

Incidents in England and Wales in 2008

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
04 Jan 2008 For 1 day (DWR)	Lower Swansea Valley – Pontardawe and Clydach	18,500	Discolouration following burst main at Crai works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • The main was repaired and the system returned to normal operation, customers called back to check discoloured water has cleared <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company commended for prompt response and repair of burst mains
15 Jan 2008 For 1 day (DWR)	Bryn Golau supplying Holywell Mold zone	2,000	Microbiological contamination at service reservoir	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Reservoir valved out of service and area fed on bypass, external and internal reservoir inspection carried out, sample survey undertaken <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • One of three separate <i>E.coli</i> detections from service reservoirs supplied by Alwen water treatment works over a very short space of time and in the same geographical area, critical that the internal inspections for compartments 1 and 2 at Bryn Edwin service reservoir were not undertaken promptly and that these delays were not communicated to the Inspectorate. Company reminded of need to keep Inspectorate up-to-date on progress with remedial actions • Recommended review of procedures to ensure that sampling regimes are appropriate and consistent • Advice given about dip sampling at an early stage following the notification of an <i>E.coli</i> contravention at a service reservoir and the value of enhanced monitoring pending the completion of all outstanding investigative and remedial actions
15 Jan 2008 For 1 day (DWR)	Cilcain SR supplying Holywell Mold zone	75	Microbiological contamination at service reservoir	See above

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<p><u>Repeated incidents in 2008</u> 15 Jan 2008 For 1 day (SRN)</p> <p>22 Feb 2008 For 1 day (SRN)</p> <p>24 Feb 2008 For 1 day (SRN)</p> <p>29 Mar 2008 For 1 week (SRN)</p>	<p>Twyford works, Twyford, Fair Oak and Hedge End, Hampshire</p>	<p>149,174</p>	<p>Repeated bacteriological failures</p>	<p>Southern Water action:</p> <ul style="list-style-type: none"> • The company increased the chlorine residual at the works, carried out an audit of the works and sample the distribution system • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Routine scheduled maintenance on a critical monitor was not undertaken in accordance with the company's own procedures. Recommended that critical monitors are routinely serviced and calibrated in accordance with the company's maintenance procedures • Recommended action to ensure that water is being adequately disinfected • Recommended CCTV inspection of the contact main to assist in investigations • Enforcement action initiated to require the company to enter into a legally binding agreement to make improvements in a required timescale

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18 Jan 2008 For 3 weeks (TMS)	Cleeve works, large area in Berkshire – Abingdon, Blewbury and Chilton, Cookley Green, Compton, Culham, East Oxford, Nettlebed, Thame, Wallingford, Didcot and Wantage East.	295,728	<i>Cryptosporidium</i> in treated water	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Isolated boreholes • Sampled affected area • Retrained staff • Reviewed all boreholes at risk of flooding and implement any relevant mitigation/protection measures • Reviewed turbidity alarms <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company did not act on an uncharacteristic raw water turbidity alarm, site that should have been risk assessed as being vulnerable to flooding and <i>Cryptosporidium</i> at a time of heavy rainfall and high river levels • Required company to inform Inspectorate of when staff training took place and of the refresher intervals proposed • Recommended review of event response procedure at this, and similar sites at risk of <i>Cryptosporidium</i> and flooding, to instigate a more rapid and appropriate response • Recommended that the BECC guidance for responding to alarms be revised • Required company to provide details of the flood mitigation plans

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20 Jan 2008 For 2 days (UU)	Blackpool	61,487	Loss of supplies due to planned work	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Bottled water and bowsers supplied • Some areas rezoned • Warbreck Tower isolated to maintain supplies later • Council and Health Protection Unit informed <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Isolation of tower ensured mains deposits from the bottom of the tower were not entrained and carried into distribution • Recommended timely action to investigate and remedy unexpected events during a planned job • Recommended review of event management procedures to ensure that the right people are involved and that decisions and actions are taken in a timely manner • Recommended review of procedures to ensure the status of valves are returned to their original configuration following work on the distribution system <p>Advice given about the management of residual chlorine</p>

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22 Jan 2008 For 1 day (DWR)	Bryn Edwin supplying Flint Connahs Quay zone	7,500	Microbiological contamination at service reservoir	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Reservoir valved out of service and area fed on bypass, external and internal reservoir inspection carried out, sample survey undertaken <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • One of three separate <i>E.coli</i> detections from service reservoirs supplied by Alwen water treatment works over a very short space of time and in the same geographical area, critical that the internal inspections for compartments 1 and 2 at Bryn Edwin service reservoir were not undertaken promptly and that these delays were not communicated to the Inspectorate. Company reminded of need to keep Inspectorate up-to-date on progress with remedial actions • Recommended review of procedures to ensure that sampling regimes are appropriate and consistent • Advice given about dip sampling at an early stage following the notification of an <i>E.coli</i> contravention at a service reservoir and the value of enhanced monitoring pending the completion of all outstanding investigative and remedial actions
22 Jan 2008 For 10 weeks (SVT)	Draycote WTW, Mythe WTW, Strensham WTW, Trimpley WTW and Whitacre WTW	100,000	Pesticide (metaldehyde) detection	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Investigation including sampling surveys • Worked with water and agriculture industry to develop catchment control measures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management

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23 Jan 2008 For 2 days (ANG)	Two properties at Harborough Rd, Desborough, Northants	5	Taste or odour due to low flow in main	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Sampled affected area • Provided bottled water • Transferred services to another main <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Not linked to operational work and no evidence of any widespread issue within the distribution system
29 Jan 2008 For 18 hours (DWR)	Alwen works	32,000	Loss of control of coagulation following power failures	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that the company restarted the plant without correcting the faults which led to elevated aluminium in the water supplied, the company should have shut down this works at an early stage, while investigations into water quality alarms were made on site • Recommended contingency plans for all strategic works where rezoning is not a practicable option to support a works shutdown
02 Feb 2008 For 5 days (WSX)	Tucking Mill Works Feeding Hampton Down service reservoir	26,000	Disinfection failure (excess dechlorination)	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Review of procedures • Shut down treatment works • Increased chlorine residuals at service reservoir • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures for the commissioning of new plant/treatment processes, acting on alarms and briefing personnel after modifications at works • Inadequate design/operation of contact tank • Inadequate on-site investigation • Recommended protection against short circuiting of treated water on site

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03 Feb 2008 For 4 days (TMS)	Chingford South works serving Bush Hill, Enfield Town, Goffs Oak, Lee Valley, Picketts Lock, Upshire, Hertfordshire	235,119	<i>Cryptosporidium</i> in treated water	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Shut down treatment works • Modified control systems to prevent restart without critical processes • Start up procedure revised and new on-site checks incorporated • Refresher training organised <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that SCADA screens display appropriate information and that this is routinely monitored • Recommended that regular on-site checks of the processes are made • Recommended proper completion of records is checked and verified • Recommended training of all operatives is reviewed and refreshed and that more complete Log Book entries are maintained • Recommended more comprehensive sampling in response to similar events
07 Feb 2008 For 5 days (TVW)	Wildhill, near Hatfield, Herts	148	Cross connection with private (untreated) water supply	<p>Three Valleys Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Issued a do not drink notice • Provided bottled water on request • Review of procedures • Sampled affected area • Successfully prosecuted the owner of private supply under Water Supply (Water Fittings) Regulations <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Thorough and satisfactory response and remedial actions

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20 Feb 2008 For 12 hours (SST)	Lichfield, Tamworth	1,000	Brown discolouration due to work on distribution system	<p>South Staffordshire Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Rezoned area (brought in water from different source) • Review of procedures • Sampled affected area • Restored supply after finding illegally closed valve <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Illegal operation of valves on distribution system combined with misidentification of valve during re-zoning • Recommended that company review and revise procedures for dealing with housing developers
21 Feb 2008 For 1 day (DWR)	St Mellons and Rumney	3,625	Discolouration following planned work on distribution system	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Flushing carried out in affected areas, sampling survey undertaken, information issued to customers, valve labelling error corrected on geographical information systems <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Incident was due to inadequate labelling of valves
21 Feb 2008 For 2 hours (UU)	Wickenhall works serving high parts of Oldham, Shaw and Royton	32,241	Turbidity in final water due to pump failures	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Repaired faulty equipment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance of equipment

