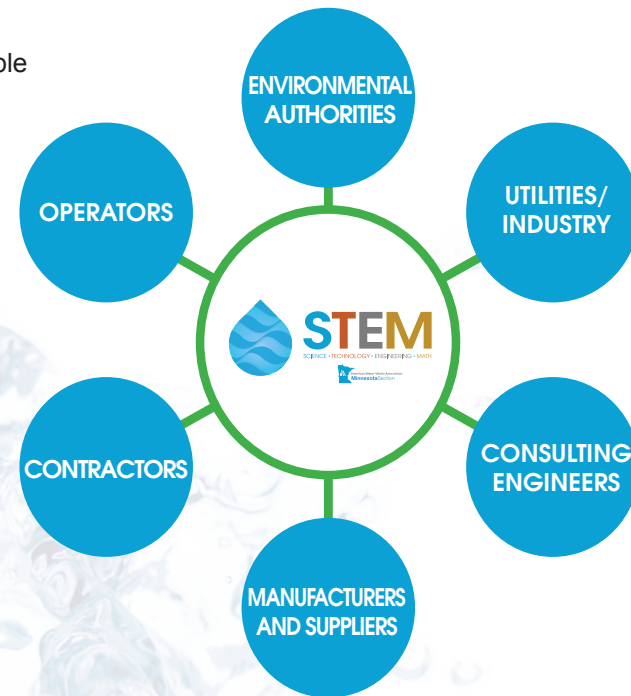


WATER BASED CAREERS



WATER TREATMENT OPERATORS — responsible for making any water supply safe for human consumption through the use of chemical, biological, mechanical, and fluid dynamic disciplines. Daily works with computers, laboratory test equipment, chemical delivery systems, and large electrical pumps, motors and controls. Key attributes include attention to detail, an inquisitive mind, respect for others, self-motivation, and an aptitude for science and mechanics.

WATER DISTRIBUTION — performs a multifaceted job within the scope of a municipal setting. The water distribution system is under ground and is the delivery portion of a water system to a residents home or business. For the most part, this technician/operator works outside a physical plant or building.

FACILITY MAINTENANCE — responsible for maintaining and repairing any equipment used in the water and wastewater treatment processes. Maintenance staff may also be responsible for pumping stations, distribution and collection systems, and general building upkeep.

WATER METER READER — regularly read the water meters in houses, businesses, and industries to determine water usage. This is necessary for billing the owner of the property for both water and wastewater services. A water meter reader will also assist with the installation, repair, and servicing of meters.

WASTEWATER TREATMENT — remove pollutants from wastewater so that it is safe to discharge to receiving waters. The process can involve settling, biological treatment, flocculation, coagulation and settling as well as disinfection and filtration.

PROCESS CONTROL & LABORATORY — install, modify, maintain and repair instrumentation used in measurement and control systems. In the water industry, these instruments measure temperature, water quality, water levels and flow. Accurate collection of water data is essential in the regulatory environment of water.

LABORATORY ANALYST — performs a variety of analyses on samples for process control, routine monitoring, and licensing compliance. Data from laboratory analyses is used by operators to make adjustments within the plant to ensure high quality effluent.

MICROBIOLOGIST — performs critical analysis for the presence or absence, and counts of pathological bacteria, viruses, parasites and other biological organisms. The data is required for compliance with regulations and for process control.

GEOGRAPHIC INFORMATION SYSTEMS ANALYST — provides technical support and assistance. Generates and updates the mapping system.

ENVIRONMENTAL SAMPLER (WATERSHED, STORMWATER) — perform field sampling to help monitor changes up and downstream of treatment plants as well as help assess impacts of treatment technologies. They support the environmental and watershed monitoring programs, in conjunction with various stakeholders to support great quality drinking water and to maintain and preserve the riparian habitats.

MANAGEMENT — provides overall management of operation and maintenance of existing infrastructure. Responsible for maintaining and updating regulatory requirements including compliance monitoring and enforcement. Meet with municipalities/industrial owners to discuss regulatory issues/concerns.

OPERATIONS/PROCESS OR MAINTENANCE ENGINEER AND TECHNICIAN — typically works in a water or wastewater treatment plant setting or can also include Industrial or Manufacturing processes. Duties may include:

- Maintaining effective production processes including treatment, optimizing treatment processes, and ensuring compliance with regulatory limits.
- Evaluating existing treatment processes / systems, and looking for ways to make them more effective or economical.

RESEARCH/PLANNING ENGINEER — general responsibilities include the investigation, development and evaluation of new processes and equipment for use in their industry, in response to an assigned goal or to solve a specific problem.

