unit and is basically recirculated. Computer room units are often cooled by chillers using chilled water.

**Q: What exactly does SSM do in this process?**

**A:** For our clients, SSM mechanical engineers specify the air conditioning equipment needed for a building. Whether it's a retail space, a data center, or any other unique building - our team uses expertise to determine what performance capacity a unit needs to have, and the specifications needed for that unit. Our team uses several industry-based programs to calculate heat gains and cooling loads, airflow, air handling, and cooling capacity. Some of the considerations include weather data, solar functions, the building use, and more. Using all of this, we specify and design the best system for the building's needs.

## Don't Forget Your Vehicle

Mold can grow almost anywhere and spread quickly and easily which means company vehicle fleets are at risk of mold growth just like your facilities.

The main cause of mold is damp conditions mixed with a warm environment, which can easily occur in a vehicle. Leaks from a cracked window or open sunroof during a rain storm, spilled liquids or even wet clothes/towels may provide just enough moisture for mold to grow.

Once there's mold in the vehicle it has the potential to ruin the car's interior. Getting it professionally cleaned might be the only option in some cases.

### Case Study: Vehicle Assessment

SSM Industrial Hygienists worked with ServPro of Easton, Bethlehem and Whitehall to provide services related to possible mold in vehicles. Our team collected tape lift samples and evaluated the results from an AIHA accredited microbiology laboratory.

### FOR MORE INFORMATION

[Kevin Conrad | Manager, Field Services](#)



## Summer storms are a growing problem.

Did you know that mold can grow in as little as 24-48 hours? Mold can grow almost anywhere there is water, high humidity, or dampness. For mold to grow, it needs moisture or water, oxygen, and an organic source.

According to OSHA, concern about indoor exposure to mold has increased along with public awareness that exposure to mold can cause a variety of health effects and symptoms, including allergic reactions.

Although most types of molds that are routinely encountered are not hazardous to healthy individuals, overexposure can result in symptoms like cough, congestion, runny nose, eye irritation, and aggravation of asthma. Depending on the amount of exposure and a person's individual vulnerability, more serious health effects such as fevers and breathing problems can occur.

Additionally, if not treated, mold can eventually cause structural damage to a wood-framed building, weakening floors and walls as it spreads.

### What can you do to prevent indoor mold growth?

- Keep the building's humidity level below 70% and regularly inspect your building's HVAC system.
- Be aware of water damage. Walk through the workplace to identify any condensation or wet spots and repair plumbing problems immediately.
- Ensure adequate drainage around your building sloping **away** from the foundation.

### Here to help.

SSM offers a staff of industrial hygienists, indoor air quality specialists, and facilities engineers capable of performing the evaluations necessary to assess mold and the extent of mold contamination. We understand that immediate response is critical to identify and eliminate the source of moisture and to controlling mold and its growth. Our approach includes a detailed remediation work plan and specifications, provisions of oversight and final clearance testing.

### FOR MORE INFORMATION

[Kevin Conrad | Manager, Field Services](#)

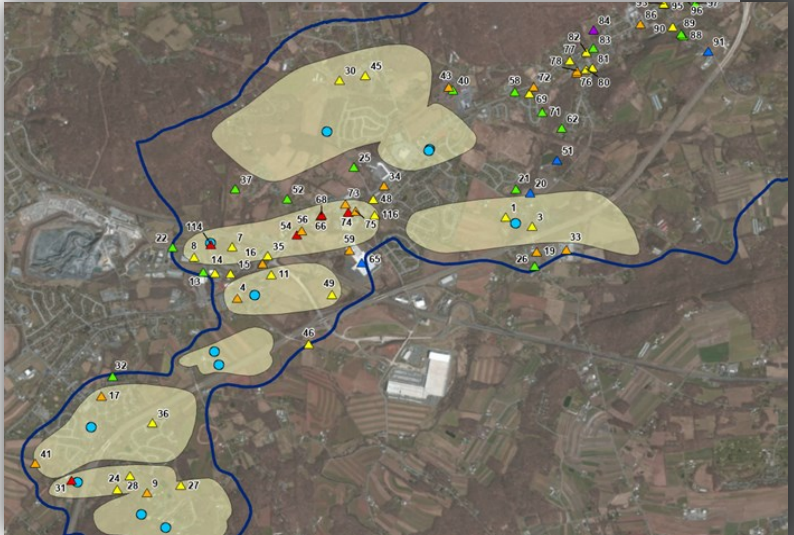
# Celebrating 15 Years of SWPTAP

SSM is proud to be participating in our fifteenth year as a technical partner in the Source Water Protection Technical Assistance Program (SWPTAP).