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23 Feb 2008 For 12 hours (UU)	Lostock works serving Bolton, Westhoughton, Manchester, Salford, Stockport, Macclesfield, Knutsford, Wilmslow	208,333	Aluminium in treated water at level above standard due to faulty duty aluminium dosing pump	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Replaced faulty equipment • Dosing pump changed to standby and process changed <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – dosing • Recommended samples analysed in a timely manner • Recommended checks at works to determine that all alarms are routed to the Operations Response Centre • Advice given on other sites alarm responses
28 Feb 2008 For 0.5 hours (SRN)	Burham works, near Rochester, Kent	340,000	Chlorination failure	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Action taken to reinstate chlorine dosing <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended proposed temporary and permanent changes to the treatment process be carried out as soon as possible in line with control measures in updated risk assessment • Recommended Southern Water discusses its procedures with Mid Kent Water (South East Water) to ensure that issues affecting the quality of water supplied via the bulk supply are notified in a timely manner • Advice given about alarm handling and incident sampling

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28 Feb 2008 For 3 weeks (SES)	Bough Beech works Bough Beech Supply zone	85,201	Pesticide (metaldehyde) detection	<p>Sutton and East Surrey Water action:</p> <ul style="list-style-type: none"> • Decreased works output • Funded research into the treatment processes for metaldehyde • Replaced granular activated carbon media at the works with a new, more effective media type • Over-abstracted water from the River Eden to dilute metaldehyde concentrations in the reservoir • Liaised with the Environment Agency • Wrote to farmers in the catchment and undertook a small stream survey • Construction of new granular activated carbon absorbers at the works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management
29 Feb 2008 For 8 hours (SEW)	Burham zone – Snodland, Leybourne, Larkfield, East Malling Aylesford and Barming, including Maidstone Hospital in Kent	39,489	Low residual chlorine in bulk supply from Southern Water	<p>South East Water action:</p> <ul style="list-style-type: none"> • Reviewed procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures, delayed sampling response • Recommended formal procedure for reporting and acting upon issues with bulk supply water quality
29 Feb 2008 For 7 hours (SVT)	Whiteacre works Atherstone between Tamworth and Nuneaton, N. Warwickshire	13,000	Loss of supplies due to loss of power at a works	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment • Replaced faulty equipment • Rezoned area (brought in water from different source) • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate standby power arrangements due to lack of maintenance

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10 Mar 2008 For 24 hours (SWT)	Stithian works Roscrow, Carmanellis and Lanner Hill, and Chasewater	1,600	Elevated pH due to fault with lime dosing unit	<p>South West Water action:</p> <ul style="list-style-type: none"> • Flushed, rezoned and samples affected area • Retrained staff <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Overdosing due to problem with lime dosing plant
12 Mar 2008 For 1 day (DWR)	Cwellyn works supplying Bangor, Caernarfon and South Anglesey	75,000	<i>E.coli</i> in treated water leaving works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampled affected area and investigated works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification absent • Inadequate treatment process – filtration • Works is vulnerable to turbidity and <i>Cryptosporidium</i> breakthrough under certain raw water conditions due to the positioning of the raw water inlet and the lack of a coagulation stage • Works prone to turbidity spikes following filter washing due to the fact that there is no facility to run to waste • Required the company to enter into a legally binding programme of work to improve arrangements at the site to reduce risks to water quality
12 Mar 2008 For 2 days (SVT)	Audley, Stoke on Trent	8,683	Brown discolouration due to mains burst	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures • Advice given about recording chlorine and turbidity readings from a downstream hydrant immediately following the return to supply of a repaired main, to demonstrate that the section has been adequately flushed

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28 Mar 2008 For 1 day (BWH)	Wimborne	184,376	2,4-D pesticide contamination in consumer tap sample	<p>Bournemouth and West Hampshire Water action:</p> <ul style="list-style-type: none"> • Resampled and thorough investigation of laboratory <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that company used bottles for sampling that had been used for making pesticide standards with insufficient washing • Recommended review of method for preparation and handling of pesticide standards
29 Mar 2008 For 12 hours (SVT)	Hinckley, Leicestershire	8,128	Loss of supplies due to failure of pressure reducing valve (PRV)	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Repaired faulty equipment • Review of procedures • Bypassed PRV to restore supplies • Changes were made to limit the maximum flow at the pumping station <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • PRV was not on records when job planned

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07 Apr 2008 For 3 days (TMS)	West End Lane, London NW6	118	Ground contamination with hydrocarbons	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Replaced main <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the company for regarding petrochemical odours simply as being 'usual', company did not adhere to the criteria specified in its Best Operating Practices (BOP) and did not keep appropriate records of commissioning of new main, results of samples were ambiguous • Recommended company informs the Inspectorate of how it intends to ensure that procedures within its BOP will be followed • Recommended that all petrol-type odours are escalated and, at a very minimum, the company take a number of soil samples, either during its site surveys or in response to strong odours being detected in excavations during the laying of unprotected HPPE (or similar) mains • Advice given about sampling/analysis errors
07 Apr 2008 For 1 day (WSX)	Woolcombe, south of Yeovil	500	Fragments of polyurethane lining detected at consumer's tap	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Commissioned independent investigation (WRc) • Kept consumers informed <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Quality of work by contractors inadequate • Critical that video checking by company of the relining was not robust, recommended following Code of Practice for in-situ resin lining of water mains 2007
15 Apr 2008 For 18 days (ANG)	Eight domestic properties in Thieves Lane, Rockland All Saints, Attleborough, Norfolk	20	Taste or odour due to ground contamination with hydrocarbons	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Issued a do not drink notice • Provided bottled water • Sampled affected area • Replaced main and communication pipes <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company actions robust and timely

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17 Apr 2008 For 258 days (ANG)	Alton, Ardleigh, Covenham, Elsham, Grafham, Gt. Wratting, Heigham, Maltby le Marsh, Mumby, Pitsford, Ravensthorpe, Saltersford and Stoke Ferry works, Bulk import at Tiptree, Wing.	2,527,000	Pesticide (metaldehyde) detection	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Sampling survey and engagement with EA including contribution to their metaldehyde action plan. Engagement with other catchment stakeholders including NFU, Catchment sensitive farming teams and Natural England <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management
19 Apr 2008 For 1 day (DWR)	Prestatyn, Cyneth, Meliden	10,000	Discolouration following planned work on the distribution system	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampled affected area, rezoned area (brought in water from different source), review of procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures
23 Apr 2008 For 1 day (FLK)	Folkestone (Seabrook) and Hythe areas in Kent.	1,275	Loss of supplies/poor pressure due to burst mains	<p>Folkestone and Dover Water action:</p> <ul style="list-style-type: none"> • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures, electrofusion of this fitting was incorrectly carried out • Recommended that the company puts in place a formal mechanism for audit and monitoring of work carried out by external contractors including staff training and monitoring of the contractors, competence to complete key tasks • Recommended review of arrangement for accepting incoming customer calls out of office hours • Recommended company works with the contractor to put in place a suitable procedure which covers this type of mains laying activity

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26 Apr 2008 For 9 weeks (TMS)	Sunbury East, Syon Park, Teddington, Whitton Middlesex including the West Middlesex Hospital	180,575	Loss of supplies due to burst main	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source) • Repaired main • Provided bottled water on request • Provided an alternative supply by tanker/bowser • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of risk assessment as inadequate for an extended shut of a leaking 33 inch main, risk assessment was not documented – recommended investigation into why company procedures not followed and action to ensure that risk assessment and decisions made by third party contractors are documented in future
29 Apr 2008 For 9 hours (SEW)	Hazards Green WTW. Boreham Street, Ashburnham, Kent.	1,500	Loss of supplies/poor pressure due to mains burst	<p>South East Water action:</p> <ul style="list-style-type: none"> • Flushed mains, • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate company risk assessment in respect of wider impact of actions taken to reduce pressure in one area of distribution system • Recommended guidance be given to third party contractors in the compilation of these types of documents to ensure that all risks are adequately identified and documented
02 May 2008 For 24 hours (SST)	Bourne Vale pumping station Sutton Coldfield	28,000	Discolouration due to pump start up	<p>South Staffordshire Water action:</p> <ul style="list-style-type: none"> • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended more representative sampling throughout an event. Where possible, this should include sampling both before and after any remedial action is undertaken

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03 May 2008 For 3 days (YKS)	East of Doncaster Finningley works	13,750	Loss of disinfection due to failure of charger controlling outlet flow meter	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Repaired faulty equipment • Sampled affected area • Reviewed alarm settings <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • High and low chlorine alarm limits were added to the alarm system on 7 May 2008 and a review is to be undertaken of electrical chargers and alarms at other sites • Recommended that the review into chargers is widened to ensure appropriate chlorination alarms are in place
08 May 2008 For 1 week (NNE)	Widdrington and Ulgham	250	Discolouration: due to planned work	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Review of procedures • Flushed and sampled area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Evidence of inadequate risk assessment
11 May 2008 For 48 hours (SEW)	Several properties on Ashdown Road, Forest Row. East Sussex	7,595	Coliform bacteria in distribution	<p>South East Water action:</p> <ul style="list-style-type: none"> • Flushed mains, increased chlorine residuals at service reservoir and replaced the main supplying the Ashdown road area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not keep customers informed • Inadequate procedures • Recommended reviews of policy for contacting consumers in writing, in particular when an incident is underway • Required preparation of report on learning points, detailing changes to company-wide procedures/policies, in particular those focusing on consumer communications as a result of this incident

