

Texas TCEQ Class C Water License Practice (Sample)

Study Guide



Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. What distinct smell is associated with hydrogen sulfide?**
 - A. Fresh bread**
 - B. Chlorinated water**
 - C. Rotten eggs and obnoxious**
 - D. Pine forest**

- 2. Elevated storage is required for systems with more than how many connections?**
 - A. 500 connections**
 - B. 750 connections**
 - C. 1,000 connections**
 - D. 1,500 connections**

- 3. For how many years must the results of bacteriological analysis be kept on file?**
 - A. 3 years**
 - B. 5 years**
 - C. 7 years**
 - D. 10 years**

- 4. What is the approximate total volume of a circular tank in gallons, if it is 30 feet in diameter and 15 feet deep?**
 - A. 60,000 gallons**
 - B. 79,300 gallons**
 - C. 90,000 gallons**
 - D. 100,000 gallons**

- 5. What are ground storage tanks required to have for proper operation?**
 - A. Screened vents and an overflow pipe**
 - B. Approved locking roof hatch and annual inspection**
 - C. Overflow pipe with hinged flap device and maintenance**
 - D. All of the above**

6. What pressure is typically used to maintain the chlorine residual in water systems?

- A. 200 psi**
- B. 80 psi**
- C. 50 psi**
- D. 30 psi**

7. A groundwater well producing 1.4 MGD should be converted to how many GPM?

- A. 800 gpm**
- B. 972 gpm**
- C. 1,200 gpm**
- D. 1,400 gpm**

8. What is a common chemical oxidizer used in water treatment?

- A. Chlorine dioxide**
- B. Potassium permanganate**
- C. Hydrogen peroxide**
- D. Sodium hypochlorite**

9. What is the volume capacity in gallons of a storage tank that is 978 cubic feet?

- A. 5,000 gallons**
- B. 7,315 gallons**
- C. 10,000 gallons**
- D. 12,500 gallons**

10. When an air gap is not practical, which of the following backflow prevention devices may be acceptable?

- A. Only reduced pressure zoning devices**
- B. Only pressure vacuum breakers**
- C. Atmospheric vacuum breaker and pressure vacuum breaker**
- D. Atmospheric vacuum breaker, pressure vacuum breaker, testable double check valve assemblies, and reduced pressure zoning devices**

Answers

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1. C
2. B
3. B
4. B
5. D
6. B
7. B
8. B
9. B
10. D

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Explanations

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1. What distinct smell is associated with hydrogen sulfide?

- A. Fresh bread
- B. Chlorinated water
- C. Rotten eggs and obnoxious**
- D. Pine forest

Hydrogen sulfide is well-known for its distinct and unpleasant odor that closely resembles that of rotten eggs. This characteristic smell is due to the presence of sulfur in the chemical structure of hydrogen sulfide. The compound is often encountered in various environments, including natural sources like volcanic eruptions and the decomposition of organic matter, particularly in anaerobic conditions. Recognizing the odor of hydrogen sulfide is crucial, especially in water treatment and environmental monitoring, as its presence can indicate potential health and safety hazards. The ability to identify this foul smell allows operators and personnel to take necessary precautions to avoid exposure and mitigate risks associated with hydrogen sulfide. Other options do not accurately describe the smell of hydrogen sulfide. For instance, fresh bread and pine forest scents evoke pleasant and natural aromas, while chlorinated water has a more chemical scent associated with disinfectants, none of which are linked to the rotten egg smell.

2. Elevated storage is required for systems with more than how many connections?

- A. 500 connections
- B. 750 connections**
- C. 1,000 connections
- D. 1,500 connections

Elevated storage is a crucial requirement for water systems that maintain consistency in pressure and supply, especially during peak usage times or emergencies. For water systems with more than 750 connections, it becomes essential to have elevated storage to ensure adequate pressure and volume for effective service delivery. This threshold considers the population served and the anticipated water demand, which increases with the number of connections. Proper elevation and storage allow the system to meet fluctuating demands, provide fire protection, and maintain water quality by reducing stagnation. Systems with fewer than this number may find that ground-level storage and other methods of pressure management are sufficient to meet their operational needs.