## About SWPTAP

SWPTAP is a voluntary technical assistance program funded by the U.S. Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (Pa DEP). The SWPTAP program offers public drinking water suppliers the no-cost opportunity to develop a source water protection plan with the goal of protecting their water sources utilized for drinking water.

Over the last fifteen years, the program has been incredibly successful, with more than 500 public water suppliers requesting participation in the program.



## Developing a Source Water Protection Plan

- **Identifying the protection area.** The first step in creating a source water protection plan is delineating protection areas for each drinking water source. Sources may consist of groundwater wells, springs, surface water intakes, or a combination of these. The SSM team uses a variety of inputs in geographic information system (GIS) database and hydrogeologic modeling software to determine how and from where water flows to a source - whether on the surface or through the ground. The result of that modeling determines the boundaries of the protection area which serves as the basis for the protection plan.
- **Analyzing potential threats.** Once the protection areas are determined, the team analyzes potential sources of contamination (PSOCs) within the area. Identifying these potential threats is key to creating a viable protection plan for the protection area. This phase of the plan provides the water system with an inventory and maps of the PSOCs
- **Developing management strategies.** The SSM team then works with the system and steering committee to develop a list of attainable management strategies which will help the system protect their sources from these PSOCs. As a final phase, our team develops a report describing the water system and technical aspects of the project.

## Implementation

The water system can choose to implement their source water protection plan in whichever way makes sense for the size, resources, and goals of the system. Implementation can range in complexity and may involve simple good housekeeping practices such as house training, or developing a spill cleanup program. Or, the implementation may involve public education and outreach with cleanups or tree planting. Implementation may also be as involved as working with local and county officials to implement ordinances or other regulatory protections for the water system. At SSM, we're honored to assist several SWPTAP graduate, now our valued clients, in their implementation efforts.

## Moving Forward

Over the years, SSM has seen the SWPTAP program evolve with the introduction of new technologies, data, and program goals. Eight years ago, the small system program was added as a sub-set of SWPTAP. This program aims to provide much smaller water supplies - such as mobile home parks, assisted living facilities, or small municipalities - the same benefits as SWPTAP, but on a smaller, more appropriate scale.

While any size public water supplier may always apply to the program, in recent years we have seen a shift from mostly larger, urban and suburban water to suppliers to more rural water suppliers are participating in the program. This proves that source water protection truly is for everyone.

Of the 500 total systems who have participated in SWPTAP over the years, more than 200 of those have entered through the small system program, almost all of those systems serving a population of less than 500 customers, with many serving less than 100 customers.

As the program continues to evolve, we continue to be proud of being a part of it. We have had the opportunity to assist our clients in protecting drinking water for millions of Pennsylvanians over the last 15 years. The future of source water protection continues to grow, and we look forward to being right there with it.

