

Please address all correspondence to Water Supply (Network) Department

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To All MCSTs, Town Councils and Building Owners

ENSURE PROPER SECURITY AND MAINTENANCE OF WATER SERVICE INSTALLATIONS

PUB, the national water agency, would like to remind all Management Corporation Strata Titles (MCSTs), Town Councils and building owners of your responsibilities to ensure proper security and maintenance of the water service installations including the potable water storage tanks, pressure reducing valves (PRVs), pilot operated solenoid valves, ball float valves, water pumps and pressure vessels. This is to ensure that the water conveyed through them is fit and safe for consumption, to prevent any water supply interruption to the residents, occupiers and users, and also to prevent water wastage. Among other measures, MCSTs, Town Councils and building owners are to ensure the following:

Maintenance of Water Service Installations and Their Related Parts and Equipment

- Maintain the water service installations (e.g. PRVs, pilot operated solenoid valves, ball float valves water pumps and pressure vessels etc.) regularly based on the original equipment manufacturers' (OEMs) recommended frequencies/intervals and seek Qualified Person's (QP) guidance if required.
- Ensure proper calibration of the pilot operated solenoid valves to minimise pressure surges during the topping up of water tanks which may cause resuspension of mineral sediments into the water tanks.
- Regularly check and maintain all other parts or equipment (e.g. electronic control panels and their related control switches, warning lights/alarms, power supply etc.) related to any water service installation in the same manner.
- Carry out timely maintenance/replacement of pressure vessels based on OEMs' recommended frequencies/intervals.
- Properly document the records of these maintenance checks, together with the relevant supporting documents (e.g. maintenance guides, procedures etc.) from the OEMs or QP. The records shall be readily available upon request from PUB.
- All maintenance works should be performed by accredited and qualified personnel, and it is your responsibilities to ensure that works carried out are in accordance with OEM approved Method Statements and aligned with the actual ground conditions (e.g. adequate ventilation is provided to exhaust chemical fumes from enclosed spaces during painting works and curing times)

Water Storage Tanks Low Water Level Alarm System

- Maintenance personnel or crews must ensure that the Low Water Level Alarm system is functional all the time, respond promptly for all Low Water Level alerts/water interruptions and provide temporary water supply to the affected customers if necessary.
- Set a higher water level threshold to allow for a longer response time prior to the water tanks running dry.

Timely Certification of Water Storage Tanks

- The water storage tank is a very important water service installation as it stores potable water serving all residents, occupiers and users within the building. All MCSTs, Town Councils and building owners shall monitor the timeline closely, maintain proper documentation and ensure the timely engagement of a Licensed Plumber to conduct annual inspection and certification of your water tanks. **Failure to complete the water tank certification by the deadline¹ will result in enforcement action taken against the MCST Town Council or building owner.**
- **Under the Public Utilities (Water Supply) Regulations, the penalty for non-compliance on the mandatory inspection and certification of water tanks is a fine not exceeding \$10,000 or imprisonment for a term not exceeding 12 months or both.** PUB takes a serious view of late tank certification, which may lead to water quality issues with serious consequences. As part of the overall efforts to ensure compliance with PUB's regulation, we will be stepping up our enforcement actions against late water tank certifications.

Joint Inspections with Licensed Plumber Before & After Water Tank Cleaning

- Carry out at least two joint inspections with the Licensed Plumber:
 - i. **Before the commencement of cleaning and disinfection** to check on the condition of the water storage tanks. All remedial works to the tanks arising from the joint inspection shall be carried out before the cleaning work. To conserve water, use the water to around 150 to 200mm above the bottom of the tank before the tank is isolated and the outlet pipes shut off for cleaning work to commence. The remaining water can be used for non-potable uses such as irrigation, general washing, etc. (wherever possible). Please display adequate notices and signboards to indicate that the water tanks are undergoing cleaning and disinfection.
 - ii. **After the cleaning and disinfection have been completed** to check on the condition of the water storage tanks to ensure that all remedial works have been carried out and all tank openings (such as air vents, overflow and warning pipes, etc.) have been properly screened to prevent birds, insects and other possible contaminants from entering the water tank.

¹ The deadline is defined as the date that is exactly one year from the previous certification date. E.g. if the water tanks were last certified on 1 Jan 2023, the deadline will be on 1 Jan 2024.

Security of Water Storage Tanks

- Lock water tank covers, access doors to water tanks and its ancillary equipment using high-quality locks with non-duplicable keys.
- Secure all water tank covers, including side covers by bolting or fastening using stainless steel brackets/fastener. Fully tighten the tapered round nuts used for the stainless steel brackets. Properly secure the electrode box covers and holders at the water tank. See examples of photos of electrode security non-compliances as shown in **Appendix A**.
- **Conduct regular checks to ensure all the above security measures are in place** and keep records of such checks. Records are to be made available for inspection upon request by PUB.
- Restrict access to the water tanks (including any taps fitted to the tanks) and its ancillary equipment as well as the premises where these are located only to authorised person/s. Records of persons granted access shall be properly kept and be made available for inspection upon request by PUB.
- Do not use the room or enclosure housing the water tanks for storage of items including flammable, volatile or pungent liquids or chemicals (e.g. paints) as it may give rise to odour issues and potentially affect the quality of water therein. Unnecessary access to the water tank rooms and enclosures would be eliminated.
- Notify PUB immediately of any:
 - i. contamination or suspected contamination of the water in the water tanks.
 - ii. unauthorised access to the water tanks (including any taps fitted to the tanks) or its ancillary equipment or the premises where the water tanks and its ancillary equipment are located.
- Infrastructural & operational measures as stated in our circular dated 6 Sep 2011 have been implemented and continue to be in place. A copy of the circular can be found in PUB website or by scanning the QR code below:



Precautions for Fogging/Insecticide Spraying Operations

- Work closely with your contractor/pest control operators (PCOs) and take extra precautions when fogging or spraying insecticides near water tanks, so as not to affect the safety and quality of water stored in the tanks.