3. For how many years must the results of bacteriological analysis be kept on file?

- A. 3 years**
- B. 5 years**
- C. 7 years**
- D. 10 years**

Keeping records of bacteriological analysis is crucial for ensuring water quality and compliance with regulations. The correct duration for retaining these results is five years. This requirement is established to provide a reliable record of water quality over time, allowing for trend analysis and demonstrating compliance during inspections or audits. Retention for five years ensures that sufficient data is available for reviewing historical trends and addressing any potential contamination issues that may arise during that period. This time frame balances the need for thorough documentation with the practical aspects of record-keeping in water management systems.

4. What is the approximate total volume of a circular tank in gallons, if it is 30 feet in diameter and 15 feet deep?

- A. 60,000 gallons**
- B. 79,300 gallons**
- C. 90,000 gallons**
- D. 100,000 gallons**

To determine the approximate total volume of a circular tank in gallons, we first need to calculate the volume in cubic feet and then convert that to gallons. The formula for the volume of a cylinder is given by: $\text{Volume} = \pi r^2 h$. In this case, the diameter of the tank is 30 feet, which gives a radius of 15 feet (since the radius is half the diameter). The depth of the tank is 15 feet. Using the formula, we calculate: 1. Calculate the area of the circular base: $\text{Area} = \pi (15)^2 = \pi (225) \approx 706.86$ square feet. 2. Then, multiply by the height (depth) of the tank to find the volume in cubic feet: $\text{Volume} = 706.86 \times 15 \approx 10,602.9$ cubic feet. Next, to convert cubic feet to gallons, we use the conversion factor where 1 cubic foot is approximately 7.48 gallons. 3. Therefore, converting the volume to gallons

5. What are ground storage tanks required to have for proper operation?

- A. Screened vents and an overflow pipe**
- B. Approved locking roof hatch and annual inspection**
- C. Overflow pipe with hinged flap device and maintenance**
- D. All of the above**

Ground storage tanks are essential components in water distribution systems, and various operational requirements ensure their effective management and safety. The inclusion of features like screened vents and an overflow pipe is crucial because these elements prevent contamination and manage excess water safely, respectively. Screened vents allow for air exchange while keeping debris and contaminants out, which helps maintain water quality. An approved locking roof hatch is important for access while ensuring security and preventing unauthorized entry, further protecting the stored water from potential contamination. Regular annual inspection is vital for identifying and addressing any structural or operational issues before they lead to significant problems. Having an overflow pipe with a hinged flap device is necessary not only to manage overflow but also to prevent backflow and maintain system pressure. Regular maintenance of these components is critical to ensuring they function effectively when needed. Given these explanations, it's clear that a comprehensive approach combining all these features is required for the proper operation of ground storage tanks, making the option that includes all components the correct choice.

6. What pressure is typically used to maintain the chlorine residual in water systems?

- A. 200 psi**
- B. 80 psi**
- C. 50 psi**
- D. 30 psi**

Maintaining an adequate chlorine residual in water systems is critical for effective disinfection, and the pressure used can significantly impact the efficiency of the chlorine injection process. An 80 psi pressure is often considered optimal in many water treatment systems. This pressure level allows for a consistent and sufficient flow of chlorine solution into the water supply while ensuring that the chlorine can be effectively mixed and dosed appropriately. At 80 psi, the chlorine can effectively travel through the distribution system, overcoming friction losses and maintaining a uniform chlorine concentration throughout the water. Additionally, operating at this pressure helps to achieve better atomization of the chlorine, which is essential for maintaining an adequate residual and ensuring that the water remains safe for consumption. Using significantly lower pressures, such as 30 psi, may lead to inadequate mixing and insufficient contact time, potentially resulting in lower chlorine residual levels. Higher pressures, like 200 psi, could pose operational risks and complicate system maintenance without providing significant benefits in terms of residual maintenance. Therefore, 80 psi strikes a balance between effective chlorine delivery and practical operation within water treatment systems.

