

# Water Resources and Pollution in Environmental Science Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Table of Contents

<b>Copyright</b> .....	<b>1</b>
<b>Table of Contents</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
<b>How to Use This Guide</b> .....	<b>4</b>
<b>Questions</b> .....	<b>5</b>
<b>Answers</b> .....	<b>8</b>
<b>Explanations</b> .....	<b>10</b>
<b>Next Steps</b> .....	<b>16</b>

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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. Decomposable materials that consume oxygen are best described as which pollutant group?**
  - A. Nitrates and Phosphates**
  - B. Sediments**
  - C. Biodegradable Wastes**
  - D. Toxic Chemicals**
  
- 2. Which term describes extraction of water faster than aquifer recharge?**
  - A. Groundwater Withdrawals**
  - B. Over-Pumping from aquifers**
  - C. Aquifer Recharge Rate**
  - D. Desalination Methods**
  
- 3. Which term refers to nutrient runoff containing NO<sub>3</sub> and PO<sub>4</sub> from agriculture?**
  - A. Raw Sewage**
  - B. Saltwater Intrusion**
  - C. Sewage Runoff**
  - D. Nutrient Runoff**
  
- 4. What is the upper surface of groundwater in an aquifer?**
  - A. Water Table**
  - B. Ocean Floor**
  - C. Aquifers**
  - D. Desalination**
  
- 5. Health effects of heavy metals include which statement?**
  - A. Cause Cancer and Disrupt Bodily Systems**
  - B. Heat From Power Plants Harms Species**
  - C. Unlined Landfills and Industrial Discharges**
  - D. Nutrients Leading to Algal Blooms**

- 6. What describes contamination of underground water sources?**
- A. Dissolved Oxygen Levels**
  - B. Algal Blooms**
  - C. Common Groundwater Pollutants**
  - D. Groundwater Pollution**
- 7. What term refers to toxins added to aquatic systems from various sources?**
- A. Organic Chemicals**
  - B. Inorganic Chemicals**
  - C. Nitrate Standards**
  - D. Oxygen-Demanding Wastes**
- 8. Which phenomenon results from elevated nutrient levels leading to algal growth that harms water quality?**
- A. Oxygen-Depleted Zones**
  - B. Nutrient Runoff**
  - C. Saltwater Intrusion**
  - D. Harmful Algal Blooms**
- 9. Which of the following is an example of a point source of pollution?**
- A. Factories, oil wells, and animal feedlots**
  - B. Pollution from broad, diffuse areas**
  - C. Rain washes pollutants into surface water**
  - D. Runoff from croplands and logged forests**
- 10. Which pollutants cause excessive algae growth in water bodies?**
- A. Organic Chemicals**
  - B. Inorganic Chemicals**
  - C. Nitrate Standards**
  - D. Plant Nutrients**

## Answers

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

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## **Explanations**

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**1. Decomposable materials that consume oxygen are best described as which pollutant group?**

- A. Nitrates and Phosphates**
- B. Sediments**
- C. Biodegradable Wastes**
- D. Toxic Chemicals**

Biochemical oxygen demand occurs when microorganisms decompose organic material and use dissolved oxygen to do so. Substances that are readily decomposable—biodegradable wastes—provide abundant food for these microbes, so they consume more oxygen in the water. If a body of water receives a large amount of biodegradable waste, the microbial activity can deplete oxygen faster than it can be replenished, leading to low dissolved oxygen and stressed or killed aquatic life. That's why biodegradable wastes are described as the pollutant group that consumes oxygen. Nitrates and phosphates are nutrients that can fuel algal blooms, which may later lead to oxygen depletion when the algae die and decompose, but they themselves are not the materials that directly consume oxygen. Sediments affect clarity and habitat, not the immediate oxygen demand. Toxic chemicals can harm organisms in various ways, but they aren't defined by oxygen consumption in the same way.

