Drinking Water Inspections: What to Expect When You’re Inspected/ Seasonal Start Up Procedure

Jennifer Crowe
Jennifer Crowe has worked for the Arizona Department of Environmental Quality’s Safe Drinking Water Value Stream as an Inspection and Compliance Officer since September 2019. Prior to working with ADEQ, Jennifer worked as a third party consultant inspecting construction sites SWPs and working alongside AmeriCorps conserving the environment. Jennifer earned her Bachelor’s degree in Conservation Ecology and Biology from Arizona State University. She earned her operator certificate 2021.
With the increase of winter visitors into Arizona this season, ADEQ wants you to be prepared for your customers.

The best practices for preparing your drinking water and onsite waste water system will be discussed during this presentation.

ADEQ is here to assist you if you have questions or concerns.
The expectation from ADEQ is that your water system will be in compliance at the time of inspection.

ADEQ provides you all the information needed to be in compliance. As a water system owner, you are responsible for protecting the health of your customers by maintaining your system in compliance at all times.
Some Seasonal Start-Up Systems are:

- Summer Homes
- Camping sites
- RV parks
- Road side rest areas
Prior to Opening

- Inspect each source-
  - is your well sealed and intact?
  - Are there any breaches or opening allowing contamination in springs?
  - Are gaskets and screens in tact?
  - Dusty or dirty equipment that has sat idle all summer can short out when started causing operational issues.
Prior to Opening Continued..

- Inspect any Storage or Pressure tanks of openings and checking all valves

- If your system is treating
  - Ensure that chemical feeds are function properly.
  - Ensure your system has new disinfectant.
  - If you have filters be sure to check and replace them.
Prior to Opening Continued..

- Flush the distribution system.
- Flush your tanks to ensure stagnant water is removed and all valves are working properly.
- Inspect pipes
Flushing your system before testing: ADEQ suggest that you take one non-compliance total coliform sample before opening day.
All Seasonal Start-Up needs to fill out this form to give to their Compliance Assistance Coordinators every year before they startup.

Only have to send in the first page

If not submitted can result in a violation.
**Revised Total Coliform Rule (RTCR) Seasonal Start-up Procedures Checklist**

To use this checklist if the water system was depressurized, lost pressure, and/or was fully shutdown during the off-season.

### PWG ID Number

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**Keep the checklist and Start-up Procedures in the PWG’s records.**

Do not submit this page with the Seasonal Start-up Certification Form.

### Description | Date Completed | Corrective Actions and Notes
---|---|---
1. Wellhead cap | | 
2. Well head area | | 
3. Well house or pump house (if applicable) | | 
4. Well cover (if applicable) | | 
5. Treatment facilities (if applicable) | | 
6. Storage tank (if applicable) | | 
7. Distribution piping, valves, and service lines | | 
8. Dump Station Cross Connection Control | | 
9. Sampling locations | | 
10. System shock disinfected | | 
11. System flushed to between 1.0 ppm and 0.2 ppm | Note: Pool test kits are not allowed. | 
12. Startup bacterium sample(s) | Note: A compliance sample is required the first month you are open. See your Master Sampling Schedule. | 
13. System has an operator | | 
14. Startup Certification Form (see Page 1) Subject to CRDE after completion of startup procedures. | | 

The ADEQ Groundwater Inspection Checklist may also be used and kept on file.

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**Cross-Connection Control and Dump Stations (A.A.R.C. R-4-215)**

A testable backflow device should be installed at the water supply point(s) to ensure no backflow can occur. Whenever these devices are installed they are to be tested annually as part of the routine and regular startup procedures. It may be advisable to protect the device from freezing by installing a sediment filter ahead of the device.

Please be aware that reverse flow valves (e.g. Hydro-Flush, Flush King, RV Dual Flush) contain a valve mechanism incorporated into a PVC connector which allows fresh water under pressure to be connected to the water supply holding tank for flushing and cleaning. Systems allowing the use of reverse flow valves must install a testable backflow device on the potable water supply line anywhere these devices may be used.

**Disinfection Dose for 50 ppm (mg/L) with Standard Bleach (8.25%) or 70% Chlorine Pellets**

Disinfection of the water system components is required as part of startup procedures for systems where either shut completely down,lost system pressure below 20 psi during the off-season, following any work on the system or positive bacteria detections. Follow the instructions in ADEQ Engineering Bulletin 89 (Section V.C., pg. 21), “Commission of Water Systems.” The bleach can be mixed into five gallons of water to be poured down the well casing to deliver the solution to the water level. After proper mixing for 10-20 minutes, by 12 to 24 hours holding time for the disinfection to be effective. Disinfection doses should reach, but not exceed, 30 ppm depending on the conditions. DO NOT use pool blossom additives as these contain algicides and are not certified for drinking water use. DO NOT use any laundry bleach with any additives like fragrances, whiteners, softeners, or other chemicals. Use liquid bleach as it moves readily. Wells deeper than 200 ft may require pellets in addition to bleach to improve dispersion deep in the well. Approximate doses for 50 ppm (8.5% bleach) are:

