



Notice of Ofwat’s proposal to impose a penalty on Thames Water Utilities Limited

This document constitutes a Notice given by the Water Services Regulation Authority (“Ofwat”) under and in accordance with section 22A(4) of the Water Industry Act 1991 (as amended) (“WIA91”).

WHEREAS

- i) Ofwat has power under section 22A(1) WIA91, subject to certain conditions being met, to impose a penalty on a water and sewerage undertaker which Ofwat is satisfied has contravened or is contravening any Condition of its Appointment;
- ii) On 9 June 2011 Ofwat served a Notice on Thames Water Utilities Limited (“Thames Water”) under and in accordance with section 203(2) WIA91 (the “Section 203 Notice”):
 - (a) stating that it appeared to Ofwat that, when it submitted information on 11 June 2010, Thames Water may have contravened Conditions of its Appointment (namely Condition J and/or M in respect of regulatory reporting); and
 - (b) requiring Thames Water to produce certain documents and to furnish certain information specified and described in the Section 203 Notice;
- iii) Ofwat has considered the facts, matters and circumstances relating to the contraventions. Ofwat has also considered Thames Water’s response to the Section 203 Notice, as well as other relevant submissions and reports made by Thames Water and other parties;
- iv) On 25 October 2013, Ofwat issued a ‘minded to’ letter to Thames Water which included a draft Notice proposing a financial penalty, and giving Thames Water an opportunity to respond before Ofwat’s decision was taken on whether to issue a Notice under section 22A(4) of the Act;

- v) After due consideration of all the points raised by Thames Water and all relevant matters, Ofwat is:
- (a) satisfied that Thames Water submitted unreliable and inaccurate information on 11 June 2010 in its June return and thereby contravened Condition J of its Conditions of Appointment;
 - (b) satisfied that section 22C (time limits to set financial penalties) has been complied with; and
 - (c) satisfied that it would be appropriate to impose a penalty on Thames Water in respect of this contravention. However, following Ofwat's investigation into this issue, Thames Water has offered a package of measures for its customers. Ofwat is satisfied that the measures pledged by Thames Water (together with a nominal penalty of £1) will be of greater benefit to customers than the penalty Ofwat had been minded to impose absent these measures. Thames Water has said it will:
 - accept a £79 million (2012-13 prices) reduction by Ofwat to its regulated capital value (RCV)¹, plus a financial adjustment to remove any benefit Thames Water received from this expenditure being included in its RCV during 2010 to 2015. This will result in lower bills for Thames Water's 14 million sewerage customers for years to come; and
 - spend £7 million on customers, over and above what it would otherwise have spent, over the next five years through:
 - increasing the amount of money available to the Trustees of the Thames Water Trust Fund (£2million) to assist customers who are having difficulty paying their bills; and
 - investing £5 million to support additional community projects such as local programmes to better protect rivers and improve the natural environment.

NOW THEREFORE, OFWAT HEREBY GIVES NOTICE TO ALL WHOM IT MAY CONCERN THAT:

For the reasons set out in the attached schedule:

¹ The RCV was developed for regulatory purposes and is primarily used in setting price controls by Ofwat. One of the elements Ofwat considers when assessing the revenues that the companies need is a financial return on the capital invested in the business. The value of the capital base of each company for the purposes of setting price controls is the RCV.

- i) Ofwat has this day proposed to impose a financial penalty on Thames Water in respect of Thames Water's contravention of Condition J of its Conditions of Appointment;
- ii) Ofwat is proposing to impose a nominal penalty of £1; and
- iii) Any representations or objections with respect to this proposal should be made to Ofwat in writing by no later than 5pm on 26 June 2014 and in accordance with the instructions set out in section 7 of the Schedule to this Notice.



