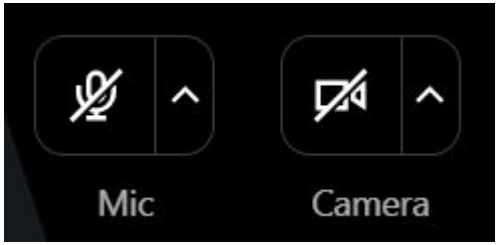
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Engineering Bulletin 10
Chapter 3: Pumping Facilities
Chapter 5: Hydropneumatic Tanks
Chapter 6: Storage

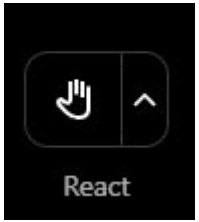
June 9, 2026

Online Tools

Muted (bottom, middle)



Raise hands (bottom, left)



Use the Question Tool (top, right)

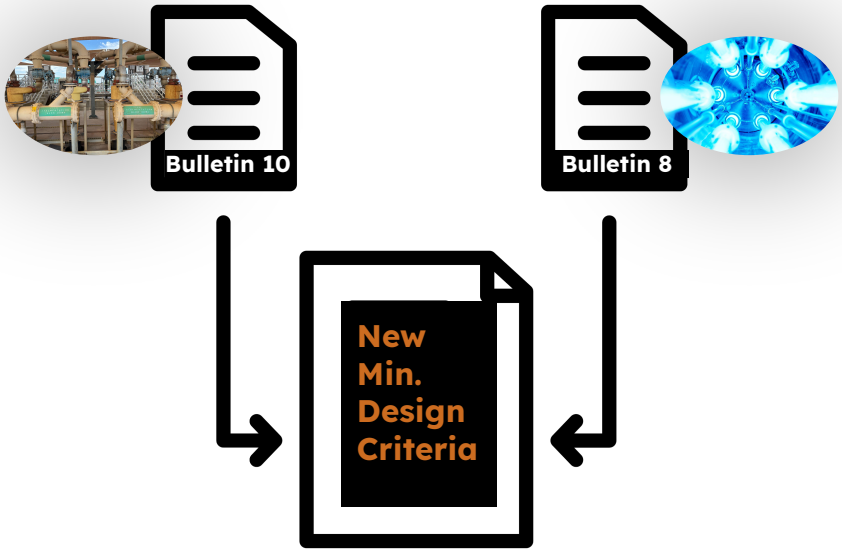
Agenda

- Welcome, Housekeeping, and Team Introductions
- MDCR High Level Update
- Today's Topic Introduction
- What Have We Heard Thus Far?
- Present Identified Gaps in Engineering Bulletin 10, Chapters 3, 5, and 6
- ADEQ Questions and Open Discussion
- Next Steps
- Closeout

Tips for a Good Meeting

- Share from your experience and perspective
- Please listen when others are speaking
- Allow space for all to participate
- Be generous
- We ask that all present be respectful and kind and we believe that this will lead to good outcomes

What is the Minimum Design Criteria Rule (MDCR) Update?



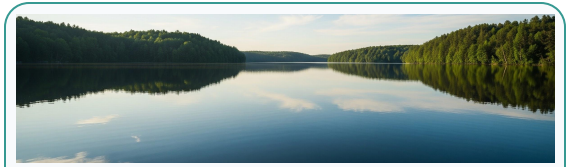
MDCR will update 18 A.A.C. 5, Article 5 design criteria and associated rules, since existing design requirements reflect 1978 standards and practices.

Key Benefits:

- Improve **regulatory clarity**
- Ensure **public health protections**.
- Modernize to **current industry practices.**
- Align with **Safe Drinking Water Act (SDWA)** requirements

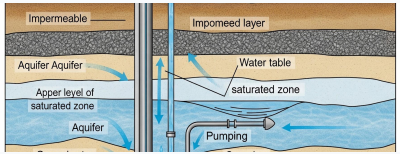
Summary from last session on 5/7/2026

EB 10 Chapter 2: Source Development & Construction



Surface Water

- Source Development
- Source Construction



Groundwater & Wells

- Groundwater Development
- Well Construction Requirements

Springs

- Spring Construction Requirements

Other Source Development and Construction

- Groundwater Under the Direct Influence of Surface Water (A.A.C. R18-4-212)
- New Source Analysis
- Other Sources

Your Voice Matters!