**6-INCH DIAMETER DRILLED WELL**

<table>
<thead>
<tr>
<th>Water Depth</th>
<th>Water Volume</th>
<th>8.5% Bleach Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 ft</td>
<td>100 gal</td>
<td>7.5 oz</td>
</tr>
<tr>
<td>100 ft</td>
<td>150 gal</td>
<td>11.25 oz</td>
</tr>
<tr>
<td>150 ft</td>
<td>200 gal</td>
<td>16.25 oz</td>
</tr>
<tr>
<td>200 ft</td>
<td>300 gal</td>
<td>22.5 oz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and 50 pellets</td>
</tr>
</tbody>
</table>

After 12 to 24 hours of contact time, chlorine should be flushed to waste via a bladder or hydrant. Flush to waste until the free chlorine level is less than 1.0 mg/L free chlorine. When flushing, DO NOT dispose of the chlorinated water into a stream or pond as it will kill aquatic life. Be careful to use the proper dosage and dechlorination tablets or solution should be used to decrease the chlorine in the flushed water. Adjust bleach volumes up for 5% bleach and down for 1% bleach.

**FOLLOW-UP ACTION**

It is recommended that bacterial samples be taken after the chlorine has been flushed from the system to ensure that the disinfection has been successful. Bacterial samples should not be taken until all chlorine has been flushed away. For special (non-regulatory) bacterial samples use sampling code 5.

For more information or questions contact

Drinking Waterッシュ Misting and Protection Unit

602-771-8403
Who do we Inspect?

Public Water Systems

- 15 service connections or
- Regularly serve an average of at least 25 individuals at least 60 days out of the year.
Required equipment for a Drinking Water System:

- Well/ Source
- EPDS – Entry Point to the Distribution System
- Distribution System
  - Community - Residential
  - Businesses – Schools, Restaurants, Stores
  - Campground/Rest stop
  - Standpipe
Frequency of Sanitary Surveys

3 Years

Community water system (e.g. City water systems,...)

5 Years

Non-transient non-community water system (e.g. schools, work places,..)

Transient non-community water system (e.g. gas stations, restaurants,...)
What is a sanitary Survey or an inspection?

3 Types Inspections:
- ADEQ File Review
- Unannounced Sanitary Survey
- Announced Sanitary Survey
Inspector’s Preparation

- Review the facility’s history
- Contact the Facility
- Summarize the compliance consultation in an email.
- Provide the facility the tools to be in compliance
Sanitary Survey Emails

To |

Subject

If you are sending this to anyone else, please note that we are in the process of building a virtual inspection and understanding tool. We are finalizing the tool for a free virtual trade in Arizona, and this tool will be available online.

On the other hand, the tool is currently available only in Arizona, and the tool is currently available only in Arizona.

The tool is currently available only in Arizona, and the tool is currently available only in Arizona.

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Jennifer Crowe

Water Quality Inspector

Water Quality Improvement and Compliance Unit

Phone: 602-518-8200

Jennifer.Crowe@azdhs.gov

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- We include the pre-inspection checklist for your water system to review to be in compliance at the time of inspection
- The system grading sheet
- The Inspection Report to review what we will be look at during the site visit
- Your systems old inspection report for you to review and make sure any deficiency has been correct.
- Virtual inspections- list of clear and concise photographs for inspection.
Pre-inspection Checklist for Community Water Systems

Your public water system is due for a sanitary survey. This is a routine inspection conducted every 3 years. Please complete the checklist and return it to the ADEQ inspector prior to the inspection.

PWS Name: ___________________________ PWS ID Number: AD04 - __________ Date: __________

Name and title of person completing form: ____________________________

General Paperwork Review

Do you have the following documents on-site and available at the time of inspection?

☐ Yes ☐ No 1. Revised Total Coliform Rule Microbiological Sample Siting Plan (MISSP) A.A.C. R18-4-126
☐ Yes ☐ No 2. Lead & Copper Monitoring Plan A.A.C. R18-4-111
☐ Yes ☐ No 3. Stage 2 Disinfection Byproducts (DHP) monitoring plan (for facility which adds a primary or residual disinfectant other than UV light) A.A.C. R18-4-124
☐ Yes ☐ No 4. Emergency Operations Plan A.A.C. R18-4-204(A)
☐ Yes ☐ No 5. Maintenance Records
☐ Yes ☐ No 6. Annual Backflow Prevention Assembly testing records A.A.C. R18-4-215
☐ Yes ☐ No 7. Records of ADEQ approval (if necessary) for system components added in last 5 years
☐ Yes ☐ No 8. Records of water quality analyses
☐ Yes ☐ No 9. Records of turbidity and of continuous residual disinfectant concentration measurements (Surface water and GUDI* systems only)

*GUDI = Ground water under the direct influence of surface water

Physical Facilities A.A.C. R18-231

Perform a walk-through of your systems and verify that the following components are installed and in good condition.

