



Housing Landlord Services

Legionella Policy 2019

DOCUMENT HISTORY

Name of Policy:	Housing Landlord Services Legionella Policy 2019
Purpose of Policy:	<p>New Forest District Council is committed to its legal obligations as an employer under common law, the Health and Safety at Work etc. Act 1974, associated legislation and codes of practice pertaining to Legionella. Consideration has been given to the control of legionella bacteria in water systems, as set out in the HSE Approved Code of Practice and Guidance L8 and HSG 274.</p> <p>This policy sets out the guiding principles and arrangements for Housing Landlord Services.</p>
Policy Applies to:	This policy and the subsequent arrangements apply to all directly and indirectly employed housing staff within New Forest District Council and, where appropriate, tenants, contractors, care providers and members of the public.
First Issued and Implementation Date:	1 st November 2019
Reviewed:	At least every 2 years from date of issue or as a result of legislative, organisational changes or an incident investigation.

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Section 1 Introduction

Legionnaire's disease is a potentially life-threatening pneumonia caused by Legionella bacteria. It is the most well-known and serious form of a group of diseases known as legionellosis. Infection is spread by breathing in small water droplets contaminated with the bacteria. The disease cannot be passed from one person to another.

Everyone is susceptible to the bacteria, although men appear more susceptible than women, but some persons are known to be at higher risk such as smokers, those over 45 years of age, alcoholics, diabetics, those with chronic respiratory or kidney disease and persons who have a pre-existing illness or whose immune system is suppressed.

Persons exposed to Legionella can develop initial symptoms such as high fever, chills, headaches, and muscle pains. Other symptoms can include diarrhoea or vomiting and delirium.

Approximately 12% of reported cases result in fatality, however the disease can be treated effectively with antibiotics during early diagnosis.

Legionella bacteria can survive under a wide variety of environmental conditions although the temperature ranges 20°C to 45°C tend to favour growth. The organisms do not readily multiply below 20°C and will not survive above 60°C.

Legionella also require a supply of nutrients to multiply. Sources include organisms in the water such as algae, amoebae, and other bacteria.

The presence of sludge, sediment, scale and other material within systems can harbour bacteria and can provide favourable conditions and protection from biocides for bacteria to survive.

It is therefore incumbent that water systems are adequately monitored, maintained and cleaned / disinfected when required.

New Forest District Council is committed to its legionella obligations within its housing stock and will strive to reduce the risks associated with its water systems to as low a level as is reasonably practicable. This policy sets out the guiding principles and arrangements regarding its obligations as an employer under common law, the Health and Safety at Work etc. Act 1974, associated legislation and codes of practice pertaining to Legionella. Consideration has been given to the control of legionella bacteria in water systems, as set out in the HSE Approved Code of Practice and Guidance L8 and HSG 274.

This Legionella Policy complements the Corporate Legionella Strategy produced by New Forest District Council.

Section 2 Legislative and Regulatory Context

The key issues / duties under the Control of Legionellosis, ACOP L8 are to:

- Identify and assess sources of risk in premises;
- Prepare a scheme or plan for prevention or controlling the risk;

- Implement and manage this scheme – appointing a person or persons (responsible person/s) to be responsible for this;
- Maintain records and to check that action taken is effective;
- Provide training, instruction and supervision of persons with delegated responsibilities.

NFDC will comply with standards governing the control and risk management of Legionella bacteria in conjunction with current and appropriate Codes of Practice.

The purpose of this practice is to manage the risk from Legionella bacteria exposure (from water systems under the control of NFDC) to employees, visitors and residents within / close to NFDC premises.

NFDC in response to the above requirements will: -

- Assess the foreseeable risks from legionella bacteria;
- Take action to manage the risk from legionella bacteria and identify responsible person/s;
- Provide recommendations and guidance on precautionary measures required to maintain hot and cold-water services;
- Maintain appropriate records;
- Continually review policy and adapt to meet any changing needs.

