

Annex 3

Significant, serious and major drinking water quality events

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|-------------------------------|---|
| 05 Jan 2010 For 14 hours (SVT) | Eyton works, near Telford, Shropshire. | 1,625 | Loss of blending. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Sampled affected area. • Repaired faulty equipment. • The company has carried out a full root cause analysis of this event and made changes, including a review of its procedures for monitoring new valve installations and reiteration of the need for prompt investigation of water quality events to staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Following the installation and commissioning of the new valve in September 2009, problems were experienced by the company which resulted in a failure of blending control and elevated nitrate levels in the Eyton Low Level distribution system. • Critical of internal and external communications and lack of thorough investigation. <p>Risk classification: significant</p> |

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|-------------------------------------|--|---------------------------------|--|---|
| 05 Jan 2010 For 33 days (DWR) | Maerdy, Ferndale and parts of Rhondda Valley | 56,000 | Brown discolouration due to problems with coagulation. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Introduced further treatment. • Optimised treatment. • Reviewed drinking water safety plan. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not follow company procedures for notifying the Inspectorate or other external bodies. • Inadequate treatment process – coagulation and filtration. • Recommended the company investigate whether action required to clean and/or maintain the distribution system to minimise discolouration and whether there is a need to take action to ensure that any iron entering the distribution system does not cause future discolouration contacts from consumers. • Critical that the company failed to gain control of the water quality leaving this site for over a month. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Wales report)</p> |

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|------------------------------------|---|---------------------------------|--|--|
| 06 Jan 2010 For 2 days (UU) | Ellesmere Port, Wirral and surrounding area | 34,250 | Brown discolouration: due to burst on private supply. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Advised consumers to trickle flush their taps. • Briefed key customers on need to communicate any water supply issues or change in operations in the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling. <p>Risk classification: significant</p> |
| 09 Jan 2010 For 13 days (UU) | Crewe and Nantwich | 143,803 | Chlorine taste and odour due to raw water deterioration. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Sampled affected area. • Increased water from other source. • Introduced powdered activated carbon. • Introduced lime dosing earlier in process. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate initial investigations. • Company had made changes to the treatment process in 2009 which resulted in compromised treatment. • Poor response by company in respect of consumer complaints. • Poor understanding of break-point chlorination. • The severe adverse weather conditions contributed to this event. <p>Risk classification: serious</p> <p>(see the <i>Drinking water quality events</i> section of the Northern regional report)</p> |

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|------------------------------------|---|---------------------------------|---|--|
| 11 Jan 2010 For 9 days (NNE) | Greenside service reservoir supplying Greenside, Prudhoe, Ryton and Stocksfield | 13,953 | Loss of supplies/poor pressure due to burst main. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Provided an alternative supply by tanker/bowser. • Repaired main. • Sampled affected area. • Company have project to replace pumps at Wylam to improve resilience in the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfied with company response. <p>Risk classification: significant</p> |
| 11 Jan 2010 For 2 days (YKS) | Ripon | 25,000 | Brown discolouration due to increased pumping. | <p>Yorkshire Water Services Ltd 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"> • Supplied unwholesome water. • Sample results for iron, aluminium, manganese and turbidity above the standards. <p>Risk classification: significant</p> |
| 13 Jan 2010 For 2 days (UU) | Heswall area of the Wirral | 62,000 | Brown discolouration due to burst main. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Provided an alternative supply by tanker/bowser. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Commended actions taken to maintain supplies from Heswall Service reservoir during the period of repair. • Criticised the lack of microbiological checks filling reservoir from an alternative source. <p>Risk classification: significant</p> |

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|------------------------------------|--|---------------------------------|---|---|
| 13 Jan 2010 For 5 days (YKS) | Chapel Allerton, Leeds | 3 | Sulphurous odour due to microbiological contamination in a dead leg main. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Connected school to an alternative main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied water unfit for human consumption, but transferred school to alternative supply immediately. <p>Risk classification: significant</p> |
| 15 Jan 2010 For 4 days (UU) | Prescot works, supplying south Liverpool and West Prescot | 382,056 | <i>Cryptosporidium.</i> | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Investigation of the treatment works. • Undertook genotyping of the oocysts. • Reviewed relevant risk assessment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that the company put in place robust processes and procedures to prevent rapid flow changes at the works. • Recommended that the company ensure staff are fully aware of the potential impact of flow changes and the recommendations of the Badenoch and Bouchier reports. • Recommended the company take all possible actions to ensure accurate turbidity monitoring at the works and no discrepancies between laboratory and on-line results. <p>Risk classification: significant</p> |

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| 16 Jan 2010 For 1 day (TMS) | Farmoor works supplying areas of Banbury, Bicester, Oxford and Swindon | 517,000 | <i>Cryptosporidium</i> . | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Repaired faulty pre-ozonation equipment. • Subsequent final water samples contained no <i>Cryptosporidium</i> oocysts. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. <p>Risk classification: significant</p> |
| 18 Jan 2010 For 11 days (SVT) | Bromsberrow, Gloucestershire | 22,137 | Pesticide (Diuron). | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Took borehole out of supply. • Investigated with EA and Natural England. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested company reviews its pesticide monitoring strategy and risk assessment to ensure that it has appropriate raw water sampling in place to identify pesticides that have a significant potential to present a risk. • Suggested company ensures that all samplers who are likely to visit a site have the relevant training and equipment to allow them to sample from all possible locations. <p>Risk classification: significant</p> |

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| 20 Jan 2010 For 24 hours (NNE) | Warkworth works supplying the North Tyneside area | 161,000 | <i>Cryptosporidium.</i> | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – filtration. • Inadequate procedures. • Criticised the company for lack of site specific disinfection policy. • Recommendation following site audit in May that the company should develop a site specific disinfection policy to meet the requirements of Regulation 26. <p>Risk classification: significant</p> |
| 20 Jan 2010 For 1 day (WSX) | Rockwell Green, Wellington, Somerset | 3,900 | Brown discolouration due to mains burst. | <p>Wessex Water Services Ltd 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"> • Critical that the plans available to the Network Technician did not correlate with the mains layout on site. • Delay in mains isolation. • Recommended that company ensure asset records are updated in light of this event. <p>Risk classification: significant</p> |

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| 21 Jan 2010 For 3 days (SVT) | Bromsgrove, Worcestershire. | 245 | Burst main due to damage by third party. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Flushed mains. • Issued a boil water notice. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was dissatisfied with the company procedures for issuing Precautionary Advice Notices to consumers. However, following this event the company amended their procedures. • Critical that the company made several attempts to chlorinate the main during this event but were unable to do so. • Samples not analysed for appropriate parameters. <p>Risk classification: significant</p> |
| 21 Jan 2010 For 17 hours (NNE) | Chester Road, Stanley, County Durham | 6,069 | Sulphurous taste and odour due to valve operations following burst main. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied water in breach of regulatory standards due to valve operations. • Company could not explain the delay between stagnant water entering supply and consumers complaining. • Suggest company review DOMS and flow and pressure data for the area. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section Northern regional report).</p> |

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| 21 Jan 2010 For 2 days (TMS) | Welling, Kent | 8,775 | Loss of supplies/poor pressure. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling. • Inadequate training/competence of staff. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Thames regional report)</p> |
| 22 Jan 2010 For 4 days (TMS) | Reading area | 12,240 | Brown discolouration. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. <p>Risk classification: significant</p> |

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|-------------------------------------|--|---------------------------------|-------------------------------|--|
| 22 Jan 2010 For 6 weeks (SVT) | South Nottingham and parts of Leicestershire | 366,449 | <i>Cryptosporidium.</i> | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Reduced output. • Conducted investigations of works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Critical that while it is common practice for the company to bring the dissolved air floatation plant on and off line in response to changing demands and to maximise energy savings, the company does not have a formal procedure for commissioning and decommissioning the plant. • Suggested that company ensures risks associated with raw water contaminants at Church Wilne are incorporated in the company's Regulation 27 risk assessment. • The Inspectorate was critical of company compliance with Regulation 26, however, since the time of the event the company has made improvements at the works to ensure compliance with Regulation 26. • It was suggested that it would be beneficial for the company to be able to determine the level of iron in water entering the filters. <p>Risk classification: significant</p> |