☐ Yes ☐ No 1. Well slabs are intact and in good condition. Small cracks have been sealed.
☐ Yes ☐ No 2. Raw water sample taps are installed at all wells.
☐ Yes ☐ No 3. All wells have a tuned down vent that terminates 2 ft. above the slab with a #16 non-corrodible mesh screen.
☐ Yes ☐ No 4. All openings into well casing(s) are sealed, including electrical conduits and holes.
☐ Yes ☐ No 5. Sample taps are installed at all Entry Points to the Distribution System (EPS).
☐ Yes ☐ No 6. All chemicals used in the system conform to ANSI/NSF Standard 60.
☐ Yes ☐ No 7. All storage tank overflow pipes extend down to 12-24 inches above the ground surface and are protected with a securely fitting flapper gate or a #16 non-corrodible mesh screen.
☐ Yes ☐ No 8. Vegetation is maintained and controlled around system facilities.
☐ Yes ☐ No 10. Area around storage tank(s) is graded to provide drainage away from tank/no sediment has accumulated around tank or foundation (see picture on next page).
☐ Yes ☐ No 11. All pressure tanks have a pressure gauge and a pressure relief valve.

NOTE: ADEQ inspectors are not allowed to take photographs or related storage tanks. Please/own records photos of the tank(s) opened to show operation of filters/flow to show Pump valve(s) and a photo of the vent showing the height above tank and field allowed environment. If you’re in an area with high pressure or in a tank, please check the report for places. Only aera with tunneling properly on Presta.

Missing any forms, plans, or templates? Click on the links below

- Lead and Copper Monitoring Plan
- Microbiological Sample Siting Plan for PWSs serving 3000 or fewer people
- Microbiological Sample Siting Plan for PWSs serving 3001 or more people
- Emergency Operations Plan Template
- ADEQ Operation & Maintenance Manual Official Version

Don’t get caught with a common violation

1. RTCR Microbiological Sample Siting Plan violations
2. Area around storage tank not properly graded to allow water to flow away from the base of tank
3. Failure to develop an emergency operations plan
4. Failure to annually test backflow prevention assemblies & retake records
5. Operations & Maintenance

Well's sanitary seal in bad condition
Missing raw water sample tap
Cracked well slab
Broken air vent
Excessive vegetation around storage tank
Buried Foundation
Hatch lacks a seal and a lock
Busted screen

August 2018 | Page 1
Compliance rates for PWS's that receive Compliance Consultations

- **76%** of facilities in compliance after completing the consultation.
- **45%** of facilities that are in compliance without completing the consultation.
- **46%** of facilities that corrected an O&M deficiency based upon the consultation.
Steps to take for a compliant inspection

- Have a knowledgeable person available
- Review monitoring history; accessible at Safe Drinking Water Information System
- Review any documents sent by ADEQ
- Review Checklist
Day of Inspection:

- Notice of Inspection Rights
- Paperwork Review
  - Sampling plans
  - Records of analytical data
  - Maintenance logs
  - Other relevant documents
- Physical components/Walk through of facility
[ARS § 49-104 (B)(8)] Cites regulatory authority to perform inspection
Provides the facility with its rights during an inspection
## Inspection Rights Form

**Notice of Inspection Rights**

<table>
<thead>
<tr>
<th>Facility Information</th>
<th>ADEQ Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Name/Customer:</td>
<td>Date/Time of Inspection:</td>
</tr>
<tr>
<td>Facility Location (City):</td>
<td>County:</td>
</tr>
<tr>
<td>Phone:</td>
<td>Telephone:</td>
</tr>
<tr>
<td>E-mail:</td>
<td></td>
</tr>
<tr>
<td>Mailing Address:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsible Party:</td>
<td></td>
</tr>
<tr>
<td>On-Site Representative:</td>
<td>ADEQ Follow-up Contact:</td>
</tr>
<tr>
<td>Phone:</td>
<td>Telephone:</td>
</tr>
</tbody>
</table>

The ADEQ representative(s) identified above were present at the above address on the above listed date and time. Upon entry to the premises, the ADEQ representative(s) met with me, presented photo identification indicating that they are ADEQ employees and explained:

- That the purpose of the inspection is to determine:
  - Compliance with any permits and the Arizona Revised Statutes, Title 18 of the Arizona Administrative Code* and/or:
    - Arizona Revised Statutes: Title 48, Chapter 2, Article 9.
    - Arizona Administrative Code: Title 18, Chapter 14, Article 5.
    - Permit/Agreement Number: |
  - Qualification for a license issued pursuant to:
    - Arizona Revised Statutes: Title 48, Chapter 2, Article 9.
    - Arizona Administrative Code: Title 18, Chapter 5, Article 1.
  - That this inspection is conducted pursuant to the authority granted in Arizona Revised Statutes § 49-1067(B) and/or:
    -Arizona Revised Statutes: § 49-1060, § 49-1067(B) |
    - Arizona Administrative Code: R18-4-207.
    - Permit/Agreement Number: |
  - That the state shall be barred by the statutes of limitations of actions, according to A.R.S. § 12-514, except as provided in A.R.S § 12-529 concerning certain claims based on non-payment of water rates. According to 28 U.S.C. § 2462, the U.S. government must commence an action within 2 years after the date the claim first accrued.
  - Possible implication of Small Business Bill of Rights pursuant to Arizona Revised Statutes § 41-8001(21)

- That the fee for this inspection be:

*The Arizona Revised Statutes (A.R.S.) can be found on the Internet: www.azleg.gov/public/rel/Chapter_of_Contents.htm

While I have the right to refuse to sign this form, the ADEQ representatives may still proceed with the inspection.

I have read this notice and discussed any questions or concerns with the ADEQ representative(s) and I have received the Small Business Bill of Rights.

| Signature of Regulated Person or Authorized On-Site Representative: Date: |
| - The regulated person or authorized on-site representative refused to sign |
| Name of Regulated Person or Authorized On-Site Representative: |
| The regulated person or an authorized on-site representative was not present at the facility. |

Signature of ADEQ Representative: Date: June 30, 2015

### INSPECTION RIGHTS

- I understand that I have the right, on request, to:  
  - Copies of any original documents taken during the inspection, and that ADEQ will provide copies of these documents at ADEQ's expense;  
  - A copy of any analyses performed on samples taken during the inspection and that ADEQ will provide copies of these analyses at ADEQ's expense;  
  - Copies of any documents to be relied on to determine compliance with license or regulatory requirements if the agency is otherwise permitted by law to do so.

- I also understand that:

  - Each person who is interviewed by an ADEQ inspector during the inspection must be informed that:
    1. participation in an interview is voluntary, unless legally compelled to participate;  
    2. they have the right to have an attorney or other person present;  
    3. the ADEQ inspector may not take any adverse action or treat less favorably or give any preference as a result of the interview conducted by an attorney or other person present;  
    4. statements made by the person may be included in the inspection report;  
    5. they have the right to a hearing to review any written notice statement of violation issued by the ADEQ inspector on which the ADEQ inspector requests that person's signature.

- If the information and documents provided to the ADEQ inspector become a public record, trade secrets and proprietary and confidential information may be redacted, unless the information and documents are not confidential pursuant to statute.

- Each person interviewed during the inspection must be informed that statements made by the person may be included in the inspection report.

- Each person whose consent is taken during the inspection must be informed that the consent is being tape recorded.

- If an administrative order is issued or a permit decision is made based on the results of the inspection, I have the right to appeal that administrative order or permit decision. I understand that my administrative appeal rights are set forth in Arizona Revised Statutes § 11-902 at qq.

- If I have any questions or concerns about this inspection, I may contact the person listed on the ADEQ Follow-up Contact at the front of this form. ADEQ's Compliance office at (602) 771-4820 (toll-free inside Arizona at (800) 2345017, extension #4322; or in the Arizona Ombudsman-Counsel's Affidavit office at (602) 775-3750 (toll-free at 800) 472-2870).

- I have any questions concerning my rights to appeal an administrative order or permit decision, I may contact ADEQ's Office of Administrative Counsel at (602) 771-2212 (toll-free inside Arizona at (800) 234-5677, extension #212).

June 30, 2015 Edition
1. **Microbiological Sample Siting Plan**
   - All public water systems

2. **Lead and Copper Plan**
   - Community water systems and
   - Non-transient non-community water systems

3. **Emergency Operations Plan**
   - Only community water systems

4. **Disinfection Byproducts Plan**
   - Community water system or a non-transient non-community water system that:
     - uses a primary or residual disinfectant other than ultraviolet light or
     - delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.
- **Operations and Maintenance Records** - These include records of routine component operations and maintenance (pumping rates, well maintenance, treatment system maintenance, component repairs, etc.).

- **Monitoring records** - Monitoring records are required to be kept on site for a determined amount of time depending on the type of records. Generally records are required to be kept between 3-10 years.