Section 3 Definitions

Term	Definition
Dedicated Call Centre	Appletree Careline or other contracted 24Hr Call centre.
Responsible Person	Responsible Persons and those who are appointed to carry out the control measures and strategies for the Control of Legionella will be suitably informed, instructed and trained and their suitability assessed. Their training will be to a standard that ensures that tasks are carried out in a safe, technically competent manner.
Legionnaires Disease	Legionnaire’s disease is a potentially life-threatening pneumonia caused by Legionella bacteria. It is the most well-known and serious form of a group of diseases known as legionellosis. Infection is spread by breathing in small water droplets contaminated with the bacteria. The disease cannot be passed from one person to another.
ACOP	Approved code of Practice

Section 4 Roles and Responsibilities

Chief Executive
<p>Responsibility for complying with, the Health and Safety at Work etc. Act 1974, associated legislation and codes of practice pertaining to Legionella rests with the 'responsible person'.</p> <p>The 'responsible person' is the employer and any other person who may have control of any part of the premises. In the case of NFDC the employer is represented by the Chief Executive together with the Executive Heads who collectively form the 'Executive Management Team'.</p>
Executive Head of Governance and Regulation
<p>The Executive Head of Governance and Regulation has overall strategic responsibility for the Council's approach to legionella in social housing controlled by the Council and is responsible for ensuring that the requirements of HSE Approved Code of Practice and Guidance L8 and HSG 274, and supporting Regulations are applied and implemented and to nominate one or more persons to act on their behalf to discharge their responsibilities.</p>
Housing Service Managers
<p>The Housing Service Managers are responsible for the overall effectiveness of the Housing Landlord Services Legionella Policy in their areas of responsibility.</p>
Asset Maintenance Manager
<p>The Asset Maintenance Manager in conjunction with the Servicing and Compliance Officer is responsible for overseeing the day to day management of Legionella to all Council owned housing stock, reporting directly to Service Manager for Housing Maintenance Compliance and Asset Management.</p>
Housing Estates and Maintenance Operations Managers
<p>The Housing Estates Manager, Maintenance Operations Manager and Maintenance Operations (Technical) Manager are responsible for the detailed arrangements necessary to manage risks associated with legionella within their respective areas of control.</p>
Specialist Contractors
<p>Providing advice to NFDC on controlling and reducing risks associated with Legionella bacteria and advising on legal duties placed on NFDC, when requested to do so. Undertaking risk assessments, remedial works and monitoring and maintenance tasks within each site as and when contracted to do so. Maintaining records of maintenance and remedial works and making them available for inspection when required.</p>

Reports on legionella compliance will be submitted on a quarterly basis to the Housing Health and Safety panel alongside a review of any relevant actions.

Section 5 Legionella Procedures

The Servicing and Compliance Officer will arrange survey/risk assessments by the specialist contractor in accordance with relevant HSE Guidance notes and Codes of practice.

Legionellosis Risk Assessments will be undertaken in all Housing General Needs Blocks, Extra Care schemes and buildings which contain hot or cold-water storage that supply more than one property.

Separate risk assessments of Temporary Social Housing and Private Sector Leasing properties should also be undertaken.

Due to the small systems contained within single dwelling properties and the high turnover of water within these properties the risk of Legionellosis to system users is low.

A suitable and sufficient assessment of the risks of exposure to Legionella bacteria from use of water systems on NFDC premises will be undertaken.

This assessment will identify and evaluate potential sources of risk and the particular means by which exposure to legionella can be prevented or where this is not reasonably practicable the method by which the risk from legionella bacteria can be controlled.

The appropriate control measures (if required) will be instigated to the satisfaction of the Servicing and Compliance Officer and Asset Maintenance Manager to ensure that the risks to the Health and Safety of all have been adequately controlled.

Appropriate records will be maintained of all such maintenance visits and details will be recorded in site log books held by the contractor, and records held on Keystone.

Void/Empty Properties

All assessments and maintenance records will be reviewed periodically (annually) or where the content of the assessment may no longer be valid.