**2. Which term describes extraction of water faster than aquifer recharge?**

- A. Groundwater Withdrawals**
- B. Over-Pumping from aquifers**
- C. Aquifer Recharge Rate**
- D. Desalination Methods**

When water is removed from an aquifer faster than it can be replenished, the aquifer is being over-pumped. This term specifically captures the idea of an unsustainable withdrawal rate that exceeds recharge, leading to falling groundwater levels and associated problems like subsidence, reduced spring and well yields, and possible saltwater intrusion in coastal areas. Groundwater withdrawals is a broad phrase for extracting groundwater and doesn't by itself imply an unsustainable rate. Aquifer recharge rate describes how quickly the aquifer is replenished, not how fast water is being taken out. Desalination methods refer to removing salt from seawater or brackish water, not to the dynamics of groundwater depletion.

**3. Which term refers to nutrient runoff containing NO<sub>3</sub> and PO<sub>4</sub> from agriculture?**

- A. Raw Sewage**
- B. Saltwater Intrusion**
- C. Sewage Runoff**
- D. Nutrient Runoff**

Nutrient runoff is the movement of dissolved nutrients, especially nitrate (NO<sub>3</sub><sup>-</sup>) and phosphate (PO<sub>4</sub><sup>3-</sup>), from agricultural land into nearby water bodies via rain and irrigation-driven runoff or drainage. These nutrients come from fertilizers, manure, and crop residues and fuel algal blooms that can lead to eutrophication and low oxygen levels in streams, lakes, and oceans. The term specifically describes the transport of these nutrients from land to water, which is why it fits this scenario best. The other terms refer to different sources or processes—raw sewage and sewage runoff involve human waste, while saltwater intrusion is the inland movement of saline water into freshwater aquifers.

**4. What is the upper surface of groundwater in an aquifer?**

- A. Water Table**
- B. Ocean Floor**
- C. Aquifers**
- D. Desalination**

Water table is the upper surface of groundwater in an aquifer. It marks the boundary between the saturated zone, where all pore spaces are filled with water, and the unsaturated zone above. The water table can rise or fall with rainfall recharge and groundwater withdrawals, and it generally slopes from higher recharge areas toward discharge points like springs or wells. The other terms don't describe this surface: the ocean floor is the bottom of the sea, aquifers refer to the groundwater-bearing layers themselves, and desalination is a treatment process for removing salt from seawater.

**5. Health effects of heavy metals include which statement?**

- A. Cause Cancer and Disrupt Bodily Systems**
- B. Heat From Power Plants Harms Species**
- C. Unlined Landfills and Industrial Discharges**
- D. Nutrients Leading to Algal Blooms**

Heavy metals can directly affect human health by causing cancer and disrupting multiple bodily systems. Metals like arsenic, cadmium, lead, and mercury are toxic and can interfere with essential enzymes and cellular processes, generate oxidative stress, and accumulate in organs over time. This leads to a range of outcomes, from cancer risk to harm to the nervous, renal, cardiovascular, and immune systems, depending on the metal and the level of exposure. The other statements describe where contamination can come from or ecological effects, not the health impacts themselves: heat from power plants talks about ecological heat pollution, unlined landfills and discharges describe pathways of contaminants, and nutrients causing algal blooms refer to nutrient pollution and eutrophication, not the direct health effects of heavy metals.

**6. What describes contamination of underground water sources?**

- A. Dissolved Oxygen Levels**
- B. Algal Blooms**
- C. Common Groundwater Pollutants**
- D. Groundwater Pollution**

Groundwater pollution describes the contamination of underground water sources. It means harmful substances—such as nitrates, heavy metals, solvents, pesticides, or pathogens—enter an aquifer from land-based activities and migrate with groundwater, degrading water quality and creating health and ecological risks. Groundwater moves slowly, so contaminants can persist for long periods and spread as plumes, making cleanup difficult. The other options point to related water quality aspects (like dissolved oxygen) or surface-water issues (like algal blooms) or simply mention pollutants found in groundwater rather than the process of contamination itself, so they don't capture the concept as accurately.