- **Backflow Prevention** – Testable backflow prevention devices are required to be tested annually by a certified tester. PWSs are required to retain testing records for at least three years.
Day of the Inspection
Inspection Checklist- 8 Elements of a Sanitary Survey

- Source
- Treatment
- Distribution system
- Finished Water Storage
- Pumps/Pump Facilities and Controls
- Monitoring/Reporting/Data Verification
- Monitoring/Reporting/Data Verification
- Operation Compliance with State Requirements
# Sources

## A. SOURCES

<table>
<thead>
<tr>
<th></th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Approved Source(s)?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose an item.</td>
</tr>
<tr>
<td>Quantity: Click here to enter text. (R18-5-507A)</td>
<td>Click here to enter text.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Ground Water Under the Influence of Surface Water?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-4-212)</td>
</tr>
</tbody>
</table>

## B. WELL REQUIREMENTS

<table>
<thead>
<tr>
<th></th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sampling Tap Installed Prior to Distribution?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-5-502)</td>
<td>Click here to enter text.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Vent turns down and terminates 2 ft above the slab with #16 mesh screen?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-5-502)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. No Unauthorized Access to Well?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-5-502)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Appropriate Drainage Away from Well?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-4-203)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Sanitary Seal and Slab?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose an item.</td>
</tr>
<tr>
<td>(R18-4-203)</td>
</tr>
</tbody>
</table>

## C. WELL RECOMMENDATIONS:

<table>
<thead>
<tr>
<th></th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State well number posted</td>
<td></td>
</tr>
<tr>
<td>Choose an item.</td>
<td></td>
</tr>
</tbody>
</table>

| 2. Casing Extends 12” above slab |
| Choose an item. |

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![Image of well setup with labels: WELL VENT, PIPE PLUG, DISCHARGE LINE, WIRE MESH, SANITARY SEAL, DROP PIPE FROM SUBMERSIBLE PUMP, POWER CABLE TO SUBMERSIBLE PUMP.]

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![Image of well with date stamp: Nov 12, 2021 9:41:50 AM, 43955 West Padilla Road, Maricopa, Pinal County, Arizona.]
# D. DISINFECTION REQUIREMENTS:

<table>
<thead>
<tr>
<th>1. Disinfection Compound Container ANSI/NSF 60 Approved and Labelled (R18-4-213)</th>
<th>Choose an item.</th>
<th>Click here to enter text.</th>
</tr>
</thead>
</table>

![Disinfection Compound Container Diagram](image1)

![Disinfection Compound Image](image2)

![Disinfection Compound Image](image3)
Treatment and Storage

**Treatment Requirements**
1. Treatment required? Choose an item
   - Click here to enter text.
2. Type of treatment? Choose an item
   - Click here to enter text.
3. Is the treatment operational and properly maintained? Choose an item
   - Click here to enter text.
4. Unauthorized bypass? Choose an item
   - Click here to enter text.

**Storage Requirements**
1. Drain is Air Gapped from Sanitary Sewer, Storm Drain, or Irrigation Conveyance (R18.6-125) Choose an item
   - Click here to enter text.
2. Vents Protected with #16 Non-Corrosible Mesh (R18.5-302) Choose an item
   - Click here to enter text.
3. Overflow Pipe Protected with #16 Non-Corrosible Mesh (R18.5-302) Choose an item
   - Click here to enter text.
4. Hatch has Gasket or Seal, and Locking Device (R18.6-302) Choose an item
   - Click here to enter text.
5. All Ground Water Storage has Water Tight Cover or Roof (R18.6-125) Choose an item
   - Click here to enter text.
6. Area Within 100 Ft. of Tank Graded to Provide Drainage Away From Tank (R18.4-205) Choose an item
   - Click here to enter text.

**Storage Recommendations**
- Working Mechanism, Automatic Gauge, or Alarm Choose an item
  - Click here to enter text.

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**Water Treatment Plant**
**Surface Water Supply**

1. Intake Pipe
2. Protective Bar Screen
3. Preliminary Treatment
4. Low Lift Pump Well
5. Chemical Additive
6. Coagulation
7. Flocculation
8. Sedimentation Basin
9. Sand Filtration
10. Post Coagulation
11. Disinfection
12. Chlorination
13. High Lift Pump Well
14. Elevated Water Storage Tower
15. Ground Level Reservoir
16. To Distribution System
Pressure Tanks, Cross Connections, Backflow prevention

### H. PRESSURE TANK REQUIREMENTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operational Pressure Gauge (R18-4-203)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>2. Operational Pressure Relief Valve (R18-4-205)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
</tbody>
</table>

### I. PRESSURE TANK RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operational Water Level Gauge (R18-4-203)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
</tbody>
</table>

### J. DISTRIBUTION REQUIREMENTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. System Pressure &gt;20 PSI Throughout System (R18-5-502.8)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>2. Cross Connection/Backflow Prevention (R18-4-215)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>3. Separate Non-Portable System with Connections Labelled (R18-5-502)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
</tbody>
</table>

### K. GENERAL REQUIREMENTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emergency Plan for Community System in Accessible Location (R18-4-204)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>2. Microbiological Site Sampling Plan (R18-4-205, 40CFR 141.21)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>3. Components Enclosed by Building or Security Fencing (R18-5-502)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
<tr>
<td>4. Appropriate Operation and Maintenance (R18-4-208)</td>
<td>Choose an item. Click here to enter text.</td>
</tr>
</tbody>
</table>

