

NGWA Augering and Monitoring Well Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

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

SAMPLE

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

SAMPLE

- 1. Monitoring wells are commonly installed downgradient of a landfill to determine groundwater contamination.**
 - A. False**
 - B. Yes, to determine groundwater contamination**
 - C. Only to measure groundwater depth**
 - D. Only for sampling nearby**

- 2. Best backfill material for the annulus after the filter pack and seal?**
 - A. Sand**
 - B. Cement and/or bentonite grout materials**
 - C. Gravel**
 - D. Fine clay**

- 3. A piezometer is placed in groundwater to measure hydraulic head. What is hydraulic head a measure of?**
 - A. Temperature**
 - B. Pressure and elevation**
 - C. pH level**
 - D. Turbidity**

- 4. For a typical 2-inch monitoring well, what material is best for the filter pack?**
 - A. Fine sand**
 - B. Gravel**
 - C. Coarse clean silica sand**
 - D. Silt**

- 5. When bentonite is used in drilling the borehole for constructing a monitoring well, which method is best for removing the bentonite from the screen area?**
 - A. Using deflocculant agents and surging**
 - B. High-pressure jetting**
 - C. Mechanical scraping**
 - D. Backfilling with gravel**

- 6. The drilling method used to construct a monitoring well should do what?**
- A. minimize disturbance of subsurface materials**
 - B. maximize drilling speed**
 - C. minimize cost**
 - D. use drilling fluid additives**
- 7. Which sampling method is commonly used to obtain soil samples during monitoring-well drilling?**
- A. Shelby tube and/or split spoon sampler**
 - B. Grab samples from surface soil**
 - C. Soil coring with a rock drill**
 - D. Pore water extraction only**
- 8. When developing a monitoring well, what factor(s) will determine the well development method to be used?**
- A. Well casing material**
 - B. Weather conditions**
 - C. Driller's preference**
 - D. Well construction and geologic formation**
- 9. Which drilling method would be described as the most efficient for bedrock monitoring wells?**
- A. Mud rotary with jetting**
 - B. Cable tool drilling**
 - C. Auger drilling**
 - D. Air rotary with a down-hole hammer**
- 10. In selecting a fluid for a well, what criterion should guide the choice?**
- A. The depth to water table**
 - B. The type of formation**
 - C. Circumstances of each individual well**
 - D. The pump capacity**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Monitoring wells are commonly installed downgradient of a landfill to determine groundwater contamination.

A. False

B. Yes, to determine groundwater contamination

C. Only to measure groundwater depth

D. Only for sampling nearby

Monitoring wells placed downgrading of a landfill are positioned where groundwater flows away from the waste, so they can detect any contaminants as the plume migrates with the groundwater. By sampling water at multiple downgradient locations, you can determine if contaminants have escaped the landfill, measure their concentrations, map the size and direction of the plume, and observe changes over time. This information is essential for assessing impact, guiding mitigation, and protecting receptors. While measuring groundwater depth can be part of routine well monitoring, the primary purpose of these downgradient wells is to determine groundwater contamination, not just to measure depth. They're not limited to sampling nearby; they're intended to capture and characterize the contaminant plume as it moves through the aquifer.

2. Best backfill material for the annulus after the filter pack and seal?

A. Sand

B. Cement and/or bentonite grout materials

C. Gravel

D. Fine clay

The space between the outside of the screened interval and the borehole wall must be sealed with a material that forms a durable, low-permeability barrier and supports the casing. Cementitious grout and/or bentonite grout materials are ideal because they cure into a solid, dense seal that prevents vertical water movement and contaminant migration along the annulus, while also stabilizing the casing. Mixing cement with bentonite combines strength with very low permeability, making the seal robust under groundwater pressures. Sand or gravel are too permeable and are used for the filter pack around the screen, not as annulus backfill. Fine clay alone can swell or crack and doesn't provide the same long-lasting structural seal. So cement and/or bentonite grout is the best backfill for the annulus.