7. A groundwater well producing 1.4 MGD should be converted to how many GPM?

- A. 800 gpm**
- B. 972 gpm**
- C. 1,200 gpm**
- D. 1,400 gpm**

To convert million gallons per day (MGD) to gallons per minute (GPM), you can use the following conversion factors: 1 MGD is equivalent to 1,000,000 gallons in a day and there are 1,440 minutes in a day (24 hours x 60 minutes). Therefore, the conversion formula is: $GPM = (MGD \times 1,000,000 \text{ gallons}) / 1,440 \text{ minutes}$. Applying this to a well producing 1.4 MGD: $GPM = (1.4 \times 1,000,000) / 1,440 \text{ GPM} = 1,400,000 / 1,440 \text{ GPM} = 972.22$. When rounded appropriately, this results in approximately 972 GPM. This calculation aligns with the correct answer, which reflects accurate conversion from daily output in million gallons to a minute flow rate in gallons. Understanding this conversion is essential for water management and ensuring that systems are appropriately calibrated for the flow rates involved in various applications.

8. What is a common chemical oxidizer used in water treatment?

- A. Chlorine dioxide**
- B. Potassium permanganate**
- C. Hydrogen peroxide**
- D. Sodium hypochlorite**

Potassium permanganate is a common chemical oxidizer used in water treatment for several reasons. It is effective in oxidizing a range of contaminants, including iron and manganese, which are naturally occurring in water sources and can cause staining or undesirable tastes and odors. Additionally, potassium permanganate facilitates the disinfection process by breaking down organic compounds and microorganisms, improving overall water quality. This oxidizer is particularly valued for its strong oxidizing properties, allowing it to react and neutralize pollutants effectively, making it an essential component in both wastewater and drinking water treatment processes. Its ability to work at varying pH levels makes it versatile, and it can be used in both pre-treatment and post-treatment processes in water treatment facilities. While other chemicals, such as chlorine dioxide, hydrogen peroxide, and sodium hypochlorite, are also oxidizers and are commonly used in water treatment, potassium permanganate stands out due to its specific applications in degrading manganese and iron and its capability to oxidize organic materials selectively without the production of harmful by-products that are sometimes associated with other chemical treatments.

9. What is the volume capacity in gallons of a storage tank that is 978 cubic feet?

- A. 5,000 gallons**
- B. 7,315 gallons**
- C. 10,000 gallons**
- D. 12,500 gallons**

To find the volume capacity in gallons of a storage tank measured in cubic feet, it is essential to use the conversion factor between these two volume units. One cubic foot is equivalent to approximately 7.48 gallons. To calculate the total volume in gallons for a tank that is 978 cubic feet, the following mathematical operation is performed: 1. Multiply the volume in cubic feet by the number of gallons per cubic foot: 978 cubic feet \times 7.48 gallons/cubic foot = 7,315.84 gallons. The closest whole number here is 7,315 gallons, which corresponds to the selected answer. This conversion reflects the standard unit relationships and illustrates the process of converting volumetric measurements crucial for various water management applications in the context of the Class C Water License.

10. When an air gap is not practical, which of the following backflow prevention devices may be acceptable?

- A. Only reduced pressure zoning devices**
- B. Only pressure vacuum breakers**
- C. Atmospheric vacuum breaker and pressure vacuum breaker**
- D. Atmospheric vacuum breaker, pressure vacuum breaker, testable double check valve assemblies, and reduced pressure zoning devices**

An air gap is the most effective method for preventing backflow; however, there are situations where an air gap may not be practical. In such cases, a range of backflow prevention devices can be utilized to protect the potable water supply from contamination. The correct choice includes atmospheric vacuum breakers, pressure vacuum breakers, testable double check valve assemblies, and reduced pressure zoning devices. Each of these devices serves a specific purpose in preventing backflow in various applications: 1. **Atmospheric Vacuum Breakers** are devices that prevent back-siphonage by allowing air to enter the system when a negative pressure occurs, thus breaking the vacuum and preventing contaminated water from being drawn back into the potable supply. 2. **Pressure Vacuum Breakers** work similarly, offering protection against back-siphonage and incorporating a check valve that closes to protect the water supply when pressure drops. 3. **Testable Double Check Valve Assemblies** consist of two check valves in series and are designed to prevent backflow in situations where the risk of contamination is low. They must be tested regularly to ensure effectiveness. 4. **Reduced Pressure Zoning Devices** provide higher levels of protection by maintaining a reduced pressure zone that is lower than the pressure in the potable water system,

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://tceq-classcwaterlicense.examzify.com>

We wish you the very best on your exam journey. You've got this!

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