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15 May 2008 For 1 hour (UU)	Preston and the Fylde Peninsula Franklaw works	664,803	Interruption of polyelectrolyte dosing	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Repaired faulty equipment • Revised the procedures requiring notification of events occurring at treatment works • Investigating the feasibility of making the on-site data acquisition system audible to the Process Controller • Reviewed alarm triggers and response times at all works and instructed Remote Monitoring Controllers to ensure that all alarms are passed out • Conducted incident workshops for Process Controllers • Installed a new polyelectrolyte batching system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification • Critical of lack of sampling for parameters likely to be in breach of regulations
16 May 2008 For 1 day (SVT)	Coopers Green pumping station Alsagers bank, Newcastle-Under-Lyme	23,003	Brown discolouration due to planned work	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Replaced faulty equipment • Sampled affected area • Company brought the cleaned compartment of the service reservoir back into supply early and took out the other compartment • Alarms have been re-configured at pumping station <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfactory investigation and remedial actions

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22 May 2008 For 48 hours (SEW)	Area supplied by Bewl WTW, Kent	12,567	Coliforms in distribution system	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains, increased chlorine residuals at service reservoir; proposal for long-term action, includes installation of chlorine booster <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigation into root cause, noted that there is a loss of chlorine residual within Stocks reservoir relative to other assets
27 May 2008 For 7 days (TMS)	Tidworth, Wiltshire	9,240	Elevated turbidity due to flooding	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • A raw water turbidity monitor installed at Tidworth Chalkpit water treatment works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of lack of prompt turbidity monitoring • Recommended the hi-hi turbidity alarm level be changed • Suitable shut down trigger at site required

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28 May 2008 For 1 day (DWR)	Broomy Hill works supplying Hereford and the surrounding area	121,000	Elevated turbidity and aluminium in treated water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Optimised treatment process at works • Undertook sampling survey • Installed additional monitoring capability and undertook modifications to the telemetry system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company updates its site specific treatment and disinfection policy for this works • Recommended that the company applies any updates to the policies and/or risk assessments to its other works which abstract from the River Wye, where appropriate • Recommended that the company consider installing run to waste facilities at the works as part of their review of the treatment policy for this site • Recommended that the company include all relevant sample results in any future incident reports • Recommended that the company confirms any remedial actions identified in its review of the risk assessment, site treatment and disinfection policies in an updated risk assessment provided to the Inspectorate under Regulation 28 together with any control measures required
28 May 2008 For 2 days (SRN)	Areas supplied by Testwood WTW, Hampshire	60,000	Metallic taste or odour due to raw water deterioration	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Blended supply with another source, sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff • Inadequate treatment (clarification and filtration) • Recommended improvements were made to coagulation control and the SCADA system which controls the works • Recommended that iron monitors on site were linked to telemetry control for increased visibility of monitoring and processes on site

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29 May 2008 For 1 day (DWR)	Llyswen works supplying rural areas of Powys and Herefordshire, including Hay-on-Wye, Clyro, Glasbury, Painscastle, Talgarth and Bronllys	16,000	Elevated turbidity and aluminium in treated water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Rectified problems with lime dosing plant • Optimised treatment process • Undertook sampling survey • Plans in place to replace existing lime dosing system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Variable quality raw water and insufficient process monitoring to ensure risk is managed • Recommended that the company reviews the monitoring strategy at this site and associated alarms and alarm settings • Recommended that the company review its water quality procedures for all water treatment works to ensure that appropriate, prompt and effective support is provided in response to site issues
02 Jun 2008 For 1 day (NNE)	W101, Consett, Durham	53	Loss of supplies due to mains burst	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals in the distribution system • Replaced faulty equipment • Sampled area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not forewarn customers • Lack of maintenance of equipment • Advice given about procedures in relation to the checking of critical valves to prevent a similar problem occurring in the future

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
07 Jun 2008 For 4 hours (UU)	Lostock works serving Bolton, Westhoughton, Manchester, Salford, Stockport, Macclesfield, Knutsford, Wilmslow	100,000	Elevated pH due to lime batching failure causing aluminium deposits lining the outlet main to dissolve and enter distribution	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampled the area • Repaired faulty equipment • Reinforced a previous instruction to all Remote Monitoring Controllers that they must pass alarms in accordance with procedures • Re-examined the lime dosing/phosphoric acid dosing systems <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – dosing
12 Jun 2008 For 1 day (DWR)	Llannerch works, Abergele, Rhyl and Prestatyn areas	200,800	Failure of chlorination	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Chlorination reinstated, sampling survey undertaken, investigation undertaken into cause of disinfection failure <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical that there was no site specific disinfection strategy in place as required by Regulation 26 however it was noted a company wide review of compliance with Regulation 26 was underway • Recommended that the company review what measures can be put in place for early identification of telemetry signals that are ‘frozen’ or ‘flatlining’ and implement those where appropriate • Recommended that the company review in detail the procedures for testing monitors, including those steps to be taken on completion of testing to confirm the software is operating effectively

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
17 Jun 2008 For 24 hours (SEW)	Blatchington WQ zone and Piddinghoe reservoir Eastbourne West Sussex	Up to 50,757 supplied by zone	<i>Cryptosporidium</i> in treated water	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area, shut down treatment works for short period and instated continual monitoring upon restart • Reviewed procedures, reclassified this site as Very High risk for <i>Cryptosporidium</i>, Regulation 27 risk assessment shows these as unacceptable risks <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process (filtration); potential breach of Regulation 26 • An action plan which details the proposed timescales for the installation of UV treatment and extra monitoring for turbidity has been requested from the company
20 Jun 2008 For 3 days (SWT)	Houndall works South Dartmoor and the eastern outskirts of Plymouth	18,000	Boil notice due to micro-biological contamination	<p>South West Water action:</p> <ul style="list-style-type: none"> • Issued boil notices, alternative supplies, flushed and sampled area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Valve operations resulted in connection to a raw water main • This incident remains under investigation by the Inspectorate
22 Jun 2008 For 1 day (BRL)	Purton works	100,000	Loss of supply due to power failure	<p>Bristol Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source) • Repaired faulty equipment • Review of procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of standby power generators on site and ineffective contingency arrangements with electricity supplier • Inadequate investigations into root cause • Inadequate risk assessment • Inadequate procedures • Unacceptable delay in notifying Inspectorate

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
22 Jun 2008 For 7 days (TVW)	West Horsley near Guildford, Surrey	30,000	Media interest in burst main	<p>Three Valleys Water action:</p> <ul style="list-style-type: none"> • Repaired main • Sampled affected area • Removed service reservoir from supply • Rezoned area (brought in water from different source) • Increased chlorine residuals in the distribution system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning, risk assessment did not fully take into account the higher pressures operating within the affected area, critical of not deploying mobile disinfection unit to raise chlorine residuals in depressurised area • Recommended that in future all risk assessments should take the pressures within the various DMA's fully into account prior to opening boundary valves between DMA's • Recommended when there have been multiple bursts on the system linked with positive microbiological samples from a service reservoir then booster disinfection should be installed to ensure that the distribution system is fully disinfected
25 Jun 2008 For 10 days (ANG)	Pitsford works Northampton, Daventry and Brixworth	258,000	Boil water notice due to detection of <i>Cryptosporidium</i> in treated water	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Issued a boil water notice • Drained and inspected tanks • Repaired tank vents/hatch • Installed UV treatment • Liaised with Crypto reference laboratory and Health Protection Agency to support enhanced health surveillance <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance of tank hatches/vents allowed a rabbit to gain access to treated water; good use of company website to keep consumers informed

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
25 Jun 2008 For 10 days (ANG) (cont)	Pitsford works Northampton, Daventry and Brixworth (cont)	258,000 (cont)	Boil water notice due to detection of <i>Cryptosporidium</i> in treated water (cont)	<p>(cont)</p> <ul style="list-style-type: none"> • Recommended review of policy for registration and promotion of service for consumers with special needs • Recommended review of all treatment and storage units to ensure the exclusion of vermin, birds, insects and other small animals where ingress is a possible risk. This must extend to whole sites and wider environs • Required review of Regulation 27 risk assessment methodology to ensure this hazard is both recognised and assessed, and appropriate control measures and action plans are incorporated into each of its water supply system Risk Assessments and if required, provide the DWI with revised Regulation 28 reports • Recommended the company replace the access hatches and ventilators on the GAC backwash water tank at Pitsford Works to improve security and unwanted ingress at the works • Recommended the company reviews its standing arrangements for procuring laboratory services for determining oocyst type in circumstances where this information is of potential importance to public health • Recommended company jointly evaluates the role of opinion surveys in the context of a water supply incident with the Consumer Council for Water • Recommended company ensures that all its personnel are briefed on the powers granted to Inspectors appointed under the Water Industry Act 1991 and the penalties that exist for impeding an inspector in the course of carrying out investigations