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| 25 Jan 2010 For 1 day (UU) | Huntington works supplying parts of Cheshire and Merseyside | 1,500,000 | <i>Cryptosporidium.</i> | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment – clarification. • Inadequate site start up procedures. <p>Risk classification: significant</p> |
| 26 Jan 2010 For 1 day (YKS) | Blackmoorfoot works supplying areas of Huddersfield, West Yorkshire | 70,000 | <i>Cryptosporidium.</i> | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the company reviews the Regulation 27 risk assessment in light of this event and, if appropriate, provide an updated copy of the Regulation 28 report to the Inspectorate. <p>Risk classification: significant</p> |
| 27 Jan 2010 For 2 days (VCE) | Littlebury Green, Saffron Walden | 150 | Musty taste or odour. | <p>Veolia Water Central action:</p> <ul style="list-style-type: none"> • Retrained staff. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Initial flush exacerbated the situation • Inadequate training/competence of staff. • Incorrect valve arrangement for task. • Company unaware of pipe material. <p>Risk classification: significant</p> |

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|------------------------------------|---|---------------------------------|-------------------------------------|--|
| 27 Jan 2010 For 3 days (SVT) | Butterhill, Stoke on Trent, Staffordshire | 10,039 | Discolouration due to planned work. | <p>Severn Trent Water Ltd 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 number of samples taken. • Recommended that the company conducts a full review of its sampling strategy during events to allow it to comply with Regulation 17 of the Water Supply (Water Quality) Regulations 2000 (amendment). <p>Risk classification: significant</p> |
| 29 Jan 2010 For 2 days (TMS) | Twickenham. Middlesex | 24,175 | Discolouration. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Updated geographical information systems (GIS) records <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. <p>Risk classification: significant</p> |

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|-----------------------------------|--------------------------------|---------------------------------|-------------------------------|--|
| 29 Jan 2010 For 1 day (SRN) | Selling works, Thanet, Kent | 100,000 | Loss of disinfection. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Flushed mains and chlorinated reservoir. • Sampled affected area. • The company also took disciplinary action against a member of staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Recommended changes to automatic site shut down and alarm handling. • Recommended that the time taken for an automatic shutdown of the works be reviewed and reduced if appropriate. • Suggested review of maintenance programme for the motive water dosing lines at all sites to ascertain whether or not current maintenance requirements are adequate and fit for purpose. • Suggested the company reviews and updates risk assessment for the site in light of this event. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Southern regional report)</p> |

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|-------------------------------------|-----------------------------------|---------------------------------|--|--|
| 04 Feb 2010 For 6 hours (DWR) | Cwellyn works, near Caernarfon | 8,000 | Temporary loss of power leading to undisinfected water leaving site. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Shut down of works. • Repaired faulty switch gear. • Flushed mains. • Booster chlorination of service reservoir. • Sampling survey. • Reviewed and revised procedures. • Completed upgrade to Cwellyn on 25 March 2010. • Carried out investigation into the failings of the electrical mains switchgear. • Checked the status of similarly configured treatment works to ensure shutdown systems were sufficient. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Highly critical that inadequate checks were made at site during the power failure. • Highly critical of the unsatisfactory shutdown system at Cwellyn works. • The completed upgrades now in place at the works have changed the process stream and therefore the circumstances which led to this event are unlikely to recur. <p>Risk classification: serious</p> <p>(see the <i>Drinking water quality events</i> section of the Wales report)</p> |

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|-------------------------------------|---|---------------------------------|-------------------------------|--|
| 08 Feb 2010 For 3 days (ANG) | Grimsby and Skegness | 301,360 | <i>Cryptosporidium</i> . | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Revised risk assessments. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • The company thoroughly investigated and revised its risk assessments. <p>Risk classification: significant</p> |
| 09 Feb 2010 For 6 weeks (TMS) | Coppermills works affecting north-east London | 2,000,000 | Taste and odour. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Stopped abstraction from contaminated source. • Affected storage reservoirs removed from supply. • Alternative raw water used. • Ozone concentration increased. • Identified chemical and source. • Review of risk assessment. • Extensive sampling of raw water and treated water. • Issued information to consumers and media. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • (see the <i>Drinking water quality events</i> section of the Thames regional report) <p>Risk classification: serious</p> |

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|-------------------------------------|--------------------|---------------------------------|--|--|
| 11 Feb 2010 For 5 weeks (ESK) | Chigwell, Essex | 15,000 | Taste or odour due to chemicals in raw water. | <p>Essex and Suffolk Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Ozone concentration increased. • Worked with Thames Water to identify chemical and source. • Alternative source of raw water provided as bulk supply. • Review of risk assessment. • Issued information to consumers and media. • Liaised with stakeholders. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • (See the <i>Drinking water quality events</i> and <i>Chemical quality</i> sections of the Eastern regional report). <p>Risk classification: serious</p> |
| 12 Feb 2010 For 12 hours (UU) | Oldham, Lancashire | 33,000 | Interruption to pH dosing leading to elevated turbidity. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow up sampling. • Inadequate treatment – lime dosing. • Critical of failure of automatic shutdown alarms on site. <p>Risk classification: significant</p> |

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|------------------------------------|--------------------------------|---------------------------------|---|--|
| 13 Feb 2010 For 2 days (SVT) | Hinckley, Leicestershire | 20,886 | Burst main. | <p>Severn Trent Water Ltd action:</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"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 16 Feb 2010 For 3 days (YKS) | Goldthorpe, South Yorkshire | 2,000 | Loss of supplies due to third party damage to main. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Replaced main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company acted appropriately to protect consumers by sampling the area, rezoning supplies and informing consumers. <p>Risk classification: significant</p> |

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|------------------------------------|--------------------------------------|---------------------------------|-------------------------------|---|
| 19 Feb 2010 For 1 day (SRN) | Whitchurch works, Andover, Hampshire | 5,810 | Elevated turbidity. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Review of procedures. • Drained reservoir to waste. • Company reviewed reservoir cleaning programme. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – disinfection. • Recommended that the boreholes at this site are inspected as the company is unable to provide details of last inspection date. • Recommended that monitors accurately reflect the quality of water, especially when linked to site shutdown. • Recommended review of Regulation 28 risk assessment. <p>Risk classification: significant</p> |
| 08 Mar 2010 For 2 days (SEW) | Burham, Kent | 44,150 | Pesticide (carbetamide). | <p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Liaised with Southern Water about bulk supply quality. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • DWI was satisfied with the handling of this event. <p>Risk classification: significant</p> |

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| 08 Mar 2010 For 4 days (SRN) | Burham, Kent | 332,000 | Pesticide (carbetamide). | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. • Revised regeneration time for GAC. • Notified South East Water and the Environment Agency. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment – regeneration period for granular activated carbon was inappropriate. • Recommendations made regarding inadequate checks of media. • Suggested revision of risk assessment. <p>Risk classification: significant</p> |
| 11 Mar 2010 For 24 hours (DWR) | Pontsticill works supplying zones near Merthyr Tydfil, Aberdare and Caerphilly | 250,000 | Microbiological contamination at treatment works. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Inspected final water reservoirs. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations were made, however, the Inspectorate suggested interstage sampling forms part of any similar investigation. <p>Risk classification: significant</p> |

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| 11 Mar 2010 For 4 days (DWR) | Gelligaer, north of Cardiff | 200,000 | Brown discolouration due to a burst main. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Repaired main. • Flushed mains. • Rezoned area (brought in water from different area). • Sampled affected area. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied unwholesome water in breach of regulations. • Following a similar event in August 2009, the company entered into a legally binding programme of work to investigate and mitigate discolouration of supplies in this area. <p>Risk classification: significant</p> |

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| 11 Mar 2010 For 6 days (SRN) | Tyford Moors works, Hampshire | 150,000 | Loss of disinfection. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Shut down treatment works. • Increased chlorine residuals at treatment works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Sampling was not timely enough. • Critical that despite the facility for the works to auto shut down on low chlorine the borehole pumps continued to run. • Inadequate treatment process – disinfection. • Inadequate procedures. • Recommended that the company reviews procedures for regulating the access of contractors to site and briefs all operatives on the importance of site security. • Recommended that the company reviews the control philosophy of the auto shut down facility to ensure the site shuts down under all circumstances when the shut down levels are triggered. • Recommended that the company also considers installing auto works shut down in response to high turbidity on the raw water. • Recommended that the company ensures that appropriate sampling is undertaken when investigating events. <p>Risk classification: significant</p> |

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| 15 Mar 2010 For 30 hours (SST) | Cawney Hill, West Bromwich, Walsall, Sedgley Darlasto. West Midlands | 120,000 | Burst main. | <p>South Staffordshire Water Plc action:</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"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 21 Mar 2010 For 1 hour (UU) | Huntington works supplying parts of Cheshire and Merseyside | 1,500,000 | Loss of disinfection. | <p>United Utilities Water Plc 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"> • Critical that water with no chlorine residual left site undetected for 40 minutes. • Critical of lack of low chlorine alarm visibility on site. • Critical of lack of site shutdown. <p>Risk classification: significant</p> |