# Consumer Confidence Reports: What to Know

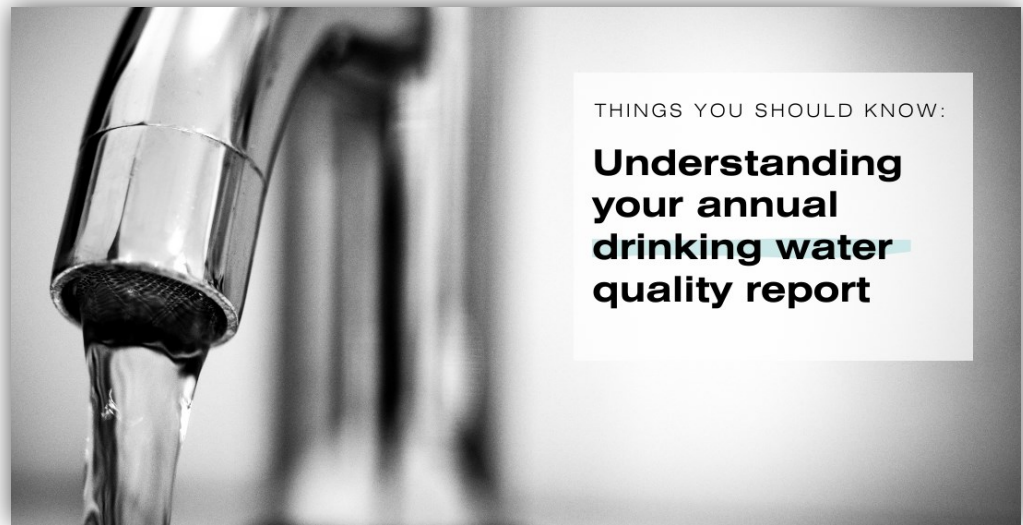
## Water Quality Reporting:

In 1996, Congress amended the Safe Drinking Water Act, adding a provision requiring that all community water systems deliver to their customers a brief water quality report annually.

## What is a CCR and why do I get it?

A groundwater or surface water source may encounter many contaminants as it travels to a water treatment plant. While treatment systems will remove the majority of these pollutants, some level of contaminants are to be expected - whether they are minerals or bacteria naturally present in the environment, or potentially harmful substances resulting from human activity.

In light of the 1996 Safe Drinking Water Act, community water systems are required to provide their customers with a water quality report on an annual basis. This report is to inform customers about these contaminants in their drinking water, and provide information regarding levels of concern for the consumer. The Consumer Confidence Report (CCR) contains language pertaining to the system's source of water, potential health effects of certain contaminants, and any regulatory violations that may have occurred over the year.



THINGS YOU SHOULD KNOW:

## Understanding your annual drinking water quality report

### Delivery Requirements.

- A copy of the Consumer Confidence Report (CCR) must be delivered, or made available to, each of the water system's customers.
- Water systems that serve over 100,000 people must post their CCR to a public website. If posting to a website, the supplier must provide a direct URL to customers to access the CCR.
- CCRs must also be certified with the PA Department of Environmental Protection (DEP) by June 30th each year.
- Annual CCRs must be delivered to customers by July 1 of each year

### Understanding the CCR.

The CCR is a general overview of the water quality delivered by your community water system. The report lists the regulated contaminants detected in the treated water and the level at which they were found. The CCR intends to provide customers with information on what they are consuming, and whether or not they should be concerned about certain contaminants.

Included in the CCR are website links and contact numbers for consumers should they have questions, or want to find additional information regarding health effects of the less common contaminants.

### Understanding potential health effects.

The CCR provides parameters such as Maximum Contaminant Level (MCL) which is the highest level of a contaminant that is allowed in drinking water. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect. Generally, if there are no MCL violations for the detected contaminants, a customer could know that they are drinking safe, clean water.

### Making the most of information.

SSM assists many of our clients to prepare their annual Consumer Confidence Report. We collect the water system's analytical data and analyze the data including calculating the average and maximum results of each detected contaminant. We are proud to assist our clients in putting together the information that consumers deserve to know.

Remember, your Consumer Confidence Report provides you with important information about the quality of your drinking water. If you have a question about your water system's report, or any of the terminology and what it means for you - always ask!

## Staff News

### Cathlene Farnelli, PE Earns Professional Engineers License

Cathlene Farnelli, PE has earned her Professional Engineers license in Pennsylvania. Farnelli is a Structural Engineer in the Facilities Engineering department at Spotts, Stevens and McCoy. She is a graduate of Drexel University with a BS in Architectural Engineering and MS in Civil Engineering. Her experience includes analysis and design of steel, concrete and masonry structures. Projects include industrial and commercial facilities, municipal facilities and multi-tenant housing structures.



### Ryan Leid Earns Certification as Drone Pilot

Ryan Leid, Survey Technician has received his certification as a FAA Certified Remote Pilot. Leid is one of three certified pilots at SSM. He is a graduate of Shippensburg University with a BS in Geoenvironmental Studies.



