Rainwater Toilet Flushing System with UV & Filters

Last Issue Date: 03/05/2017		**Type Of Service**				
Activity		**A**	**B**	**C**	**D**	**E**
1	Undertake a VISUAL INSPECTION of the condition and structural integrity of the rainwater tank pressure pump-set system. Check: a) The rainwater tanks, components, pipework (including flexible connections and insulation) for damage including scratches and dents. b) The slab base/foundations for any cracking or subsidence. c) For any loose bolts, anchors and fittings and for any water leakage from the components such as the connections, joints, flanges and fittings. d) The rainwater tanks, pipework, components and internal components (where possible) by safely looking through the access hatches for corrosion. e) The rainwater tanks access hatches are secure and undamaged. f) The rainwater tanks vents and rotary spinners (if applicable) for damage, excessive dust build-up or poor operation. g) There are no gaps at any of the rainwater tank's openings.			Y	Y	Y
2	SIGNAGE: Check the general information / safety signage is appropriately located and fixed.			Y	Y	Y
3	GUTTERS: a) Check the condition of the gutters and gutter guard mesh. b) Remove any debris from the roof and gutters. c) Clean the gutters. d) Check the gutter guard mesh is not displaced and is secure.			Y	Y	Y
4	DOWNPIPES: a) Check the condition and general structural integrity of the downpipes feeding in to the rainwater tanks. b) Check the condition of the inlet opening mesh screens for degradation etc. c) Clean the inlet opening mesh screens. d) Check the inlet opening mesh screens are not displaced or torn and are secure.			Y	Y	Y
5	OVERFLOW PIPEWORK: a) Check the condition and general structural integrity of the overflow pipes. b) Check the condition of the rainwater tanks outlet opening mesh screens for degradation etc. c) Clean the outlet opening mesh screens. d) Check the outlet opening mesh screens are not displaced or torn and are secure. e) Check the overflow water is being directed away from the rainwater tanks, pumpset enclosure, buildings, fences etc.			Y	Y	Y
6	INTERNAL INSPECTION: Check the tanks for foreign matter such as dead animals, leaves, mosquito larvae or algae growth and for sludge build-up. Refer to `Special Comments'.			Y	Y	Y
7	RAINWATER TANK PUMP SWITCH/FLOAT (if applicable): a) Inspect the components for damage, wear or loose fixings. Check the float cable for wear and the housing for damage. b) Check the operation of the float and operate the switch.				Y	Y

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8	RAINWATER TANK LEVEL SENSORS: Check the operation of the ultrasonic sensors.				Y	Y
9	ELECTRICAL (Refer ACTIVITIES 11g, 12 for additional): a) Check the electrical connection and voltage. b) Check the condition of the panel meter and cables. c) Check the operation of the sensors.				Y	Y
10	BACKFLOW PREVENTION DEVICES/VALVES: a) Inspect the condition and the fixings and check for any leaks. b) Check the housings are undamaged and the valves are accessible. c) Undertake field testings for correct operation. d) Check the operation of the solenoid isolation valves and the power supply (mains or battery). For battery powered systems, replace the battery at the intervals recommended by the manufacturer (default annually). e) If required, register the device/s and provide a test report copy to the water authority and Facility Manager. Refer to AS2845.3 for field testing, maintenance (repair work), OH&S and reporting requirements.				Y	Y
11	PUMP (ACTIVITIES 11 - 12): a) Check the condition for signs of wear, corrosion and damage. b) For submersible pumps: 1/ Lift the pump and check the condition of the pump column pipe, cap, electrical drop cable, low level probe and static water level. 2/ Reinstall the pump. c) Check the fixings/mountings are secure. d) Check the operation of the motor, inspect for signs of overheating and check any safety devices. e) Check the condition and operation of associated valves and for signs of leaks. f) Check the warning signage is correctly located and visible. g) ELECTRICAL: Check the condition and operation of electrical components: 1/ The isolation switch and conduit for security of mounting. 2/ All connections for security, tightness, contact and corrosion. 3/ Record the motor operating current draw and compare with rated output.				Y	Y
12	PUMP: If applicable (plug-in type) undertake an earthing continuity test and insulation test.					Y
13	PRESSURE VESSEL (non-submersible pumping system): a) Check the condition for signs of wear, damage and corrosion. b) Check the air pressure in the tank is set as required. c) Check the operation. d) Check the warning signage is correctly located and visible.				Y	Y
14	BAG FILTERS: Safety Note: Prior to removing the filter lids ensure: the pump is turned off and locked out; the inlet and oulet shut-off valves are turned off; the filters are drained; and the filters have no internal pressure (check gauge).				Y	Y

