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improving safety
protecting lives

Biennial report on reservoir safety 1 April 2007 - 31 March 2009

Contents

We are the Environment Agency. It's our job to look after your environment and make it **a better place** - for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

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Foreword

It is now four and a half years since the Environment Agency took over as the enforcement authority for more than 2,000 large raised reservoirs in England and Wales. During this time we have significantly increased compliance and introduced a more coherent and uniform approach to the regulation of the Reservoirs Act.

We follow better regulation principles in all our work. We want to protect people and the environment, whilst encouraging responsible economic growth. We do this by focussing our regulatory activity on those non-compliant reservoirs that pose the greatest threat.

We have worked hard to encourage compliance at all reservoirs, consulting and listening to the reservoir industry. We are a fair but firm regulator and will only prosecute where all other efforts fail. In four and a half years we have only had to prosecute one undertaker.

It is our job to maintain a register of all reservoirs in England and Wales. We have found over 110 reservoirs that were not previously registered and now have 2,093 reservoirs on the register.

Emergency response procedures are now in place to help avoid potential disasters at reservoirs with no legal undertaker. This is extremely important, as our experience at Hameldon Reservoir proved (see case study in Section 2).

In our last biennial report we called for a number of improvements to the Reservoirs Act 1975. In his review of the summer 2007 flooding, Sir Michael Pitt fully endorsed our recommendations. These are considered within the draft Flood and Water Management Bill.

We work closely with other regulators. We were encouraged when this country's largest safety regulator, the Health and Safety Executive, stated that they recognised "...the significant advances in reservoir safety achieved since the Environment Agency assumed responsibility for reservoir safety."

We continue to work with Defra, WAG and the Cabinet Office to develop the specification for reservoir flood plans and have successfully introduced post-incident reporting. We are also at the forefront of research and development to further improve the safety of our reservoirs.

As the regulator for England and Wales, we are sharing our experiences and learning with our colleagues in Scotland as they too move to a single enforcement authority.

It has been an exciting, challenging and rewarding two years and we look forward to continuing to push the boundaries of reservoir safety still further in the future.

A handwritten signature in black ink, appearing to read 'Ian Hope', written over a horizontal line.

Ian Hope
Technical Manager – Reservoir Safety

Executive summary

This is the second biennial report of our contribution to improving reservoir safety in England and Wales. It highlights our achievements in making large raised reservoirs safer over the past two years and looks ahead to the changes we would like to see in the future.

There have been some significant achievements during this time. As a result of our efforts, many more reservoirs are now complying with legislation.

Liaising closely with reservoir undertakers to help create safer ways of working has been at the heart of all we do. By focusing our efforts on those reservoirs that pose the greatest threat, we are helping to better protect people and the environment.

Over the past two years we have only had to prosecute once. This is due to the success of other enforcement methods and following better regulation principles. Learning lessons from the past to be better prepared for the future is essential in ensuring reservoir safety. We have played a major part in this by successfully introducing a system of post-incident reporting throughout England and Wales.

We continue to make a key contribution to improving reservoir safety and have been instrumental in acting as a force for legislative change.

Our call for improvements to the Reservoirs Act 1975 in our last report has now been heeded. Our recommendations have been included in the draft Flood and Water Management Bill. These include registering all reservoirs above a minimum volume of 10,000m³, but only actively regulating those that pose a risk to life. Other changes include receipt of all engineers' reports and statements, and making post-incident reporting mandatory.

We want to continue to play a leading role in improving reservoir safety and protecting lives in the future. Our next report will confirm if we have been successful.

What is an 'undertaker'?

This is an operator, user, owner or lessee of a reservoir.

Undertakers are responsible for meeting the requirements of the Reservoirs Act 1975. For example, water companies, businesses, charities, fishing and sailing clubs and the Environment Agency are all reservoir undertakers.

Our role

As the enforcement authority for the Reservoirs Act 1975 in England and Wales, we are responsible for:

- maintaining a register of reservoirs and making it available to the public;
- ensuring that undertakers appoint a supervising engineer for each of their 'in operation' and 'abandoned' reservoirs;
- making sure that undertakers have their reservoirs regularly inspected by inspecting engineers;
- making sure that undertakers carry out necessary repairs, improvements or studies required by inspecting engineers;
- enforcing the Reservoirs Act 1975 (the Act) by making sure undertakers fully comply with the law, and warning and ultimately prosecuting those that don't;
- appointing engineers and commissioning engineering work and necessary repairs (measures in the interest of safety) if an undertaker does not comply, and charging for the work;
- appointing engineers and using our emergency powers to make sure that essential safety measures are completed (see section 2 page 14).





Background

In 1925 two dams failed causing 21 deaths. As a result of this, the Reservoirs (Safety Provisions) Act 1930 was passed. Since then, no deaths have been caused through dam failures in Great Britain. The Reservoirs Act was passed in 1975 and implemented between 1983 and 1987.

The Reservoirs Act 1975 introduced the following main changes:

- the role of supervising engineer was established;
- the role of enforcement authority was introduced;
- a register of reservoirs had to be published and kept up-to-date.

A review, carried out in the late 1990s, consulted with the reservoir industry and recognised the need for a single enforcement authority. The review recommended that this role should transfer from the 136 local authorities who fulfilled this role in England and Wales to the Environment Agency.

The Water Act 2003 transferred the responsibility for enforcing the Reservoirs Act to the Environment Agency and also established the requirement for undertakers to prepare reservoir flood plans.

Our approach

To tackle our workload, we have allocated our resources using a risk-based approach. This means we focus on those non-compliant reservoirs that pose the greatest risk to the safety of people and the environment. Our main priorities are to make sure that all reservoirs under the Act have a supervising engineer appointed, and then that all inspections, repairs and essential safety works required by law are carried out within the set timescale.

A reservoir comes under the Act if it is designed to hold, or capable of holding, more than 25,000 cubic metres of water above natural ground level.

Guide to the Reservoirs Act

This guide is published by the Institution of Civil Engineers and provides guidance on the interpretation of the Reservoirs Act 1975. It details the Statutory Instruments, key correspondence from government and general guidance in reservoir safety. It also shows how the Reservoirs Act 1975 was implemented. The Guide is currently being updated in a contract commissioned by Defra.

Our achievements

We continue to work tirelessly to improve the safety of our reservoirs. Here we detail some of our key achievements.