**7. What term refers to toxins added to aquatic systems from various sources?**

- A. Organic Chemicals**
- B. Inorganic Chemicals**
- C. Nitrate Standards**
- D. Oxygen-Demanding Wastes**

The main idea here is how pollutants in water are categorized. Toxins that enter aquatic systems from a variety of sources are typically described as organic chemicals—carbon-containing compounds that come from everyday products and processes, such as pesticides, solvents, fuels, and other industrial or consumer chemicals. These organic pollutants are common because they originate from many activities: agricultural runoff, industrial discharges, leaky storage, improper disposal, and spills, all introducing carbon-based toxins into water bodies. Why this fits best: while inorganic chemicals include metals and simple salts that can also be toxic, the broad range of toxins added to aquatic systems from diverse sources is more accurately encompassed by organic chemicals, since many well-known water pollutants are organic (pesticides, hydrocarbons, solvents, pharmaceuticals). Nitrate standards relate to regulatory limits for nitrate, not toxins themselves, and oxygen-demanding wastes describe substances that consume dissolved oxygen as they decompose, which is a different pollution mechanism they don't define as toxins.

**8. Which phenomenon results from elevated nutrient levels leading to algal growth that harms water quality?**

- A. Oxygen-Depleted Zones**
- B. Nutrient Runoff**
- C. Saltwater Intrusion**
- D. Harmful Algal Blooms**

Elevated nutrients in a water body spark rapid growth of algae. When that growth becomes excessive and harms water quality—for example by releasing toxins or by consuming a lot of oxygen as the algae die and decompose—it's called a Harmful Algal Bloom. The nutrients most often responsible are nitrogen and phosphorus from sources like fertilizers, agricultural runoff, and wastewater. The harm includes poorer water clarity, potential toxins that affect wildlife and people, and lower dissolved oxygen levels that can create dead zones. Oxygen-depleted zones are a downstream consequence of these blooms, not the initiating phenomenon itself. Nutrient runoff explains where the nutrients come from, while saltwater intrusion is not tied to this nutrient-driven bloom.

**9. Which of the following is an example of a point source of pollution?**

- A. Factories, oil wells, and animal feedlots**
- B. Pollution from broad, diffuse areas**
- C. Rain washes pollutants into surface water**
- D. Runoff from croplands and logged forests**

Point source pollution comes from a single, identifiable discharge point, such as a pipe or outlet where pollutants are released into a water body. The example listing factories, oil wells, and animal feedlots fits this description because each facility can have a specific outlet that emits pollutants, making the source traceable and localized. In contrast, pollution from broad, diffuse areas is nonpoint source because there isn't one distinct discharge; pollutants enter water from many places across a landscape. Rain washing pollutants into surface water shows a process that carries contaminants from widespread areas rather than a single outflow, and runoff from croplands and logged forests is similarly diffuse. Because point sources are identifiable and located at a definite point, they're typically subject to permits and direct regulation, while nonpoint sources are spread across large areas and are harder to control.

**10. Which pollutants cause excessive algae growth in water bodies?**

- A. Organic Chemicals**
- B. Inorganic Chemicals**
- C. Nitrate Standards**
- D. Plant Nutrients**

Excess nutrients act as fertilizer for algae. Plant nutrients, especially nitrogen and phosphorus, enter water bodies from fertilizers, runoff, and waste. When these nutrients are abundant, algae and other phytoplankton can grow rapidly, causing blooms. This rapid growth can block light, alter habitat, and, when the algae die and decompose, deplete dissolved oxygen, leading to further ecological problems like dead zones. That direct link between nutrient input and algal growth makes plant nutrients the right answer. Other options describe broader pollutant categories or regulatory limits that don't directly drive algal overgrowth. Organic or inorganic chemicals can affect water quality in various ways, but they aren't the primary cause of the nutrient-driven blooms. Nitrate standards refer to limits set to protect water quality, not to the pollutant type that fuels algal growth.

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## 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](mailto:hello@examzify.com).**

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

**<https://waterresourcespollutioninenvisci.examzify.com>**

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

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