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	a) Check for secure fittings and fixings and general condition. b) Check the condition and operation of all valves e.g. air relief, inlet shut-off, vent, outlet shut-off, drain. Check for leaks. c) Check the condition and operation of all gauges e.g. temperature, pressure, differential pressure. d) Replacement of bag filters: 1/ Check the condition and operation of the filters, replace if necessary. This may need to be done 6 monthly depending on manufacturer's requirements and/or site conditions. 2/ Check the condition of the O-rings and replace if damaged. 3/ Check the condititon of the gaskets, ensure they are not twisted and the bevelled edges are facing outwards. Clean groove if necessary. Apply a little O-ring lubricant to the outside of the gaskets. e) Check the water presure and visual water quality. f) Check the warning signage (3 no labels) is correctly located and visible.					
15	ULTRA VIOLET (UV) DISINFECTION UNIT (ACTIVITIES 15-17): a) Check for secure fittings and fixings and general condition. b) Isolate the water supply, switch off mains power supply and release the pressure and drain the water within the reactor (chamber). c) Slide the UV lamp out, unscrew the sealing nut and remove the thimble from the chamber. Clean the thimble. d) Check the condition of the O-ring and sealing nut. Lubricate the sealing nipple with silicon grease or petroleum jelly if required. e) Reinstall the UV lamp (Refer Special Comments).			Y	Y	Y
16	UV DISINFECTION UNIT: Replace the lamp. This may need to be done 6 monthly depending on manufacturer's requirements and/or site conditions.				Y	Y
17	UV DISINFECTION UNIT: a) Reassemble the unit. b) Refill chamber with water, remove air from the system and check for leaks. c) Check UV alarm system (if applicable) and electrical components. d) Check the condition and operation of any optional fittings e.g. lamp life run counter, lamp change alert, UV intensity monitor, thimble wiping system, over-temperature ptotection and remote lamp failure indication. e) Check the warning signage is correctly located and visible. NOTE: Any servicing of the Power Supply Box is to be done by a qualified technician.			Y	Y	Y
18	OPERATIONAL TEST: Test the system and check the quality of the water flow to the building.			Y	Y	Y
19	ENCLOSURE: Check the general structural integrity and overall condition.					Y
20	DESLUDGE the tanks without draining them every 2-3 years depending on site conditions.					Y

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21	LOGBOOK: Record all results. Refer `Special Comments' for additional requirements.			Y	Y	Y

Special Comments and Technical Data

C SERVICE 6 MONTHLY.
D SERVICE ANNUALLY.
E SERVICE 2 YEARLY.
- FOR BASIC SYSTEMS WITHOUT FILTERS/UV UNIT REFER TO S18AA.
- THE FREQUENCY OF ROOF AND GUTTER CHECKING, DEBRIS REMOVAL AND CLEANING SHOULD BE INCREASED IN AREAS WITH SUBSTANTIAL TREE GROWTH / VEGETATION.
- ALL RAINWATER TANK OPENINGS ARE REQUIRED TO HAVE A REMOVEABLE, MOSQUITO PROOF MESH SCREEN WITH SECURE FIXINGS AND WITH MESH APPERTURES LESS THAN 1MM IN SIZE.
- NOTIFY THE SITE REPRESENTATIVE AND FACILITY MANAGER IF:
1/ THE BACTERIOLOGICAL AND/OR GENERAL QUALITY OF THE TANK WATER IS OF CONCERN. OBTAIN EXPERT ADVICE AND ARRANGE TESTING IF REQUIRED.
2/ IT IS SUSPECTED THE TANK WATER HAS BEEN CONTAMINATED BY A DEAD ANIMAL. DISINFECT THE TANK WITH CHLORINE. IF AN ANIMAL IS FOUND, REMOVE IT. EMPTY AND CLEAN THE TANK - IF THIS HAS TO BE DELAYED, DISINFECT THE TANK WITH CHLORINE. OBTAIN EXPERT ADVICE IF CONTAMINATION IS CONCERNING.
3/ THERE HAS BEEN A MOSQUITO OUTBREAK. OBTAIN EXPERT ADVICE WHETHER TREATMENT IS REQUIRED.
- IF THE RAINWATER TANKS ARE ENTERED FOR CLEANING OR REPAIR WORKS ENSURE THERE IS ADEQUATE VENTILATION AND A SAFETY BACK-UP `SPOTTER' IS PRESENT FOR THE FULL DURATION.
- IF THE RAINWATER TANKS ARE DRAINED FOR CLEANING REFER TO AS2304 FOR WATER CONSERVATION MEASURES.
- SERVICING AND MAINTENANCE WORK ON THE RAINWATER PRESSURE PUMP-SET COMPONENTS, I.E. BACKFLOW PREVENTION DEVICES AND VALVES, PUMP AND PRESSURE VESSEL, WATER METERS, VARIOUS FILTERS, SENSORS, PANEL METER CONTROLLLERS ETC IS TO BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REPLACEMENTS PARTS ARE TO BE OF THE EXACT TYPE AND MATERIAL RECOMMENDED BY THE MANUFACTURER OF THE COMPONENT. WORK ON THE COMPONENTS OF THE SYSTEM IS TO BE DONE BY LICENSED ELECTRICIANS OR PLUMBERS / PLUMBERS REGISTERED TO UNDERTAKE THAT WORK OR SPECIALIST TECHNICIANS AS APPLICABLE.

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