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| 23 Mar 2010 For 12 hours (DWR) | Capel Dewi, near Carmarthen | 27,000 | Turbidity greater than 1NTU. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Reviewed and amended procedures. • Replaced faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that actions were not taken during the commissioning of the filter, which would have prevented high turbidity entering the process in the event of the outlet valve failing. • Recommended that the programme of works was reviewed and the installation of the shutdown was prioritised. <p>Risk classification: significant</p> |
| 26 Mar 2010 For 1 day (TMS) | North Orpington works supplying areas of south east London | 229,400 | Microbiological contamination. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Investigated works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. <p>Risk classification: significant</p> |

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|-------------------------------------|-----------------------------------|---------------------------------|---|---|
| 31 Mar 2010 For 4 hours (SRN) | Matts Hill works, Medway, Kent | 145,877 | Elevated turbidity. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Shut down treatment works. • Briefed staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inspectorate was highly critical that the cause of the plant shut down was not investigated fully prior to restarting the works. <p>Risk classification: significant</p> |
| 01 Apr 2010 For 7 days (SVT) | Newtown, Powys, Wales | 23,663 | Brown discolouration due to planned work. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Repaired faulty equipment. • Reviewed and improved procedures. • Identified a blockage in main. • Tankered water to area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Supplied water unfit for human consumption. • Suggested company prioritised the inspection of all downstream assets to ensure no mains swab debris was present. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|----------------------|---------------------------------|-----------------------------------|--|
| 02 Apr 2010 For 11 hours (YKS) | Headingley, Leeds | 58,000 | Discolouration due to burst main. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. • Rezoned area (brought in water from different source). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfactory investigation and actions. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|-------------------------------|---|
| 03 Apr 2010 For 12 hours (SEW) | Hazards Green works, Bexhill on Sea, East Sussex | 45,228 | Loss of disinfection. | <p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Shut down treatment works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – disinfection. • Inadequate treatment process – dosing. • Inadequate procedures. • Recommended that the company review all treatment works inlet valves and monitors to ensure correct operation and as part of the review assess the appropriateness of maintenance schedules. • Recommended that the company improve their reporting and recording to ensure that there is an auditable trail showing when water is in supply and when it is being run to waste and that all data provided is consistent. • Recommended that the company ensure that procedures regarding the use of the emergency override are followed and suitably documented. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|----------------------------------|---------------------------------|---|---|
| 13 Apr 2010 For 4 days (YKS) | Huddersfield, West Yorkshire | 6,250 | Discolouration due to burst main. | <p>Yorkshire Water Services Ltd 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 follow-up sampling. <p>Risk classification: significant</p> |
| 16 Apr 2010 For 12 hours (SRN) | Southampton and surrounding area | 60,000 | Brown discolouration due to planned work. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Sampled area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested that the company considers undertaking hydraulic modelling prior to any work where discolouration may occur. • Suggested the company uses the information gained during this event to update their DOMS (Distribution, Operation and Maintenance Strategy). <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|----------------------------------|---------------------------------|---|--|
| 17 Apr 2010 For 4 days (YKS) | Batley, West Yorkshire | 78 | Issue of Boil Notice due to burst main. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Issued precautionary boil water notice due to extent of damage caused by burst. • Portable booster chlorinator on site to increase residual chlorine in the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfactory investigation and actions. <p>Risk classification: significant</p> |
| 20 Apr 2010 For 3 days (NNE) | Forest Hall area of Newcastle | 59,350 | Brown discolouration due to planned work. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Sampled affected area. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of unreliable alarm responses from turbidity monitor which were used to inform and support operational procedures. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|---|--|
| 20 Apr 2010 For 7 days (UU) | Penrith in Cumbria and surrounding area | 3,750 | Higher than usual residual chlorine following disinfection failure. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Flushed mains. • Replaced faulty equipment. • Removed service reservoir from supply. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment – overdosing chlorine. • Inadequate investigations into root cause. • Inadequate communication caused delay in response. • Samples not analysed for appropriate parameters. <p>Risk classification: significant</p> |
| 30 Apr 2010 For 2 days (NNE) | Shilbottle service reservoir supplying north Tyneside | 25,000 | <i>E.coli.</i> | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Isolated reservoir from supply. • Sampled affected area. • Sample point relocated. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that sample point was highlighted as inappropriate in 2008 and had not been moved. • One of several microbiological failures at associated reservoirs. • Enforcement action considered. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|---|
| 10 May 2010 For 4 hours (TMS) | Walton works supplying areas of south west London | 39,165 | Loss of disinfection. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Shut down treatment works. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. <p>Risk classification: significant</p> |
| 10 May 2010 For 11 days (UU) | Rossendale near Oldham, Lancashire | 300 | Cross connection with a private supply. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Issued a boil water notice. • Rezoned area (brought in water from different source). • Sampled affected area. • Disconnected spring supply from mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • United Utilities followed good practice to reduce the risk to private supply users. • Event should be used as training example within the company for good collaborative work with stakeholders. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|---|---|
| 19 May 2010 For 2 days (DWR) | Prestatyn, Denbighshire | 23,388 | Brown discolouration due to planned work. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Pre-warned consumers. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied water unfit for human consumption. <p>Risk classification: significant</p> |
| 20 May 2010 For 10 days (UU) | Parts of the Wirral including Wallasey, near Merseyside | 127,000 | Loss of supplies/poor pressure due to planned work. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Provided an alternative supply by tanker/bowser. • Repaired main. • Repaired faulty equipment. • Provided bottled water on request. • Rezoned area (brought in water from different source). • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Poor asset information. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|-------------------------------|---|
| 20 May 2010 For 1 hour (UU) | Huntington works supplying parts of Cheshire and Merseyside | 1,548,909 | <i>Cryptosporidium.</i> | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. • Carried out reviews of procedures and audited the site. • Identified the need for investment in the backwash water treatment process. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of lack of robustness of treatment processes during power dips and/or shutdown and start up. <p>Risk classification: significant</p> |
| 21 May 2010 For 3 hours (SES) | Woodmansterne works supplying the areas of Burgh Heath and How Green, Surrey | 111,627 | Compromised disinfection. | <p>Sutton And East Surrey Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Sampled affected area. • Updated procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Unacceptable delay in notifying Inspectorate. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Thames regional report)</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-----------------------------------|---|---------------------------------|-----------------------------------|---|
| 21 May 2010 For 1 day (SWT) | Portworthy reservoir supplying areas of Plympton and Plymouth | 3,370 | Microbiological contamination. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Conducted external site inspection and planned in an internal inspection. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Recommended company adopts a risk-based approach to its service reservoir maintenance and inspection programme. • Recommended company review the sampling facilities at all its service reservoirs and ensures representative samples. <p>Risk classification: significant</p> |
| 25 May 2010 For 1 day (UU) | High Newton, Cumbria | 12,785 | Discolouration due to burst main. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Flushed affected area. • Sampled area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Discolouration was short-lived. • Appropriate company response. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|-------------------------------|--|
| 26 May 2010 For 1 hour (DVW) | Legacy works supplying the Wrexham area | 43,700 | Turbidity greater than 1NTU. | <p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Replaced faulty equipment. • Ran the undisinfected water to waste. • Installation of automatic shutdown linked to turbidity and chlorine monitors. • Review of procedures. • Post contact chlorine residual added to the telemetry system. • Retrained staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations or suggestions. • Water of suspect quality contained on site. <p>Risk classification: significant</p> |
| 26 May 2010 For 12 days (DVW) | Wrexham area | 16,000 | Brown discolouration. | <p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Sampled small part of affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Inadequate treatment process – filtration. • Inadequate number of samples taken. • The Inspectorate initiated enforcement action requiring the company to enter into a legally binding agreement to take action to investigate and mitigate the risk associated with discolouration in this distribution system and related problems at the treatment works. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|----------------------------|---------------------------------|---|--|
| 30 May 2010 For 27 hours (UU) | Bromborough, Wirral | 46,327 | Brown discolouration associated with an increase in flow from Sutton Hall works. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Information should be taken into account in DOMS. <p>Risk classification: significant</p> |
| 01 Jun 2010 For 24 hours (ANG) | Upton, Northamptonshire | 12 | Microbiological contamination due to cross connection with rainwater harvesting system. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Review of procedures. • Retrained staff. • Issued a boil water notice. • Revised risk assessments. • The company contacted all property developers in their area to locate rainwater harvesting schemes and to remind them of their responsibilities and associated BSI Codes of Practices. • The company revised procedures for inspections of properties with rainwater systems. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Samples not analysed for appropriate parameters. • Inadequate risk assessment. • Inadequate procedures. • The Inspectorate supported the company's initiative for industry wide action and learning. <p>Risk classification: serious</p> <p>(See the <i>Drinking water quality events</i> section of the Eastern regional report).</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|---|---|
| 04 Jun 2010 For 5 hours (NNE) | Houghton-le-spring, Tyne and Wear | 155 | Brown discolouration due to flow changes. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Recommended that the company review the site operating manual and make appropriate amendments where necessary to ensure all information contained within the site operating manual is accurate. <p>Risk classification: significant</p> |