The following table shows how many reservoirs were non-compliant in each category on 31 March 2007 and 31 March 2009

Table 1 – Improving reservoir safety

	Situation at 31 March 2007	Situation at 31 March 2009
No supervising engineer appointed	45 (32 of which were not previously registered)	6 (3 of which were not previously registered)
Inspection due, but no inspecting engineer appointed	40	5
Section 10 inspection overdue by more than a year, but an inspecting engineer has been appointed*	33	67*
Measures in the interests of safety over due (not completed as soon as practicable) or have exceeded the deadline set by inspecting engineer**	58	52

*Although this figure has more than doubled, once an inspecting engineer has been appointed we consider that he assumes responsibility for risks associated with the reservoir.

**We will concentrate our efforts over the forthcoming biennial period to reduce these non-compliances.

Recording compliance

By law we have to maintain a complete register of reservoirs in England and Wales. As part of this responsibility, we carried out a project to check whether there were other reservoirs that were not registered. We found over 330 bodies of water using GIS that were potentially large raised reservoirs. Following investigation, 117 were then registered, though some have subsequently been discontinued. This has affected the number of reservoirs where we have had to take enforcement action.

Over the past two years we have recorded:

- 35 newly constructed reservoirs;
- 1,057 appointments to supervise a reservoir;
- 770 appointments to inspect a reservoir;
- 563 section 10(5) certificates after an inspection under section 10 of the Act has been satisfactorily completed.
- 288 of these 10(5) certificates contained measures to be taken in the interests of safety. In these cases, we received a copy of the inspecting engineer's report;
- 190 section 10(6) certificates showing that measures to be taken in the interests of safety had been satisfactorily completed.

GIS

GIS, or Geographic Information System, is a way of capturing and analysing geographical information which allows a user to answer questions about a landscape. In our case we wanted to find out what bodies of water were likely to hold more than 25,000m³ of water above natural ground level.

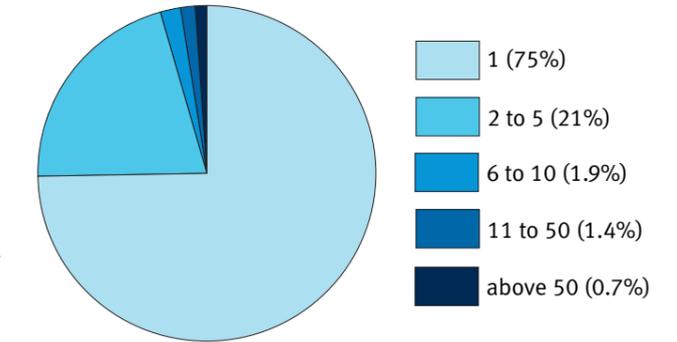
Main causes of non-compliance

The main causes of non-compliance that we find are:

- a supervising engineer is not appointed, every reservoir in operation must have a supervising engineer appointed at all times;
- an inspecting engineer has not been appointed to carry out the 10 yearly inspection (or sooner if recommended);
- 'measures in the interests of safety' (essential safety measures) identified by the inspecting engineer have not been carried out by the date specified, or 'as soon as practicable'.

Reservoir undertakers

In analysing our database, we found that there are 759 undertakers for the 2,093 reservoirs under the Reservoirs Act. Of these, 568 or 75 per cent have only one reservoir. We recognise that it is important that we take the time to explain the requirements of the Act to undertakers.



Number of reservoirs per undertaker

The number in brackets is the percentage of undertakers falling into each category

Working together

We work hard to encourage reservoir undertakers to comply with the Act, and to help create safer ways of working. We send a series of routine letters and a final letter before we eventually serve notice. Receiving a final letter before enforcement notice prompted 54 per cent of non-compliant undertakers to comply.

Serving notices

Despite our best efforts to work together with undertakers, we have had to serve 72 notices at 27 reservoirs over the last two years. At 12 of these reservoirs, the undertakers complied with the Act before the notice expired. At 3 reservoirs, the undertakers complied after the notice expired. At the end of March 2009, 12 reservoirs were still not compliant having served notice.



Table 2 – Number of notices served 1 April 2007 – 31 March 2009

Contravention of the Act notices served				
Section of the Reservoirs Act 1975	Non-compliance	Total number of notices served between 1 April 2007 and 31 March 2009		
		Total	England	Wales
8(1)	No construction engineer appointed	3	3	0
10(7)(a)	No inspection carried out and report made	12	6	6
10(7)(b)	Measures to be taken in the interests of safety not carried out	48	22	26
12(4)	No supervising engineer appointed	7	5	2
16(3)	Immediate Enforcement Authority action needed	2	2	0
Total number of notices served		72	38	34

Table 3 – Number of reservoirs where notices have been served

Notices served by dam category				
Dam category see page 36	Potential effect of a dam breach	Total number of reservoirs where notice has been served		
		Total	England	Wales
A	Where a breach could put lives at risk	10	7	3
B	Where a breach could endanger lives not in a community or could result in extensive damage	4	4	0
C	Where a breach could pose little risk to life and limited damage	13	10	3
D	Special cases where no loss of life can be foreseen as a result of a breach and very limited additional flood damage could be caused	0	0	0
Total number of reservoirs		27	21	6

Table 4 – Number of undertakers served notice

Notices served – Undertaker type				
Undertaker type	Examples	Total number of undertakers		
		Total	England	Wales
Other/Unknown	Unknown undertakers or notices served on ‘any undertaker’ and placed on site.	7	5	2
Private landowner	Individuals, estates	13	8	5
Agriculture (farms and fish farms)	Farms, fish farms	4	4	0
Public utility	Local authorities, National Parks	4	3	1
Other Government Agency	e.g. MoD, Forestry Commission, Crown Estates	3	3	0
British Waterways		1	1	0
Total number of undertakers		32	24	8

You can find a full list of non-compliant reservoirs in Appendix 4 ‘Steps taken to secure compliance’.

Appendix 5 shows an update on those cases outstanding from the 2005-2007 biennial report.

Where it is not clear, after investigation, who the undertaker is or in the case of multiple undertakers we also serve a notice on ‘any undertaker’ and place it on the site. The picture shows an example of a notice served on ‘any undertaker’ posted on site.



*Some undertakers have had enforcement notices served on more than one reservoir.