Where single dwelling properties have been unoccupied for one week the water system will be thoroughly flushed with the minimum release of aerosol i.e. removal of shower heads prior to flushing, prior to occupation. The risk assessment for legionella in void properties is attached at Appendix A.

Where the flat forms part of a communal system the property is added to the list of outlets to be flushed on a weekly basis (where tenancy agreement permits), if this is not possible and is unoccupied for a long period then the flat is to be isolated from the system and flushed through prior to occupation.

Single dwelling properties that have been unoccupied for 2 months or more and have not been flushed weekly will be chemically disinfected prior to occupation (where systems permit). This should take place no more than one week from the proposed occupation date and be undertaken by a reputable contractor.

The flushing and temperature checks are to form part of the risk assessment for that property and will be signed for by the tenant at letting stage to accept responsibility for ensuring the system is regularly flushed and the temperature is to be maintained as to inhibit legionella bacterial growth. This will be reviewed annually at the Gas service, or via a tenancy check.

Responsive Work

In the event that a member of staff identifies work that is required to a communal water system or water tank, work is to be raised through the call centre and the Asset Maintenance Manager is to be advised.

Maintenance

(The following should be read in conjunction with Appendices 'A' – 'E', which give more detail if work is to be undertaken)

On completion of the Risk Assessment, a maintenance plan will be formulated by the Servicing and Compliance Officer with the following undertaken as a minimum to comply with the policy. It will be the responsibility of the Servicing and Compliance Officer (the Nominated Person) to ensure that the maintenance plan is actioned and that all works carried out are recorded. The upkeep of the site logs is the ultimate responsibility of the Nominated Person.

Table 1. Checklist hot and cold-water services

Frequency	Check	Standard to meet		Notes
		Cold water	Hot water	
Monthly	Sentinel taps (nearest, furthest and intermediate points from the feed tank or calorifier)	The water temperature should be below 20°C after running the water for up to two minutes.	The water temperature should be at least 50°C within a minute of running the water.	This check makes sure that the supply and return temperatures on each loop are unchanged, i.e. the loop is functioning as required.
Monthly	If fitted, input to TMV's on a rotational basis.		The water supply to the TMV temperature should be at least 50°C within a minute of running the water.	One way of measuring this is to use a surface temperature probe.
Monthly	Water leaving and returning to calorifier.		Outgoing water should be at least 60°C, return at least 50°C.	If fitted, the thermometer pockets at the top of the calorifier and on the return leg are useful points for accurate temperature measurement. If installed, these measurements could be carried out and logged by a building management system.

Quarterly	Dismantle, clean and descale shower heads.			
Quarterly	Cold Water Storage tanks	Carry out temperature checks		Check temperature at inlet valve and general cleanliness of tanks.
Six monthly	Incoming cold-water inlet (at least once in the winter and once in the summer).	The water should preferably be 20°C at all times		The most convenient place to measure is usually at the ball valve outlet to the cold-water storage tank.
Annually	Water System To be carried out by independent Auditor/Adviser			Carry out full inspection of the water system and report on any changes or defects. Update schematics if necessary.
Annually	Cold water storage tanks			Visually inspect and carry out remedial work where necessary.
Annually	Representative number of taps on a rotational basis.	The water temperature should be 20°C after running the water for two minutes.	The water temperature should be at least 50°C within a minute of running the water.	This check makes sure that the whole system is reaching satisfactory temperatures for legionella control.
Annually	Calorifier flush and sample		Hot water sample also ensure correct temperatures are present.	Set up flexible hose to drain cock flush and sample.
2 Yearly	Risk Assessments	Review risk assessments every 2 years and update accordingly, incorporating areas of remedial/maintenance works required.		

Legionella Log Book

Following survey and risk assessment of NFDC housing assets by the specialist contractor a copy of each log book for each site assessed will be kept centrally within the NFDC main office (to be stored digitally on Keystone on the property folder).