### Welcome to the team Gracey Moralis.

Gracey is joining us as an Energy Data Specialist Intern within our Energy and Sustainability Services department.

## Where we'll be this summer

### July 27

#### CELG - Berks County Water & Sewer Association Conference

Serena DiMagno will be presenting the regulatory update; and Dan Standish will be conducting a Chemical Safety class.

### August 2

#### Bern Township Community Event



### August 9

#### Greater Reading Chamber Alliance Annual Summer Picnic

### August 18-20

#### ASHRAE Region III Chapter Regional Conference

Andrew Wengerd will be attending as well as speaking at the conference as President of the Lehigh Valley Chapter of ASHRAE.

### August 21

#### Swing Away Cornhole Tournament

### September 11

#### Berks Nature Trails, Trails and Ales



## Opportunities at SSM - join the team!

Visit [ssmgroup.com](http://ssmgroup.com) for more information about these opportunities:

- **Mechanical Engineer** with experience in the design of HVAC, process piping and plumbing systems in industrial, commercial, and R&D type facilities.
- **Senior Electrical Designer** with 10+ years of experience to perform design, survey and drafting of power distribution, lighting, and fire alarm and telecommunication systems for Industrial, Commercial, Educational, Pharmaceutical and Research and Development Laboratory applications.
- **CAD Designer - Civil Engineering** with responsibilities including design and layout of civil, water, wastewater, and environmental engineering projects.
- **Senior Municipal Engineer** with experience in municipal engineering and a background in Stormwater management and traffic/transportation.
- **Survey Crew Chief** with technical and crew chief experience to perform all aspects of site and boundary reconnaissance, construction stakeout, and boundary, topographic, roadway and as-built surveys.
- **Senior Systems Administrator** with experience in the IT field to provide high-level, wide-range support of our IT infrastructure.
- **Graduate Water/Wastewater Engineer** to work with a multi-disciplinary team to help local and regional public and private sector clients to solve infrastructure challenges.
- **Senior Water/Wastewater Engineer** to support our existing and future work in the water, water resources, and wastewater engineering markets.
- **Director of Surveying and Data Capture** with responsibilities including setting the strategy and overseeing the execution of the department's business plan, staff management and development, operations, technology and business development.
- **IT and Help Desk Technician** to work under the mentoring and direction of our IT Specialist in supporting users working in a multi-office enterprise infrastructure built on a Microsoft domain.

## Project Snapshots

Here's a few photos of some of the things that were in the works this summer.



### City of Reading | Southwest Fire Station

The Southwest Fire Station put on a new concrete apron. SSM provided detailed grading design to reduce the grade change for fire trucks when exiting the fire house and proceeding to turn onto Lancaster Avenue; in order to reduce wracking forces on the truck frames while doing so.



### Manheim Area Water and Sewer Authority (MAWSA) | Cherry & Charlotte Street Water Booster Station

SSM provided Design, Bid, and Construction Services for the construction of a platform to raise the Pump Station out of a flood zone and installation of a generator for emergency power supply.



### Storage World | Wyomissing, PA

SSM has supported this project by completing the site design and necessary approvals. The project is now approved and under construction. SSM has additionally assisted with stakeout work and a curb retaining wall.



## Doing your Part

When you leave your pet waste on the grass or sidewalk, or when you improperly dispose of pet waste through storm or street drains - you could be contributing to low water quality and water pollution.

Remember everything you've learned about stormwater? Let's think about that next to pet waste. When we leave our pet's waste in the yard, on sidewalks, or even dump it down the storm drain - we're offering it an almost direct path to our sacred water sources.

Once it's in the water, pet waste can do a number of damaging things to our water quality and to our aquatic life! The decaying process uses up a lot of oxygen in lakes or streams. (Remember - oxygen is what those underwater animals need to live!)

Pet waste can also cause some of those waters to become quite gross looking. With excess pet waste comes excess weed and algae growth. You know what that means - cloudy and green water.

We also know that pet waste carries an awful lot of diseases and bacteria. Many that we don't want in our water, and certainly not in our bodies.

Keeping our water bodies clean and free of toxic materials allows us to continue to stay safe from public health risks, large water bills, and mucky boating trips.