Table 5 – Engineers appointed by the Environment Agency under section 15 powers

Appointment of engineers under reserve powers				
Appointment of engineer under section 15 reserve powers following failure of undertaker to appoint under Reservoirs Act 1975 section	Non-compliance	Total number of appointments		
		Total	England	Wales
10(7)(a)	No inspecting engineer appointed	4	2	2
12(4)	No supervising engineer appointed	10*	7	3
Total number of appointments		14	9	5

*10 supervising engineers have been appointed at 6 reservoirs (3 in England and 3 in Wales)

Using our reserve powers

Where we have had no alternative, we have used our reserve powers under section 15 of the Act to:

- appoint supervising engineers for 6 reservoirs (3 in England and 3 in Wales);
- appoint qualified civil engineers (‘inspecting engineers’) to carry out 4 statutory reservoir inspections (2 in England and 2 in Wales).

Action after serving notice

From 1 April 2007 – 31 March 2009 we have served 72 notices at 27 reservoirs. We do not take any further action if undertakers comply with a notice, as was the case on 15 occasions. We have taken the following action for each non-compliant reservoir after serving notice:

Prosecutions taken	1
Cautions issued	0
Warning letters issued	6 (including one for failure to issue a section 21 notice and three arising from notices served before April 2007)
No further action	15 (see note above)

There are 12 cases where notices have yet to expire or where further regulatory action is taking place.

Prosecutions

Where an undertaker fails to comply with a notice, we have powers to warn, caution or prosecute. We regard prosecution as a last resort.

In the last biennial report we reported on the prosecution of an undertaker with two reservoirs.

We have only had to prosecute once over the past two years. This is because we have successfully used other enforcement techniques together with the principles of modern regulation.

Eurologo E Foresta Limited is legally an undertaker for two category A reservoirs. The company has a long history of failing to comply with the Reservoirs Act. An uncontrolled release of water from a category A reservoir failing would pose a considerable threat to human life and cause significant damage to property and the environment.

Despite many attempts to persuade the company to comply with the Act, we began prosecution proceedings against the company and the company director on 14 November 2007 for failing to appoint a supervising engineer and failing to comply with an enforcement notice.

The company pleaded guilty to both offences but, following his failure to appear at court the director's hearing was adjourned until January 2008 when he also pleaded guilty.

The court awarded a total of £8,400 in fines and our full costs of £1,010.

Cost recovery

Under the Reservoirs Act we can recover any costs which we reasonably incur when using our powers to appoint engineers or implement work on behalf of a reservoir undertaker.

In the past we have made effective use of the civil courts to reclaim costs. We are familiar with this process and will continue to make appropriate use of the civil courts in the future.

In addition to standard civil claim proceedings, in December 2008 we made use of a less onerous mediation process to settle a claim against a company with limited financial means.

Case study – using our emergency powers

Hameldon Reservoir is situated above the town of Accrington in Lancashire. It contains approximately 135,000m³ of water. After the previous owner of the reservoir went into liquidation in the 1990s, the Crown had the right to claim ownership as 'keeper of last resort'. However, they declined to do so, because the reservoir is an 'onerous asset'. An 'onerous asset' is where the costs of maintaining the reservoir outweighs any benefits that may be obtained from it. After detailed investigations, we discovered that Hameldon Reservoir does not have an 'undertaker' and, therefore, no one is legally responsible for the safety of the structure.

We have employed panel engineers to monitor the condition of the reservoir. As a result of concerns raised by these engineers, the Department for Environment, Food and Rural Affairs (Defra)

Undertakers

In Appendix 4 we have listed those undertakers we have served notice on that are limited companies, local authorities and charities. Under the Data Protection Act 1998 we cannot publish the names of private individuals, including partnerships and sole traders.

commissioned a report into the risk that the reservoir poses to the people of Accrington. The report concluded that the reservoir is in poor condition and could fail at any time.

After we received the Defra report, we sought legal advice in addressing the safety issues posed by the reservoir. Section 16 of the Reservoirs Act 1975 allows us to take immediate action at a reservoir in the event of an emergency. Counsel advised that our powers in section 16 apply and we implemented a project to remove the risks posed by the site.

The project, supported by our inspecting engineer, recommended discontinuing the reservoir (making it unable to hold water). Work to do this is currently underway.

Environment Agency reservoirs

Over the last two years the number of reservoirs that the Environment Agency is responsible for as 'undertaker' has increased from 167 to 184.

This is because:

- new flood attenuation reservoirs have been built as part of newly commissioned flood defence schemes;
- existing assets have been reviewed to find out if they should be registered under the Act.
- a number of reservoirs have been transferred to the Environment Agency as part of the transfer of Critical Ordinary Watercourses (COWs).

Environment Agency reservoirs that have not complied with the Reservoirs Act are shown in Appendix 6 along with the dates that they were non-compliant. On 31 March 2009 the Environment Agency had one non-compliant reservoir, Cawood Ings, where conflicting legislation has delayed the completion of the measures in the interests of safety

The transfer of Critical Ordinary Watercourses has affected the number of non-compliant reservoirs that the Environment Agency has had over the past 2 years. Many of those that have been non-compliant were part of the transfer.

We are unable to serve notice on ourself, but we have a rigorous process to flag Environment Agency non-compliance to managers and directors.

Conflicting legislation

Over the past two years we have continued to find situations where the requirements of the Reservoirs Act 1975 are in conflict with other legislation. Measures in the interests of safety recommended by inspecting engineers in their section 10 reports have the force of law, but undertakers can often find that they struggle to obtain the necessary permissions required under other statutes.

Obtaining planning permission under the Town & Country Planning Act 1990 can be a problem. Other examples have included the Protection of Badgers Act 1992, where badger setts need to be relocated and the Water Resources Act 1991 where consent to discharge permission needs to be obtained raising issues of protected species and conservation downstream of the reservoir.

It is normally possible to reconcile the needs of the competing statutes, but increasingly undertakers are meeting with an initial refusal. In our view this issue merits attention.

'Potential' reservoirs project

After taking over as the enforcement authority in 2004, we audited the information held by the previous enforcement authorities. We became aware that the register of reservoirs was incomplete. Therefore, in 2006 we commissioned Halcrow to investigate large bodies of water identified by GIS to see if they should be registered under the Reservoirs Act 1975. Known as the 'Potential reservoirs project', this work was completed in early 2008. In total, 335 bodies of water were assessed and 117 were found to be large enough to be subject to the Reservoirs Act.

We have contacted the 117 undertakers to let them know their responsibilities under the Act. As a result of our letters some of the undertakers have chosen to 'discontinue' or to reduce the capacity of their reservoirs. Currently, 85 of these reservoirs have supervising engineers and 86 have inspecting engineers appointed. All but 3 of the reservoirs found by the 'Potential' reservoirs project have the necessary appointments made or have been discontinued.