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
29 Jun 2008 For 1 day (DWR)	Builth works supplying Builth Wells and surrounding area	6,300	Elevated turbidity and aluminium levels in water leaving works at Builth	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Optimised treatment process, sampling survey, rectified problems with coagulant dosing instrumentation (streaming current detector), repaired burst main on outlet of service reservoir in distribution, tankering undertaken to maintain supplies to local distribution system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical of significant increase in flow through the works without consideration of the impact on final water quality and felt the need to remind company of duty to undertake an adequate investigation into the cause and extent of any operational failure, or apprehended failure, and take such steps as necessary to ensure the water is wholesome • Recommended a full risk assessment on all options considered in response to this incident and provide details in final report to the Inspectorate • Recommended that the company acts to ensure satisfactory re-sample results are obtained for all parameters which contravene a regulatory standard during an incident • Recommended that samples be taken for all appropriate parameters during a water quality incident to ascertain the full extent of the impact on water quality

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
01 Jul 2008 For 8 days (DWR)	Bromyard Road, Ledbury, Herefordshire	8	Microbiological contamination following planned work on the network	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey undertaken • Local mains swabbed and flushed • Boil advice issued to properties affected by the microbiological contamination • Extensive investigations undertaken into cause of contamination , a leak was found and repaired. • Investigations undertaken at affected properties to assist with resolution • Boil advice lifted following receipt of satisfactory results <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of delayed response in taking samples and recommended that company review its sampling procedures • Company commended for aspects of its liaison with affected consumers during the course of the incident
01 Jul 2008 For 4 weeks (SVT)	Dimmingsdale works Brignorth and Wolverhampton	28,743	Overdosing of fluoride in treated water leaving works	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment • Retrained staff • Review of procedures • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify Inspectorate • Did not liaise with local/health authorities • Inadequate follow-up sampling • Inadequate investigations into root cause • Inadequate training/competence of staff • Recommended staff responsible for the alteration, commissioning or operation of all plant or equipment potentially impacting on drinking water quality, are trained in line with the requirements of the Code of Practice on Technical Aspects of Fluoridation of Water Supplies 2005, and are appropriately competent, or are supervised by a competent person

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
01 Jul 2008 For 4 weeks (SVT) (cont)	Dimmingsdale works Brignorth and Wolverhampton (cont)	28,743 (cont)	High fluoride in treated water leaving works (cont)	<ul style="list-style-type: none"> • Recommended written procedures for all aspects of the fluoride improvement programme, and all other activities which may potentially affect the quality of treated drinking water. These should include a requirement for robust end-to-end testing of all control and shutdown systems • Recommended each installation, or relevant part of an installation, is checked and signed as tested and complete by a suitable senior person who has responsibility for the quality of drinking water supplied from a site • Recommended comprehensive reviews of staff training and awareness of drinking water quality standards • Recommended investigation of the reason for the lack of a response to water quality alarms further and reports back to the Inspectorate with its findings • Recommended a comprehensive review of alarm handling arrangements to ensure that alarms are a) responded to in an appropriate and timely manner and b) that records are kept of any actions taken • Recommended output of investigations is shared with other water companies to enable learning from this event • Recommended that until the cause of this failure is identified the company implement an enhanced programme of checking of similar instrument components to ensure that any deterioration is identified in a timely manner • Recommended review of the escalation procedures for results which demonstrate a failure to meet a regulatory standard, to ensure that prompt and appropriate action is taken • Recommended arrangements to ensure that it has accurate records of water quality zone delineations and ensures that these records are adequately updated • Recommended dosing arrangements at this site which are inappropriate be rectified without delay • Recommended clear, written instructions detailing actions required for alarms received during maintenance work to ensure that appropriate action is taken in a

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
01 Jul 2008 For 4 weeks (SVT) (cont)	Dimmingsdale works Brignorth and Wolverhampton (cont)	28,743 (cont)	High fluoride in treated water leaving works (cont)	<p>timely manner</p> <ul style="list-style-type: none"> • Recommended company revisits its priorities in ensuring its fluoridation arrangements meet the minimum standards required by the 2005 Code of Practice. The programme identified, together with interim control measures and action plans, should be used by the company to inform the risk assessments required under Regulation 27 of the Water Supply (Water Quality) Regulations 2000 • Recommended company reviews its triggers for notifying the Inspectorate and other stakeholders in light of this event to ensure compliance with Regulation 35 of the Water Supply (Water Quality) Regulations 2000, the Water Undertakers (Information) Direction 2004 and the Inspectorate's guidance on notifications (as detailed in DWI Information Letter 10/2007)
07 Jul 2008 For 1 day (DWR)	Broomy Hill works, supplying Hereford and the surrounding area	11,720	Elevated aluminum and turbidity in treated water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Optimised treatment process at works • Undertook sampling survey • Installed additional monitoring capability and undertook modifications to the telemetry system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company updates its site specific treatment and disinfection policy for this works • Recommended that the company applies any updates to the policies and/or risk assessments to its other works which abstract from the River Wye, where appropriate • Recommended that the company consider installing run to waste facilities at the works as part of their review of the treatment policy for this site • Recommended that the company include all relevant sample results in any future incident reports • Recommended that the company confirms any remedial actions identified in its review of the risk assessment, site treatment and disinfection policies in an updated risk assessment provided to the Inspectorate under Regulation 28 together with any control measures required

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
10 Jul 2008 For 2 weeks (SST)	Smethwick, West Midlands	278	Microbiological contamination following burst main	<p>South Staffordshire Water action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals in the distribution system • Issued a boil water notice • Repaired main • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff • Sampling was not timely enough
10 Jul 2008 For 1 day (DWR)	Maerdy works Maerdy and Porth areas	47,000	Elevated iron and turbidity in treated water leaving works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey, treatment process optimised, review of options undertaken for operational improvements at works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended review of the operation of the emergency shutdown system to ensure that shutdown is triggered promptly once predefined target settings have been breached • Recommended a review of the options available for operational improvements at works, including consideration of a run to waste facility to ensure that the plant can be restarted and the treatment process stabilised prior to pumping into supply • Advice given about decision making process to ensure triggers are set for ascertaining when remedial actions are not proving to be effective and when additional support and/or actions may be required

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
10 Jul 2008 For 1 day (DWR)	Llyswen works rural areas of Powys and Herefordshire, including Hay-on-Wye, Clyro, Glasbury, Painscastle, Talgarth and Bronllys	62,500	Aluminium and turbidity in treated water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Rectified problems with lime dosing plant • Optimised treatment process • Undertook sampling survey • Plans in place to replace existing lime dosing system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company reviews the monitoring strategy at this site and associated alarms and alarm settings • Recommended that the company review its water quality procedures for all water treatment works to ensure that appropriate support is provided in response to site issues promptly and effectively
11 Jul 2008 For 2 days (DWR)	Pendine works supplying Pendine, Whitland, St Clears, Laugharne and parts of rural South West Carmarthenshire	7,781	Elevated turbidity in treated water leaving works.	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey undertaken, treatment process optimised, review of the management of the raw water reservoir to be undertaken, raw water reservoir taken out for cleaning <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of methods for algal control in the raw water reservoir which were ineffective although action was taken to rectify this • Recommended review of the raw water protection measures at Morfa Bychan borehole • Recommended planned filter refurbishment be undertaken as soon as practicable • Recommended review of all actions considered and taken during the course of this and the other incident on 6 August to ensure that any learning points are incorporated in company procedures

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
11 Jul 2008 For 1 day (SRN)	Angmering works, West Sussex	22,800	Loss of disinfection (UV)	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at treatment works • Repaired faulty equipment • Retrained staff <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate communication caused delay in response • Inadequate training/competence of staff • Inadequate treatment process (disinfection) • Recommendations relating to disinfection and auto shutdown
11 Jul 2008 For 1 day (UU)	Blackburn, Fylde Coast, Chipping Springs, Dilworth, Dunsop Hodder works	760,000	Loss of coagulation due to failure of polyelectrolyte dosing	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampled area • Repaired faulty dosing equipment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – filtration • Inadequate treatment process – clarification • Recommended cleaning of sight glass indicating polyelectrolyte powder level to minimize blockage
14 Jul 2008 For 5 weeks (TMS)	Finmere, Oxfordshire (Anglian bulk supply)	1,026	Pesticide (metaldehyde) in a bulk supply	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Work with other stakeholders about reducing metaldehyde in the catchment of the bulk supply <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company submits a Regulation 28 report on its Regulation 27 risk assessment specifying the measures it has undertaken, or intends to undertake, to mitigate the risk of a metaldehyde recurrence • Recommended the appropriate Environmental Health Officers are notified of future events