Each Log Book contains the following:

THE SITE RISK ASSESSMENT:

- INTRODUCTION
- SITE INFORMATION
- SURVEY INFORMATION
- RECOMMENDATIONS – PROPOSED RISK MANAGEMENT SCHEME
- DESCRIPTION OF CORRECT SYSTEM OPERATION

MONITORING & MAINTENANCE RECORDS:

- TEMPERATURE / FLUSHING RECORDS
- SHOWER / MIXER VALVE MAINTENANCE
- COLD WATER STORAGE / CALORIFIER SURVEYS
- DISINFECTION CERTIFICATES / SAMPLING RESULTS
- RECORDS OF REMEDIAL WORKS UNDERTAKEN

Care staff/cleaning staff/ NATMOS that undertake weekly flushing will keep records of these on sites and also update electronically via email to the Servicing and Compliance Officer.

All of the Monitoring & Maintenance Records other than Disinfection certificates / Sampling Results and Records of Remedial Works Undertaken are to be maintained within the site log held digitally on Keystone and Contractors portal.

Independent audits will be undertaken to ensure that policies and procedures are being followed and adhered too. The Services Manager – Compliance and Asset Management and Asset Maintenance Manager will instigate this audit and report any findings to the Health and Safety Panel.

Information and Instruction

Arrangements shall be made to ensure that the individuals upon whom the statutory duty falls (NFDC employees and specialist contractors) i.e. “The responsible persons” will implement appropriate and precautionary measures.

Responsible Persons and those who are appointed to carry out the control measures and strategies for the Control of Legionella will be suitably informed, instructed and trained and their suitability assessed. Their training will be to a standard that ensures that tasks are carried out in a safe, technically competent manner.

Regular refresher training is to be given and all records of training activities will be maintained. Although training is an essential element of competence, it will not be the only factor. Other elements

such as experience, knowledge and personal qualities will be required to undertake the activities safely and in line with legislation.

All appointed specialists will be Code of Conduct Approved and produce evidence of competence for their employees working on the organisation's sites.

Actions to be taken if Legionella is detected

In the case of a positive test result for Legionella the following actions are to be taken.

- i) Notification of the positive result to the Nominated Person, dependent upon the magnitude of the results the following actions should be taken:

Legionella Bacteria (cfu/litre)	Action Required
Less than 100	<ul style="list-style-type: none"> ▪ System should be re-sampled to establish extent of colonisation ▪ Control measures and risk assessment should be reviewed to identify any remedial action required
More than 100 but less than 1000	<ul style="list-style-type: none"> ▪ System should be re-sampled to establish extent of colonisation ▪ If serogroup 1 to 14 is identified the system should be treated immediately ▪ Control measures and risk assessment should be reviewed to identify any remedial action required
More than 1000	<ul style="list-style-type: none"> ▪ The system should be treated immediately ▪ Control measures and risk assessment should be reviewed to identify any remedial action required

- ii) Undertake remedial actions as described in Appendix E Cleaning and Disinfection of Domestic Water Systems as a minimum

A suitably qualified person or appointed specialist should carry out any remedial actions.

- iii) On completion of the remedial action, water samples should be taken from the system to confirm the effectiveness of the procedure
- iv) A comprehensive record should be kept including test results and details of remedial works undertaken

Action in the event of an Outbreak

Legionnaires' disease is notifiable under public health legislation in England Wales and Scotland (i.e. all diseases caused by legionella) are reportable.

An outbreak as defined by the Public Health Laboratory Service (PHLS) is two or more confirmed cases of legionellosis occurring in the same locality within a six-month period.

Location is defined in terms of the geographical proximity of the cases and requires a degree of judgement. It is the responsibility of the Proper Officer for the declaration of an outbreak.

The Proper Officer is appointed by the local authority under public health legislation and is usually a Consultant in Communicable Disease Control (CCDC) OR a Medical Officer of Environmental Health (MOEH). In Scotland, it is the Consultant in Public Health Medicine (CPHM) employed by the Health Board.