| 07 Jun 2010 For 4 hours (UU) | Prescot works, supplying south Liverpool and west Prescot | 380,000 | Disinfection. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Sampling response. • The company has carried out a technical review of the treatment process and changes to mitigate the identified risks. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. • Recommended that the company produce up to date site specific disinfection policy for all its water treatment works. • There were three events at this works in 2010. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--------------------------------------|---------------------------------|-------------------------------|--|
| 07 Jun 2010 For 7 weeks (SEW) | Blackhurst works, Tunbridge Wells | 49,599 | Musty taste or odour. | <p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Blended supply with another source. • Flushed mains. • Sampled affected area. • Rezoned area (brought in water from different source). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Recommendations made regarding inadequate procedures. • Recommendations made regarding inadequate risk assessment. • Recommendations made regarding analysis as samples not analysed for appropriate parameters. • Recommendations made – Inadequate number of samples taken. <p>Risk classification: significant</p> <p>(see <i>Drinking water quality events</i> section)</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|-------------------------------|---------------------------------|---|--|
| 10 Jun 2010 For 2 days (BRL) | Bradley Stoke, Bristol | 10,140 | Brown discolouration due to mains burst. | <p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Flushed mains. • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested future work on the network be risk assessed and mitigation measures put in place. • Suggested company reviews response time for sampling during an event. <p>Risk classification: significant</p> |
| 11 Jun 2010 For 3 days (NNE) | Longbenton, Northumberland | 42,990 | Discolouration due to mobilisation of network deposits. | <p>Northumbrian Water Ltd 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"> • Cause of discolouration was mains deposits • Zone awaiting cleaning as part of a legally binding programme of work. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---|---------------------------------|--------------------------------|--|
| 15 Jun 2010 For 2 days (DVW) | Chester and North East Wales | 160,000 | <i>Cryptosporidium.</i> | <p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Process investigation undertaken. • The company audited the laboratory. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • This event was caused by a false positive laboratory result. • No recommendations or suggestions were made. <p>Risk classification: significant</p> |
| 17 Jun 2010 For 24 hours (SEW) | Barcombe No 2 works, Barcombe, Beacon, Cuckfield Sussex | 48,154 | Microbiological contamination. | <p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Reviewed works performance. • Reviewed analytical procedure and analytical controls. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended that sample tap review and remedial work is prioritised. • Suggested that the company contact the manufacturer of the test microbiological media (analytical) to verify that there were no issues with the microbiological media batch in question. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|---|--|
| 23 Jun 2010 For 1 hour (UU) | Huntington works supplying parts of Cheshire and Merseyside | 1,500,000 | Elevated turbidity due to equipment failure. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Company has identified upgrades to the control instrumentation. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company should review and update the site risk assessment. • Critical that the emergency lime dosing system cannot be controlled adequately. • Did not sample for appropriate parameters. • Required the company to improve disinfection control on site. <p>Risk classification: significant</p> |
| 29 Jun 2010 For 6 hours (HPL) | Woodstock Way, Hartlepool | 463 | Loss of supplies/poor pressure due to planned work. | <p>Hartlepool Water Plc 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"> • Inaccurate asset plans resulted in incorrect valve operation. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--------------------------------|---------------------------------|--|--|
| 30 Jun 2010 For 1 day (SRN) | Horsham, Surrey | 10,000 | Brown discolouration. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Flushed mains. • Sampled affected area. • Long-term actions include improved pumping arrangements from upstream treatment works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the handling of this event by the company <p>Risk classification: significant</p> |
| 01 Jul 2010 For 12 hours (UU) | Sutton Hall area of the Wirral | 67,126 | Brown discolouration: due to increased flow in trunk main. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Issued a boil water notice to a single property. • Sampled affected area. • Isolated pump from contact tank to prevent further high flows. • Restricted flows into contact tank. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Samples not analysed for appropriate parameters. • Inadequate follow-up sampling. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|--|
| 02 Jul 2010 For 1 day (BWH) | Alderney works supplying areas of Bournemouth | 88,000 | Microbiological contamination. | <p>Bournemouth and West Hampshire Water action:</p> <ul style="list-style-type: none"> • Collected samples. • Found sample line had additional connections to equipment presenting a potential backflow risk and is against company policy. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause and failed to link failures in zones to a known risk at the works which had not been mitigated. • The Inspectorate initiated enforcement action. • Filtered water was allowed to bypass disinfection due to a design fault where treated water reservoir located under slow sand filters and seals on vents created an inherent hazard. • Company have entered into a legally binding programme of work to remedy the faults. <p>Risk classification: significant</p> |
| 02 Jul 2010 For 20 days (YKS) | Part of North Yorkshire including Bedale, Leyburn, Wensleydale, Masham and Northallerton | 43,000 | Earthy musty tastes and odours due to algae in the raw water. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Review of procedures. • Revised risk assessment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify Inspectorate initially. • Inadequate contingency planning. • Inadequate number of samples taken. • Company should prioritise planned replacement of powdered activated carbon dosing. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---|---------------------------------|--|---|
| 05 Jul 2010 For 15 hours (SWT) | Exmouth, Devon | 250 | Brown discolouration due to mains burst. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Collected samples. • Provided alternative supplies, bowsers and overland riders. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 05 Jul 2010 For 3 days (UU) | Tosside works supplying Skipton | 87 | Elevated turbidity. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Review of procedures. • Filter installed to remove iron from raw water. • Procedures updated to ensure consumer notices are delivered to the correct location. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate treatment process – filtration. • The raw water turbidity monitor was not commissioned at the time of the event. <p>Risk classification: significant</p> |
| 05 Jul 2010 For 1 day (UU) | Castle Carrock works supplying Carlisle and surrounding areas | 106,000 | Loss of coagulation. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Sampled affected area. • Shut down treatment works. • Changes made to process control and alarm settings and to proactive maintenance programme. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – clarification. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|------------------------------|---------------------------------|--|--|
| 05 Jul 2010 For 5 days (ANG) | Finkle Green, Halstead | 5 | Do not drink notice issued due to cross connection with a custom built system rainwater harvesting system. | <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"> • The company's investigation determined a link to the property's broken solar heating panel and appropriate advice was given to the consumer. <p>Risk classification: significant</p> |
| 08 Jul 2010 For 1 day (WSX) | East Grimstead, Wiltshire | 3 | Misconnection of a property to a sewer. | <p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Misconnected a property to a sewer. • Flushed and chlorinated the main and plumbing system. • Sampled property extensively and the area as a precaution. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of asset records for clean and waste water pipes. • Critical of procedures for new mains connections. • Investigation ongoing. <p>Risk classification: serious</p> <p>(see the <i>Drinking water quality events</i> section of the Western regional report)</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|------------------------------|---------------------------------|---|--|
| 08 Jul 2010 For 3 days (UU) | Parts of the Manchester area | 64,855 | <i>E.coli</i> at Oldham Edge service reservoir. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Removed service reservoir from supply. • Inspected reservoir, identified integrity problem, remediated and performed a successful inundation test. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommend the company ensures sampling facilities comply with internal standards. • Lack of maintenance of equipment. <p>Risk classification: significant</p> |
| 09 Jul 2010 For 24 hours (SVT) | Bilston, West Midlands | 11,097 | Burst main due to planned work. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired main. • Flushed mains. • Rezoned area. • Review of directional drilling procedure. • Third party contractor review session with learning points incorporated into company procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|----------------------------------|-----------------------------------|---------------------------------|---|--|
| 10 Jul 2010 For 1 day (UU) | Parts of St Helens, Lancashire | 6,229 | Brown discolouration due to burst main. | <p>United Utilities Water Plc 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"> • Recommended review of risk assessment procedures on reactive work in the network and ensure documentation is completed. • Update current procedures. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|--------------------------------|---|
| 12 Jul 2010 For 5 days (SEW) | Frith Hill service reservoir, Frimley Green, Camberley, Surrey | 71,059 | Microbiological contamination. | <p>South East Water action:</p> <ul style="list-style-type: none"> • Company inspected reservoir. • Sampled affected area. • Removed site from supply for inspection. • Chlorinated reservoir. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of company response – lack of timely sampling. • Investigation not completed in a timely manner. • Highly critical of the use of booster, which had not been used for many months and was not risk-assessed. • Recommended company review management of chlorine residuals in this area, including the reservoir. • Recommended the company provided details of actions taken to ensure adequate turnover of the reservoir. • Notice in place requiring remediation of the possible ingress at Frith Hill reservoir. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|---|
| 12 Jul 2010 For 3 days (VSE) | Folkestone, Kent | 8,625 | Brown discolouration due to burst main. | <p>Veolia Water Southeast action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Flushed mains. • Rezoned area (brought in water from different source). • Repaired main. • Updated DOMS (Distribution and Operation and Maintenance Strategy) and DWSP (Drinking Water Safety Plan). <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 13 Jul 2010 For 2 hours (SRN) | Fleming works, supplying the Fleete and Thanet areas of Kent | 130,000 | Elevated turbidity. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Sampled affected area. • Revised risk assessment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate risk assessment. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|---|---|
| 15 Jul 2010 For 5 days (NNE) | Horsley works supplying Ashington, Lynemouth, Ellington, Blyth, Cramlington, Gosforth, Longbenton and Whitley Bay. | 500,000 | Loss of supplies/poor pressure due to burst main. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area and flushed mains. • Sampled affected area. • Deployed tankers and alternative supplies. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that ends of an open main were not capped. • Investigation ongoing. <p>Risk classification: significant</p> |
| 17 Jul 2010 For 1 day (TMS) | Goose Green Tower supplying the area of Hoddesdon, Lee Valley | 7,000 | Microbiological contamination. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Bypassed service reservoir. • Replaced faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Lack of maintenance of equipment. • Inadequate training/competence of staff. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|----------------------|---------------------------------|---|---|