Cathryn Ross,

Chief Executive

For and on behalf of the Water Services Regulation Authority

Dated this day, 5 June 2014

Schedule to the Notice

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1 Introduction

1. Thames Water Utilities Limited ('Thames Water') is an appointed water and sewerage undertaker and, as such, is required to comply with the Conditions of its Instrument of Appointment.
2. Condition J of Thames Water's Instrument of Appointment (Condition J) relates to levels of service information and service targets and sets out requirements on it to furnish information and data to Ofwat. Until 2010-11, each undertaker sent Ofwat detailed information about their performance each year. This annual data submission (or 'June return') was published to allow customers and stakeholders to understand each undertaker's performance. As part of this submission, each water and sewerage undertaker had to provide information (in Table 3 of the June return) in relation to properties at risk of sewer flooding, including properties on the '**1 in 10**' and '**2 in 10**' registers (the '**high risk registers**'). Unreliable or inaccurate data submissions in the June return could have prejudiced Ofwat's ability to effectively regulate the sector.
3. Thames Water's price limits for asset management period (AMP) 4 (that is, 2005-2010) included outputs relating to reducing the risk of sewer flooding. Thames Water was required to carry out capital solutions to address 3,521 properties which were at risk of internal sewer flooding and to achieve a net reduction in the number of properties that it classified in its high risk registers as high risk of internal flooding by 2,379. Through the [June 2010 reporting requirements](#)², Thames Water was required to report the number of properties on the high risk registers and the numbers removed from them in each year by both company action and as a result of better information.
4. When Thames Water submitted its 2010 June return it misreported the number of properties that it had removed from its high risk registers by company action. Specifically, Thames Water had reported removal of properties from the high risk registers by company action when these properties should not have been on the high risk registers in the first place, as there was not sufficient evidence to suggest that these properties had flooded and were high risk, in accordance with the relevant reporting requirements.
5. Solutions to reduce the risk of sewer flooding for properties added to the high risk registers which were not actually at high risk of flooding will not deliver benefits to those customers comparable to the benefits of company action for customers

² 'See 01_Key_Outputs; Chapter 3'

who are actually at high risk of sewer flooding. As the solutions have been funded through the general customer base, Thames Water's customers will have paid higher prices which will not be remedied unless action is taken to address this issue. Ofwat's detection of the misreporting has provided an opportunity to ensure this is rectified.

6. Ofwat is satisfied that Thames Water contravened the requirements of Condition J of its Instrument of Appointment when it submitted its 2010 June return. Due to the seriousness of the contravention, Ofwat is proposing to impose a penalty on Thames Water. However, Ofwat proposes that the penalty be a nominal amount of £1 to reflect the package of measures for its customers that Thames Water has pledged.
7. This schedule sets out the acts and omissions which, in Ofwat's opinion, constitute the contravention in question and the other facts which, in Ofwat's opinion, justify the proposed penalty and its amount.
8. Ofwat is satisfied that, for the purposes of section 22A(13) WIA91, the Competition Act 1998 is not the most appropriate way of proceeding.

2 Matters constituting a contravention under Condition J

9. Under section 22A(4)(c) WIA91, Ofwat is required to specify the acts or omissions which, in Ofwat's opinion, constitute the contravention in question.

2.1 Condition J

10. Licence Condition J sets out the obligation on Thames Water to provide information to Ofwat in the form and manner specified. The June return 2010 reporting requirements are the relevant requirements governing those specifications for the 2009-10 reporting year.
11. Condition J Part 1 Section 1.1 provides for the furnishing of information to Ofwat:

The Appointee shall in respect of each Charging Year, starting with the Charging Year commencing on 1st April 1990, furnish Information to the Director once in each Charging Year in respect of the matters specified in, and otherwise in accordance with, Appendix A to the letter entitled "Levels of Service" dated 21st August 1989 from the Secretary of State to the Water Authority ("the levels of service letter").

'Appendix A', for these purposes, are those matters specified in the June return 2010 reporting requirements. The use of reporting requirements supersedes the 'levels of service letter' itself and has been the recognised practice of dealing between all appointees and Ofwat since 1989.

2.2 Reporting Guidelines

12. The June return 2010 reporting requirements ('reporting requirements') were produced by Ofwat and specified the relevant requirements governing the information to be provided for the 2009-10 reporting year. Chapter 3 of the reporting requirements covered the outputs required for the sewerage service. The relevant schedule is known as DG5, '**Properties on the internal flooding register**'. The requirements state:

These lines cover properties which have flooded and are deemed to be at risk of flooding more frequently than once in twenty years and once or twice in ten years, the problem status of the properties on the register, and annual changes to the register. The flooding register was formerly known as the 'at risk' register and references to the 'at risk register' should now be treated as a reference to the flooding register.