Critical Ordinary Watercourses (COWs)

Watercourses that transferred from local authority responsibility to Environment Agency responsibility on 1 April 2007. They have now been designated as 'Main River'. Main rivers are larger streams and rivers which are marked on an official map called a 'main river map' and can cause serious flooding.

Communications

We believe it is extremely important to communicate clearly and consistently with undertakers to make sure that they fully understand their responsibilities under the Act. This includes:

- producing an explanatory brochure ‘a better place to live – working together for the safety of our reservoirs’;
- prompts by email and letter to encourage compliance;
- acknowledging work they have done;
- providing detailed information on our website;
- targeted communications to non-compliant undertakers.

We communicate with a wide audience, from farmers to recreation clubs and utility companies. In 2007, we commissioned research company Ipsos MORI to carry out a survey to find out what reservoir undertakers thought of the letters and brochures we produce.

We are grateful for the response we received and have used the feedback to improve our communications with undertakers. As a result of this survey, we have tried to tailor letters to suit each individual case and include

Working with other regulators

We work closely with other safety regulators to reduce the risk to public safety. One of our partners, at a recent annual liaison meeting, noted “The Environment Agency is responsible for enforcement of the Reservoirs Act, however there are some reservoirs that the Act does not apply to. Some are places of work and, in connection with these, the

more photos of small reservoirs in our publications. All of our publications are available to download from the Environment Agency’s website <http://www.environment-agency.gov.uk/business/sectors/32427.aspx> or are available in paper format from our office in Exeter.

Post-incident reporting

Although it is very rare for a dam to fail, we know that there are serious incidents at UK reservoirs every year. It is important that we learn lessons from these incidents and near misses so that we can alert undertakers and panel engineers and help avoid similar incidents happening in the future. We have issued one bulletin about masonry spillways and two further bulletins, together with our post-incident reporting 2008 annual report. Further bulletins are being drafted. All bulletins can be found at: <http://www.environment-agency.gov.uk/business/sectors/102975.aspx>

Reservoir Safety team liaises closely with the Health and Safety Executive (HSE). The Reservoir Safety team is aware from this liaison that HSE recognises the significant advances in reservoir safety achieved since the Environment Agency assumed responsibility for reservoir safety.”

Training

We have continued to run two training courses for our staff across England and Wales on relevant aspects of the Reservoirs Act. These are:

- T90a Enforcement Officers course
- T333 Reservoir Operators course (accredited by the Chartered Institution of Water and Environmental Management (CIWEM))

We have also liaised with external organisations, including undertakers and panel engineers to keep them up-to-date with the latest developments in reservoir safety.

Research and Development

Inspecting and supervising engineers rely on the outputs from Research and Development (R&D) contracts to provide technical advice and guidance on issues affecting reservoirs.

Defra asked us to take responsibility for the administration and delivery of the annual programme of R&D contracts from April 2008.

In Spring 2008, engineering consultants Atkins completed a project to determine the strategic direction for reservoir safety research and development in the UK for the next 5-15 years. This strategy was launched at the British Dam Society (BDS) conference in September 2008. We are already working on the priority projects listed below. The names in brackets are the engineering consultants who are undertaking the work.

- Review of the Interim Guide to Quantitative Risk Assessment (Atkins)
- Modes of Failure/Methods of monitoring (Arup)

- Guide on the Inspection, Monitoring, Maintenance and Repair of Tunnels (Black & Veatch)
- Review of the draft Guide to Internal Erosion (Atkins)
- Research into Stepped Masonry Spillways (MWH)
- Long Return Period rainfall – Phase I (CEH)
- Lessons from Dam Incidents (Halcrow)
- Flooding from Reservoirs – Communicating with the Public (Ipsos MORI)

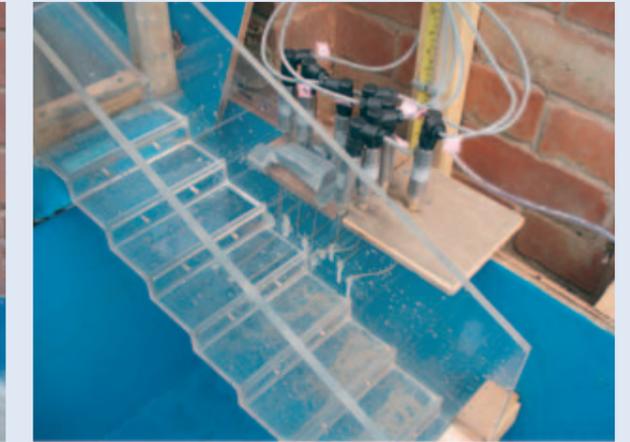
The first four projects listed above are scoping studies to determine what information is already available across the topic areas. These studies will identify gaps in the current research, and the findings will form the basis of the specification for the main reports.

We are now planning our work for 2010-2011. We are consulting with the Reservoir Safety Advisory Group (RSAG) and the reservoir industry to check that priorities are still current and to explore opportunities to work together.

Reservoir Safety Advisory Group (RSAG)

An Institution of Civil Engineers (ICE) group that provides project advice and governance.

Research into stepped masonry spillways



Pressure monitoring on model

In recent years two significant Victorian embankment dams in the UK have nearly failed due to the collapse of adjacent, stepped, masonry spillway chutes. Research has shown that other similar chutes have nearly failed in the past, but have been largely unreported. The average age of our dams in England and Wales is more than 110 years old, with many being built before concrete was used in dam construction.

The aim of this project is to firstly clarify the hydrodynamic forces that act on stepped masonry spillway chutes. Secondly, the project will determine how the integrity of the masonry and chute structure can be assessed and assured under typical high flow conditions. MWH Consultants and CRM Rainwater

are carrying out this work with support from United Utilities. A 1:20 scale physical model based on another reservoir of similar construction, Hanging Lees Reservoir near Bolton, has been constructed and tests carried out.

A larger scale acceleration chute for pressure measurement is currently being developed. This will allow the impact of step geometry and the effect of protruding/recessed masonry to be modelled. The project will be completed by Autumn 2010.

The future

We continue to make a major contribution to improving reservoir safety in England and Wales and have been instrumental in acting as a force for legislative change. Here we outline some of our key focus areas for the future.

Reservoir flood plans

On-site emergency plans

The Water Act 2003 introduced the requirement for undertakers to produce flood plans for their reservoirs where directed by the Secretary of State or National Assembly for Wales. It is likely that this Direction will be made in 2010, following consultation.

A joint Cabinet Office/Defra project has developed a guide to help undertakers prepare on-site emergency plans and to provide advice to Local Resilience Forum (LRF) members on preparing off-site emergency plans for reservoirs. A formal consultation and impact assessment on this guidance document occurred in Spring 2009.