| 18 Jul 2010 For 22 hours (UU) | Liverpool | 380,000 | Loss of coagulation. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Recommended that once a failure of a treatment process has been identified the company ensures it acts immediately to identify the cause and the potential impact on public health. <p>Risk classification: significant</p> |
| 21 Jul 2010 For 36 hours (DVW) | Hightown, Wrexham | 5,750 | Brown discolouration due to a faulty valve. | <p>Dee Valley Water Plc action:</p> <ul style="list-style-type: none"> • Sampled area affected. • Flushed mains. • Repaired faulty equipment. • Reviewed and updated procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inspectorate was critical about the lack of a risk assessment for bypassing the pressure reducing valve (PRV). • Inspectorate recommended a review of relevant procedures was undertaken. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|--|---|
| 22 Jul 2010 For 12 hours (DWR) | Llwynon works, supplying Cardiff, Merthyr and Caerphilly area | 104,600 | Sub optimal coagulation leading to turbidity and iron failures. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Reviewed and updated procedures. • Retrained staff. • Flushed mains. • Additional treatment introduced. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate training/competence of staff. • Inadequate procedures. • Critical that treatment works was not shutdown and alarms were overridden. • Recommended company review the performance of the dissolved air floatation process. • Suggested the filter backwash and associated wash water management was reviewed. • Due to similarities with a previous event the Inspectorate was highly critical that lessons do not appear to have been learnt. • Recommended a review of the Regulation 29 risk assessment. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---|---------------------------------|--------------------------------|---|
| 22 Jul 2010 For 12 hours (SEW) | Trosley works, supplying the Borough Green and Ryarsh areas of Kent | 37,700 | Elevated turbidity. | <p>South East Water action:</p> <ul style="list-style-type: none"> • Investigation ongoing. • Did not adhere to procedures. • Sampled affected area. • Shut down works. • Revised procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended backwashing regime modified. • The Inspectorate was highly critical of the company handling of this event. <p>Risk classification: serious</p> <p>(see the <i>Drinking water quality events</i> section Southern regional report)</p> |
| 22 Jul 2010 For 8 days (SVT) | Stoke on Trent, Staffordshire | 53,777 | Microbiological contamination. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Removed service reservoir from supply. • Internal inspection of service reservoir showed potential for minor ingress. • Repair and maintenance of reservoir structure. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---------------------------------------|---------------------------------|--|--|
| 22 Jul 2010 For 2 days (ANG) | Spalding, Lincolnshire | 3 | Taste or odour due to cross connection with rainwater harvesting system. | <p>Anglian Water Services 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"> • Sample not analysed for appropriate parameters. <p>Risk classification: significant</p> |
| 23 Jul 2010 For 2 days (UU) | Single property, Leagram, Preston | 3 | Boil notice issued due to raw water deterioration. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Issued boil water advice. • Sampled the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommend company bring forward date of connection of this supply to mains water. • Recommend enhanced monitoring. • Regulation 28 Notice under review. <p>Risk classification: significant</p> |
| 25 Jul 2010 For 2 days (UU) | Prescot and Whiston, Merseyside | 5,591 | Brown discolouration due to vandalism. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfactory investigation and actions. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|--------------------------------|--|
| 25 Jul 2010 For 3 days (SWT) | Killiganon service reservoir supplying areas of Truro | 1,600 | Microbiological contamination. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Removed service reservoir from supply. • Increased chlorine residuals at service reservoir. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Coliform detection at service reservoir was followed by repeated detections at reservoir and in zone downstream. • Ingress points in reservoir roof were identified and repaired. <p>Risk classification: significant</p> |
| 04 Aug 2010 For 4 weeks (SVT) | Single property in Glenfield, Leicestershire | 3 | Sewage taste and odour. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Issued a do not drink notice. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inspectorate critical that company did not keep customers informed. • Recommended company reviews the way this consumer investigation was undertaken and identifies the failings including the cause of delays in fully investigating and identifying the cause of the water quality concerns. • Recommended improvements to record keeping. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|-----------------------------------|--|
| 05 Aug 2010 For 3 hours (SRN) | Barton Stacey, Andover, North Hampshire | 7,500 | Elevated turbidity. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. • Shut down treatment works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate follow-up sampling. • Inadequate communication caused delay in response. • Recommended that the company carries out an adequate investigation in response to events, ensuring the appropriate number and type of samples are taken to demonstrate the extent and nature of the water quality impact. <p>Risk classification: significant</p> |
| 06 Aug 2010 For 4 days (SVT) | Butterhill, Stoke on Trent, Staffordshire | 23,893 | Discolouration due to burst main. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Flushed mains. • Sampled affected area. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Company carried out review of DOMS for the affected area and modelling. • The Inspectorate was satisfied with the company's actions. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|---|--|
| 09 Aug 2010 For 5 days (ANG) | South Street, Peterborough | 73 | Earthy taste or odour linked to planned work. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Issued a do not drink notice. • Flushed mains. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended investigating consumer contacts in consultation with those carrying out distribution work. <p>Risk classification: significant</p> |
| 10 Aug 2010 For 1 day (SWT) | Crownhill works supplying areas north of Plymouth | 250,035 | Microbiological contamination. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Identified potential ingress to the contact tank. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate investigations into root cause. • Critical of the time taken to highlight potential leaks in contact tank on site. • Critical of time taken to internally inspect the contact tank. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|---|--|
| 10 Aug 2010 For 3 days (WSX) | Small part of Wiltshire | 15 | Pesticide (2,4-D). | <p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Rezoned area (brought in water from different source). • Sampled affected area. • Confirmed there was no risk to public health. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Unable to conclude that these contraventions will not recur so initiated enforcement. • Acknowledgement of good joint working between the company and Environmental Health. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Western regional report)</p> |
| 11 Aug 2010 For 72 hours (SEW) | Groombridge, Crowborough, Beacon Hill, Cottage Hill and Hourne Farm areas in east Sussex | 15,000 | Brown discolouration due to burst main. | <p>South East Water Plc action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Repaired burst main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Recommended that the company reviews its risk-based procedures for mains repairs and the measures in place to assess and control impact on consumers' water quality. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|--------------------------------|--|
| 11 Aug 2010 For 2 days (SVT) | Burley water tower, Rutland, Leicestershire. | 2,022 | Burst main. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Provided an alternative supply by tanker/bowser. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 11 Aug 2010 For 2 days (TMS) | Hornsey Lane reservoir supplying areas of north London | 74,875 | Microbiological contamination. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Reservoir inspection. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • <i>E.coli</i> detected in a statutory sample from the reservoir due to inadequate disinfection of the sample point. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|---------------------------------|---|
| 11 Aug 2010 For 35 days (DWR) | Pontsticill works supplying zones near Merthyr Tydfil, Aberdare and Caerphilly | 250,000 | Musty taste and odour. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Additional treatment introduced. • Rezoned area (brought in water from different area). • Updated drinking water safety plan. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggested the company considers measures to characterise conditions which favour the growth of Cyanobacteria in the raw water reservoir. • Suggested the company review monitoring and triggers for 2-methylisoborneol. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Wales report)</p> |
| 12 Aug 2010 For 12 hours (TMS) | Twickenham, Hounslow and Ealing areas of west London | 187,375 | Loss of supplies/poor pressure. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Repaired burst main. • Sampled affected area. • Bottled water supplied. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|--|
| 14 Aug 2010 For 1 day (NNE) | North Charlton service reservoir and Warkworth works supplying areas of north Tyneside | 3,750 | <i>E.coli</i> at service reservoir. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Isolated reservoir from supply. • Sampled affected area. • Repaired mesh vents. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical that mesh vent repairs highlighted in 2009 had not been carried out. • One of several microbiological failures at associated reservoirs. • Enforcement action considered. <p>Risk classification: significant</p> |
| 17 Aug 2010 For 16 days (ANG) | Kings Sutton, Banbury | 2,250 | Microbiological contamination following burst main. | <p>Anglian Water Services action:</p> <ul style="list-style-type: none"> • Issued a boil water notice. • Provided bottled water. • Repaired main. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • The company temporarily increased the chlorine residual downstream of the repair. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---|---------------------------------|-------------------------------------|--|
| 25 Aug 2010 For 28 hours (UU) | Warrington | 50,000 | Third party damage to main. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Rezoned area (brought in water from different source). • Repaired main. • Provided bottled water on request. • Provided an alternative supply by tanker/bowser. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfactory investigation and actions. <p>Risk classification: significant</p> |
| 25 Aug 2010 For 5 weeks (SVT) | London Road, Dunchurch, Warwickshire. | 18 | Discolouration due to a burst main. | <p>Severn Trent Water Ltd 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"> • Critical that the company's Geographical Information System (GIS) contained inaccurate information, which was crucial to identifying the root cause of the iron. This was a recurrence of an issue reported in Glenfield which reported a sewage taste and odour following burst main. • Recommended that action taken to resolve issues with GIS and put in place measures to prevent a recurrence. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|--|---|
| 26 Aug 2010 For 3 days (SWT) | Landscape reservoir supplying Teignmouth, Devon | 1,000 | Microbiological contamination. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir. • Removed service reservoir from supply. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Service reservoir remains out of supply. <p>Risk classification: significant</p> |
| 26 Aug 2010 For 8 days (UU) | Single property, Langley, Macclesfield | 3 | Issue of a do not drink notice due to metallic taste in free (concessionary) supply. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Issued a do not drink notice. • Provided an alternative supply by tanker/bowser. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate number of samples taken. • Samples not analysed for appropriate parameters. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|--|
