**ATMOSPHERIC (GRAVITY) STORAGE TANK CHECKLIST**

12VAC5-590-1080 and 1081

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| Project Name: |       |  |       |
| PE name |       | Date: |       |

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| **General Information**  |
| Description of tank:      Design, construction, and materials specified in accordance with applicable AWWA standards?1  | Yes [ ]  No [ ]  |
| Tank Dimensions:  |       |
| Nominal volume  |       gallons |
| Effective volume (see Permit Manual section 9.9.3) |       gallons |
| Tank Elevations:overflow elevationeffective storage elevationnormal high levelminimum operating leveltank bottom elevation |       ft ASL      ft ASL      ft ASL      ft ASL      ft ASL |
| **Location (12VAC5-590-1080 C)** |  |
| Bottom above finished grade? If "no", is the tank bottom above the groundwater table? If "no", are sewers, drains, standing water, and similar sources of contamination kept at least 50 feet from storage facility?If “no”, pipe conforming to water distribution pipe standards of 12 VAC 5-590-1110 pressure tested in place without leakage, used for gravity sewers less than 50 feet? | Yes [ ]  No [ ]  Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ]  |
| Area surrounding a ground level structure is graded to prevent surface water from standing within 50 feet of the structure? | Yes [ ]  No [ ]  N/A [ ]  |
| Top of tank not less than two feet above normal ground surface?  | Yes [ ]  No [ ]   |
| Top of tank above the 100 year flood level?  | Yes [ ]  No [ ]   |
| Recommended: All weather access road provided to the tank site | Yes [ ]  No [ ]  |
| **Water Level and Controls (12VAC5-590-1080 D and E)** |  |
| The maximum variation between normal operational high and low water levels in finished water storage structures which float on a distribution system does not exceed 30 feet? | Yes [ ]  No [ ]  |
| Adequate controls provided to enable sufficient tank turnover, water quality maintenance, avoidance of overflows and efficient operations? | Yes [ ]  No [ ]  |
| A telemetry system with recording capability has been considered? 4 | Yes [ ]  No [ ]  |
| Altitude valves or equivalent controls provided? | Yes [ ]  No [ ]  |
| For tanks with a monitoring system, overflow, low level, and pump malfunction warnings or alarms provided? | Yes [ ]  No [ ]  N/A [ ]  |
| Project reviewed for compliance with 12VAC5-590-725 Automated monitoring and control systems and/or compatibility with existing system? | Yes [ ]  No [ ]  N/A [ ]  |
| Describe controls and telemetry:       |  |
| **Protection (12VAC5-590-1081 A)** |  |
| Suitable watertight roofs or covers that exclude birds, animals and insects? (24 mesh screens on vents and overflows) | Yes [ ]  No [ ]  |
| Designed to prevent vandalism and entrance by animals or unauthorized persons? | Yes [ ]  No [ ]  N/A [ ]  |

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| **Designed to facilitate turnover of water? (12VAC5-590-1081 B)** | Yes [ ]  No [ ]  |
| Consideration given to locating inlet and outlet pipes at different elevations and locations, tank mixers, and other acceptable means to avoid stagnation? | Yes [ ]  No [ ]  |
| Excessive storage avoided 3 | Yes [ ]  No [ ]  |
| Is tank mixing/aeration system provided? If yes, complete separate review sheet. | Yes [ ]  No [ ]  |
| **Drain - Provided? (12VAC5-590-1081 C)** | Yes [ ]  No [ ]  |
| Separate drain which discharges to atmosphere and does not cause a cross connection? | Yes [ ]  No [ ]  |
| Drainage of storage structure in NOT through inlet or outlet piping to the distribution system? | Yes [ ]  No [ ]  |
| Recommended: Screened or capped at outlet3?  | Yes [ ]  No [ ]  |
| Recommended: Erosion protection at point of discharge? Diverted away from tank? | Yes [ ]  No [ ]  |
| **Overflow - Provided? (12VAC5-590-1081 D)** | Yes [ ]  No [ ]  |
| Downward discharging near the ground? | Yes [ ]  No [ ]  |
| Outlet high enough above ground surface to prevent entrance of surface water? | Yes [ ]  No [ ]  |
| Not connected directly to sewer or storm drain?  | Yes [ ]  No [ ]  |
| Erosion protection at point of discharge? Diverted away from tank? | Yes [ ]  No [ ]  |
| Properly designed flapper valve, rubber flex-type valve or screen? | Yes [ ]  No [ ]  N/A [ ]  |
| **Inlet and Discharge Pipes – Provided? (12VAC5-590-1081 E)** | Yes [ ]  No [ ]  |
| Elevated tanks with riser pipes over eight inches in diameter have protective bars over the riser opening inside the tank? | Yes [ ]  No [ ]  N/A [ ]  |
| Inlet and outlet pipes are located in a manner that will prevent the flow of sediment into the distribution system | Yes [ ]  No [ ]  |
| **Access Manhole(s) to Interior - Provided? (12VAC5-590-1081 F)** | Yes [ ]  No [ ]  |
| Convenient access to interior for cleaning and maintenance? | Yes [ ]  No [ ]  |
| Ladders, ladder guards, balcony railings, and safely located entrance hatches provided? | Yes [ ]  No [ ]  N/A [ ]  |
| Every catwalk over finished water has a solid floor with raised edges so designed that shoe scrapings and dirt will not fall into the water? | Yes [ ]  No [ ]  N/A [ ]  |
| Manholes or scuttles above the waterline:Framed at least 4 inches above surface of the roof, preferably 6 inches?For ground level structures, manholes are elevated 24-36 inches above the top or finished grade?Watertight cover overlaps framed opening and extends vertically down around the frame at least two inches (shoe-box type)? Hinged at one side?Locking device is provided? | Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ]  |
| **Vent - Provided? (12VAC5-590-1081 G)** | Yes [ ]  No [ ]  |
| Not open construction between the side wall and roof (prohibited) | Yes [ ]  No [ ]  |
| Separate from overflow and other connections? | Yes [ ]  No [ ]   |
| Designed to prevent the entrance of surface water? | Yes [ ]  No [ ]  |
| Designed and screened to prevent the entrance of animals, birds, and insects? (24 mesh screen)  | Yes [ ]  No [ ]  |
| Screens are:Constructed of non-corrodible material?Frost-free or capable of relieving pressure or vacuum in the event of frosting or clogging? | Yes [ ]  No [ ] Yes [ ]  No [ ]  |
| On a ground level structure:Vent terminates in an inverted U construction?The opening is 24 – 36 inches above the roof or finished grade?  | Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ]  |