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
15 Jul 2008 For 3 days (WSX)	Wellington, Somerset	5,000	Loss of supply/ poor pressure due to valving operations	<p>Wessex Water actions:</p> <ul style="list-style-type: none"> • Sampled area • Implemented training programme for operatives <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that method statements are revised to provide greater assistance to operators, to ensure the exact location, sequence and rate of operation is clear • Recommended that the company take immediate steps to identify matters specified by Regulation 17(2)
17 Jul 2008 For 1 day (WSX)	Chaldon Herring, near Dorchester	250	Aeration and discolouration due to mains burst	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Increased chlorine residuals at service reservoirs due to increased turbidity after mains burst • Repaired main • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Sampling was not timely enough • Inadequate procedures and geographical information systems inaccurate
18 Jul 2008 For 1 day (NNE)	Killingworth Avenue, Backworth, NE27 0AY	8	Illness complaint linked to planned work	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains • Provided bottled water on request <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate response to a consumer complaint linked to planned work • Recommended when planned work is carried out, information is provided to the staff that handle customer contacts, regarding the nature of the work being undertaken, its duration and any problems that could arise during the work, together with recommended advice

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
20 Jul 2008 For 1 day (UU)	Bolton, Westhoughton Sweetloves works	93,396	Loss of coagulation	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampled area • Repaired faulty equipment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification • Recommended strainers are checked and cleaned on a periodic basis
24 Jul 2008 For 1 day (NNE)	Teesdale and Upper Teasdale Lartington works	581,570	Loss of power leading to coagulation and disinfection failure	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at treatment works • Sampled affected area • Replaced faulty equipment • Rezoning caused a mains burst and discolouration contacts <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning • Inadequate risk assessment. Company to re-assess risk assessment for this site • Recommended reviews of procedures and audit all of their other sites for similar issues
24 Jul 2008 For 1 day (NNE)	Cramlington	5,330	Loss of supplies due to mains burst	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains • Provided an alternative supply by tanker/bowser • Repaired main <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigation into root cause

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
29 Jul 2008 For 21 weeks (BRL)	Banwell and Rowberrow works Bristol	100,000	Pesticide (metaldehyde) detection	<p>Bristol Water action:</p> <ul style="list-style-type: none"> • Sampling enhanced • Used temporary alternate raw water supplies <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management
06 Aug 2008 For 2 days (DWR)	Pendine works supplying Pendine, Whitland, St Clears, Laugharne and parts of rural South West Carmarthenshire	7,781	Elevated turbidity and iron in water leaving works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey undertaken, treatment process optimised, review of the management of the raw water reservoir to be undertaken, raw water reservoir taken out for cleaning <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • See incident on 11 July 2008
06 Aug 2008 For 18 days (YKS)	North East of Skipton Concessionary supply Barden Scale works	5	Boil notice due to microbiological contamination at treatment works	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Replaced faulty equipment • The works was chlorinated throughout • Flushed mains • Quickly issued a boil water notice • Provided bottled water on request • Installed a new UV device August 2008 <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause • Inadequate treatment process – disinfection • Recommended in future similar situations that company carries out a full investigation which includes whether treatment was operational and adequate • Commended the company for not solely relying on clear samples to indicate when to remove protective advice

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
06 Aug 2008 For 1 day (UU)	Culcheth, Croft works	11,167	Loss of disinfection due to plant failure	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampling carried out • Repaired faulty equipment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Disinfection was lost for approximately two and a half hours before it was restored, the auto-shutdown failed due to refurbishment work undertaken at the works during November 2007 • Recommended periodic checks are made on the failsafe and auto-shutdown system, to determine that the auto-shutdown continues to function satisfactorily • Recommended that future upgrade and refurbishment contracts include provision for removal of redundant equipment, cables etc and checks are made to ensure that this work is done

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
09 Aug 2008 For 3 days (DWR)	Penybont works supplying Tywyn, Aberdovey and surrounding areas	7,781	Boil notice for consumers supplied by Penybont works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Reinstated UV treatment at the works, boil advice issued on receipt of <i>Cryptosporidium</i> sample results, boil advice lifted following confirmation that all non-UV treated water had passed through the distribution system, introduced additional guidance and modified works procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical that guidance on operation of the works was not in place at the time of the incident, highly critical of lack of prompt escalation, very critical that the issue of the boil advice was delayed because set up of Incident Management Team was delayed • Recommended procedures be put in place to ensure that such incidents are escalated promptly to Senior Manager level • Recommended consultation of key stakeholders occurs at all stages where key public health decisions are considered • Recommended investigation into reason why boil advice notices were not delivered to two specific streets in Tywyn and if necessary update procedures and records for the local area
13 Aug 2008 For 7 weeks (BRL)	Purton works Mostly North Bristol	445,000	Earthy taste	<p>Bristol Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains • Blended supply with another source <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Due to vegetation being cut in canal water source • Inadequate treatment process – filtration • Inadequate communications between Bristol Water and British Waterways

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
22 Aug 2008 For 8 weeks (SVT)	Tittesworth works and Ladderedge service reservoir Stoke-on-Trent and Leek areas, Staffordshire	50,000	Triclopyr in treated water	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Blended supply with another source • Instigating catchment management with the Environment Agency and Catchment Sensitive Farming staff. • Powdered activated carbon was dosed at the works with limited success • Blending takes place in a service reservoir • Sampling carried out at the service reservoir <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Unacceptable delay in notifying Inspectorate • Ineffective communications with the Environment Agency • Recommended that the robustness of the Church Lane booster station is reviewed • Recommended continues liaison with the Environment Agency and Catchment Sensitive Farming • Recommended company explores all treatment options
22 Aug 2008 For 10 days (WSX)	Dulverton Town	2,500	Burst main	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Flushed and repaired main. Provided an alternative supply by tanker/bowser • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of risk assessment in respect of water quality and health and safety related matters in cases where work is being conducted on critical crossing or end of system mains

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
23 Aug 2008 For 5 days (YKS)	Farsley, East Leeds	173	Boil notice due to microbiological contamination	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Issued a boil water notice • Increased chlorine residuals in the distribution system • Conducted a water fittings inspection and took action in consultation with the building owner to remove the source of contamination <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Back-siphonage from industrial unit • Recommended agreeing with the Health Protection Unit whether a wider boil water notice is appropriate in these circumstances based on the evidence of that full set of sample results • Recommended more timely response to identification of contamination following continued identification of contamination within the distribution system • Recommended training of all staff is checked and where necessary training conducted accordingly. Lining gangs should not operate until they have appropriate training in place, which is adequately documented. (see <i>Incidents in 2008</i> section)
24 Aug 2008 For 2 hours (SVT)	Melbourne works supplying most of Leicestershire	870,000	Disinfection failure	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Review of procedures • Installation of emergency chlorination points • Installed alarms on slam shut valves on chlorine supply • Revised procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures • Recommended review of failsafe systems at other works to ensure circumstances not able to be repeated there

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
27 Aug 2008 For 20 days (DWR)	Mynydd Llandegai works supplying parts of North Gwynedd	66,550	Issue of boil advice due to <i>Cryptosporidium</i> in raw water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Rezoning, boil advice issued, catchment and site investigations to establish source of oocysts, UV treatment installed, boil advice lifted following successful commissioning of UV plant and confirmation that only UV treated water remained in supply <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The investigation into the source of <i>Cryptosporidium</i> was thorough, problems with issue of boil advice • Criticism made regarding slow progress with existing plans to install coagulation at the works
05 Sep 2008 For 2 hours (TMS)	Farmoor works, Oxford, Oxfordshire	2,500	Disinfection failure	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Sampled affected area • Review of procedures • Chlorination procedure contained within the Site Operating Manual (SOM) has been reviewed and updated • To ensure the contact tank inlet valve is operational, monthly testing will commence in April 2009, initiated by the company's electronic maintenance system, where a low chlorine concentration is simulated in order to trigger the failsafe system. This activity will result in the shutdown of the highlift pumps in addition to the closure of the contact tank inlet valve. • An annual maintenance programme for the chlorination system has been implemented <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that investigations by the company identified no maintenance schedule for disinfection failsafe equipment • Inadequate communication caused delay in response • Inadequate training/competence of staff • Recommend that the company review the operational procedures for chlorination, ensure that the failsafe shutdown system is functional and set up routine maintenance and testing