| 28 Aug 2010 2 days (DWR) | Builth Wells works supplying Builth Wells area | 6,300 | <i>Cryptosporidium</i> and problems with coagulation. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Commissioned new control and shutdown system. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied water in breach of Regulation 27(1)b. • Inspectorate was critical that the terms of the Notice served on this site were breached by not making operational the shutdown system by the specified time. • Inspectorate was highly critical that a previous recommendation had not been fully acted upon, and therefore the company's response had not been effective in preventing a repetition. <p>Risk classification: significant</p> |
| 03 Sep 2010 For 12 hours (UU) | Waterhead works supplying the Oldham area | 71,000 | Elevated turbidity. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Replaced faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Supplied unwholesome water. • Inadequate follow-up sampling. • Inadequate treatment process – filtration. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---|---------------------------------|--|--|
| 07 Sep 2010 For 37 hours (SWT) | Prewley works supplying areas in and around Okehampton, Devon | 4,800 | Turbidity. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled treatment works. • Reviewed site alarms. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Critical of the company for its slow response to the coagulation problems. • Recommended the company reviews its processes for making staff aware of the operational status of works. <p>Risk classification: significant</p> |
| 09 Sep 2010 For 1 day (ANG) | Parts of Milton Keynes | 493,750 | Microbiological contamination at a service reservoir. | <p>Anglian Water Services action:</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"> • A recommendation was made to check the adjacent reservoir which is of similar age and design. <p>Risk classification: significant</p> |
| 09 Sep 2010 For 2 days (SVT) | Bucknall reservoir, Stoke on Trent, Staffordshire. | 16,813 | Loss of supplies due to shut valve at service reservoir. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Repaired faulty equipment. • Sampled affected area. • Reminded staff of correct procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|---|--|
| 15 Sep 2010 For 6 hours (SRN) | Woolmans Wood, Chatham, Kent | 5,010 | Brown discolouration due to planned work. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Retrained staff. • Flushed mains. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate training/competence of staff. • Number of recommendations made to address procedures, timeliness of work, staff competence. <p>Risk classification: significance</p> <p>(see the <i>Drinking water quality events</i> section Southern regional report)</p> |
| 17 Sep 2010 For 2 days (TMS) | Farnborough Tower supplying the areas of Wantage and Oxford | 113 | Microbiological contamination. | <p>Thames Water Utilities Ltd action:</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"> • Reservoir inspected. • Structural failure. • Ingress repaired. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|-----------------------------|---------------------------------|--|--|
| 19 Sep 2010 For 12 hours (WSX) | Corfe Mullen, Dorset | 12,700 | Brown discolouration due to mains burst. | <p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Repaired main. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • DWI was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 24 Sep 2010 For 4 days (YKS) | Kepwick, North Yorkshire | 15,490 | Disinfection. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir. • Sampled affected area. • Improved operator awareness and installed extra monitors. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process, loss of chlorine in final water. • Company has introduced measures to prevent reoccurrence. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|---------------------------------|---|
| 25 Sep 2010 For 8 hours (UU) | Nelson, Barrowford, Newchurch and Roughlee in East Lancashire | 27,000 | Loss of polymer dosing control. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Repaired faulty equipment. • Replaced faulty equipment. • Sampled affected area. • In the short term, additional alarms have been installed. • In the long term, a failsafe coagulation system is scheduled to be installed. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Further information requested regarding maintenance and calibration of pH probes and polymer pumps. • Recommended the service reservoir downstream of this site is internally inspected and records retained. <p>Risk classification: significant</p> |
| 25 Sep 2010 For 3 days (SRN) | Otterbourne works, Hampshire | 319,049 | Failure of membrane plant. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Shut down works. • Repaired equipment. • Bypassed treatment process. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---------------------------------|---------------------------------|---|--|
| 26 Sep 2010 For 4 days (ANG) | Holt, Norfolk | 155 | Burst main and risk of sewage ingress. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Issued a boil water notice. • Provided bottled water. • Repaired mains. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • The company temporarily increased the chlorine residual downstream of the repair. <p>Risk classification: significant</p> |
| 04 Oct 2010 For 48 hours (YKS) | Hessle and the surrounding area | 2,000 | Brown discolouration due to planned work. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampling from area. • Review of procedures. • Review of risk assessment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate communication caused delay in response. • Inadequate contingency planning. • Inadequate risk assessment. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|-------------------------------|---------------------------------|---|--|
| 07 Oct 2010 For 8 hours (YKS) | North Yorkshire | 64,453 | Contaminated water treatment chemical. | <p>Yorkshire Water Services Ltd action:</p> <ul style="list-style-type: none"> • Isolated works from supply. • Checks with rest of the industry. • Liaised with chemical supplier to identify batch. • Reviewed customer complaint data. • Extensive sampling from other sites. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Satisfied with company response and communication. • Information letter issued to the industry. <p>Risk classification: significant</p> |
| 07 Oct 2010 For 12 hours (SRN) | Hythe, Southampton area | 375 | Brown discolouration due to planned work. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired burst main. • Rezoned affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Suggestions made to identify and include all valves which are involved in the repair or reinstatement of planned mains work in risk assessment and method statements. • Suggestion made to consider guidelines for third party contractors on appropriate pumping capacity (mobile pumps for excavation work) for different size of mains and activities. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|-----------------------------------|---|
| 12 Oct 2010 For 2 hours (UU) | Rochdale, Lancashire | 100,000 | Elevated turbidity and aluminium. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Company contained 60% of the high turbidity water before it reached consumers. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommend the company review start up procedures. • Recommend the company develop a design standard for alarms and alarm philosophy and apply company wide. <p>Risk classification: significant</p> |
| 15 Oct 2010 For 1 day (UU) | Padgate and Orford areas of Warrington | 13,663 | Brown discolouration. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired faulty equipment. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate risk assessment. • Recommended to incorporate learning points into Distribution, Operation and Maintenance Strategy (DOMS). <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|------------------------------|---------------------------------|--|--|
| 15 Oct 2010 For 4 days (SVT) | Bramcote area of Nottingham. | 39,150 | Loss of supplies due to a burst main. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Rezoned area (brought in water from different source). • Provided an alternative supply by tanker/bowser. • Provided bottled water on request. • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 25 Oct 2010 For 2 days (ANG) | Ipswich, Suffolk | 18,170 | Discolouration caused by a faulty pressure reducing valve. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Flushed mains. • Suspended planned work to remove service reservoir from supply. • Repaired faulty valve. • Revised risk assessments. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • Inadequate contingency planning. • The company conducted an assessment for the removal of any residual deposits in the main before the recommencement of work and have reviewed its valve commissioning and operating arrangements. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|-------------------------------|---------------------------------|--------------------------------------|--|
| 27 Oct 2010 For 72 hours (DWR) | Concessionary supply, Swansea | 3 | Detection of <i>E.coli</i> . | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Retrained staff. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Additional sampling identified elevated iron concentrations. • Recommended the company install adequate treatment to ensure the iron standard is met. <p>Risk classification: significant</p> |
| 28 Oct 2010 For 13 hours (BRL) | Street, Somerset | 6,201 | Loss of supplies due to mains burst. | <p>Bristol Water Plc action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Repaired main. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|-----------------------------------|---|
| 28 Oct 2010 For 7 days (SVT) | Mitcheldean, Gloucestershire | 87,000 | <i>Cryptosporidium.</i> | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Removed defective rapid gravity filter from service and repaired. • Notified relevant authorities and stakeholders. • Enhanced monitoring in the area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequacies in the treatment process – rapid gravity filtration. • The Inspectorate was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |
| 29 Oct 2010 For 1 day (TMS) | Hornsey Lane works supplying areas of north London | 360,000 | Microbiological contamination. | <p>Thames Water Utilities Ltd action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Desludged the dissolved air floatation (DAF) plant. • Confirmed that there was no issue with sampling facilities. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event and no recommendations were made. • The company was asked to confirm that all the materials of construction and jointing of the sample line and tap comply with Regulation 31 of the Water Supply (water quality) Regulations (2007) as amended. Inspectorate suggested the company confirms that the sampling arrangements also comply with its own asset standard. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---------------------------------|---------------------------------|--|---|
| 02 Nov 2010 For 1 week (SST) | Stretton, Burton On Trent | 20,000 | Microbiological contamination. | <p>South Staffordshire Water Plc action:</p> <ul style="list-style-type: none"> • Increased chlorine residuals at service reservoir. • Introduced permanent booster chlorination at the outlet to Outwoods service reservoir and two further semi-permanent points at the distal end of the distribution system. • Enhanced monitoring throughout the zone. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The company intends to review its DOMS to identify an effective sustainable flushing strategy to assist with increasing flow and removing old water from the system. • The company intends to assess the entire distribution system within the zone to identify the capital investment needed throughout 2011. • The Inspectorate is monitoring the company's progress towards these actions. <p>Risk classification: significant (see the <i>Drinking water quality events</i> section of the Central report)</p> |
| 07 Nov 2010 For 3 days (DWR) | Abergele reservoir, North Wales | 5,520 | Detection of <i>E.coli</i> and coliform bacteria in treated water. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Internally inspected reservoir compartments. • Minor deficiencies in the sampling facilities were rectified. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended enhanced monitoring to assure the continued quality of water stored in the reservoir. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|----------------|---------------------------------|---|---|
| 10 Nov 2010 For 15 hours (ANG) | Ely, Cambridge | 23,750 | Media interest about a burst main. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Deployed bowsers. • Repaired main. • Sampled affected area. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • Supplies were lost due to the isolation of the burst main and associated service reservoir. Rezoning was only partially effective. <p>Risk classification: significant</p> |