---

**Backflow Assembly Anatomy**

- **Test cocks**
- **Inflow from Main Water Source**
- **Outflow to Sprinkler System**

If either handle is not in this position then the system is not being supplied with water.
A person shall not start to construct a new public water system, modify an existing facility, including an extension to an existing public water system, or make an alteration that will affect the treatment, capacity, water quality, flow, distribution, or operational performance of a public water system before receiving an Approval to Construct (ATC) from the Department. A new Public Water System (PWS) must also comply with the capacity development rules in Arizona Administrative Code (AAC) R18-4-601.
<table>
<thead>
<tr>
<th>Operator Requirements</th>
<th>Choose an Item</th>
<th>Click here to enter text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operator in Direct Charge Certified at Correct Grade (R105-104 A.1)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
<tr>
<td>2. Onsite Operator for Grade 3 or 4 Facility (R105-104 E)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
<tr>
<td>3. Initial Operator Certificate No Lower than 1 Grade Below Systems (R105-104 A.2)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
<tr>
<td>4. Remote Operator &lt;200 Road Miles from Facility (R105-104 F.5)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
<tr>
<td>5. Remote Operator Visits Grade 1 and 2 Systems at Least Monthly (R105-104 F.7)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
<tr>
<td>6. Written Instructions Provided by Remote Operator (R105-104 F.3)</td>
<td>Choose an Item</td>
<td>Click here to enter text</td>
</tr>
</tbody>
</table>
Certified Operator Monthly Inspection Form

1. General Public Water System (PWS) Information:
   - PWS Name:
   - PWS ID Number: ADEQ:
   - Population Served:
   - Surface Water
   - Purchased Surface Water
   - Groundwater
   - Purchased Groundwater
   - Certified Operator:
   - Grade:
   - E-Mail Address:

2. Inspection
   - Inspection Date: ________  Arrival Time: ________  Departure Time: ________
   - Person Conducting Inspection:
   - Owner/Responsible Party:
   - Present at Inspection: Yes  No

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump(s)/Mechanical equipment(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Tank(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Tank(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Addition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Calibration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Collection, schedule, locations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Summary of observations, recommendations and corrective actions required:

I certify that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

Operator Signature: __________________________ Date: __________________________

Date form provided to owner or responsible party: __________________________
## Sampling Overview

### Sampling EPDS(s) (quantity):

<table>
<thead>
<tr>
<th>Required</th>
<th>Sampling</th>
<th>Sampled By:</th>
<th>COMPLIANCE</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Turbidity</td>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coliform</td>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum Residual Disinfectant Level (MRDL)</td>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lead &amp; Copper</td>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disinfection By Products</td>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitrate</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitrite</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asbestos</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inorganic Compounds (IOC)</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volatile Organic Compounds (VOC)</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthetic Organic Compounds (SOC)</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arsenic</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radio-chemicals</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combined Uranium</td>
<td>System ☐, MAP ☐</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PWSs are graded from 1-4 based upon a point system that assigns a predetermined number of points per system characteristics.

- Pressure filter – 15 points
- Blending – 5 points
- Hypochlorite, liquid or solid – 2 points

The grade corresponds with the level of system complexity, with Grade 1 being the most simple and Grade 4 being the most complex.

All PWSs require an operator in direct charge who is certified at or above the grade of the facility.

- Grade 3 and 4 PWSs require an on-site operator
## System Grade – Treatment

<table>
<thead>
<tr>
<th>Plant Characteristics</th>
<th>Points</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1 per 5000</td>
<td>0</td>
</tr>
<tr>
<td>Max Design Capacity</td>
<td>1 per MGD up to 10</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater Source</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>GUId</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>pH Adjustment</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Packed Tower Aeration</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Air Stripping</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Stability or Corrosion Control</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Taste and Odor</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Iron/Manganese Removal</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Ion Exchange Softening</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Chemical Precipitation Softenir</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Coagulant Addition</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Flocculation</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Sedimentation</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Upflow Clarification</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Fluoridation</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Activated Alumina</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Blending</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Residual Waste Stream</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Control Systems Technology</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Biologically Active Filter</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Granular Media Filter</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Pressure Filter</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Gravity Sand Filter</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Membrane Filtration</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Chlorine Gas</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Hypochlorite Liquid</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Hypochlorite Solid</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Chloramine</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Chlorine Dioxide</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Ozone</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Ultraviolet</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

**Point Total:** 0

<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>1 to 25</td>
</tr>
<tr>
<td>Grade 2</td>
<td>26 to 50</td>
</tr>
<tr>
<td>Grade 3</td>
<td>51 to 70</td>
</tr>
<tr>
<td>Grade 4</td>
<td>More than 70</td>
</tr>
</tbody>
</table>

