Common mitigation measures – Action plans

Catchment Physical
Inspect tanks and filters for build-up of sediment and clean if required. Ensure tanks have close fitting lids.
Install additional filters to remove particulates.
Install sediment traps downstream (of forestry, quarrying, industry etc.) to combat intermittent discharges of sediment
Ensure any pipes under roadways/vehicle tracks are bridged with appropriate rigid materials, or placed in a duct, to minimise vibration or damage to pipes and disturbance of deposits within them.
Install diversion channels, ditches etc. to divert any industrial/quarrying/construction/mining run-off from water sources. Maintain as appropriate.
Install suitable means of preventing damage to pipework, e.g. Ensure pipes are buried between 750mm and 1,350mm below ground. The location, material and size of these pipes should be recorded on the supply site schematic or plan.
Disinfect and/or flush the supply at an appropriate rate and frequency if there is evidence of sediment/biofilm or particulates in the supply system.
Implement a system of logging the servicing and maintenance of equipment and structures (pipes to tanks etc).
Put in place suitable screens
Install appropriate security arrangements to prevent unauthorised access
Put in place suitable protection from wildlife and/or livestock
Put in place suitable treatment that can cope with flashy conditions, or utilise raw water storage.
Implement tank cleaning regime
Catchment Chemical
Restrict storage and use of chemicals, fertilisers, pesticides (including the location of sheep dips) or fuel from the vicinity of the source (450m).
Identify likely risks and carry out any additional monitoring (sampling) required to confirm
Install diversion channels, ditches or bunding to divert flow away from the vicinity of the source. Include regular checks and maintenance.
Install additional treatment systems or blend water supply to ensure compliance with the regulatory standard.
Implement a means of logging all servicing and maintenance of equipment and structures (pipes, tanks etc)
Ensure oil or fuel stores are adequate i.e. double skinned, bunded and marked on the site schematic.
Catchment Microbial
Ensure septic tanks or cesspool is being operated and emptied as per manufacturer's specification and in line with Environment Agency permitting requirements.
Produce a location plan/sketch of the locations of the septic tanks, cesspools and waste pipe on the supply and provide this any to contractors, builders, etc. undertaking works, to prevent accidental damage of tanks or waste pipes.
Identify any waste water discharges within 50 metres of the source and ensure these are diverted/ channelled away from the source or the supply is appropriately treated. Set up a pollution warning system with upstream owners of discharges.
Repair or replace the septic tanks or cesspool, damaged waste pipes or soakaways to ensure the structure is in satisfactory condition (which complies with Building Regulations) and the manufacturer's specification.

Install appropriate treatment which is validated for the supply.
Carry out a site inspection to check for evidence of seepage from broken waste pipes or blocked soakaways i.e. marshy vegetation or ponding. Identify the cause and undertake the appropriate remedial measures ensuring these works comply with Building Regulations and the manufacturer's instructions. .
Prior to the installation of a new treatment system, ensure a competent person disinfects the distribution system
Restrict or relocate slurry spreading or slurry lagoon respectively, 50 metres from the source as required by the Environment Agency.
Catchment Structure
Ensure there is an adequate cover which is watertight and secured to prevent unauthorised access.
Secure the source against livestock access by installing a stock-proof fence, with a minimum 4m radius around the source.
Cap and adequately seal any abandoned wells, boreholes and tanks. Check for any cross connections with current structures.
Carry out improvements to borehole head works, well cover or spring chamber to exclude surface water or other contamination in accordance with EA guidance.
Ensure pump chamber or spring chamber is fully grouted and sealed to prevent ingress.
Install a robust and secure cover, with a water tight vermin proof inspection cover (preferably raised to prevent ponding on or around the cover).
Fit a robust metal mesh, a flap or filters to any overflow, to prevent small animals, vermin or insects entering the tanks or chambers.
Prevent small animals or insects entering the borehole by suitable means e.g. cap.
Ensure there is adequate protection where farm derived waste or silage is stored within 50m of the source, such as a cut off ditch to divert the surface water away from the source.
Restrict or remove livestock from the vicinity of the source
Piped public mains supply
Request that the water company replace or refurbish corroded or leaking pipework
Request that the water company replace or reline coal tar lined pipes
Request that the water company flush the distribution system from source to end points to remove deposits
Request that the water company implement a regular flushing regime (of appropriate frequency) for distribution networks with low flows or discolouration issues
Request that the water company pressure-jet mains for manganese removal
Identify a suitable alternative mains supply should there be a water quality event or sufficiency issue
Ensure backflow protection is installed, especially for animal watering systems, industrial users, ponds and hose bib taps etc.
Temporary Supplies
Contractor should provide documentation to demonstrate conformity with BS 8551
Provide documentation to demonstrate the tanker has exclusively been used for water.
Ensure tanker is in a good state of repair.
Ensure hoses used for filling are clean and compliant with BS 8551 and hoses used for filling are stored off the ground on a reel and capped.
Disinfection
Secure equipment from unauthorised access and use.
Install monitors linked to either alarms or automatic shutdown to ensure treatment systems are effective.
Produce/complete/update schematic of the layout of all installed treatment systems, shut off devices and filters.