| 11 Nov 2010 For 12 hours (NNE) | Middlesbrough | 6,643 | Brown discolouration due to burst main. | <p>Northumbrian Water Ltd 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"> • Recommend the company update their site operations manual. • Recommend the company update their site risk assessment. • Supplied water in breach of regulatory standards. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|------------------|---------------------------------|--------------------------------|--|
| 18 Nov 2010 For 24 hours (NNE) | Hordon, Peterlee | 23 | Musty taste and odour. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate training/competency of staff. • Supplied water in breach of regulations. <p>Risk classification: significant</p> |
| 20 Nov 2010 For 1 day (ANG) | Norwich, Norfolk | 163,100 | Microbiological contamination. | <p>Anglian Water Services action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Inspected and flood tested the reservoir. • Repaired seals to hatches. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • The company determined areas of ingress around each of the three access hatches at this service reservoir. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|------------------------------|---------------------------------|---|---|
| 21 Nov 2010 For 1 day (ANG) | Biggleswade, Bedfordshire | 10,200 | Microbiological contamination. | <p>Anglian Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Inspected and flood tested the reservoir. • Carrying out repairs. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • The company determined that structural work is needed. Therefore the service reservoir remains out of service. <p>Risk classification: significant</p> |
| 25 Nov 2010 For 2 days (DWR) | Prestatyn, Denbighshire | 23,388 | Brown discolouration due to planned work. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Flushed mains. • Sampled affected area. • Repaired faulty equipment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the company incorporate learning from this and previous events into future risk assessments associated with planned work on this main. • Recommended the company investigate and document the dynamics of the reservoir and ensure the sampling arrangements at this site allow for representative samples to be obtained. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|-----------------------------|---------------------------------|---|--|
| 29 Nov 2010 For 1.5 hours (SVT) | Frankley works, Birmingham. | 1,308,000 | Treatment failure due to loss of power. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected areas. • Revised procedures. • Restarted works and repaired UPS system. • Reviewed alarms at works. • Improvements made to resilience and contingency plans for works. • Revised Regulation 28 risk assessment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate has issued a Regulation 28(4) Notice to protect public health following an audit of the works in January 2011. • Three further events occurred at this site in early 2011. <p>Risk classification: significant (see the <i>Drinking water quality events</i> section of the Central regional report)</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|---|---------------------------------|---|--|
| 29 Nov 2010 For 12 hours (SEW) | Winter Hill Road Maidenhead | 8,548 | Brown discolouration due to planned work. | <p>South East Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Repaired burst main. • Flushed mains. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate contingency planning. • Inadequate risk assessment. • Inadequate procedures. • Recommended the company reviews its procedures for assessing the status of the network prior to commencement of reactive mains work. This should include a review of the company procedure and documentation made of changes to valve status. <p>Risk classification: significant</p> |
| 30 Nov 2010 For 24 hours (DWR) | Garreglwyd works, supplying areas of Gwynedd, North Wales | 16,175 | Elevated iron and low pH due to inadequate treatment. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Provided bottled water on request. • Tankered water to area. • Repaired faulty dosing equipment. • Optimised treatment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – coagulation and filtration. • Recommended the company again reviews the control of coagulation in freezing conditions. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Wales report)</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|---------------------------------|--|
| 03 Dec 2010 For 4 days (DWR) | Strata Florida works supplying Ceredigion, mid Wales | 9,000 | Loss of supplies/poor pressure. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Rezoned area (brought in water from different source). • Tankered water to area. • Sampled affected area. • Optimised treatment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the company ensure all relevant information is provided in the 20-day report. • Recommended the company provided a robust action plan for the cleaning of the raw water mains to prevent a recurrence of this event. <p>Risk classification: significant</p> <p>(see the <i>Drinking water quality events</i> section of the Wales report)</p> |
| 06 Dec 2010 For 2 days (SWT) | Crownhill works supplying areas north of Plymouth | 250,035 | <i>Cryptosporidium.</i> | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Investigated operation and performance of treatment works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • DWI was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|-----------------------------------|---------------------------------|---------------------------------------|---|
| 07 Dec 2010 For 14 hours (UU) | Waterhead, Oldham | 154,570 | Elevated turbidity on works start up. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Sampled the area. • Problem exacerbated by cold weather event. • Heaters brought to site to thaw frozen dissolved-air supply lines. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended the company review their procedures for appropriate sampling during events and brief staff. <p>Risk classification: significant</p> |
| 08 Dec 2010 For 24 hours (SVT) | Little Eaton works, Derbyshire | 320,643 | Treatment failure. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Increased chlorine residuals at works. • Reviewed the raw water quality data. • Review of on line monitoring at works. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: serious</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--------------------------------|---------------------------------|---|--|
| 08 Dec 2010 For 24 hours (ANG) | Sproughton Village, Ipswich | 3,203 | Discolouration and odour due to planned work. | <p>Anglian Water Services action:</p> <ul style="list-style-type: none"> • Provided bottled water on request. • Issued a boil water notice. • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Recommended review procedures for correctly identifying the location of mains and operating valves during planned work. <p>Risk classification: significant</p> <p>(Linked to discolouration event in Ipswich, Suffolk on 25 October 2010)</p> |
| 08 Dec 2010 For 2 days (DWR) | Llanferres, Denbighshire | 38,750 | Loss of supplies/poor pressure due to burst main. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Repaired main. • Sampled affected area. • Flushed mains. • Tankered water to area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Did not notify the event to the Inspectorate. • Inspectorate became aware of this event because it was reported by the press. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|-----------------------|---------------------------------|---|---|
| 12 Dec 2010 For 1 hour (SRN) | Worthing, West Sussex | 93,000 | Loss of disinfection. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Shut down treatment works. • Sampled affected area. • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. <p>Risk classification: significant</p> |
| 14 Dec 2010 For 3 days (NNE) | Blyth, Northumberland | 16,994 | Brown discolouration due to planned work. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Carried out localised flushing. • Notified Health Protection Agency and local authority. • Carried out network modelling to risk assess this planned work. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Concern over contractors following their own procedures. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|--|--|
| 16 Dec 2010 For 3 days (SVT) | Wildmoor works supplying areas of Worcestershire | 70,044 | Microbiological contamination. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Increased chlorine residual leaving the service reservoir. • Sampled affected area. • Inspected the reservoir internally and externally and cleaned the reservoir. • Repairs made to on-site blending tanks and pipework. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Delays to investigation into potential cause of failures due to severe cold weather. • Suggested that Regulation 27 risk assessment report is updated. <p>Risk classification: significant</p> |
| 17 Dec 2010 For 12 hours (NNE) | Cramlington, Northumberland | 28,205 | Brown discolouration due to burst main. | <p>Northumbrian Water Ltd action:</p> <ul style="list-style-type: none"> • Repaired main. • Retrained staff. • Rezoned area (brought in water from different source). • Sampled affected area. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate follow-up sampling. • Recommended to ensure samples are representative of the whole area affected. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|---|--|
| 17 Dec 2010 For 10 days (SVT) | Church Wilne Works, Nottinghamshire. | 366,449 | <i>Cryptosporidium.</i> | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Review of water quality data. • Sampled affected area. • Catchment review. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: significant</p> |
| 22 Dec 2010 For 8 hours (UU) | Oldham, Lancashire and surrounding area | 98,000 | Disinfection. | <p>United Utilities Water Plc action:</p> <ul style="list-style-type: none"> • Reduced works output. • Cleaned the sulphuric acid dosing lines. • Notified Health Protection Unit and Environmental Health. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Assessment ongoing. <p>Risk classification: significant</p> |
| 23 Dec 2010 For 8 months (WSX) | N/A | N/A | Laboratory anomaly regarding organochlorine pesticide analysis. | <p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate investigations into root cause. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|---|---------------------------------|---|--|
| 27 Dec 2010 For 9 days (SVT) | Long Eaton area, Derbyshire. | 29 | Taste or odour. | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • Review of water quality data. • Sampled affected area. • Review of treatment processes and water quality data. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Investigation ongoing. <p>Risk classification: significant</p> |
| 28 Dec 2010 For 5 days (DWR) | St. Clears and surrounding rural areas of Carmarthen | 7,500 | Loss of supplies/poor pressure due to faulty booster pumps. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Sampled affected area. • Tankered water to area. • Provided bottled water on request. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Recommended samples are collected in a timely manner. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--------------------------|---------------------------------|--|--|
| 29 Dec 2010 For 1 day (WSX) | Taunton, Somerset | 16,900 | Brown discolouration due to mains burst. | <p>Wessex Water Services Ltd action:</p> <ul style="list-style-type: none"> • Supplied bottled water. • Flushed mains. • Rezoned area. • Collected samples. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • The Inspectorate was satisfied with the company's handling of this event. • Results of further investigative sampling were satisfactory and showed that company actions were effective in returning supplies to normal in a timely manner. • <p>Risk classification: significant</p> |
| 29 Dec 2010 For 3 days (SWT) | Exeter and East Devon | 25,000 | Loss of supplies causing press interest. | <p>South West Water Ltd action:</p> <ul style="list-style-type: none"> • Collected samples. • Daily company status reports. • Media interviews. • Tankers for alternative supplies. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • DWI was satisfied with the company's handling of this event. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|------------------------------------|--|---------------------------------|--|---|
| 31 Dec 2010 For 5 days (DWR) | Elan Valley works, supplying areas of Powys, mid Wales | 16,000 | Elevated iron due to inadequate treatment. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Replaced faulty equipment. • Sampled affected area. • Intermittently shut works down. • Reviewed procedures. • Cleaned dissolved air floatation tanks. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate treatment process – coagulation. • Lack of maintenance of equipment. • Inadequate investigation into root cause. • Supplied unwholesome water in breach of the Regulations. • Recommended the company reviews the design of the flocculator at this and other similar works, and makes changes to assets where appropriate and also inspection frequency to prevent a repetition of these circumstances. <p>Risk classification: significant</p> |