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
05 Sep 2008 For 2 hours (TMS) (cont)	Farmoor works, Oxford, Oxfordshire (cont)	2,500 (cont)	Disinfection failure (cont)	<ul style="list-style-type: none"> • Recommended that the contact tank valves are clearly shown and highlighted on the telemetry system when left in manual mode • Recommended that a maintenance schedule be set up for chlorination equipment and that procedures are written for its use and operational staff trained on the use of this system plan • Recommended that sampling of customer contacts during incidents should be prioritised • Recommended that the company completes an audit programme for all sites and carries out refresher training for all operational staff across the business in light of this incident, focusing on the operating procedures for disinfection, failsafe systems and plant shutdown/restart procedures • Recommended that a maintenance schedule be set up for failsafe and disinfection equipment and that procedures are written for its use
08 Sep 2008 For 1 day (NNE)	Three service reservoirs: Allendale, Catton Beacon and Keenley Fell, Parkgates (Northumberland area)	1,813	Microbiological contamination: at three service reservoirs	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir • Increased chlorine residuals in the distribution system • Removed service reservoirs from supply • Sampled area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause • Inadequate procedures • Require details of when the recommendations in the reservoir inspection reports will be undertaken • Company failed to take note and react to chlorine demand from an unknown source (see <i>Incidents 2008</i>)

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
08 Sep 2008 For 2 days (NNE)	Fowberry works Northumberland	4,586	Microbiological contamination in treated water leaving works	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals in the distribution system • Notified Environment Agency to look at catchment protection after flooding event • Carried out borehole inspections • Installed UV treatment system • Recognised need to review response to alarms and communicate this to all relevant staff <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Required company to inspect other borehole after necessary works to allow this to take place, critical of lack of inspection of borehole in supply at time of incident, required records as evidence that staff communication about alarms had taken place • Recommended revised Regulation 27 risk assessment and Regulation 28 report
12 Sep 2008 For 1 day (NNE)	Elford, Wandylaw service reservoir	192	Microbiological contamination at Wandylaw service reservoir	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Removed service reservoir from supply <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that evidence from upstream supplying works not taken into consideration when investigating the potential cause of microbiological contamination at a service reservoir • Advice given on reviewing chlorine residuals and turbidity levels as indicators of treatment works performance when investigating such a failure

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
13 Sep 2008 For 1 day (NNE)	New Scotts service reservoir Wooler, Northumberland	4,586	Microbiological contamination at service reservoir	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir • Sample tap audit carried out and identified need to change position of tap • External examination only due to operational difficulties with taking reservoir out of supply for internal inspection <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Internal inspection of reservoir not carried out, contrary to previous information given to the Inspectorate that service reservoir maintenance programme is based on a maximum cycle of five years between inspections • Recommended complete inspection and remedial works at earliest opportunity
15 Sep 2008 For 1 day (UU)	Sale, Greater Manchester	7,500	Discolouration: due to planned work	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning • Inadequate follow-up sampling • Sampling was not timely enough • Recommended use is made of network modelling prior to rezoning in areas undergoing refurbishment to minimize the possibility of a discolouration incident

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
16 Sep 2008 For 2 days (SVT)	Ilkestone area, Derbyshire	11,000	Discolouration due to mains burst	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Repaired main • Sampled affected area • Rezoned area (brought in water from different source) • Notified sensitive customers • Prepared a pre-emptive press release • Carried out modelling and produced a method statement <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Plans in place for a mains cleaning program in this area scheduled for December 2008 and February 2009 • Recommended company make arrangements to regain access to assets • Recommended company checks all critical valves prior to planned work
24 Sep 2008 For 1 day (SWT)	South Brent to Stanborough (South Devon)	1,500	Media interest due to burst main	<p>South West Water action:</p> <ul style="list-style-type: none"> • Provided bottled water on request • Provided an alternative supply by tanker /bowser • Flushed mains • Repaired main • Sampled affected area • Issued media statement • Area isolated <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Reiterated a recommendation to take samples following a burst

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
30 Sep 2008 For 1 day (NNE)	Hodkin Gardens area in Gateshead	15	Taste or odour: sulphurous due to back syphonage from dead leg of main	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Provided bottled water on request • Flushed mains • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling • Inadequate number of samples taken • Samples not analysed for appropriate parameters
02 Oct 2008 For 2 days (SEW)	Buckhurst zone Wokingham	57,000	Discolouration due to planned work on distribution	<p>South East Water action:</p> <ul style="list-style-type: none"> • Review of procedures • Sampled affected area • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment • Recommended review of risk assessment for commissioning of water mains to ensure that in all projects of this type and scale that a site visit is mandatory prior to commissioning and information pertaining to site visits (including changes to drawings, observations, site specific instructions) are reviewed and further authorised prior to final commissioning of the main • Recommended review of arrangements to ensure that for large scale operations there is downstream verification of the operation to enable early identification of water quality issues

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
07 Oct 2008 For 5 days (NNE)	Carrshields area of Northumberland Carrshield works	60	Boil notice due to microbiological contamination due to works shut down and start up	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at treatment works • Sampled affected area • Issued a boil water notice <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommend that the company ensures that alarms are dealt with in an appropriate timescale • Recommend that the company ensures its staff are competent in the understanding of adequately disinfected water • Recommend that the company takes steps to ensure that alarms cannot be accepted without being fully investigated and actioned • Recommend the company ensures that two sets clear of all microbiological indicators are reported prior to removal of boil water advice • Recommend the company monitors adequate water quality parameters at its critical control points
09 Oct 2008 For 1 day (WSX)	Isle of Portland, South Dorset	13,962	Discolouration	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Review of procedures • Sampled affected area • Reminded staff of the importance to follow procedure <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Sampling was not timely or representative of water supplied during the incident • Company operative did not follow procedures

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
14 Oct 2008 For 1 day (NNE)	Heartlands area of Bedlington	750	Boil notice due to microbiological contamination after burst on main to Bedlington reservoir	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Issued a boil water notice • Repaired main <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling • Supplied unwholesome water in breach of regulations • Inadequate procedures to ensure that work is carried out in a manner which reduces the risk of contamination • Conclude that the company cannot rule out the possibility that the planned work in Cramlington contributed to the issues in that area
17 Oct 2008 For 4 weeks (TMS)	Hampton works Greater London. Grimbury WTW, Milton Oxfordshire. Chingford South WTW, Greater London	3,000,000	Pesticide (metaldehyde) detection	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Review of procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing
20 Oct 2008 For 48 hours (SVT)	Bordesley, West Midlands	42,500	Discolouration due to planned work	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Flushed mains • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Likely cause was changes in flow due to planned valving operations. This was a trial job in preparation for further work. The Inspectorate expects the lessons learnt to be incorporated in planning the future job
22 Oct 2008 For 4 hours (SRN)	Brede WTW Hastings, Sussex	103,000	Chlorination failure	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment, sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inappropriate response to alarms leading to delays in response to the incident

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
23 Oct 2008 For 1 day (NNE)	Wingates reservoir	118	Boil notice due to Wingates reservoir running dry	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir • Sampled affected area • Repaired faulty equipment • Issued a boil water notice <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Reservoir drained down, inadequate communication caused delay in response, inadequate procedures • Enforcement action initiated for repetition of incidents with root cause being inadequate response to alarms and telemetry
25 Oct 2008 For 1 day (NNE)	Lanchester and Burn Hope Area of Sunderland	1,000	Discolouration due to third party damage of main	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Repaired main • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Under investigation
28 Oct 2008 For 48 hours (SEW)	Best Beech service reservoir Wadhurst, Sussex	2,030	Coliforms	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • By-passed service reservoir • Increased chlorine residuals at service reservoir <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause, company not able to demonstrate how failures modify maintenance regime • Recommended that where there are repeat failures at a service reservoir, sites are prioritised in maintenance programme for cleaning and inspection