13. Properties on the high risk registers are defined as follows.

Properties on the register: These are defined as properties that have suffered and are still likely to suffer internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant period (either once in twenty years or once or twice in ten years).

14. The relevant lines of the schedule DG5 are lines 12-33. The aim of these lines is stated as follows.

Aim

To measure the number of properties that have flooded and are still at risk of flooding from the public sewerage system by foul water, surface water or combined sewage.

It is unlikely that properties on the register can be removed from the risk of flooding again by operational improvements alone.

Information on properties on this register is to be reported in the form of a balance sheet, which identifies performance against the three DG5 reference levels at the end of the report year as well as the reasons for changes in the reported DG5 figures during the report year. It distinguishes between those problems that have been solved as a result of action by the company and those which have been removed due to better information. (Properties should be reported under either the 1 in 20, 1 in 10 or the 2 in 10 category.)

15. The guidance for lines 12 to 33 of the schedule DG5 describes how properties should be added to the high risk registers:

Properties on the registers will be identified by a number of methods:

- **historical information on actual flooding incidents; or**
- **a verified hydraulic model. (Verified means that properties are known to have flooded, or there is good reason to believe that unreported flooding has occurred, for example, neighbouring properties to the initial reported property).**

16. The requirements also describe the need for companies to keep accurate records:

Companies must maintain verifiable records for DG5. The aim of the records is to provide an auditable method for identifying the specific properties which are affected by flooding.

The DG5 Register: As part of these records companies must maintain a DG5 register which should form a database of all properties which have flooded and are likely to experience sewer flooding more than once in twenty years. It will enable the identification by address of individual properties which are below the reference level and should also contain information on (for example) complaints and the results of their investigation, problems which are attributable to customer's apparatus and properties which experience sewer flooding but are covered by one of the allowable exclusions.

17. The reporting requirements state that properties can be added to the high risk registers either by using the evidence of flooding incidents at a property - **'historical information on actual flooding incidents'** - or by using a **'verified hydraulic model'**. The requirements state that **'Verified means that properties are known to have flooded, or there is good reason to believe that unreported flooding has occurred, for example, neighbouring properties to the initial reported property'**. Therefore, if a verified hydraulic model is used it must be verified according to information on flooding incidents which are relevant to the property in question itself or there should be a good reason to conclude that unreported flooding has occurred (such as neighbouring property flooding).
18. When verifying a model, there must be a good match between the predictions of the model and actual information already gathered from flooding events. A comparison of historical information and the predications of a model will only be valid if similar assumptions are used in the model to the circumstances at the time of the known event.

2.3 Revision of the Reporting Requirements & clarification

19. Ofwat revised the reporting requirements between 2008-9 and 2009-10 (see [2009 June reporting requirements](#)³). For instance the name changed from the 'at risk register' to the 'flooding register' and there were other changes to the text. The process Ofwat followed before finalising the reporting requirements allowed for companies to raise clarification questions. Ofwat considered the questions and published the answers on its website, including an opinion on whether the

³ 'See 01_Key_Outputs; Chapter 3'

requirements needed to change as a result of the answer. Yorkshire Water asked the following question on the high risk registers:

Request for clarification on guidance and data definitions:

The Reporting Requirements state:

'To measure the number of properties that have flooded and are still at risk of flooding' but then goes on to say 'investigation, such as verified hydraulic modelling, clearly shows that it is likely to flood more frequently than once in ten years'.

Please could you clarify whether the register (no longer known as the at risk register) is for actually flooded properties only or also includes properties believed to be at risk following investigation as the guidance allows for both.

20. As a result, Ofwat issued a clarification to the reporting guidance for the 2010 June returns, which was made available to all companies. It states:

The register is for properties known to have flooded. The phrase which talks about a property being 'likely to flood' more frequently refers to a property that has flooded but investigation is indicating which category of the register the property is added to. For clarity the full paragraph is given below. The key here is that the paragraph is talking about a previously unreported property which is flooded and needs to be added to the flooding register.