Events outstanding from 2009 completed in 2010

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|--|---------------------------------|-------------------------------|--|
| 29 Jan 2009 For 30 days (SRN) | Beauport works Hastings, West Sussex | 104,000 | Isoproturon. | <p>Southern Water Services Ltd action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Arranged liaison with the Environment Agency. • Arranged for the Agricultural Development Advisory Service (ADAS) to undertake work in the catchment regarding the usage of isoproturon and catchment officer to work with farming community regarding application. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inspectorate satisfied with the company's handling of the event • Recommended the company keep the Inspectorate informed of ongoing investigations. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--------------------------------------|--|---------------------------------|---|--|
| 28 Apr 2009 For 1 day (DWR) | Alwen works, supplying areas west of Chester | 175,000 | Issue of boil notice due to microbiological contamination at works. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Sampled affected area. • Made alterations to treatment works disinfection process. • Reduced flow through the works. • Investigated and reviewed catchment. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate treatment process – disinfection. • To safeguard public health, the Inspectorate issued a Notice under Regulation 28(4)(d). This Notice set out various changes that need to be made to the works, including new filtration facilities and a new contact tank, by 31 August 2011. The company is also required to restrict flows so that maximum output is subject to a minimum contact time value of 15mg.min/l under all operational conditions. <p>Risk classification: major</p> |
| 27 Aug 2009 For 24 hours (DWR) | Crai works supplying the Upper Swansea Valley area | 23,750 | Iron failure. | <p>Dŵr Cymru Welsh Water action:</p> <ul style="list-style-type: none"> • Review of procedures. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Inadequate procedures. • Inadequate treatment process – filtration. <p>Risk classification: significant</p> |

| Date and duration | Area | Estimate of population affected | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|-------------------------------------|---------------------------|---------------------------------|---|---|
| 17 Dec 2009 For 10 days (ANG) | Little Dunham, Norfolk | 680 | Back siphonage from a cross connected private water supply located on a farm. | <p>Anglian Water Services Ltd action:</p> <ul style="list-style-type: none"> • Flushed mains. • Provided bottled water on request. • Sampled affected area. • Review of procedures. • Reviewed risk categorisation of non-domestic properties. <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • No recommendations made. • Prompt sampling of consumers' taps. • The company's investigation was prolonged. <p>Risk classification: significant</p> |

Event affecting a number of water companies

| Date and duration | Nature and cause of the event | Main actions and findings from the Inspectorate investigation |
|--|--------------------------------|---|
| <p>02 Jul 2010 Duration not applicable (Severn Trent Services)</p> | <p>Analytical malpractice.</p> | <p>Severn Trent Water Ltd action:</p> <ul style="list-style-type: none"> • In response to immediate feedback from an audit by the Inspectorate, the company suspended managers and team leaders, carried out an exhaustive investigation, and took all necessary steps to reinstate services to the required standard <p>DWI comments and findings:</p> <ul style="list-style-type: none"> • Serious deficiencies were found by the water undertakers or the combined licensees for failing to meet their obligations under Regulations 16 and 34 for analysis of water samples and, in particular, derived analytical data, competency, retention of appropriate records, and for the appropriate time, using suitable equipment found in analytical practices for inorganic chemical analysis (Regulation 16). • Full details in the published audit report. • Initiated enforcement action in relation to the eight water companies using Severn Trent Services. <p>Risk classification: serious</p> |