DESIGN ENGINEER — responsible for design of infrastructure, including water treatment plants, wastewater treatment plants, water distribution systems, sanitary systems, or stormwater collection and treatment systems.

WATERSHED SPECIALISTS — responsible for managing the risks associated with the watershed. Besides monitoring of water quality, watershed strategies are developed to maximize water quality and conservation.

TECHNICIAN — coordinates, inspects and approves the construction of water and sewer system components, in accordance with approved construction and engineering specifications, policies and practices.

WASTEWATER COLLECTION — performs a variety of tasks in the maintenance and repair of sanitary sewers. Operates highly specialized sewer and storm drain cleaning equipment; utilizes laptop computers to complete work assignments; performs research on wastewater collection assets. Raises and seals manholes, including pouring of concrete, directing traffic away from work area and informing general public of sewer operations. Inspects and maintains sewer pumping facilities. Clean pumps, fuel generators and perform maintenance duties inside or adjacent to pump stations.

UNDERGROUND UTILITY LOCATOR — identifies and maps location and depth of utilities such as water, sewer, stormwater and fiber optics. Works with utility maps, utility designating equipment, provides proper field sketches. Uses a variety of mapping and as-built software to locate infrastructure. Utilizes a variety of technology (ground penetrating radar (GPR), Smartphone, iPads locators, measuring tool).

IT ANALYST — provides computer and information systems support. Works with tablets and iPads, smartphones, GPS and uses and supports a wide variety of computer systems.

www.MNAWWA.org

PATHWAY TO WATER-BASED CAREERS



EVERY JOB SHOULD BE THIS FUN!

IMAGINE A JOB WHERE YOU...

- Make a huge difference for people who live and work in your community. They depend on you to make their lives safe.
- Are challenged, rewarded and will learn new things every day.
- Are proud of what you do for your community.
- Work with fun people who care about you.
- Earn lots of vacation to spend with your family.
- Have a schedule that provides time for a life outside of work.
- Have a job that provides the income to do many of the things you've always wanted to do.



If you want to find real job satisfaction in a career that truly matters, consider a job in the WATER-based industry.

BENEFITS

- **100% JOB PLACEMENT.**
- **FLEXIBLE HOURS AND SCHEDULE.**
- **ROOM FOR CAREER GROWTH.**
- **USE NEW TECHNOLOGY — COMPUTERS, IPADS, IPHONES, TABLETS, GPS AND GIS.**
- **PAID MEDICAL AND DENTAL INSURANCE.**
- **PAID TIME OFF.**
- **CLOTHING ALLOWANCE (FREE CLOTHES).**
- **PENSION AND 401K RETIREMENT SAVINGS.**
- **MAKE A DIFFERENCE — COMMUNITY AND ENVIRONMENTAL – GOOD STEWARDSHIP!**
- **GREAT STARTING SALARY, \$32/HR!**
- **E-LEARNING OPPORTUNITIES.**
- **PLENTY OF TIME TO PURSUE HOBBIES**
- **EXCELLENT BALANCE BETWEEN FAMILY AND WORK.**

FUN ACTIVITIES

BE A LEAK DETECTOR. ACTIVITY: CHECK FOR TOILET LEAKS

You will need:

- Food coloring or dye tablets
- A clock or watch
- A toilet

INSTRUCTIONS:

1. Remove the lid off the toilet tank.
2. Add a few drops of food coloring or a dye tablet into the tank. Do not flush the toilet.
3. Wait 10 minutes. If color appears in the toilet bowl, without flushing, it has a leak.
4. Flush the toilet immediately after the experiment ends to avoid staining inside of the tank.

WATER TASTE TEST

You will need:

- Samples of tap water and several brands of bottled water
- Small paper cups

INSTRUCTIONS:

1. Pour the different types of water into their designated cups. Keep the source hidden until after the taste test is completed.
2. Taste each water sample. Which water do you enjoy the most, based on: clarity, bouquet, and taste?

BALLOON FUN

You will need:

- Balloons (12 inch)
- Small funnel or a small piece of paper rolled up in a funnel shape
- Baking soda
- Vinegar
- Small plastic bottle (12 or 20 oz. soda bottle)

