Site Address / Branch Office	Cooper Yard, Old Cider Works, Abbotskerswell, Newton Abbot, TQ12 5NF

Specific Location Details	Not Known

Job / Task Details:	Inspection, Clean & Disinfection – Cold Water Storage Tanks

Precise Location	Not Known

Planned Dates	Not Known

BRIEF DESCRIPTION OF THE WORKS, TASK OR PROCESS:

Carrying out Water Hygiene Monitoring activities on customer sites

Water Hygiene Monitoring
-Arrive on site on date and time as agreed with the customer contact
-Report to site contact and discuss works to be undertaken, access required and any disruption to water services
-Carry out health and safety risk assessment or sign risk assessment continuation sheet (if work activity and risks are the same as a previous site visit) prior to commencing works
-Post warning notices/signs where applicable
-Complete water hygiene monitoring activities as detailed in worksheet
-Ensure the work area is left in the same condition as it was found
-Discuss findings and implications with responsible person on site
-Detail all results, actions and recommendations etc. on worksheet
-Detail all results, action, recommendations in site logbook where available
-Ensure customer signature on worksheet
-Issue Customer Feedback Survey sheet to customer if required
-Leave site
-Complete all ancillary paperwork concerning dip slide reports, samples etc.
-Return all paperwork for works carried out to the supervisor/administrator as soon as possible (but no longer than one week) after completion of the work

SEQUENCE OF OPERATIONS:

Water Storage Tank - Visual General Inspection
Using a calibrated thermometer, measure and report the following:
-Ambient (external temperature).
-Tank room temperature.
-Stored water temperature (Temperature of the tanked water shall be monitored via the drain point if practicable).
-Supply temperature.
-Visually inspect tank room for bird and/or rodent infestation and state amount.
-If insulation allows for inspection of the external condition of the tank walls, inspect for corrosion pitting and leaks.
-Visually inspect internal walls of tank for signs of scale deposition, corrosion and slime deposits.
-Visually inspect tank and associated valves/pipework for leaks.
-Visually inspect bottom of tank for sludge deposition and state amount.
-Visually inspect internal walls of tank for corrosion and state amount.
-Visually inspect for signs of stagnation such as water surface dirt, oil films, insects, smell, low input.
-Visually inspect water surface for; dirt, oil films, insects and state amount.
-Visually inspect for slimy deposits on the internal walls of tank and state the colour of substance and state amount.
-Visually inspect for algae growth indicated by either green or red plant like growth on water surface.
-Visually inspect the insulation for signs of wear and tear and areas where the insulation has been removed.
-Visually inspect that the lid is correctly fitted and that any bolts are securely tightened.
-Visually inspect that all insect/rodent screens fitted are clear from debris so that water can flow easily.
-Visually inspect that the ball valve opens and closes correctly.
-Visually inspect all pipework for signs of corrosion and leaks, and check the condition of insulation fitted.
-Visually inspect all valves for correct operation, signs of corrosion and leaks.
-Visually inspect all booster pumps fitted for correct operation.
-Indicate the date that the tank was last cleaned and disinfected and indicate whether it was disinfected as routine or due to adverse conditions.

Water Storage Tank - Cleaning and Disinfection
Tank Cleaning

The pH of the water shall be measured and must be between 5.5 and 9.0 before chlorinating solution is introduced. If pH is found to be below 5.5 the system shall be drained, flushed and refilled with fresh water.

The tank(s) shall be filled with fresh water and chlorinating agent to give a minimum free chlorine concentration of 50ppm (50mg/l), and when full, allowed to stand for 1 hour.

After 1 hour, measure free chlorine level, if free chlorine level is below 30ppm, repeat above step.

The tank(s) shall be drained and then thoroughly flushed out with clean mains water until tests indicate that the residual chlorine concentration is no greater than 0.5ppm (0.5mg/l), or that present in the mains water supply.

Where the volume exceeds 2000 litres, the disinfected water must be neutralised, using sodium thiosulphate, before disposal. The neutralised waste MUST NOT be drained through the system.

Fix ball valve in close position.

Isolate Tank from system, outlets must be sealed from inside tank.

Empty the Tank via drain-point or by using a submersible or barrel type pump, in the absence of a drain-point or if draining from drain-point is impracticable.

Clean Tank and remove all deposits of scale, corrosion and sludge deposition using a combination of hand scraping and brushing together with application of chemicals to dissolve or soften the scale (where necessary). Vacuum out all loose debris and deposits.

When using high-pressure jet washers to clean the internal surfaces of the Tank, suitable PPE must be used, including a positive pressure respirator. In this circumstance, the escape of aerosols must be restricted or minimised.

Where oil and grease contaminants on the tank surface are implicated, they shall be removed using suitable de-greasants. Where necessary (and practicable) the tank can be steam cleaned to remove grease contaminants.

Where “significant” or “highly-significant” levels of biological contamination is reported, the Tank shall be disinfected (using the disinfection method below), before the cleaning process is commenced.