Take our survey and visit our site to keep up with our project progress.

bit.ly/4m8jZv9

bit.ly/4sRjPLa

Minimum Design Criteria for Public Water Systems and Related Infrastructure

Rulemaking Website

azdeq.gov/rulemaking/minimum-design-criteria

Revised On: Feb. 10th, 2026 - 08:49 am

Summary:

ADEQ intends to update its public water system design and application process rules in 18 A.A.C. 5, Article 5, Minimum Design Criteria for Public Water Systems.

- Article 5: Minimum Design Criteria for Public Water Systems | View Article 5 >

ADEQ's rules for public water system Minimum Design also include Engineering Bulletins 8 and 10 via incorporation by reference in A.A.C. R18-5-502:

- Engineering Bulletin 8 — Disinfection of Water Systems | View Bulletin 8 >
- Engineering Bulletin 10 — Guidelines for the Construction of Water Systems | View Bulletin 10 >

The Minimum Design Criteria Guidelines (Engineering Bulletin 10) and rules for public water systems and related infrastructure in Article 5 currently reflect engineering standards and practices from 1978. The rules and incorporated technical requirements will be updated to reflect current industry standards and practices.

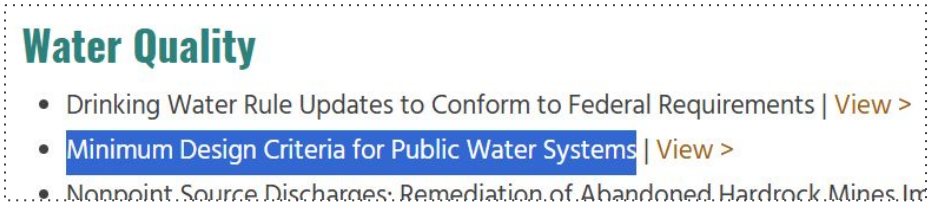
More information and content to come (e.g., external survey).

Finding MDCR Webpage from the ADEQ Homepage (azdeq.gov)

Click on the “Laws/Rules/Policy” tab. ⇨

Click “View” under Active Rulemakings (azdeq.gov/active-rulemakings) ⇨

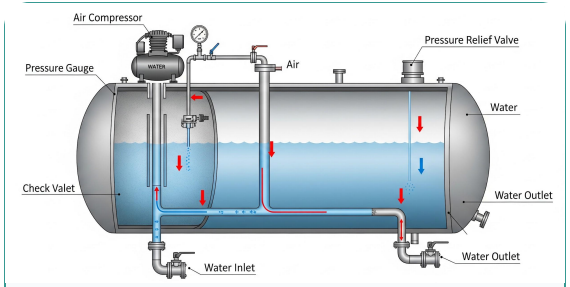
Under the Water Quality subheading, click on “View” next to Minimum Design Criteria for Public Water Systems ⇨



Today’s Focus

Chapter 3

Pumping Facilities



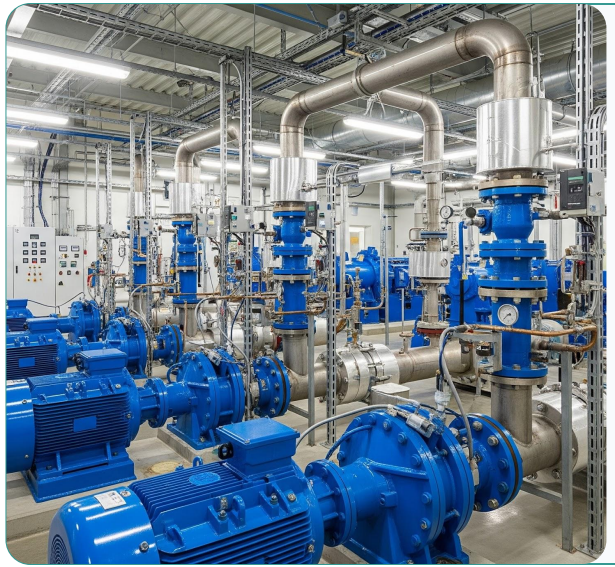
Chapter 5

Hydropneumatic Tanks

Chapter 6

Storage

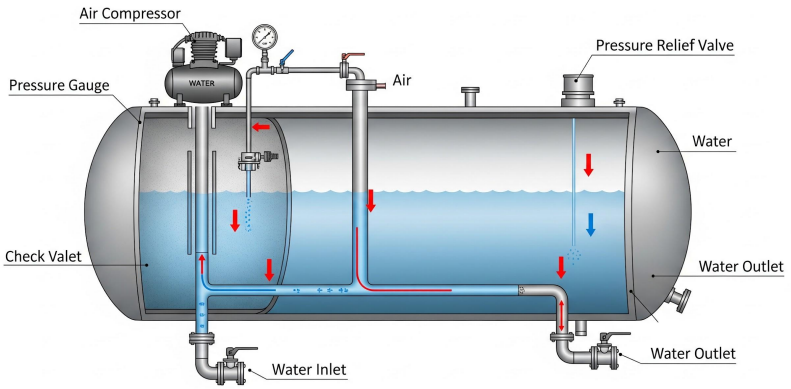
What Have We Heard Thus Far?