As part of the outbreak investigation and control the following requests and recommendations may be made by HSE or your local authority:

- a) to shut down any processes under your control which are capable of generating and disseminating airborne water droplets and keep them shut down until sampling procedures and any appropriate remedial cleaning or other work has been undertaken. Final clearance to restart the system may be required.
- b) to take water samples from the system prior to any emergency disinfection being undertaken. This will aid the investigation of the cause of the illness. The investigating officers from the Local Authority may take samples or require them to be taken.
- c) to provide health records for your staff to determine if there are any further undiagnosed cases of illness, and to assist in the preparation of case histories of those persons affected.
- d) to co-operate fully in an investigation of any plant that may be suspected of being involved in the cause of the outbreak. This may involve for example:
 - tracing of all pipework runs;
 - detailed scrutiny of all operational records;
 - statements from plant operatives and managers;
 - statements from water treatment contractors or consultants.

An outbreak control committee or team will normally be set up to manage the incident. This will involve representatives of all the agencies involved and Housing Maintenance representatives may be requested to attend meetings of this committee and contribute to its formal report.

Any infringement of relevant legislation may be subject to a formal investigation by the appropriate Enforcing Authority, either the Health and Safety Executive or the Local Authority

Further information / Supporting Documentation

Where appropriate, refer to the site-specific Legionella log books, a copy of these documents are to be found on the sub-contractors' portal, and Keystone

Further advice can also be obtained from the legal Guidance document and Approved Code of Practice:

The control of legionella bacteria in water systems, Approved Code of Practice and Guidance L8.

Service Standards

See Checklist hot and cold-water services table 1 above

Performance Monitoring

- Monthly meetings will be held with service providers;
- Monthly compliance reports will be issued to NFDC;
- Quarterly assurance ratings and a statement of compliance will be issued to the H&S Panel each quarter.

Section 6 Appendices

Appendix A - Risk Assessment under the Control of Substances Hazardous to Health Regulations 1999 of legionella in the water supplies in NFDC void properties.

Appendix B - Temperature monitoring

Appendix C - Calorifier Flush and Sample

Appendix D - Inspection and Sampling of Storage Tanks

Appendix E - Cleaning and Sterilisation of Domestic Water Systems

Appendix A - Risk Assessment under the Control of Substances Hazardous to Health Regulations 1999 of legionella in the water supplies in NFDC void properties.

Assessed by: Richard Fudge Date: February 2019

Risk: Infection from legionella bacteria present in the hot and/or cold-water supply from the water supply system in void properties causing legionnaires disease, Pontiac fever or Lochgoilhead fever.		
Hazards Airborne droplets or droplet nuclei containing legionella	Risk Rating	
	Without Controls <u>Medium</u>	With controls <u>Low</u>
Harm Inhalation of airborne droplets or droplet nuclei containing legionella bacteria formed when showers and taps are used in the property.		
Persons in danger <ul style="list-style-type: none"> ▪ Employees of NFDC particularly re-lettings team members. ▪ New and prospective residents of void properties during visits and on occupation, particularly males, those who smoke, who may be alcoholic, those suffering from cancer, chronic respiratory disease or kidney disease or are in immunosuppressed groups. ▪ NFDC employees, contractors and sub-contractors working in void properties. ▪ Residents in properties in the immediate vicinity of the void property. 		
Sources of risk <ul style="list-style-type: none"> ▪ Showers and taps dispensing hot and cold water in all areas of the property. ▪ The various “deadlegs” in the pipework supplying the total system. ▪ Unused water supply points in the property. ▪ Flush toilets. ▪ Water storage tank. 		
Controls used <ul style="list-style-type: none"> ▪ Flushing of unused outlets in void properties will be carried out if the property is empty for more than 7 days and before occupancy. This will be undertaken with minimum release of aerosols until the contents of the dead-leg pipework has been fully flushed e.g. shower heads removed during initial part of flush and taps run at low flow rate to reduce aerosol generation. Staff who have any chronic respiratory illness or who are taking immunosuppressing drugs will not be used for this work. 		

- Renewal of shower heads and hoses.
- Removal of deadlegs.

