

# Authority Times

News and Information for Customers  
of the Borough of Conshohocken Authority



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## FAQs Regarding Sewage Treatment Plant Odors

### 1. What is the source of odors at the plant?

Odors are caused by sulfur gases, mercaptans and organic amines. Odors that are predominantly detected are hydrogen sulfide (H<sub>2</sub>S).

### 2. What causes odors to worsen?

The Authority is carrying out \$2.3 million in state-of-the-art improvements to dramatically reduce odors at the plant. The work that is in progress, unfortunately, causes odors to worsen temporarily as we work to improve the odors long-term.

### 3. Why did the Authority decide to start this project during warmer months?

Temperature plays a vital role in the material being used to protect the treatment tanks from corrosion. The manufacturer suggests that when applying its product, outside temperature should be above 65 degrees for optimal application. This left the Authority without additional options.



### 4. When will the project be completed?

While we all hope that the project will be promptly completed by spring 2017, we are unable to predict what may or may not transpire in the future that could potentially impede the project.

### 5. What led to the Authority's decision to mitigate odors?

The Authority had a

national engineering company perform an odor control study in 2014. With recommendations from Webster Environmental Associates, the Board of Directors unanimously approved a state-of-the-art odor control system that will provide odor mitigation for years to come.

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## BOARD MEMBERS

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## Authority Changes Mailing Address

The Borough of Conshohocken Authority has updated its mailing address to help with faster payment processing and less lag time.

Customers can still pay their sewer bills with cash or check at the Vist Bank located at 221 West Ridge Pike, Conshohocken, PA 19428. For those mailing payments, our new address is Borough of Conshohocken Authority, PO Box 116, Ithaca, NY 14851.

Customers using e-checks from their bank may need to update the billing address.

## Sewer Gas: The More You Know, the Better

### Question: What is sewer gas?

**Answer:** Sewer gas is a mixture of inorganic gases created by bacteria on sewage and sludge. The gas can contain hydrogen sulfide, ammonia, carbon dioxide, methane, nitrogen, and hydrogen.

### Question: What causes the odor?

**Answer:** Almost always, hydrogen sulfide causes the odor. In rare cases, ammonia may be formed. The lowest concentration that can be detected with the nose for hydrogen sulfide is between .001 and .01 parts per million.

### Question: Can these gases be harmful?

**Answer:** Hydrogen sulfide will not harm people at the concentrations that exist in a house with sewer gas odor problems.

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# The more you know about sewer gas

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Studies have shown that hydrogen sulfide has a depressant effect on the central nervous system in concentrations above 150 parts per million, or 15,000 to 150,000 times the amount detectable by most people. Not enough gas is generated in sewers for in-home concentrations to approach the dangerous level.

## **Question: How does sewer gas get into the house?**

**Answer:** The only way sewer gas can seep into a home is through faulty plumbing. The most common plumbing system problem is untrapped drains.

Other ways sewer gas can get into your home include:

1. A dry trap. If there is a trap in a drain line that is not often used, the water in the trap may evaporate, breaking the trap seal.
2. A damaged trap. If the trap is cracked and allows the water to run out, the trap seal is again lost.
3. A damaged drain line. If the drain line is cracked or broken between the main sewer and the trap, there is nothing to impede the flow of gases through the crack or break in the line. A damaged drain line could allow sewage to drain into a home's basement or crawlspace, causing a sewer odor from that accumulation.
4. A damaged or plugged vent. The vent system in your plumbing neutralizes the atmospheric pressure differences caused by wastewater flowing through the plumbing, and also allows sewer gases to escape the plumbing system by venting them into the atmosphere above the house. If the system has an untrapped opening inside the house, gases may escape through that opening.

## **Question: How is gas produced in the sewer?**

**Answer:** Hydrogen sulfide is produced when the sulfate radical is reduced to hydrogen sulfide and water. This reaction takes place when oxygen and other oxidants are not present in the microbial environment. Studies have shown that hydrogen sulfide is not produced in fresh wastewater for two or three days. By this time, it is normally through the wastewater treatment plant.

There are, however, some environments where hydrogen sulfide is produced in sewers:

1. The slime layer that coats the sewer pipe below the water line. Although this layer can be only .040 of an inch thick, the three-quarters of the layer closest to the sewer pipe is so oxygen-poor that hydrogen sulfide is commonly formed.
2. If any sludge has been deposited at the bottom of the pipe, hydrogen sulfide will also be formed in that sludge.
3. If there is a problem in the sewer with blockages preventing sewage from moving, the oxygen content gets too low that hydrogen sulfide can be produced in the sewage.

All sewage systems, at one time or another, produce sewer gas.

## **Question: What can be done to keep gas from being formed in sewers?**

**Answer:** If hydrogen sulfide is becoming a problem in a localized

area, oxidizers can be added to sewage to increase the oxidation-reduction potential.

If the problem is in part of the sewage collection system, flushing the sewers to increase the flow rate and remove any sediments or obstructions is the best course of action.

## **Question: How can I keep odors out of the house?**

**Answer:** Find the problem with the plumbing system and have it repaired. If the floor drains are untrapped, have traps installed. It is probably not wise to simply plug the drain, as any water that enters the basement or utility room could flood the room. An experienced plumber can find the system's shortcomings and offer corrective measures.

## **Question: What is a trap?**

**Answer:** A trap is a device made from a U-shaped section of pipe, tubing or tile which traps wastewater. The wastewater then acts as a seal to prevent sewer gases from coming out through the drain opening.

## **Question: How can I tell if my floor drains are trapped?**

**Answer:** Pour at least two gallons of water into the opening and visually inspect it by looking down the opening. If considerable water is standing the drain is trapped. Check it again a couple of hours later to be sure the water hasn't drained out.

If there is no standing water, then either there is no trap or it is located somewhere else in the line. If odors are present, pour water into the opening and check for odors about an hour later. If odors are still present, there is probably no trap.

# FAQs regarding sewage treatment plant odor

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## **6. Will odors be eliminated entirely after the new project is completed?**

While odors will be reduced with the new odor control system, eliminating odors entirely at a wastewater treatment plant is not realistic. The modern design technology of the odor control system will capture and treat 99% of the odor coming from the plant.

## **7. Odors from the Conshohocken Authority seems to be worse than everywhere else. Why?**

Odors are highly subjective and every individual can be more or less sensitive than another when presented with the same concentration of a given odor-causing compound. The Authority is situated within close proximity to the surrounding community, which is different from other treatment plants. While the treatment plant cannot be relocated, the Authority is working to address odors and minimize them to the greatest extent that technology will allow.

## **8. What are the highest levels of H<sub>2</sub>S generated by the plant?**

The Authority purchased H<sub>2</sub>S moni-

toring equipment several years ago and during the spring and summer months, staff hang H<sub>2</sub>S monitors at the plant and install a low range monitor within a 2 to 3 block radius of the plant. The highest recorded H<sub>2</sub>S reading from the property line of the plant was 3 parts per million or 3,000 ppb, well below limits that would cause nose and throat irritation.

## **9. How can I stay updated on this project?**

Visit our Website at <http://www.conshohockensa.com/> for the latest news and sign up for e-alerts for updated information.