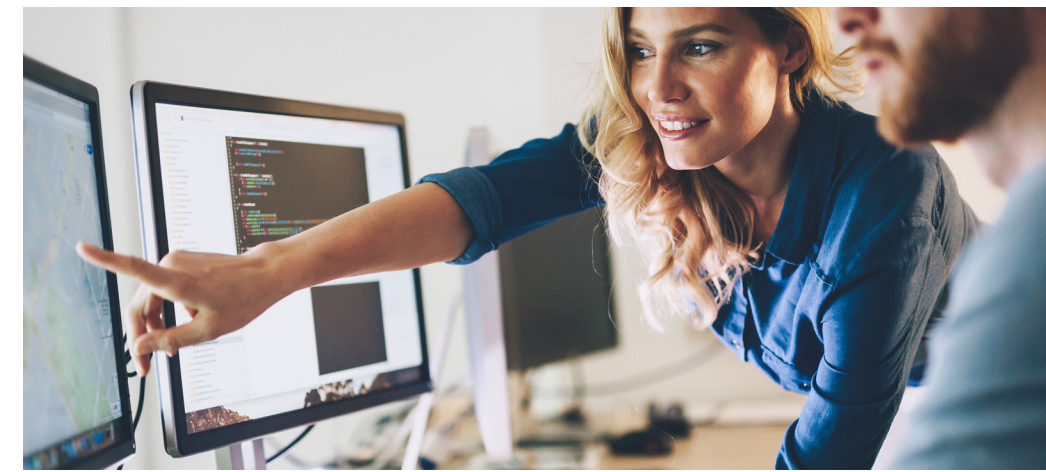
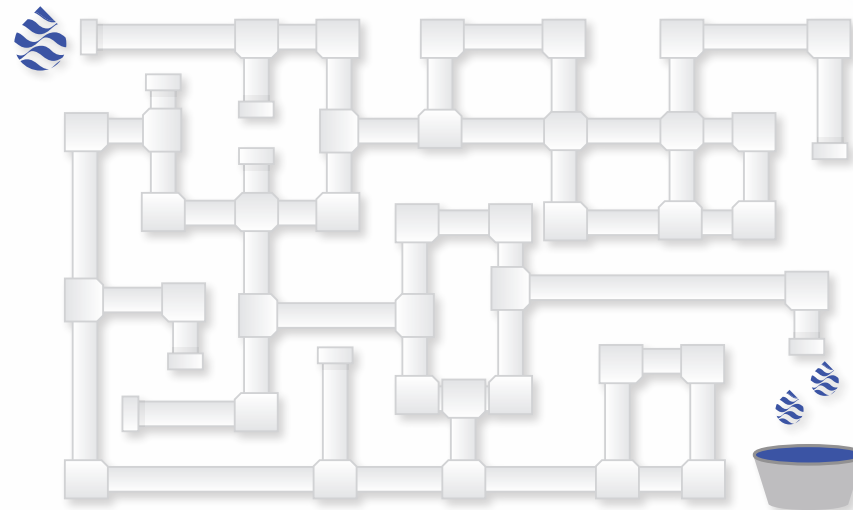
INSTRUCTIONS:

1. Using the funnel, add 3 teaspoons of baking soda to each balloon.
2. Fill each soda bottle 1/3 full with vinegar.
3. Without dropping in the baking soda, fit the balloon top over the bottle opening.
4. Hold up the balloon and let the baking soda fall into the vinegar.
5. Watch as the baking soda mixes with the vinegar to make carbon dioxide gas and blow up the balloon.

The vinegar mixes with the baking soda to create a chemical reaction that produces carbon dioxide gas. The gas then blows up the balloon.

MAZE

Help the water drop find its way through the pipe.



TRAINING AND EDUCATION OPPORTUNITIES (WATER ENVIRONMENT TECHNOLOGY)



www.SCTCC.edu
(keyword search - WETT)



<https://tinyurl.com/WUTTInformation>

ORGANIZATION WEBLINKS

MN American Water Works • <https://careers.mnawwa.org/jobs/>

Water Environment Federation • www.wef.org

MN Wastewater Operators Association • www.MWOA.net/careers

MN Public Works Association • www.APWA-MN.org

WORD SEARCH

C E V A P O R A T E T E E L S
N D L G D L T I S Y V E A M H
N I Z O P N R M Z A R R W C S
O S L J M O A V P U E A A X X
I S Y E E Y V O T T T S X P P
T O Q S Y W R A E E S A A G W
A L W H V A R M R S O B Q G D
L V G U T E O E M L Y L I E
U E C I P M V A N I P C L T O
M P O M R A S P J L F O M I R
U N E E P O O A F U S I U D L
C T H O N A T M O S P H E R E
C T R S F A S T C S P P A I P
A D I U Q I L L C A S T N E T
O S D U O L C M E F P D I A X

SOLID
LIQUID
EVAPORATE
EVAPORATION
SEASONS
DISSOLVE
GAS
WATER VAPOR
CLOUDS
ACCUMULATION
SLEET
THERMOMETER
ATMOSPHERE
TEMPERATURE