Specialist contractors will be used to carry out the following work:

- Water systems will be disinfected if the property is void for over 60 days.

This will include:

- Chlorination of shower heads.
- Descaling of showerheads.
- Communal cold-water storage tanks supplying the property will be cleaned, disinfected and the disinfectant pulled through to all outlets within the void property if deemed necessary.
- The system design will be reviewed and any remedial works necessary to bring the system in line with current guidance will be considered and undertaken as required.
- Draining of the water system will be considered for long term voids
- On reinstatement of the hot water services thermostats of the device providing hot water will be set to enable 50°C to be achieved at outlets (or prior to thermostatic mixer valves if present) within one minute of running.

Maintenance, Examination of Controls

A log will be kept detailing dates of flushing, water temperature checks, dates of descaling/replacement of shower heads, removal of deadlegs and flushing through of systems by NFDC and specialist contractors.

All documentation associated with the log will be forwarded to the Asset Maintenance Manager to be held on the property folder on Keystone

Certificates of chlorination, certificates of testing will be retained by NFDC.

Information, Instruction and Training

Specialist contractors will be competent in the control of and protection from legionella, will be aware of the risks and will be trained in appropriate protective action.

NFDC staff involved in carrying out controlling action will be briefed about the risks and the precautions to take.

Action required

NFDC Operatives and Letting Team to be briefed in the risks involved and the precautions to be taken when working in void properties

Date of next assessment: February 2020.

Appendix B - Temperature monitoring

The responsible person shall be responsible for ensuring that temperatures are monitored in accordance with the maintenance regime.

Temperature monitoring will only be undertaken by staff that have been specifically trained to carry out such duties.

The equipment used to undertake temperature monitoring shall be specifically designed for that purpose and should be calibrated at periodic intervals in order to ensure its accuracy.

The temperature at outlets shall be measured by opening the fitment and placing the monitoring device in the stream of water. Any changes in temperature should be observed and after a specific period (see checklist) a record made of the temperature displayed. If the required standard (below 20°C for cold, above 50°C for hot) has not been attained when monitoring, monitoring shall continue until the standard is achieved and a written note made of the exact time required. The test should last for no more than 5 minutes, if the outlet fails to meet the required standard it shall be clearly identified on the site report.

When the test has been completed the area shall be left in the condition it was found, in that all splashes around the area shall be removed. If any area requires cleaning as a result of splashes or spillage then that area shall be clearly identified as a 'slippery surface' until such time that the area has dried.

Temperatures within storage cisterns and tanks shall be monitored by inserting an appropriate measuring device into the water. Before the device is inserted into the water it shall be cleaned and sterilised by employing 1000mg/l chlorine solution. All results shall be recorded on the site report and in the site log book, with any non-compliance's clearly identified. Any insulation or lids, which have had to be removed in order to gain access, shall be replaced into the correct manner.

Temperatures from calorifier deliveries can often be observed from fixed gauges, these shall NOT be taken as the true temperature; these readings shall be verified with calibrated test equipment. Any insulation, which has to be removed in order to carry out these checks, should be replaced in the correct manner. Insulation suspected of containing asbestos shall be tested prior to any works. If insulation is to be removed it shall be carried out under controlled conditions and in accordance with "The Control of Asbestos at Work Regulations 2012, and NFDC Policy.

Appendix C - Calorifier Flush and Sample

The responsible person shall be responsible for ensuring that calorifiers are flushed and sampled in accordance with the maintenance regime.

Flushing and sampling of calorifiers will only be undertaken by staff that have been specifically trained to carry out such duties.

Flexible hose will be connected and set up between the calorifier 'drain cock' and the nearest suitable drain.

The drain will then be run until the discharge is free of all debris.

The flow of water should then be stopped, and the flexible hose removed.

The drain cock should then be 'flamed' before legionella and bacteriological samples are taken.

All samples taken should be clearly identified with the following information; location, date, time and the sampler's identity. These samples should then be transferred to a UKAS accredited laboratory for analysis.