Pumping Facilities

- Add standards for SCADA technology
- Like-for-like replacement: pumps should be within a specific threshold of the existing pump size

What Have We Heard Thus Far?



Hydropneumatic Tanks

- Include a plan/profile view
- Provide guidance on capacity calculation and design materials
- Address if hydropneumatic tanks could qualify as storage for very small systems

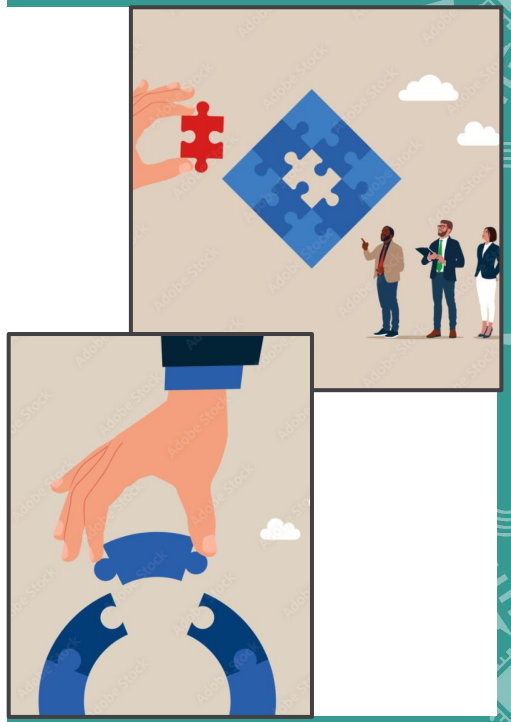
What Have We Heard Thus Far?

Storage

- Require storage tanks be protected with a 6’ fence when placed in high populous areas
- Provide examples and further explanation of minimum capacity requirements
- Provide guidance on demand calculation, design materials, climatology, and turnover
- Add residence time
- Clarify when tanks don’t require permits

Identified Gaps

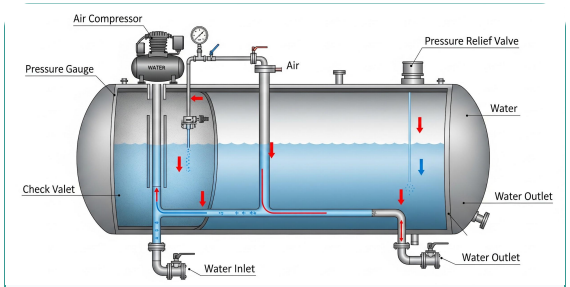
- Pumping Facilities
  - Expand discussion of booster pumps (e.g., location, appurtenances, pressure requirements)
  - Expand criteria around appurtenances (e.g., lubricants, controls, valves)
- Hydropneumatic Tanks
  - Include schematic level figure of hydropneumatics tank
  - Include additional methods of sizing tanks (e.g., hydraulic transient analysis)
- Storage
  - Include schematic level figure of storage tank
  - Include additional materials and methods of construction (beyond welded steel tanks – AWWA D100)



Open Discussion

Chapter 3

Pumping Facilities



Chapter 5

Hydropneumatic Tanks

Chapter 6

Storage

Discussion - Chapter 3: Pumping Facilities

Discussion - Chapter 3: Pumping Facilities

Cybersecurity & Physical Security

Should the new MDC mandate specific cybersecurity protocols and physical security standards (e.g., cameras/alarms connected to SCADA) for unattended facilities?

Floodplain Elevation

Should pump station elevation be 3 ft above the 100-yr floodplain (vs. 1 ft per EB10)? Or should flexible design criteria be established?