**Notes:**
For Population and Max. Design Capacity use 1 point for each whole or portion of the number given.
# System Grade – Distribution

## System Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1 per 5000</td>
</tr>
<tr>
<td>Max Design Capacity</td>
<td>1 per MGD up to 10</td>
</tr>
<tr>
<td>Pressure Zones</td>
<td>5</td>
</tr>
<tr>
<td>Booster Stations</td>
<td>5</td>
</tr>
<tr>
<td>Storage Tanks</td>
<td>3</td>
</tr>
<tr>
<td>Blending</td>
<td>5</td>
</tr>
<tr>
<td>Fire Protection Systems/</td>
<td></td>
</tr>
<tr>
<td>Testable Backflow</td>
<td></td>
</tr>
<tr>
<td>Prevention Assemblies*</td>
<td>5</td>
</tr>
<tr>
<td>Cathodic Protection</td>
<td>3</td>
</tr>
<tr>
<td>Control Systems Technology</td>
<td>2</td>
</tr>
<tr>
<td>Chlorine Gas</td>
<td>6</td>
</tr>
<tr>
<td>Hypochlorite Liquid</td>
<td>2</td>
</tr>
<tr>
<td>Hypochlorite Solid</td>
<td>2</td>
</tr>
<tr>
<td>Chloramine</td>
<td>9</td>
</tr>
<tr>
<td>Chlorine Dioxide</td>
<td>9</td>
</tr>
</tbody>
</table>

### Point Total: 0

## Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1 (see below)</td>
<td>0</td>
</tr>
<tr>
<td>Grade 2</td>
<td>1 to 20</td>
</tr>
<tr>
<td>Grade 3</td>
<td>21 to 35</td>
</tr>
<tr>
<td>Grade 4</td>
<td>more than 35</td>
</tr>
</tbody>
</table>

No points are added for Grade 1 small systems that:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(All must be “Yes” for Grade 1 Distribution System, otherwise the system is a Grade 2 or higher)</td>
<td>(otherwise the system is a Grade 2 or higher)</td>
</tr>
<tr>
<td>Only Distribute Groundwater</td>
<td></td>
</tr>
<tr>
<td>Serve Fewer Than 500 persons</td>
<td></td>
</tr>
<tr>
<td>Have no disinfection or disinfect by chlorine gas or hypochlorite only</td>
<td></td>
</tr>
<tr>
<td>Do Not Store Water Or Store Water In Storage Tanks Only</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

For Population and Max. Design Capacity use 1 point for each whole or portion of the number given.

* The presence of one or both of these devices earns five points for the facility.
After the inspection

- Were you in compliance?
An inspection report is issued to the responsible party or on-site representative at the time of inspection

- ADEQ reserves the right to issue an inspection report after an inspection but not exceed 30 business days.

Report will identify whether:

- ADEQ will take no further action or
- Potential deficiencies were identified and further correspondence may be forthcoming
Notice of Violation

- Emergency Plan (EOP) for Community system
- Monitoring and Reporting Requirements not met
- Failure to obtain an Approval to Construct (ATC) / Approval of Construction (AOC)
- No record of testing of Backflow prevention devices
Most common violations of the Past Year

- Storage tank overflow pipe was not screened
- No Raw Water Sample tap
- Excess vegetation around storage tank
- No backflow records to review on site
- No gasket on Storage Tank
Common Traits

Commonly issued

Reported to the EPA as an Operations & Maintenance deficiency

Field issued NOC

Easy To Correct
Stay in compliance

- ADEQ website is a great tool to stay in compliance.
  - Questions about Operator Certification
  - Templates for MSSP, DBP, EOP
  - Drinking water rules
  - Sampling guidelines
  - Operator Certification Templates
  - Engineering review
Learn More About the Water Quality Programs

The Water Quality Division (WQD) protects and enhances public health and the environment by ensuring healthy drinking water is provided by public water systems and that pollutants are prevented from entering our surface water sources.
Operator Certification

ADDO's Operator Certification Program establishes guidelines to ensure that only certified operators make decisions about process control or system integrity that affects public health. The program establishes minimum standards for certification and re-certification of the operators of drinking water and wastewater systems.

Who Is An Operator?
A certified operator is an individual who holds a current certificate issued by ADEQ in the field of water or wastewater treatment, water distribution, or wastewater collection. All water and wastewater facilities require an operator in direct charge who is certified for the class of the facility at or above the grade of the facility. Facility owners need to ensure that all current operators working in their facility are on file with ADEQ.

Who Must Be Certified?
- Grade 3 & 4 facilities require an on-site operator.
- Grade 1 & 2 facilities require an on-site representative.
- Grade 1 distribution facilities, serving fewer than 100 people, do not need an on-site representative.

How Do I Become A Certified Operator?
To become a certified operator, you will need to take the Operator Certification Examination. No work experience at a water or wastewater facility is required to complete an operator certification exam in Arizona.