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
29 Oct 2008 For 12 hours (SVT)	Bamford works Most of Derbyshire and parts of Leicestershire and Nottinghamshire	180,000	Failure of lime dosing	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment • Review of procedures • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommend that the company review the ability to reduce the pH through the works • Recommend that the company review the procedure for escalating unusual events to staff with the relevant technical expertise in a timely manner • Recommendations relating to operational sampling and results during a water quality event including appropriateness of parameters analysed • Recommend review of operating procedures • A number of other deficiencies were also identified, but the company had already taken action to address them
30 Oct 2008 For 72 hours (WSX)	Chard SR, Snowdon No.1 and No.2 Service reservoirs Somerset	12,500	Boil water advice due to microbiological contamination at three service reservoirs	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Chlorinated reservoir on finding <i>E.coli</i> • Flushed reservoir • Issued boil notices and sampled <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Flooding event due to heavy rainfall • Inadequate investigations into root cause
03 Oct 2008 For 1 day (UU)	Hodder works to the Fylde	5,000	Mains lining damage by contractors	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Main taken out of supply until reason for failure has been determined • Polyurethane lining became detached from 27 inch main causing blockage <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
02 Nov 2008 For 30 days (ESK)	Three district metered areas supplied by Hockley Tower, near Rayleigh, Essex	8,375	Taste or odour due to tank lining	<p>Essex and Suffolk Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Removed service reservoir from supply for inspection • Additional ongoing taste and odour monitoring <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Original asphalt tank lining was cause of taste and odour, applied around 1930 although condition inspections found no problems • Required investigation of whether short-circuiting takes place in the tank and any methods available to ensure there are no 'stagnant' areas within the tank. (Possibly encourage a larger diurnal variation in tank level) • Monthly taste and odour testing required (including after boiling) with GCMS screening scan • Recommended review of possible influence of seasonal change from chlorination to chloramination at the supplying treatment works on the tank lining material and any related consumer taste and odour contacts • Advice given on duration of additional sampling (two years)
02 Nov 2008 For 5 hours (NNE)	Large area downstream of Lartington works	581,570	Loss of coagulation due to flooding at works	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at treatment works • Provided an alternative supply by tanker/bowser to strategic areas • Repaired main and installed temporary ferric dosing to maintain supplies <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Pipe burst within works due to poor solvent weld joint causing flooding of plant room and loss of dosing resulting in a few discolouration complaints from customers • Inadequate contingency planning • Inadequate treatment process – clarification • Recommend audit other sites for similar problems and reassess risk assessment for this works

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
05 Nov 2008 For 3.5 hours (DWR)	Pontsticill works	100,000	Loss of coagulation at works	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey undertaken, changes made to procedures, review of automatic changeover of coagulant tanks for all works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Assessment ongoing
05 Nov 2008 For 1 day (NNE)	Westley Bank service reservoir Heydon Bridge area	750	Boil notice due to failure of sensors and Westley Bank reservoir running dry	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Replaced faulty equipment • Review of procedures • Sampled affected area • Reservoir ran dry and boil notice issued to customers <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical of the company for failure to respond appropriately to alarms at the control centre • Enforcement action recommended due to similar previous events and the company's likelihood of failing standards for iron, manganese and aluminium (see <i>Incidents 2008</i>)
05 Nov 2008 For 1 day (SRN)	Darland and Wigmore zones – near Sittingbourne in Kent	133,000	Turbidity >1NTU	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Review of procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures • Inadequate treatment process (filtration) • Inadequate communication caused delay in response • Investigation ongoing

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
05 Nov 2008 For 1 day (TMS)	Playhatch works Emmer Green area, Reading, Berkshire	20,300	<i>Cryptosporidium</i> in treated water	<p>Thames Water action:</p> <ul style="list-style-type: none"> • Shut down treatment works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – filtration • <i>Cryptosporidium</i> identified in boreholes • Recommended that the two boreholes and wellheads are fully investigated including CCTV survey to determine if there has been any significant deterioration of the lining etc since the last survey
08 Nov 2008 For 7 days (BRL)	Purton works, Littleton works, Gloucester Sharpness canal 16 water supply zones	1,052,500	Pesticide (metaldehyde) detection	<p>Bristol Water action:</p> <ul style="list-style-type: none"> • Company optimised treatment processes <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management
12 Nov 2008 For 21 days (ANG)	Thirty-four commercial properties at Norris Way, Rushden, Northants	85	Do not drink notice due to hydrocarbon ground contamination	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Replaced main <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Affected main replaced along with boundary boxes and service pipes
12 Nov 2008 For 1 day (DWR)	Individual property near Coastlands Oxwich Bay	3	Property connected to sewer not water main	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Carried out investigation on site, sampling undertaken, new connection procedures modified to include additional checks <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Assessment ongoing

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
12 Nov 2008 For 48 hours (SEW)	Tonbridge works Bloodshot zone Tonbridge in Kent	1,000	<i>Cryptosporidium</i> in treated water leaving the works	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Shut down treatment works <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process (filtration) • Required a detailed action plan highlighting timescales for replacement or repair of the tanks, installation of UV and details of monitoring which is being carried out in the interim period to quantify the ongoing risk (in particular the risk posed to the works by contaminants in catchment) • Recommended review of the integrity of the supplying boreholes (Greensands and Chalk) and review of the catchment and hydraulics which may influence the boreholes
13 Nov 2008 For 2 days (TVW)	Iver works and Egham works	750,000	Pesticide (metaldehyde) detection	<p>Three Valleys Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Regulation 27 risk assessment to be updated and Regulation 28 report submitted • Monthly sampling of raw and final waters instigated in 2009. DWI reminded company of the amendments to regulations which allow sampling in raw waters and supply points <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended close liaison with the local Environment Agency officers to assist in a catchment management approach to controlling metaldehyde • Initiated enforcement action, enabling the company to take action to control risk through catchment management

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
14 Nov 2008 For 4 weeks (SEW)	Bewl works Kent and Barcombe WTW in Sussex	325,877	Pesticide metaldehyde in treated water	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area, raw water monitoring of the area and company working with stakeholders on catchment controls <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate has initiated enforcement action requiring the company to enter into a legally binding agreement to take action to investigate and mitigate against further failures of the pesticide standard
14 Nov 2008 For 12 hours (SVT)	Llandinam works and Llandinam service reservoir Between Newtown and Llandinam, Wales	19,557	Loss of supplies due to telemetry failure causing service reservoir to empty	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Provided an alternative supply by tanker/bowser • Repaired faulty equipment • Rezoned area (brought in water from different source) • Review of procedures • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Failure to respond to original alarm regarding loss of telemetry • Inadequate procedures
14 Nov 2008 For 1 day (SVT)	Bromsberrow works Bromsberrow, Gloucestershire	21,500	Elevated nitrate in treated water	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Re-started low nitrate blend water <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Failure to act on alarms despite company procedures requiring action • Inadequate training/competence of staff • Current scheme to install ion-exchange at Bromsberrow to reduce the nitrate levels. This scheme is due for completion in March 2009. This will also ensure that the site will automatically shutdown on high nitrate levels

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
16 Nov 2008 For 2 days (SRN)	Hastings area in East Sussex	61,000	Discolouration due to mains burst	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source), sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment; company did not follow its own procedures in an area identified as being at high risk of discolouration • Recommended all appropriate risk assessments are completed prior to the operation of boundary valves • Recommended that where appropriate, modelling is conducted in advance of operation of valves • Required updated Regulation 28 report
17 Nov 2008 For 44 days (ESK)	Hanningfield, Langford, Chigwell, Barsham, Langham, Layer and Ormesby works; parts of Essex and Suffolk.	1,602,000	Pesticide (metaldehyde) detection	<p>Essex and Suffolk Water action:</p> <ul style="list-style-type: none"> • Sampling survey and engagement with EA including contribution to their metaldehyde action plan. Engagement with other catchment stakeholders including NFU, catchment sensitive farming teams and Natural England <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management
18 Nov 2008 For 2 weeks (SST)	Seedy Mill WTW and Hampton Loade WTW	894,140	Pesticide (metaldehyde) detection	<p>South Staffordshire Water action:</p> <ul style="list-style-type: none"> • Investigation including sampling surveys • Develop catchment control measures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
20 Nov 2008 For 8 hours (SEW)	Liss, Hawkley, Liphook, Bramshott, Empshott, Rake, Sheet and Greatham in Hampshire	21,255	Discolouration due to planned work on distribution system	<p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that DOMs strategy updated • Risk assessment process reviewed including tools used and staff training
20 Nov 2008 For 12 hours (SVT)	Essington and Willenhall, Wolverhampton	68,551	Discolouration due to planned work	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Review of procedures • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Prompt action taken once cause of discolouration identified • Recommended review/implementation of procedures for checking valve status and operating valves • Recommended electronic records to reflect actual status of valves
21 Nov 2008 For 1 day (SVT)	Redhill service reservoir Telford, Shropshire	12,000	Loss of supplies due to equipment failure causing service reservoir to empty	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source) • Replaced transducer <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended sensitivity of the insufficient rate of change alarm be reviewed, as it did not provide the early warning of a problem at service reservoir • Consideration still be given within DWI to appropriate actions regarding repeated events concerning the company's failure to act appropriately to alarms