- Properly seal cover all water tank openings and drain outlets (overflow pipes, warning pipes and discharge pipes etc.) during fogging and insecticide spraying operations.
- No direct fogging or insecticide spraying into the water tank enclosures and water tank pipes and drain outlets.
- **No fogging or insecticide spraying operations are allowed** when water tank transfer pumps are in operation. These pumps are located on either the ground floor or basement.
- PCOs shall inform the MCST, Town Council or building owner the date and time of fogging/insecticide spraying operations in advance. Keep proper records of the dates and times of such operations.
- Fogging and insecticide spraying operations shall be carried out under proper supervision.

Prevention of Mosquito Breeding and Ingress of Any Animal, Insect, Foreign Material, Etc. in Water Storage Tanks

- Conduct regular inspections to ensure that the water tanks are adequately protected and screened to prevent ingress of any animal, insect or foreign material. There shall be no corroded surfaces, dents or gaps at the water tank roof covers, inspection covers or any other openings on the water tanks that may allow the ingress of any animal, insect or foreign material.
- During regular inspections, check for possible infestations or breeding of flies or insects in the tanks. Tell-tale signs can be identified as shown in **Appendix B**.
- Properly screen all air vents and overflow and warning pipes with non-corrodible or corrosion-resistant stainless steel mosquito-proof netting of aperture size not exceeding 0.65mm to prevent ingress of any animal, insect or foreign material.
- For new buildings yet to reach full occupancy, ensure regular water flushing of the water service installation are carried out after commissioning. This also applies if water is left stagnant over a prolonged period when units in the development remains unoccupied.
- Monitor the daily consumption of the development and if necessary, adjust the storage capacity of the water tanks accordingly to ensure that there is no prolonged stagnation of water due to over provision of storage in the water tank. The volume should be sufficient to cater for one day's water usage.
- Inspect and ensure that water tank covers are not left opened for prolonged period of time, especially during and after commissioning to minimize the chance of animal, insect or foreign materials entering the tank.

Use of Pilot Operated Ball Float Valves for Water Storage Tanks

- Properly seal any openings on the water tanks due to the use of pilot operated ball float valves.
- If there are such openings, engage a Professional Engineer or Licensed Plumber to rectify immediately by:

- i. replacing the existing valve with one that fully meets PUB's requirements and properly and effectively sealing all openings on the water tanks; or
 - ii. properly and effectively sealing all openings on the water tanks caused by the use of the existing valve.
- Consult the suppliers/manufacturers of the pilot operated ball float valves and the water tanks before any rectification or modification on the pilot operated ball float valves and the water tanks are carried out.

Prevention of Bird Roosting in Water Tank Enclosure Room

- Put in place proper measures to prevent the ingress of birds and bird roosting in water tank enclosure room.
- Conduct regular inspections to ensure that the external of the water tanks are not littered with bird droppings and nests.
- Bird droppings are acidic in nature and can corrode external surfaces of water tank, leading to possible impact on water quality.
- See examples of photos of water tanks littered with bird droppings as shown in **Appendix C**.
- Should signs of corrosion be found on the external surfaces of the water tank, the MCST, Town Council or building owner shall immediately engage a Licensed Plumber to rectify the defects and certify that it is fit and safe for the storage of potable water.

Prevention of bacterial growth in water service installations including centralised hot water system

- Monitor the daily consumption of your premises and if necessary, adjust the storage capacity of the water tanks accordingly to ensure that there is no prolonged stagnation of water due to over provision of storage in the water tank.
- Volume of water in the water tank should be equivalent to about one day's water usage.
- Conduct regular flushing if the water in the water service installations is left stagnant over a prolonged period.

2 PUB will continue to carry out regular spot checks on water storage tanks and will not hesitate to take punitive action against responsible parties for contravention of any of the maintenance and security requirements.

3 Thank you for helping to ensure a safe and reliable water supply to your residents/occupiers/users. If you have any queries, please do not hesitate to contact my colleague, Balachandar Perumal at 96514308.

Yours faithfully

A handwritten signature in black ink, appearing to be 'Zhafri Shah', written in a cursive style.

ZHAFRI SHAH
SENIOR ENGINEER (INSPECTORATE)
for DIRECTOR
WATER SUPPLY (NETWORK) DEPARTMENT

Appendix A



Electrode box cover and holder not properly secured

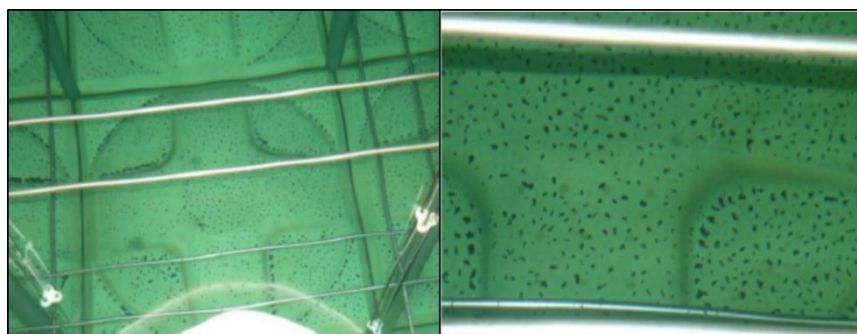
Appendix B



Flies and pupae shells observed on the water surface of the tank



Presence of visible worms/worm case on the side walls/ledge/ladder



Presence of worms/worm case at the bottom of the tank

Appendix C



Presence of bird droppings on water tanks