Any spillage or splashes should be removed, and the area left in the condition that it was found. If any area has to be mopped as a result of splashes or spillage then the area shall be clearly identified as a 'slippery surface' until such time that it has dried.

Appendix D - Inspection and Sampling of Storage Tanks

The responsible person will be responsible for ensuring that storage tanks are inspected and sampled in accordance with the planned preventative maintenance regime.

Inspection and sampling of storage tanks shall only be undertaken by staff who have been specifically trained to carry out such duties.

Each storage tank should be visually inspected internally; a written record of this inspection shall be made. Photographic records can also be taken if it aids the process.

Legionella and Total Viable Count (TVC) samples should be taken from the tank by utilising sterilised silicon tube and following BS7592 (sampling for legionella organisms in water and related materials).

All samples taken should be clearly identified with the following information; location, date, time and sampler's identity. These samples should then be returned to a UKAS accredited laboratory for analysis.

The chlorine residual of water stored within the tank should be measured and recorded.

The temperature of water stored within the tank should be measured and recorded.

Any insulation, which is removed to gain access, should be replaced in the correct manner.

Appendix E - Cleaning and Sterilisation of Domestic Water Systems

The responsible person will be responsible for ensuring that all works are completed in accordance with the planned preventative maintenance programme and in the event of legionella bacteria being detected within the system.

Cleaning and sterilisation will only be undertaken by staff that have been specifically trained to carry out such duties.

Cleaning and sterilisation operations should follow unsatisfactory inspections or analysis.

This work can call for staff to work in areas defined as 'confined spaces', therefore requiring the use of atmospheric monitoring equipment, breathing apparatus and the necessary authorisation. All staff undertaking the cleaning and sterilisation of storage tanks will have received formal training in confined space working and be authorised to wear breathing apparatus.

Prior to cleaning the storage tank shall be isolated from the distribution system and drained. Any debris removed shall be packaged and removed in a safe manner. If pumps or vacuums are employed the discharge should be directed to a drain which is capable of handling the capacities involved.

When cleaning operations have been completed the tank surfaces should be immersed in water containing a free chlorine residual of at least 50mg/l free chlorine residual.

The tank shall then stand for 1 hour before the free chlorine residual is checked again; if it has fallen below 30mg/l the procedure shall be repeated. If the free chlorine residual is 30mg/l or above the water within the tank should be neutralised before it is allowed to drain.

The tank will then be filled with fresh water (potable supply) and the free chlorine residual checked (ensure level is commensurate with potable supply). The tank may then be put back into service.

Legionella and TVC samples should then be taken from the tank by utilising sterilised silicon tube and following BS7592.

All samples taken should be clearly identified with the following information; location, date, time and the sampler's identity. These samples should then be returned to a UKAS accredited laboratory for analysis.

Any insulation or covers, which have been removed to facilitate this work, shall be replaced in the correct manner.

Where the sterilisation process is to be extended to the whole of the distribution system all site staff should be made aware that the water will not be fit for use until further notice. Each outlet shall be temporarily labelled in order to clearly identify that water should not be used. The chlorination should be applied to the tank/cistern and be drawn through the system, when 50mg/l free chlorine is detected at each outlet it shall then be allowed to stand for 1 hour before the free chlorine residual is measured again.

If the free chlorine is 30mg/l or above the water within the tank should be neutralized using sodium bisulphite. The neutralized water should be then drawn through the system to remove the chlorine. The tank should then be drained and filled with potable water and the free chlorine residual checked. The system may then be put back in service and warning notices removed. Samples should be taken from sentinel taps to ensure the sterilization process has been successful.

Any spillage or splash shall be removed, and the area left in the condition that it was found. If any area is mopped as a result of splashes or spillage then that area shall be clearly identified as a 'slippery surface' until such a time that the area has dried.

Alternative sterilisation methods utilising appropriate chemicals and procedures in accordance with in BS6700 may be used when carrying out a clean and sterilisation of a tank or system. Method statements and COSHH data sheets are to be provided to NFDC for information and kept on file centrally.