Although it is not yet a legal requirement to have an on-site plan, guidance is available on our website at <http://www.environment-agency.gov.uk/business/sectors/37185.aspx> to help undertakers who may wish to develop a plan now. We are also developing a training package to provide further guidance in producing a plan.

Inundation mapping

Inundation maps show the effects of a dam breach on the downstream catchment. Originally, it was intended that undertakers would produce the inundation maps for their reservoirs. However, following the Pitt Review into the 2007 summer floods, Defra has asked us to produce high level inundation maps for all large raised reservoirs.

We started work on this project in May 2008, with a trial on a number of reservoirs in the North West, to develop a specification for inundation mapping. This specification was tested in November and December 2008 and is being used to produce high-level inundation maps for all reservoirs in England and Wales.

Inundation maps will be completed for all reservoirs by the end of 2009. Detailed inundation maps, showing flow depths and velocities, will be given to LRFs to help them prepare off-site emergency plans and identify critical infrastructure at risk.

Outline maps, showing the maximum extent of inundation, will be given to undertakers to inform their on-site plans. These maps will also be available for spatial planning.

This means that undertakers will not now need to carry out their own inundation mapping.

Local Resilience Forum (LRF)

Under the Civil Contingencies Act 2004, category 1 and 2 organisations come together to form the Local Resilience Forum (based on police areas), which helps co-ordination and co-operation between responders. There are 47 LRFs across England and Wales.

Category 1 organisations are those at the centre of the management the emergency response (e.g. the police, fire service, ambulance and local authorities).

Category 2 organisations (e.g. transport and utility companies) are involved in planning for emergencies that affect their business sector.

Legislative change

Following on from The Pitt Review of the 2007 floods, 'Learning lessons from the 2007 floods' (June 2008), we have submitted a number of proposals to be included in the draft Flood and Water Management Bill. The Government issued the draft Bill for consultation in Spring 2009.

We have asked that the method used to decide which reservoirs will be covered by the new Act is changed. We have recommended that all reservoirs above a minimum volume (10,000m³) should be registered. Reservoirs would then be allocated to a risk (or consequence) band: high, significant or low. The level of engineering supervision required at the reservoir would depend on its risk category.

We would like to see an appeal process for undertakers who believe that their reservoir has been placed in the wrong risk category.

We have also proposed that:

- engineers send copies of all reports to us;
- an independent review of a proportion of the reports is carried out, followed by referral to the Institution of Civil Engineers where serious concerns are raised;
- inspection reports are issued before the next scheduled inspection date;
- civil sanctions, such as fines, are included within the Bill to allow us to respond more proportionately to offences.

Following recommendations made in the Pitt Review, we have also requested that post-incident reporting, which is currently voluntary, is made mandatory.



Sir Michael Pitt (second from right) gathering evidence as part of his review into the floods in summer 2007.

Table 6 – Our proposed proportionate approach to the engineering supervision of reservoirs

Reservoir	Registration	Supervising engineer required	Inspecting engineer required
High consequence	✓	✓	✓
Significant consequence	✓	✓	✗ unless requested by the supervising engineer
Low consequence	✓	✗	✗

Appendix 1: Report submitted by the Environment Agency, for England and Wales, in its capacity as enforcement authority for the Reservoirs Act 1975, to Defra/Welsh Assembly Government, for the two year period ending 31 March 2009.

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Statistics for all Reservoirs					
1	Total number of 'large raised reservoirs' (LRRs)	1,924	2,010	2,093	This number comprises those reservoirs that are 'in operation', 'abandoned' and 'under construction'.
2	Total number of 'under construction' reservoirs	95	101	106	The 'under construction' category includes both new reservoirs and those being modified.
3	Total number of 'abandoned' reservoirs	-	3	3	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m ³ of water above natural ground level.
4	Total number of 'discontinued' reservoirs	243	210	234	The figure for 31/3/05 was inaccurate.
5	Total number of 'proposed' reservoirs	8	15	21	These are locations at which a LRR may be constructed in the future.
6	Total number of undertakers	614	710	759	
7	Total number of LRRs for which the Environment Agency is the Undertaker	129	167	184	
Supervising Engineer Appointments					
8	Total number of LRRs with no SupE (supervising engineer)	48	45	6	
Inspecting Engineer Appointments					
9	Number of LRRs for which the next Section 10 inspection (S10 Insp) report is due	122	188	153	All reservoirs have to be inspected periodically, by an inspecting engineer (InspE), at intervals no greater than 10 years. This includes cases in which an InspE has been appointed, but a 10(5) Certificate has not yet been issued.
10	Number of LRRs for which the next S10 Insp report is due, for which an inspection and report is in progress	-	148	148	Reservoirs where an inspecting engineer has been appointed, but a 10(5) Certificate has not yet been received.
11	Number of LRRs for which the next S10 Insp report has been due for at least 1 year	52	33	70	Whilst this does not represent a 'non-compliance' under the Reservoirs Act 1975, a certificate has not yet been issued and the inspection process is therefore incomplete. Includes reservoirs where an inspecting engineer has been appointed as well as those where an inspecting engineer has not been appointed.
12	Number of LRRs for which the next S10 Insp report has been due for at least 1 year, for which an InspE has NOT been appointed	-	2	3	
13	Number of LRRs for which the next S10 Insp report has been due for less than 1 year for which an InspE has NOT been appointed	-	-	2	

Appendix 1: continued

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Measures to be taken in the interests of safety (MIOS)					
14	Total number of LRRs with MIOS, including those within the 'target period' set by the inspecting engineer	292	306	336	Measures in the interests of safety are essential works identified by an InspE during an inspection carried out under Section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement measures in the interests of safety.*
15	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	50	45	
16	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least 5 years	-	8	7	These are subject to the enforcement process. If MIOS are still outstanding after 5 years it is considered that they may not have been implemented 'as soon as practicable'.

Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE 1996)
A	703	33.6	At least 10 lives at risk and extensive property damage
B	302	14.4	Fewer than 10 lives at risk but extensive property damage
C	395	18.9	Negligible risk to human life but property damage
D	241	11.5	Negligible risk to human life and very limited property damage
Not Applicable	115	5.5	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risks posed by all reservoirs are now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category.
Unknown	337	16.1	Section 10 Inspection Reports, in which risk category information is normally supplied, are not available for all reservoirs (because the Reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority).
Totals	2,093	100	

Distribution of undertaker type		
Undertaker Type	Number of LRRs	% of total number of LRRs
Agriculture (Farms and Fisheries)	214	10
British Waterways	71	3
Environment Agency	184	8.9
Industrial	118	6
Other Government agency	45	2
Other/unknown*	2	0.1
Private landowner	404	19
Private utility	32	2
Public utility	210	10
Registered charity	72	3
Water company	741	36
Totals	2,093	100

*Disclaimed reservoirs

*This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.