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
21 Nov 2008 For 12 hours (WSX)	Dunball Village	200	Loss of supplies due to mains burst	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Mains flushed and area rezoned • Carried out notifications <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Review of procedures in light of failure to collect samples
23 Nov 2008 For 18 hours (SVT)	Cockbury service reservoir Winchcombe, Gloucestershire	3,250	Loss of supplies due to reservoir running dry	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment • Review of procedures • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Low level alarms at a reservoir were set at levels below that where customers go without water, known air lock problems at site, not the first incident involving telemetry and instrumentation • Recommended alarms at other sites are reviewed as well as the reservoir in question • Consideration still be given within DWI to appropriate actions regarding repeated events concerning the company's failure to act appropriately to alarms
24 Nov 2008 For 5 weeks (BRL)	Stowey works and Littleton works Seven supply zones affected	74,800	Pesticide (metaldehyde) detection	<p>Bristol Water action:</p> <ul style="list-style-type: none"> • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initiated enforcement action, enabling the company to take action to control risk through catchment management

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
27 Nov 2008 For 1 day (DWR)	Hirwaun works, Hirwaun, near Merthyr Tydfil	12,195	Loss of effective filtration due to maintenance activities	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Sampling survey undertaken, reduced flow through works, rezoning undertaken to minimise area supplied, filters returned to supply, report commissioned into options for filter refurbishment <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that the company failed to report this event to Inspectorate for four days. • Recommended full, documented risk assessment is undertaken in advance of any significant operational change at a water treatment works
01 Dec 2008 For 1 day (SRN)	Matts Hill Works Near Sittingbourne in Kent	133,000	<i>Cryptosporidium</i> in treated water	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Shut down treatment works • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Ongoing
02 Dec 2008 For 1 day (YKS)	Parkhill, service reservoir Wakefield supplying south west of Pontefract	18,750	Loss of supplies due to planned work	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Flushed mains • Provided bottled water on request • Review of procedures • Increased chlorine residuals at service reservoir <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Agreed with the companies' conclusions of the need to review procedures for removing the reservoirs from supply

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
03 Dec 2008 For 1 day (SVT)	Alvaston, Derby	46,465	Brown discolouration due to planned work	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment • Inadequate number of samples taken • Sampling was not timely enough • Inadequate risk assessment • Recommended that the company review their sampling response to ensure it is carried out in a timely manner and adequately reflects the area affected
04 Dec 2008 For 1 day (NNE)	Blyth area	20,000	Discolouration due to valve operations in distribution	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area • Review of procedures <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Due to risk of surface water freezing, operated the valve without care for consequences, problem related to seating of valve, did not keep customers informed • Company has now classed all work as medium in this programme due to history of discolouration • Suggest timely letter drops to keep customers informed of planned work
06 Dec 2008 For 48 hours (YKS)	Altofts area of Wakefield, West Yorkshire	6,680	Discolouration in distribution following planned work	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Provided bottled water on request • Sampled affected area • Flushed mains <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Under investigation

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
07 Dec 2008 For 1 hour (WSX)	Market Lavington (Easterton works), Wiltshire	5,175	Elevated turbidity in treated water	<p>Wessex Water action:</p> <ul style="list-style-type: none"> • Manual filter backwash, tankering to dilute reservoir and rezoning <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Turbidity due to problems with iron removal at works • Investigation ongoing
11 Dec 2008 For 12 weeks (SVT)	Redmarley, Gloucester	30	Illegal cross connection of a private borehole to the public water supply network	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Undertook a series of Water Fittings Regulations inspections • Took prompt action to isolate private water supply and protect public supply • Notice requiring remedial actions to be undertaken issued to property responsible for contamination • Regular flushing programme initiated to address low turnover in the area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended improved procedures for ensuring all samples collected are analysed • Recommended prompt notification to the Inspectorate

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
11 Dec 2008 For 3 hours (YKS)	Wensleydale and Swadedale Thornton Steward works	64,000	Loss of coagulation due to a ruptured dosing line	<p>Yorkshire Water actions:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at treatment works • Sampled affected area • Shut down treatment works • Replaced faulty equipment • Reviewed coagulation on site, calibrated on line instruments, water quality training on coagulation and dissolved air floatation processes. • Issued a briefing to scientists and production personnel of the importance of clarity about treatment process points • Issued a briefing regarding the use of mild steel pipework <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the company implements a procedure to deal with preventing partially treated water entering supply
15 Dec 2008 For 6 hours (DWR)	Llyswen works rural areas of Powys and Herefordshire, including Hay-on-Wye, Clyro, Glasbury, Painscastle, Talgarth and Bronllys	10,000	Elevated aluminium and turbidity in treated water	<p>Dŵr Cymru (Welsh Water) action:</p> <ul style="list-style-type: none"> • Rectified problems with lime dosing plant • Optimised treatment process • Undertook sampling survey • Plans in place to replace existing lime dosing system <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company reviews the monitoring strategy at this site and associated alarms and alarm settings • Recommended that the company review its water quality procedures for all water treatment works to ensure that appropriate support is provided in response to site issues promptly and effectively

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
18 Dec 2008 For 1 day (NNE)	Wideopen area of Newcastle	40,000	Discolouration due to planned work in distribution	<p>Northumbrian Water actions:</p> <ul style="list-style-type: none"> • Sampled affected area. • Manually operated valves to try and minimise the spread and impact of the discoloured water <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Assessment ongoing
18 Dec 2008 For 1 day (UU)	Crosby	3,500	Discolouration, brown due to burst main	<p>United Utilities Water actions:</p> <ul style="list-style-type: none"> • Carried out flushing • Phoned customers on special care list • Provided bottled water • Notified Health Protection Unit <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended review of procedures and risk assessment when dealing with planned work in an area known for its discolouration issues
19 Dec 2008 For 1 day (SRN)	Brede works, Beauport and Burham, Sussex and Kent area	163,000	Pesticide (metaldehyde) in raw water	<p>Southern Water action:</p> <ul style="list-style-type: none"> • Reviewing pesticide usage in the catchments • Company instigated monitoring programme for 2009 • Review of relevant Regulation 27 risk assessment • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended closer liaison with the Environment Agency • Initiated enforcement action, enabling the company to take action to control risk through catchment management

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
29 Dec 2008 For 3 weeks (SVT)	Church Wilne works supplying Nottingham and Leicestershire	366,499	<i>Cryptosporidium</i> detected in treated water	<p>Severn Trent Water action:</p> <ul style="list-style-type: none"> • Sampled affected area • Put in place such systems to prevent critical plant control programs changing to default settings without the knowledge of the plant operators <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Noted that the company have already put in place tighter controls for reloading programs and making software modifications to process control systems • Advice given for larger sample volumes during inter-stage investigations and filter backwash checks with records
30 Dec 2008 For 24 days (ANG)	Henlow, Bedfordshire	3	Do not drink advice due to hydrocarbon odour	<p>Anglian Water action:</p> <ul style="list-style-type: none"> • Issued a do not drink notice • Sampled affected area <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Required further investigation into mains lining and condition in the surrounding area • Required additional periodic sampling to determine if the problem has resolved

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
30 Dec 2008 For 36 hours (TVW)	Iver works, Wraysbury , West Drayton , Hayes , Greenford , Northolt , Yew sley , Uxbridge , Ickenham , Pinner , Ruilsp , Northwood and Watford	400,000	Air in water (white)	<p>Three Valleys Water action:</p> <ul style="list-style-type: none"> • Provided recorded message for consumers on incoming telephone system • Control bobbin on surge vessel jammed, leading to the air compressor running continuously. Alarm added to compressor system to identify when the compressor has been running for excessive periods of time • Repaired heaters to the surge vessels, which may have been associated with the control bobbin jamming • Further maintenance checks added to the scheme for the surge vessels <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inspectorate content with company actions and no further recommendations were made

Incidents in England and Wales outstanding from 2007

Date and duration (Company)	Area	Estimate of population affected	Nature and cause of the incident	Main actions and findings from the Inspectorate investigation
12 July 2007 for 13 hours (UU)	Newton le Willows	7,750	Discolouration (brown) due to mains damage by third party	<p>United Utilities actions:</p> <ul style="list-style-type: none"> • Provided bottled water on request • Blended supply with another source <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • New valve was installed without checking causing brown waters • Company to review suitability of temporary fittings used in mains rehabilitation
10 Aug 2007 For 7 hours (SWT)	Bovey Cross works Moreton-hampstead	3	Health and Safety incident due to incorrect chemical delivery	<p>South West Water action:</p> <ul style="list-style-type: none"> • Precautionary hospitalisation of three people • Reported 'Dangerous Occurrence' to the Health and Safety Executive • Building vented and tank contents removed from standby tank for disposal • Reviewed procedures with supplier and third party chemical delivery company • Disciplinary action <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Errors by operator and supplier in making the chemical delivery • No effect on water quality • Liaison with Health and Safety Executive to ensure their findings taken into account • Minded to recommend a review of chemical delivery procedures, but this had been done • Recommended refresher training and documentation