“When a previously unreported property is flooded, it should be entered onto the register under an appropriate category. It should normally be added to the 1 in 20 category unless:

investigation, such as verified hydraulic modelling, clearly shows that it is likely to flood more frequently than once in ten years, then it should be added to the once in ten years category, or is likely to flood more frequently than twice in ten years, then it should be included in the twice in ten year category;”

June return guidance to be amended?: No”

21. In the 2010 June return, Thames Water included the following comment in Appendix A to the commentary on Table 3:

“A meeting with the Reporter was held in January 2010 in recognition that five large and complex sewer flooding schemes (at Coldharbour Lane, West Ham, Norland Square, Haydon Wick and Clova Road) comprise over 80% of the DG5 outputs in AMP4. It is important to us that the Reporter continues to scrutinise these schemes, the properties alleviated and that he satisfies himself that the hydraulic models have been developed to an appropriate standard and quality. In previous years, the Reporter has asked us to reinforce and enhance the process by which flooded properties are checked, audited and signed off when they are alleviated by a scheme, which we have now done.

At this meeting, we also reviewed with the Reporter Ofwat's information requirements for the 2010 June Return. Our conclusion from our review was that the clarifications provided by Ofwat did not require any specific amendments to our Level of Service Methodology or the process by which determine whether a property is at risk or alleviated by a scheme.”

22. For the avoidance of doubt, Thames Water's claim that it had enhanced the **‘process by which flooded properties are checked, audited and signed off when they are alleviated by a scheme’** is not consistent with the Reporters' report on Table 3:

“in a number of cases there were very limited numbers of actual reported flooding incidents to verify the modelled assessments. We are therefore concerned that a proportion of the Company's claimed outputs are not adequately supported”

23. Thames Water has emphasised in its representations that throughout the 2005-10 period it only added properties that it believed had flooded. This reveals a good understanding by Thames Water of what the reporting requirements required. Ofwat is not aware of any other change in the reporting requirements, other than the one specified above, that could have led to a change in the way Thames Water interpreted the reporting requirements..
24. It is Ofwat's view that the reporting requirements, including the stated aims, are sufficiently clear to have enabled Thames Water to understand what was required in order for them to properly comply with Licence Condition J and to form the basis for the breach that Ofwat has found.

2.4 Thames Water's 2010 June Return

25. Up to 2011, Ofwat collected the information required by the Conditions of Appointment from undertakers as part of an annual return, known as the June return (or, prior to 1999, the July return). Since 1991, Ofwat specified what information was to be furnished by means of its June return reporting requirements and definitions manual (**'the reporting requirements'**).
26. For each June return submission water and sewerage companies were required not only to furnish information on the relevant reporting year but also to furnish information for **'reference years'**. Thames Water's obligation to provide robust information in its June return applies to information for every year reported on, even where such information has previously been submitted to Ofwat, as part of the June return in earlier years. The properties reported as removed by company action in 2009-10 contain properties added earlier than 2009-10.
27. The relevant data which Ofwat considers is misreported is reported in table 3 of the June return. The relevant table reported by Thames Water in respect of 2009-10 is shown below. The parts of the table Ofwat considers to be mis-reported are highlighted. Ofwat's concerns relate to lines 12, 13, and 22-25 of table 1 below and particularly line 22.

Table 1

Thames Water Utilities Ltd
Key outputs; Sewerage service - Internal flooding

Line	Description	Unit	2008-09	2009-10
A DG5 Annual flooding summary				
1	Number of domestic properties connected to sewerage system	'000	5,737.0	5,772.6
(i) Overloaded sewers				
2	Properties flooded in the year (overloaded sewers)	nr	193	381
3	Flooding incidents in the year (overloaded sewers)	nr	219	432
4	Flooding incidents (overloaded sewers attributed to severe weather)	nr	19	117
5	Properties where flooding limited to uninhabited cellars only (o/loaded sewers)	nr	24	59
(ii) Other causes				
6	Properties flooded in the year (other causes)	nr	845	746
7	Properties which have flooded more than once in the last 10 years (other causes)	nr	1,568	1,450
8	Flooding incidents (other causes - equipment failure)	nr	9	15
9	Flooding incidents (other causes - blockages)	nr	905	745
10	Flooding incidents (other causes - collapses)	nr	28	35
11	Properties where flooding limited to uninhabited cellars only (other causes)	nr	419	253
B Properties on the flooding register				
(i) Summary				
12	2 in 10 register at end of year	nr	492	402
13	1 in 10 register at end of year	nr	1,669	1,202
14	Total 1 in 10 and 2 in 10 properties on the register at end of the year	nr	2,161	1,604
15	1 in 20 register at end of year	nr	11,016	10,451
16	Properties on the register which have not flooded in the past 10 yrs (excl. severe weat	nr	310	66
17	Properties which have not flooded internally but suffer restricted toilet use (RTU)	nr	24	0
(ii) Problem status of properties on the 1 in 10 and 2 in 10 registers				
18	Cost beneficial problems where risk is reduced temporary measures (mitigation)	nr	21	75
19	Non cost beneficial probs. where risk is reduced by temporary measures (mitigation)	nr	237	226
20	Cost beneficial problems without mitigation awaiting solution & those which have not t	nr	1,135	472
21	Non cost beneficial problems without mitigation	nr	768	831
(iii) Annual changes to 1 in 10 and 2 in 10 registers				
22	Removed by company action	nr	562	867
23	Removed because of better information	nr	184	155
24	Added because of better information	nr	277	465
25	Added because of increased demand	nr	0	0