3. A piezometer is placed in groundwater to measure hydraulic head. What is hydraulic head a measure of?

- A. Temperature
- B. Pressure and elevation**
- C. pH level
- D. Turbidity

The main idea is that hydraulic head represents the total energy per unit weight of groundwater, combining both pressure energy and elevation energy. A piezometer shows how high a column of water would rise at that point, which reflects the pressure in the water (pressure head) plus the height of the point above a reference datum (elevation head). Together they form hydraulic head: pressure head plus elevation head. This is what the piezometer reading conveys about the groundwater system. It's not about water quality properties like temperature, pH, or turbidity, which describe the water itself rather than its energy state. The hydraulic head tells you where water would tend to flow—from higher head to lower head—driving the groundwater gradient.

4. For a typical 2-inch monitoring well, what material is best for the filter pack?

- A. Fine sand
- B. Gravel
- C. Coarse clean silica sand**
- D. Silt

The key idea is choosing a filter pack that protects the screen from sediments while letting groundwater flow freely. For a typical 2-inch monitoring well, coarse clean silica sand is the best choice because it is clean, has a uniform grain size, and provides high permeability without supplying excess fines. This combination helps trap any fine silt or clay from the surrounding formation around the screen, prevents fine particles from entering the well, and keeps the pack from compacting too much or forming channels. Fine sand brings many fines that can clog the screen and pack, reducing yield. Silt is so fine it clogs almost immediately. Gravel is too large to fill the space properly around the screen and can create voids or channels, compromising the seal and allowing unwanted particles to move. Coarse clean silica sand strikes the right balance, making it the standard material for filter packs in 2-inch monitoring wells.

5. When bentonite is used in drilling the borehole for constructing a monitoring well, which method is best for removing the bentonite from the screen area?

- A. Using deflocculant agents and surging**
- B. High-pressure jetting**
- C. Mechanical scraping**
- D. Backfilling with gravel**

When bentonite mud remains in the screen area, the goal is to loosen and flush it out without damaging the screen or clogging the formation. Deflocculant agents work by dispersing the clay particles, reducing their tendency to clump into a gel that sticks to the screen and fills the slot openings. This makes the bentonite more suspensible in water. Surging then uses rapid in-and-out water pulses to physically dislodge material from the screen surface and surrounding grout or filter pack, carrying the loosened bentonite up and out of the borehole. Together, deflocculation and surging clean the screen while preserving the integrity of the screen, preserving open slots, and minimizing re-deposition of fines. High-pressure jetting can erode or damage the screen and can push bentonite into the formation or create uncontrolled turbulence. Mechanical scraping may remove surface material but can scratch or damage the screen and often fails to reach material packed into the socket or slot openings. Backfilling with gravel is a filter-pack approach around the screen and does not effectively remove bentonite from the screen area itself.

6. The drilling method used to construct a monitoring well should do what?

- A. minimize disturbance of subsurface materials**
- B. maximize drilling speed**
- C. minimize cost**
- D. use drilling fluid additives**

Preserving the natural state of the subsurface is essential when installing a monitoring well so that groundwater samples and hydraulic measurements reflect the true in-situ conditions. If the drilling method disturbs the subsurface, it can alter porosity, fracture networks, and hydraulic conductivity, create mixing or bypass channels, and introduce fines or contaminants. These changes can bias contaminant concentrations and misrepresent how groundwater actually moves and reacts in the aquifer. A low-disturbance approach helps keep the aquifer's stratigraphy and flow paths intact, supporting accurate long-term monitoring data. Proper casing, sealing, and placement practices then work with this approach to prevent vertical leakage between zones and surface intrusion, ensuring the well records the real conditions underground. While speed, cost, and drilling-fluid additives matter, they should not compromise the goal of minimizing disturbance to obtain valid monitoring results.