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| **Penetrations through roof and sidewall (12VAC5-590-1081 H)** |  |
| Pipes running through roof or sidewall:In metal tanks - welded, properly gasketed?In concrete tanks: connected to standard wall castings that were placed during the forming of a concrete structure; with flanges imbedded in the concrete?  | Yes [ ]  No [ ]  N/A [ ] Yes [ ]  No [ ]  N/A [ ]  |
| Valves and controls located outside the storage structure so that valve stems and similar projections will not pass through the roof or top of the structure? | Yes [ ]  No [ ]  |
| Downspout pipes for roof drainage do not enter or pass through the structure? | Yes [ ]  No [ ]  |
| **Paints, Coatings and Cathodic Protection (12VAC5-590-1081 L)** |  |
| Metal surfaces are protected by paints, coatings or cathodic protection or both?Interior paints/coatings specified (describe):      Do interior paints/coatings meet NSF/ANSI/Can Standard 61-2020, AWWA Standards D102-17, D104-17 and D106-20, or an approved equivalent, where applicable? | Yes [ ]  No [ ] Yes [ ]  No [ ] Yes [ ]  No [ ]  |
| Cathodic protection provided?If yes, describe.       | Yes [ ]  No [ ]  |
| **Cleaning and disinfection (12VAC5-590-1081 M and N)** |
| Cleaning required prior to disinfection?  | Yes [ ]  No [ ]  |
| Only potable water used for cleaning and rinsing?  | Yes [ ]  No [ ]  |
| All equipment including brooms, brushes, spray equipment, and worker’s boots disinfected before they are used to clean the storage facility?  | Yes [ ]  No [ ]  |
| Finished water storage facility disinfection to be completed in accordance with AWWA C652-19? | Yes [ ]  No [ ]  |
| Disinfection is to be repeated until it is determined, by bacteriological testing, that the water is free of coliform bacteria? | Yes [ ]  No [ ]  |
| **Freeze Protection** |  |
| All finished water storage structures and their appurtenances, especially the riser pipes, overflows, and vents are designed to prevent freezing? | Yes [ ]  No [ ]  |

1. See AWWA Standards: D100-11 Welded Carbon Steel Tanks, D103-19 Bolted Carbon Steel Tanks, D107-16 Composite Elevated Tanks, D-108-19 Aluminum Dome Roofs for Water Storage Facilities, D110-13 Circular Prestressed Concrete Water Tanks, D-115-20 Tendon Prestressed Concrete Tanks, D-120-19 Thermosetting Fiberglass-Reinforced Plastic Tanks, D121-12 Bolted Fiberglass-Reinforced Plastic Panel-Type Tanks. Specifications are to reference either AWWA Standard or manufacturer’s installation procedures.
2. Recommended or “should”.
3. Typically, a goal of complete water turnover in 3 to 5 days is recommended, but this must be determined on a case-by-case basis.
4. If telemetry provided, also recommend mechanical level indicators (pressure gauge or float level indicator).