Appendix 2: Report submitted by the Environment Agency, for England only, in its capacity as enforcement authority for the Reservoirs Act 1975, to Defra for the two-year period ending 31 March 2009.

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Statistics for all English Reservoirs					
1	Total number of 'large raised reservoirs' (LRRs)	1,715	1,799	1,889	This number comprises those reservoirs that are 'in operation', 'abandoned' and 'under construction'.
2	Total number of 'under construction' reservoirs	93	99	102	The 'under construction' category includes both new reservoirs and those being modified.
3	Total number of 'abandoned' reservoirs	-	3	3	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m ³ of water above natural ground level.
4	Total number of 'discontinued' reservoirs	204	175	191	The figure for 31/3/05 was inaccurate.
5	Total number of 'proposed' reservoirs	-	14	19	These are locations at which a LRR may be constructed in the future.
6	Total number of undertakers	431	644	691	
7	Total number of LRRs for which the Environment Agency is the Undertaker	124	161	180	
Supervising Engineer Appointments					
8	Total number of LRRs with no SupE (supervising engineer)	44	40	6	
Inspecting Engineer Appointments					
9	Number of LRRs for which the next Section 10 inspection (S10 Insp) report is due	115	166	138	All reservoirs have to be inspected periodically, by an inspecting engineer (InspE), at intervals no greater than 10 years. This includes cases in which an InspE has been appointed, but a 10(5) Certificate has not yet been issued.
10	Number of LRRs for which the next S10 Insp report is due, for which an inspection and report is in progress	-	129	134	Reservoirs where an inspecting engineer has been appointed, but a 10(5) Certificate has not yet been received.
11	Number of LRRs for which the next S10 Insp report has been due for at least 1 year	51	29	64	Whilst this does not represent a 'non-compliance' under the Reservoirs Act 1975, a certificate has not yet been issued and the inspection process is therefore incomplete. Includes reservoirs where an inspecting engineer has been appointed as well as those where an inspecting engineer has not been appointed.
12	Number of LRRs for which the next S10 Insp report has been due for at least 1 year, for which an InspE has NOT been appointed	-	1	3	
13	Number of LRRs for which the next S10 Insp report has been due for less than 1 year for which an InspE has NOT been appointed	-	-	1	

Appendix 2: continued

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Measures to be taken in the interests of safety (MIOS)					
14	Total number of LRRs with MIOS, including those within the 'target period' set by the inspecting engineer	278	277	303	Measures in the interests of safety are essential works identified by an InspE during an inspection carried out under Section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement measures in the interests of safety.*
15	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	49	40	
16	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least 5 years	-	5	5	These are subject to the enforcement process. If MIOS are still outstanding after 5 years it is considered that they may not have been implemented 'as soon as practicable'.

Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE 1996)
A	621	33	At least 10 lives at risk and extensive property damage
B	264	14	Fewer than 10 lives at risk but extensive property damage
C	358	19	Negligible risk to human life but property damage
D	220	11.5	Negligible risk to human life and very limited property damage
Not Applicable	108	5.5	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risks posed by all reservoirs are now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category.
Unknown	318	17	Section 10 Inspection Reports, in which risk category information is normally supplied, are not available for all reservoirs (because the Reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority).
Totals	1,889	100	

Distribution of undertaker type		
Undertaker Type	Number of LRRs	% of total number of LRRs
Agriculture (Farms & Fisheries)	212	11
British Waterways	71	4
Environment Agency	180	9
Industrial	95	5
Other Government agency	35	2
Other/unknown*	2	0.1
Private landowner	372	20
Private utility	17	0.9
Public utility	188	10
Registered charity	70	4
Water company	647	34
Total	1,889	100

*Disclaimed reservoirs

*This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.

Appendix 3: Report submitted by the Environment Agency, for Wales only, in its capacity as enforcement authority for the Reservoirs Act 1975, to Welsh Assembly Government, for the two-year period ending 31 March 2009.

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Statistics for all Welsh Reservoirs					
1	Total number of 'large raised reservoirs' (LRRs)	204	211	205	This number comprises those reservoirs that are 'in operation', 'abandoned' and 'under construction'.
2	Total number of 'under construction' reservoirs	2	2	4	The 'under construction' category includes both new reservoirs and those being modified.
3	Total number of 'abandoned' reservoirs	-	0	0	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m ³ of water above natural ground level.
4	Total number of 'discontinued' reservoirs	39	35	43	The figure for 31/3/05 was inaccurate.
5	Total number of 'proposed' reservoirs	-	1	2	These are locations at which a LRR may be constructed in the future.
6	Total number of undertakers	-	66	68	
7	Total number of LRRs for which the Environment Agency is the Undertaker	4	6	4	
Supervising Engineer Appointments					
8	Total number of LRRs with no SupE (supervising engineer)	4	5	0	
Inspecting Engineer Appointments					
9	Number of LRRs for which the next Section 10 inspection (S10 Insp) report is due	7	22	15	All reservoirs have to be inspected periodically, by an inspecting engineer (InspE), at intervals no greater than 10 years. This includes cases in which an InspE has been appointed, but a 10(5) Certificate has not yet been issued.
10	Number of LRRs for which the next S10 Insp report is due, for which an inspection and report is in progress	-	19	14	Reservoirs where an inspecting engineer has been appointed, but a 10(5) Certificate has not yet been received.
11	Number of LRRs for which the next S10 Insp report has been due for at least 1 year	1	4	6	Whilst this does not represent a 'non-compliance' under the Reservoirs Act 1975, a certificate has not yet been issued and the inspection process is therefore incomplete. Includes reservoirs where an inspecting engineer has been appointed as well as those where an inspecting engineer has not been appointed.
12	Number of LRRs for which the next S10 Insp report has been due for at least 1 year, for which an InspE has NOT been appointed	-	1	0	
13	Number of LRRs for which the next S10 Insp report has been due for less than 1 year for which an InspE has NOT been appointed	-	-	1	

Appendix 3: continued

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/09	Notes
Measures to be taken in the interests of safety (MIOS)					
14	Total number of LRRs with MIOS, including those within the 'target period' set by the inspecting engineer	14	29	33	Measures in the interests of safety are essential works identified by an InspE during an inspection carried out under Section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement measures in the interests of safety.*
15	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	1	5	
16	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least 5 years	-	3	2	These are subject to the enforcement process. If MIOS are still outstanding after 5 years it is considered that they may not have been implemented 'as soon as practicable'.

Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE 1996)
A	82	40.5	At least 10 lives at risk and extensive property damage
B	38	18.5	Fewer than 10 lives at risk but extensive property damage
C	37	18	Negligible risk to human life but property damage
D	21	10.2	Negligible risk to human life and very limited property damage
Not Applicable	7	3.5	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risks posed by all reservoirs are now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category.
Unknown	19	9.3	Section 10 Inspection Reports, in which risk category information is normally supplied, are not available for all reservoirs (because the Reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority).
Totals	204	100	

Distribution of undertaker type		
Undertaker Type	Number of LRRs	% of total number of LRRs
Agriculture (Farms and Fisheries)	2	1
British Waterways	0	0
Environment Agency	4	2.5
Industrial	23	11
Other Government agency	10	5
Private landowner	32	15.5
Private utility	15	7
Public utility	22	11
Registered charity	2	1
Water company	94	46
Total	204	100

*This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.

Appendix 4: Steps taken by the Environment Agency as enforcement authority to ensure that undertakers observe and comply with the requirements of the Reservoirs Act 1975

Total notices served – 72 Total engineers appointed 10 *Some reservoir names and the names of private individuals have been removed to comply with the Data Protection Act.

Reservoir	Undertaker	Undertaker Type (see note 4)	Location	Country	Dam category (if available) (see note 1)	Number of notices served under Reservoirs Act 1975 section (see note 2)					Appointment of engineer under section 15 reserve powers following failure of undertaker to appoint under Reservoirs Act 1975 section (see note 2)		Enforcement outcome (see note 3)	Compliance status as of 31 March 2009	Comment
						8(1)	10(7)(a)	10(7)(b)	12(4)	16(3)	10(7)(b)	12(4)			
Ty Isaf/Banc Melyn (ID19)	Other/unknown	Other/unknown	Powys	Wales	B		1		1		1	1	Under investigation	Non-compliant	Investigating who the undertaker is
Blaen Bran	Eurolago E Foresta Ltd	Private landowner	Upper Cwmbran	Wales	A		1	10			1	1	Under investigation	Non-compliant	Warning letter sent April 2008.
Emerson Green Pond C3	South West of England Regional Development Agency	Other Government agency	Bristol	England	B			2					Under investigation	Non-compliant	Notices have not yet expired
Reservoir A	Private individual A + any undertaker**	Private landowner	Wiltshire	England	A			2					No further action	Compliant	10(6) certificate received before notices expired
Hameldon	No owner	Other/unknown	Accrington	England	A		1			2	1	1	No further action as there is no owner	Non-compliant	Enabling works started to discontinue the reservoir.
Hawley Lake	Defence Estates	Other Government agency	Frimley	England	C			3					Under investigation	Non-compliant	Notices have not yet expired
Henley Park Lake	Ministry of Defence	Other Government agency	Guildford	England	C			1					Under investigation	Non-compliant	Notices have not yet expired
Jack's Key Lodge	No owner	Other/unknown	Darwen	England	A		1				1	1	No further action as there is no owner	Non-compliant	Options appraisal under way
Reservoir B	Private individual B	Agriculture	Essex	England	C	1							No further action	Compliant	Construction Engineer appointed before notice expired
Reservoir C	Private individual C	Private landowner	Lincolnshire	England	A	2							Under investigation	Non-compliant	Notices have not yet expired
Reservoir D	Private individual D	Private landowner	Oxfordshire	England	B		1						Under investigation	Non-compliant	Notices have not yet expired
Langold Lake	Bassetlaw District Council	Public utility	Worksop	England	A			1					Under investigation	Compliant	10(6) certificate received after notice expired
Reservoir E	Private individual E	Private landowner	Staffordshire	England	C				1				No further action	Compliant	SupE appointed before notice expired
Llyn Pwll y Gele	Betchton Ltd	Private landowner	Dolgellau	Wales	C		1						No further action	Compliant	13(2) certificate of discontinuance received before notice expired
Llyn-Y-Mynydd	Upper Tanat Fishing Club	Private landowner	Llangynog	Wales	C			12					No further action	Compliant	New 10(5) certificate issued before notices expired
Reservoir F	Private individual F	Agriculture	Bedfordshire	England	Not applicable (non-impounding)								Warning letter	Compliant	Failure to serve a section 21 notice (now served)
Reservoir G	Private individual G	Agriculture	East Sussex	England	C		1		1				No further action	Compliant	SupE & InspE appointed before notices expired
Middleton Hall Lake	J F Ashton Ltd	Private landowner	Middleton	England	C		1						No further action	Compliant	InspE appointed before notice expired
Nant-y-Draenog	Eurolago E Foresta Ltd	Private landowner	Ynysddu	Wales	A			4				1	Under investigation	Non-compliant	Prosecution November 2007
Quadrang (ID177)	R Bratley (Quadrang) Ltd	Agriculture	Donington	England	B		1		1				No further action	Compliant	SupE & InspE appointed before notices expired
Stackpool	Wyre Forest District Council	Public utility	Kidderminster	England	B			1					Under investigation	Compliant	10(6) certificate received after notice expired
Sunderton Pool	Glaning Ltd	Private landowner	Shrewsbury	England	C			2				1	Under investigation	Non-compliant	Warning Letter sent April 2008. Mediation for outstanding invoice
Reservoir H	Private individual H	Agriculture	East Sussex	England	C		1		1				No further action	Compliant	SupE & InspE appointed before notices expired
Reservoir I	Private individual I	Private landowner	Northamptonshire	England	C				1				No further action	Compliant	SupE appointed before notice expired
Reservoir J	Private individual J	Private landowner	Shropshire	England	C			5					Under investigation	Non-compliant	Notices have not yet expired
Reservoir K	Blaenau Gwent County Borough Council + Private individual K + any undertaker**	Public utility + Private landowner	Blaenau Gwent	Wales	A		3		1				No further action	Compliant	Warning Letter sent December 2007
Weston Turville	British Waterways	British Waterways	Wendover	England	A			3					No further action	Compliant	10(6) certificate received before notice expired
Whiteknights	University of Reading + Reading Borough Council + any undertaker**	Private landowner + Public utility	Reading	England	A								No further action	Compliant	10(6) certificate received before notice expired
Explanation notes on page 36	**Notice posted on site				Totals	3	13	47	7	2					