Examination Requirements
- To sit for a Grade 1 exam, you must have a high school diploma or GED.
- Operators must hold the lower-grade level certificate for one full year (365 days).

Requirements For A Public Water System (PWS)

Engineering Review Of Public Water Systems
Prior to developing a new drinking water system or modifying an existing system (including the addition of new water sources), an applicant is required to apply for and receive an "Approval of Construction" from ADEQ before they can begin operating.

Learn More

Capacity Development
New community and nontransient, noncommunity public water systems must provide an Elementary Business Plan, including supporting documentation for the capacity development evaluation. The Drinking Water Section issues Elementary Business Plan Approval to the applicant for presentation to the Engineering Review staff or, when applicable, to a delegated county or entity, for the review and approval of plans and specifications for the operation of the new public water system.

Operator Certification
Only certified operators are allowed to make decisions about process control or system integrity of public water systems. ADDEQ Operator Certification Program establishes minimum standards and guidelines for certification and re-certification of the operators of drinking water and wastewater systems.

Monitoring Assistance Program (MAP)
All public water systems (community and non-transient non-community excluding state or federally owned) serving less than 10,000 people are required to participate in the Monitoring Assistance Program.
Drinking Water Engineering Review

The Drinking Water Engineering Review Program conducts a detailed technical review of public water system designs in Arizona prior to, and after construction, to ensure the systems are designed and built to standards that provide safe, potable water to customers as required under the Safe Drinking Water Act (SDWA).

Drinking Water Systems Review

Public water system facilities comprise of waterlines, booster pumps, storage tanks, wells, and other structures and devices that treat, store, and deliver drinking water to residential, commercial, and industrial buildings. Prior to developing a new drinking water system or modifying an existing system (including the addition of new water sources), applicants must:

1. Apply for and receive an "Approval to Construct" Certificate from ADEQ before construction begins.
2. Apply for and receive an "Approval of Construction" before operating the facility.

Learn more about Approval to Construct, Approval of Construction and design standards | Learn More >

Drinking Water Point-of-Use (POU)/Point-of-Entry (POE) Review

ADEQ safe drinking water rules allow public water systems to employ point-of-use (POU) or point-of-entry (POE) treatment devices as a means for compliance with drinking water maximum contaminant levels (MCLs). Typically POU devices are designed to treat the water being used for drinking and cooking purposes and are installed at a single tap or kitchen sink. POE devices treat all the water coming into a home or building. Whereas, a centralized treatment system treats all of the water produced by the public water system. Since only 1 to 3 percent of water entering a home is used for direct consumption, a POU or POE compliance program can result in significant cost savings.

CONTACT

Engineering Review Email >

SEE MORE

DW Engineering Review Overview >
DW Facilities Review Application Information >
Engineering Bulletin GB >
Engineering Bulletin 10 >
Application Time Frames >
DW Facilities Review Fees >
DW Facilities Review FAQs >
POU/POE Application Packet (CP1) >
Point of Use DW Review Application Information >
Point of Use Guidance (PDU) >
Public Water System Overview >
ADEQ Delegated Agencies >

FORMS

Approval to Construct Application >
Approval of Construct Application >
Water Service Agreement >
New Source Approval >
DWRE ED-Initial Monitoring >
4-Leg Removal of Wastewater Application >
Time Extension Request Form >
Fee/Exemption Checklist >

Drinking Water Compliance Assistance

ADEQ provides various resources to help public water systems (PWSs) comply with drinking water rules, including:

Consumer Confidence Report | Learn More >
Groundwater | Learn More >
Stage 1 Disinfection Byproducts | Learn More >
Stage 2 Disinfection Byproducts | Learn More >
Inorganic Chemicals | Learn More >
Lead and Copper | Learn More >
Public Notification | Learn More >
Radium-223 | Learn More >
Revised Total Coliform | Learn More >
Surface Water Treatment | Learn More >
Synthetic Organic Chemicals | Learn More >
Volatile Organic Chemicals | Learn More >

Current Drinking Water Rules

Arizona’s drinking water rules are located in Title 18, Chapter 4, of the Arizona Administrative Code (18 A.R.C. 4). ADEQ adopted the federal rules to maintain Arizona’s primary enforcement authority of the Safe Drinking Water Act, pursuant to Arizona Revised Statutes (A.R.S.) §49-353(A12)(a).

The notice of final rulemaking is available on the Arizona Secretary of State website.
- During COVID-19 ADEQ is still performing sanitary surveys.
- We want to make sure Public Water Systems are providing safe drinking water to the public at all times.
- Please work with us to ensure public safety.
Questions

- Contact Jason Bobko for more information on the Inspections and Compliance Unit
  - 602-771-4253
  - Bobko.Jason@azdeq.gov

- Jennifer Crowe
  - Inspector/Compliance Officer
  - 602-771-4259
  - Crowe.Jennifer@azdeq.gov