Tank Disinfection Using Sodium Hypochlorite
The pH of the water shall be measured and must be between 5.5 and 9.0 before chlorinating solution is introduced. If pH is found to be below 5.5 the system shall be drained, flushed and refilled with fresh water.

The tank(s) shall be filled with fresh water and chlorinating agent to give a minimum free chlorine concentration of 50ppm (50mg/l), and when full, allow to stand for 1 hour.

After 1 hour, measure free chlorine level, if free chlorine level is below 30ppm, repeat above step.

The tank(s) shall be drained and then thoroughly flushed out with clean mains water until tests indicate that the residual chlorine concentration is no greater than 0.5ppm (0.5mg/l), or that present in the mains water supply.

Where the volume exceeds 2000 litres, the disinfected water must be neutralised, using sodium thiosulphate, before disposal. The neutralised waste MUST NOT be drained through the system.

The tank is to be refilled with fresh water via the inlet ball valve(s).

Using a suitable sterile container, collect a water sample and submit for biological analysis. The analysis shall measure the presence of contamination by general bacteria (Total Viable Colony Count – TVCC). Samples to be collected no earlier than 48 hours following disinfection.

Tank Disinfection Using Chlorine Dioxide (ClO2) – Soaking Method
Once the activated solution is in the system and adequately mixed, check that a reserve of at least 50mg/L as ClO2 is given. Add more activated solution if necessary.

Draw chlorinating agent from all outlets and ensure the presence of at least 50ppm ClO2. After 1 hour, check ClO2 level, if below 30ppm, repeat above steps. If level is >30ppm ClO2, after one hour flush system with fresh water and put to drain.

The tank(s) and system shall be thoroughly flushed out with clean mains water until tests indicate that the residual ClO2 concentration is no greater than 0.5ppm (0.5mg/l), or that present in the mains water supply.

After the one hour soak period, the system can be drained and flushed out and provided the system volume is less than 2m3 and the residual less than 20mg/L as ClO2 can be discharged to sewer without deactivation. For larger volumes/higher residuals then this shall be deactivated using Sodium Thiosulphate solution.

The area of the storage vessel above the water line (overflow, lid, ball valve etc.) shall be manually cleaned and then disinfected by spraying with 500 ppm ClO2 solution using garden type pressure sprayer ensuring surfaces remain wet for 10 minutes

If the water volume is less than 2m3 and the residual ClO2 content is less than 20 mg/L as ClO2 then it is acceptable to discharge the water to sewer without further deactivation.

The tank is to be refilled with fresh water via the inlet ball valve(s).

Using a suitable sterile container, collect a water sample and submit for biological analysis. The analysis shall measure the presence of contamination by general bacteria (Total Viable Colony Count – TVCC). Samples to be collected no earlier than 48 hours following disinfection.

Tank Disinfection Using Chlorine Dioxide – Spray Method
Spray all surfaces of the tank using a knapsack or garden pressure sprayer or fogger, with ready prepared 500ppm ClO2 solution, ensuring that all surfaces remain wet with disinfectant for at least 10 minutes. Note the requirements for personal protective equipment when spraying of fogging chlorine dioxide solutions.

When the spray disinfection is complete and the solution has been in contact with all surfaces for at least 10 minutes, thoroughly rinse all sprayed surfaces with clean water and remove any residues with pump/wet vac or flush through to drain.

Refill with fresh water and put back into service. Check residual of chlorine dioxide is below 1ppm.

Using a suitable sterile container, collect a water sample and submit for biological analysis. The analysis shall measure the presence of contamination by general bacteria (Total Viable Colony Count – TVCC). Samples to be collected no earlier than 48 hours following disinfection.

EQUIPMENT AND PROCEDURES:

Plant/Tools needed	Hand tools
PPE required *Delete and/or add as appropriate:*	Safety footwear Eye protection Positive Respirator, as required see Method Statement
Materials to be used	N/A
Operatives required	Plumber / Water Hygiene Technician
Specific Training needed – give details	Trade Specific
Permits to Work needed *Delete and/or add as appropriate:*	N/A
Machinery Shutdown and Lock-Off Procedures	N/A
Is Electricity needed	N/A
Mobile Phone use – any Restricted Areas	No

Means of protection to other people *Delete and/or add as appropriate:*	N/A
Site Access and Egress	Site specific information not known
Access to Works Area	Site specific information not known
Means of Access to Height *Delete and/or add as appropriate:*	Site specific information not known
Fall Prevention Measures	Site specific information not known
COSHH Assessment Carried Out	See MSDS in operatives file
Suitable Welfare Arrangements – give details	N/A
Traffic Management in Place	N/A
First Aid Cover – give details	Sign into client site register
Accident Procedures – give details	Sign into client site register. All accidents to be reported with client and WEMCO office
Overhead Power Cables – are goalposts in place	N/A
Noise Issues	N/A
Dust Control	N/A
Vibration Control	N/A
Fire Plan in Place	See RA 800 – Fire Risk Assessment at workplaces other than our own.
Site Contact Details including Emergency Numbers Etc	Sign into client register Office telephone 01626 363668

ISSUED TO:

Name	Signature	Date