Install appropriate drainage and other measures to protect equipment from flooding
Ensure that water is pre-treated to meet <1NTU turbidity before disinfection by UV and or chlorine; by optimising existing processes or installing suitable treatment
Create or revise procedures which govern the purchase of approved treatment chemicals, their delivery, handling and use.
Install suitable and validated treatment to disinfect the source water, ensuring adequate mixing, dose and contact time as appropriate.
Ensure the treatment system 'fails safe' thus preventing untreated or partially treated (unsafe) water being supplied and consumed (often referred to as auto shutdown)
Create or modify contingency plan to ensure consumers receive an alternate supply should the normal source be unavailable for any reason.
Provide evidence to demonstrate that the treatment is validated and suitable for the levels and types of contaminants present in the source water
Provide evidence to demonstrate that the equipment is operated according to manufacturer's instructions and is validated
Create or modify procedures which govern the servicing and maintenance of equipment and associated monitors including records to demonstrate maintenance history
Create or modify procedures which govern the setting of alarms and response to them to ensure wholesome drinking water is supplied to consumers at all times.
Ensure treatment is protected from cold weather and other adverse conditions.
Install and calibrate online monitors and set up associated records to document servicing and maintenance work.
Distribution structure
Carry out appropriate repairs to pipes, ensuring all fittings comply with Regulation 5.
Replace pipes, ensuring they comply with Regulation 5.
Consider possible internal corrosion of galvanised pipe (giving rise to colour, particulates) that may need replacement.
Divert pipes/reconfigure the distribution system to reduce residence times.
Pipes to be lagged or run in conduit appropriate to the hazard (i.e. to prevent deterioration of water quality or contamination by damage or ingress of pipes by any means).
Remove cross connections between pipes carrying different water sources and any dead legs.
Put in place robust reservoir/storage tank covers, ensuring sound seals are in place to prevent ingress
Replace/repair the existing structure to ensure that it is suitably robust against risk of damage and/or contamination by any means.
Put in place robust and suitable security measures to protect treated water storage facilities from unauthorised access
Mark or colour code pipes in line with BS 1710 to aid identification. In areas where digging may take place use coloured streamers in the ground above the pipe to avoid accidental damage.
Put in place a robust stock-proof barrier around inspection chamber(s).
Put in place suitable/adequate drainage arrangements appropriate to the hazard.
Where there are latrines, septic tanks, waste pipes, animal enclosures or cess pits in the vicinity of the distribution system, put in place/upgrade appropriate barriers to prevent contamination of treated water via ingress/leaching
Replace plastic pipes with barrier pipe to prevent migration of solvents/ fuel/oil.
Replace or reline pipes to prevent contact of water with corroded or coal tar lined metal pipes.
Ensure pumps have slow start or surge arrestors to avoid damage to pipework, fittings of treatment apparatus.
Distribution management
Provide robust documents/records to demonstrate that the method(s) of treatment is/are

appropriate to the hazard.
Provide documents/records to demonstrate that the treatment is being managed according to the manufacturer's instrument/equipment operating instructions.
Improve dosing arrangements to minimise the production of THMs/ disinfection by- products.
Put in place/update procedures and records for the controlled and effective management of the distribution network, such as valve operations, flushing, tap-ins, pipe maintenance and repair.
Put in place/update documented programme of regular flushing of pipes from hydrants/wash out points, stating the required frequency.
Put in place/update record keeping of water quality monitoring (e.g. chlorine residual measurements, sampling).
Put in place/update appropriate backflow protection measures to prevent actual or potential contamination of the public supply
Put in place/update procedures and records of treated water storage facility cleaning and maintenance
Replace/upgrade treated water storage facility to ensure that its capacity is replenished with fresh water regularly throughout each day (i.e. so that its size is proportionate to usage) with the inlet and outlet on opposite sides. Ensure it is lagged and covered to prevent warming or freezing.
Premises
Install vermin proof covers, vents and overflows not liable to corrosion (see Water Regulations Guide page 7.11).
Hot water cylinder vent pipes should not discharge over/in to wholesome water cisterns
Clean loft tanks - one off or implement a regular programme (update maintenance records) Install servicing valves on the inlets to facilitate this.
Replace lead pipe-work
Replace internal pipework if corroding and causing discolouration
Install check valves (back-flow protection) on washing machines/dishwashers if water tastes of TCP
Identify and remove any pipe dead legs.
Install an appropriate filter if the water is turbid, collate associated documents and set-up appropriate maintenance regime
Install adequate backflow protection between rainwater harvesting system and the drinking water supply (usually an AA or AB air gap physically separating the systems)
Ensure storage tank is of appropriate size and configuration to ensure adequate turnover of water.
Upgrade point of use treatment device to address raw water quality
Put in place a maintenance regime for the point of use device to include filter or lamp changing, cleaning etc.
Replace/upgrade the UV unit