Appendix 5: Update on non-compliant cases in appendix 4 of the 2005-2007 Biennial Report

Reservoir	Undertaker	Undertaker Type (see note 4)	Location	Country	Dam category (if available) (see note 1)	Number of notices served under Reservoirs Act 1975 section (see note 2)				Appointment of engineer under section 15 reserve powers following failure of undertaker to appoint under Reservoirs Act 1975 section (see note 2)		Compliance status as of 31 March 2009	Comment
						8(1)	10(7)(a)	10(7)(b)	12(4)	10(7)(b)	12(4)		
Wayoh	United Utilities Plc	Water company	Bolton	England	A			1				Compliant	10(6) Certificate received 6 September 2007
Castleshaw Upper	United Utilities Plc	Water company	Oldham	England	A			3				Compliant	New Section 10 Inspection certificate received 23 July 2007
Slade Brook	Kettering Borough Council	Public utility	Kettering	England	A			3				Compliant	10(6) Certificate received 3 January 2008
Black Moss	British Waterways	British Waterways	Marsden	England	A			1				Compliant	10(6) Certificate received 8 January 2008
Hedgecourt Lake	Crawley Mariners Yacht Club Ltd	Private landowner	East Grinstead	England	C			3				Compliant	New Section 10 Inspection Certificate received 27 September 2007
Blaen Bran	Eurolago E Foresta Ltd	Private landowner	Upper Cwmbran	Wales	A		1		2	1	2	Non-compliant	Further enforcement action, see Appendix 4
Nant-y-Draenog	Eurolago E Foresta Ltd	Private landowner	Cwmfelinfach	Wales	A		1		2	1	2	Non-compliant	Further enforcement action, see Appendix 4
Sunderton Pool	Glaning Ltd	Private landowner	Shrewsbury	England	C		1		1	1	1	Non-compliant	Further enforcement action, see Appendix 4
Aldermaston Court Lake	Holaw (420) Ltd	Industrial	Reading	England	A			2				Compliant	10(6) Certificate received 4 August 2007
Pool Hall	Pikerace Ltd	Agriculture (Farms and Fish Farms)	Wolverhampton	England	C			4				Compliant	10(6) certificate received 25 August 2008. Warning letter sent.

Appendix 6: Environment Agency reservoirs where we would have served notice to a third party**

Reservoir name	Category	Dates non-compliant	Current compliance status	Notes	Explanation from Operator	Remedy
Cawood Ings Wistow Lordship	A	09/08/08 – 14/11/08	Compliant- second recommendation completed	Outstanding measures in the interests of safety. Target date 09/08/08.	Unable to access the site to complete the works due to extreme wet weather conditions.	Partial 10(6) Certificate received 14 November 2008.
Cawood Ings Wistow Lordship	A	31/01/09 - present	Non-compliant	Outstanding measures in the interests of safety. Target date 31/01/09.	Conflicting legislation (Protection of Badgers Act 1992) has delayed completion of the measures in the interests of safety.	Relevant licence has been obtained and works are progressing.
Frankley Balancing Reservoir*	B	31/12/07 – 26/06/08	Compliant	Outstanding measures in the interests of safety. Target date 31/12/07.	Delay in commissioning a Qualified Civil Engineer to oversee completion of the measures in the interests of safety.	10(6) Certificate received 15 September 2008.
Braunstone Park Storage Reservoir *	D	01/04/07 – 01/08/07	Compliant	No supervising engineer appointed.	Delay in appointing the supervising engineer.	Supervising engineer appointed 1 August 2007.
Breaston FSR*	D	01/04/07 – 02/08/07	Compliant	No supervising engineer appointed.	Delay in appointing the supervising engineer.	Supervising engineer appointed 2 August 2007.
Dakyn Road FSR*	D	01/04/07 – 02/08/07	Compliant	No supervising engineer appointed.	Delay in appointing the supervising engineer.	Supervising engineer appointed 2 August 2007.
West Park & Harrington Drain FSR*	D	01/04/07 – 02/08/07	Compliant	No supervising engineer appointed.	Delay in appointing the supervising engineer.	Supervising engineer appointed 2 August 2007.
Knighton Park FSR*	D	01/04/07 – 02/08/07	Compliant	No supervising engineer appointed.	Delay in appointing the supervising engineer.	Supervising engineer appointed 2 August 2007.

* Passed to Environment Agency on 1 April 2007 as part of the transfer of Critical Ordinary Watercourses (COWs)

** We cannot serve notice on ourselves, but in the above cases they reached the point where we would have done, had the reservoir belonged to a third-party undertaker.

Notes

- 1. Dam category**
- A** Where a breach could endanger lives in a community
- B** Where a breach could endanger lives not in a community or could result in extensive damage
- C** Where a breach would pose negligible risk to life and cause limited damage
- D** Special cases where no loss of life can be foreseen as a result of a breach and very limited additional flood damage would be caused
- U** Unknown
- 2. Reservoirs Act 1975 section**
- 8(1)** No construction engineer appointed
- 10(7)(a)** No inspection and report
- 10(7)(b)** Measures to be taken in the interests of safety not carried into effect
- 12(4)** No supervising engineer appointed
- 3. Enforcement outcomes**
- Under investigation
 - No further action
 - Written warning
 - Formal caution
 - Prosecution

- 4. Reservoir Enforcement and Surveillance System undertaker definitions**
- | Undertaker type | Examples |
|----------------------------------|--|
| Other/unknown | |
| Private landowner | Trusts, limited companies, recreational bodies, individuals, estates |
| Agriculture (farms & fish farms) | Farms, fish farms |
| Public utility | Local authorities, National Parks |
| Water company | |
| Industrial | Manufacturing and chemical companies |
| British Waterways | |
| Private utility | Power generator company |
| Registered charity | National Trust |
| Environment Agency | |
| Other Government agency | MoD, Forestry Commission, Crown Estates |

- 5. Data protection**
- We have listed those undertakers that are limited companies, local authorities and charities.
- The Data Protection Act 1998 does not permit us to publish the names of private individuals, including partnerships and sole traders.

Contact details

Please call us during normal office hours (Monday-Friday 9am to 5pm) on 01392 442001.
 Fax: 01392 444238

Or write to us at:

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Or email us at:

reservoirs@environment-agency.gov.uk

Visit our website at:

www.environment-agency.gov.uk/business/sectors/32427.aspx