7. Which sampling method is commonly used to obtain soil samples during monitoring-well drilling?

- A. Shelby tube and/or split spoon sampler**
- B. Grab samples from surface soil**
- C. Soil coring with a rock drill**
- D. Pore water extraction only**

When drilling a monitoring well, the goal is to get soil samples that truly represent the subsurface conditions at depth. Using a Shelby tube or a split-spoon sampler does exactly that by capturing a relatively undisturbed slice or core of soil as the borehole is advanced. The Shelby tube is a thin-walled tube pushed into the soil, preserving natural structure and moisture for accurate analysis of properties like moisture, density, and plasticity in cohesive soils. The split-spoon sampler, a thicker-walled device that can be driven or pushed into place, yields a solid sample that's particularly useful for coarse-grained layers and provides material for grain-size analysis and stratigraphic interpretation. Grab samples from surface soil don't reflect the subsurface conditions where the well screens and groundwater flow occur, so they're not suitable for characterizing the intervals of interest. Soil coring with a rock drill is more typical in hard rock or unconsolidated rock situations and isn't the standard approach for general monitoring-well soil sampling. Pore water extraction focuses on the liquid phase and lacks the solid matrix needed to evaluate many soil properties and the stratigraphy of the borehole.

8. When developing a monitoring well, what factor(s) will determine the well development method to be used?

- A. Well casing material**
- B. Weather conditions**
- C. Driller's preference**
- D. Well construction and geologic formation**

When choosing how to develop a monitoring well, the design of the well itself and the characteristics of the surrounding formation drive the method you use. The well's construction—such as screen length and slot size, the presence or absence of a gravel pack, and the integrity of the annular seal—directly affects how water and fines will move during development and how to best flush the screen-cleaning material without damaging the well. The geology of the aquifer—grain size distribution, fines content, clay or cohesive materials, and any fractures—determines how stubbornly fines are held in place and how aggressive you must be to establish a good hydraulic connection between the formation and the well. In practice, a coarse, clean filter pack in a sandy aquifer may respond well to lighter methods like gentle surging or low-rate pumping to remove loose fines. A fine-grained or cohesive formation often requires more vigorous development (air-lift, jetting, longer or staged development) to break up compaction and flush out fines, ensuring the well yields and represents the aquifer water accurately. Weather or driller preference don't set the method—the well's construction details and the formation's properties do.

9. Which drilling method would be described as the most efficient for bedrock monitoring wells?

- A. Mud rotary with jetting**
- B. Cable tool drilling**
- C. Auger drilling**
- D. Air rotary with a down-hole hammer**

In hard, solid bedrock, you need a drilling method that can aggressively break rock while keeping the borehole clear and allowing casing to be installed efficiently. An air rotary system with a down-hole hammer provides that combination: the hammer delivers percussive energy to fracture the rock, and the circulating air carries cuttings to the surface, reducing mud issues and debris build-up. This setup speeds penetration through hard rock and supports continuous drilling with casing placement, which is essential for bedrock monitoring wells. Other methods struggle in bedrock: auger drilling can't cut solid rock effectively; cable tool drilling is slow and labor-intensive in hard formations; mud rotary relies on drilling mud to remove cuttings and cool the bit, which becomes inefficient in very hard rock and can cause stabilization challenges. Therefore, the air rotary with a down-hole hammer is the most efficient choice for bedrock monitoring wells.

10. In selecting a fluid for a well, what criterion should guide the choice?

- A. The depth to water table**
- B. The type of formation**
- C. Circumstances of each individual well**
- D. The pump capacity**

Fluid choice for a well must be tailored to the specific conditions you're dealing with at that site. Each well presents a unique combination of factors—formation type and stability, drilling depth, groundwater chemistry, presence of clays or abrasive materials, expected pressures, and what the finished well will be used for—that all shape what properties the fluid should have. The right fluid needs to provide borehole stability, control filtrates and solids, lubricate and cool the bit, resist corrosion, and be compatible with casing, grout, and any intended pumping or sampling operations. Because these conditions vary from one well to another, the guiding criterion is the particular circumstances of that well rather than any single factor like depth, formation type alone, or pump capacity.

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://ngwaaugeringmonitoringwell.examzify.com>

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

SAMPLE