**Ready to protect our water quality?** Click [here](#) to request a **FREE** SSM fire hydrant pet bag dispenser.

## CASE STUDY

### Ventilation Study at the University of Pennsylvania

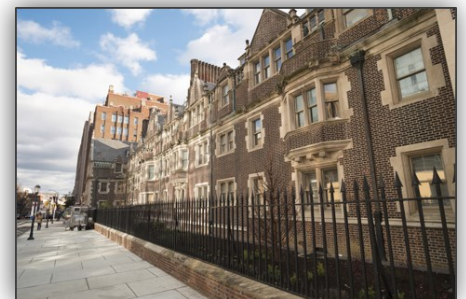
SSM completed a study to provide options to ventilate the "attic" space of Weightman Hall.

The space contained two air conditioners discharging hot condenser air into the space. The existing ventilation of this space was not sufficient to remove the heat leading to an increased load on the air conditioners and decrease in performance of the units which are rated at ambient temperatures of 95 degrees F. Temperatures in the attic space were believed to exceed 120 degree F.

SSM explored options to ventilate the space housing the air conditioners to provide a satisfactory ambient condition or modify the installation to mitigate the impact of being installed in an interior space.

SSM mechanical engineers surveyed the site and documented existing conditions including several existing and apparently abandoned duct systems in the vicinity of the air conditioners and the space in which the units are housed and the surrounding areas in sufficient detail to develop ventilation options.

The final report included three options for creating a satisfactory environment for the operation of the air conditioning units and budgetary construction costs for each scenario.



*Weightman Hall was originally constructed as a field house. It houses offices of the Penn Athletic Department and the Penn Sports Medicine Center*

C E L E B R A T I N G

90  
years  
1 9 3 2 ↔ 2 0 2 2

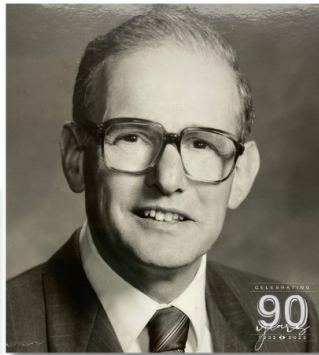
## Celebrating the Stories that Made Us

This year, SSM celebrates its 90th anniversary in business. Follow along through our newsletter and through social media as we share 90 stories for 90 years. Stories - just like these - that demonstrate where we came from, and how we got here.

Check out more of our stories on our website: [ssmgroup.com](http://ssmgroup.com)

### Charles H. STEVENS

↔ Celebrating 90 years of SSM



## Remembering Charles H. Stevens, PE, CIH

Mr. Stevens is the namesake for Stevens in Spotts, Stevens, and McCoy.

His career began in 1947 after graduating from the College of the City of New York with a B.M.E. Later, he pursued graduate study in Industrial Engineering at Columbia University. After graduation, he served as an engineer in a variety of positions. First, with several air conditioning and refrigeration contractors. Then, as a mechanical engineer responsible for design and layout of dust and fume control and air handling systems, and later for pollution control activities including industrial hygiene.

It was in 1968 when Mr. Stevens joined Lewis J. McCoy, Sr., PE and "Stevens and McCoy" was born. Mr. Stevens' experience in industrial HVAC, mechanical engineering, and electrical engineering provided an expansion of services and expertise to Mr. McCoy's growing practice.

How did they decide the order of their name? A simple coin flip! Stevens and McCoy was incorporated in 1969. And, industrial engineering was now a staple of the firm's services.

Mr. Stevens and Mr. McCoy brought many years of leadership and expertise to the company, which would later acquire Spotts Engineering Associates, Inc. - completing the name you know us as now - Spotts, Stevens and McCoy.

We went into the archives and found some project photos from "back in the day." Here are some project photos of a well house construction project from 1968 and a sewage treatment plant inspection in 1966.

Water and Wastewater Engineering has been a part of our expertise since the early 60s and continues to be a staple of our services today. In addition to more than 20 municipal authorities that we serve, some for 30 years or more, we provide similar services to industrial, manufacturing, and institutional clients.