Standby Power

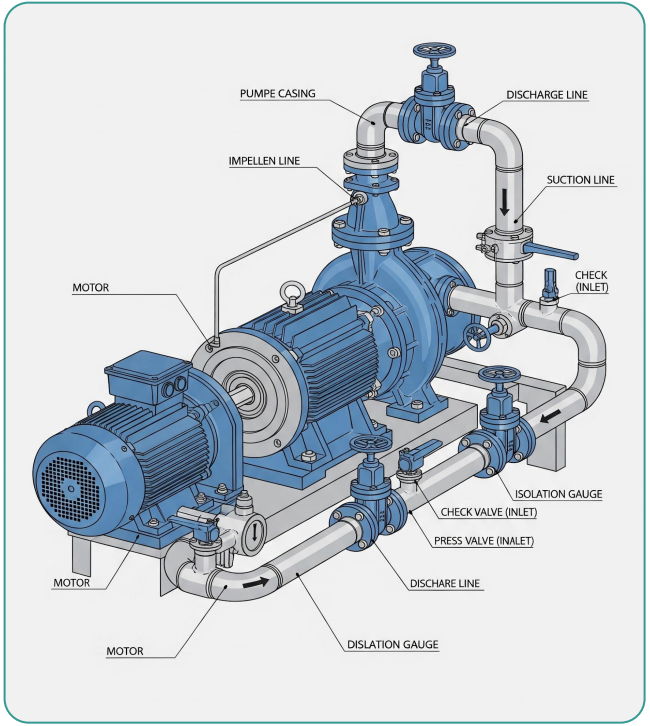
What considerations would be helpful in providing guidance related to dedicated standby power?

Discussion - Chapter 3: Pumping Facilities

- Pump Design: What aspects of pumping unit and appurtenance design should be more clearly addressed in the updated MDC?
- Pump Types: What other types of pumps besides turbine, submersible, and pitless are found in drinking water pumping facilities?

Discussion – Chapter 3: Pumping Facilities

- **Pump Upgrades:** What challenges arise when replacing pumping equipment at existing facilities, and what should the updated MDC clarify to improve predictability?
- **Visual Guidance and Clarity:** What design elements for wells or groundwater pumping facilities are most often unclear and could be better supported through figures or schematics?



Discussion - Chapter 5: Hydropneumatic Tank

Discussion – Chapter 5: Hydropneumatic Tank

- **Hydro. Tanks vs. Static Storage:** How do you think we should address hydropneumatic tanks versus storage tanks? What are some of the practicalities and differences of how we should review or address hydropneumatic tanks versus storage (even if hydro. tanks a billed as storage)?
- **Sizing and Analytical Methods:** Should the updated criteria explicitly allow or require modern sizing methods, such as hydraulic transient analysis, alongside the traditional calculation methods?

Discussion - Chapter 5: Hydropneumatic Tank

- **Clarity:** What appurtenances or design details are most important to address more clearly in the MDC for hydropneumatic tanks?
- **Standards:** Besides ASME standards, where do designers and reviewers look for guidance today when the existing criteria are silent or unclear?
- **Schematic:** What should a hydropneumatic tank figure help clarify that is often interpreted inconsistently today?

Discussion - Chapter 6: Storage Tank

Discussion - Chapter 6: Storage Tank

- **Water Residence Time:** What operational challenges might turnover requirement pose, particularly for systems with seasonal demand fluctuations, and how should exceptions be handled?
- **Materials and construction methods:** What specific modern materials and construction methods (e.g., bolted steel, fiberglass, tendon-prestressed concrete) should be explicitly added to the approved construction materials list?
- **Security:** What would be the general criteria for site security?

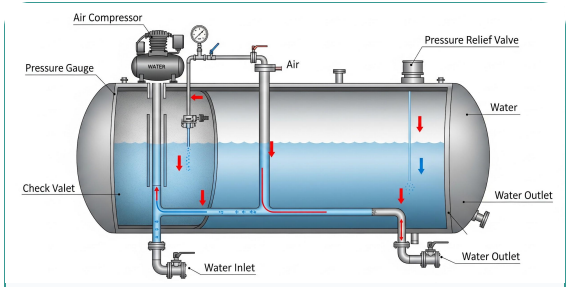
Discussion - Chapter 6: Storage Tank

- **Schematic**: What key elements would be beneficial to see on a figure/schematic of a storage tank?
- **Design considerations:** Are there any general design considerations missing from the discussion?

Any Additional Comments!

Chapter 3

Pumping Facilities



Chapter 5

Hydropneumatic Tanks

Chapter 6

Storage

Thank You!

Join us for more virtual engagement sessions!

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- Heidi Welborn
- Stephanie Huang
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- Nicole Rubenstein