28. Table 1 shows that 867 properties were reported as removed by company action in 2009-10 (line 22). These 867 properties are at the heart of Ofwat's concerns. 'Removed by company action' implies that Thames Water spent money to introduce remedies. The line below (line 23) indicates that there is a route for removing companies from the high risk registers without incurring such expenditure, that is by acquiring better information about the risk of flooding.

2.5 Section 203 Notice

29. Ofwat has had discussions with Thames Water over many years concerning its sewer flooding programmes and the reporting of them. In 2009-10 the Reporter's commentary on the 2010 June return data also raised serious concerns about the number of properties Thames Water had reported as 'removed from the register by company action'. The report noted

“that a total of 1,291 of 3,603 AMP internal propertiesclaimed by the Company as removed by company action had been identified through hydraulic modelling, a proportion which we consider is high. We noted that these assessed outputs had been checked against other historical information where available. However, in a number of cases there were very limited numbers of actual reported flooding incidents to verify the modelled assessments. We are therefore concerned that a proportion of the company’s claimed outputs are not adequately supported...”

30. Given the above statement from the reporter about the validity of Thames Water’s hydraulic model, Ofwat decided to take a closer look at the supporting evidence behind specific properties that Thames Water had entered onto the high risk registers.

31. Section 3 sets out details of the history of Ofwat’s concerns, its dialogue with Thames Water and other work commissioned, as a result of which, Ofwat formed the view that Thames Water may have contravened Condition J of its appointment and so, in June 2011 Ofwat issued Thames Water the Section 203 Notice to obtain information about 867 properties.

2.6 Investigation of the evidence

32. Thames Water provided information as requested in response to the Section 203 Notice. Ofwat carried out detailed analysis on 832 out of the 867 properties reported as removed by company action. These properties were chosen because they were covered by 4 large schemes in London, and represented 96% of the relevant properties. The large schemes are those known as

- Clova Road, E7;
- Coldharbour Lane, South London;
- Norland Square, W11 and
- West Ham, east London.

Ofwat did not investigate the other 35 properties.

33. Table 2 below shows the results of Ofwat’s investigation. In Ofwat’s opinion, around 73% of the 832 investigated properties did not meet the standard of evidence required by the reporting requirements for inclusion on the high risk registers.

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Category	Assessment of the documentary evidence provided by Thames	Clova Road	Coldharbour Lane	Norland Square	West Ham	ALL	Percent of total	Cumulative Number	Cumulative %	Ofwat conclusion
1	No internal flooding reported and no properties close by that should be on the register.	23	203	9	106	341	41%	341	41%	Insufficient evidence to meet the threshold of the Reporting Requirements
2	Some documentary evidence that flooding may have occurred, although it is either unclear that the flooding was internal or that the source of the flooding was the public sewerage system due to hydraulic incapacity.	16	24	3	110	153	18%	494	59%	Insufficient evidence to meet the threshold of the Reporting Requirements
3	Have documentary evidence that internal flooding has occurred, some times repeatedly, although in each case if a cause is noted it is that the flooding was through cracks in the wall or floors of cellars.	32	4	0	47	83	10%	577	69%	Insufficient evidence to meet the threshold of the Reporting Requirements
4	Some documentary evidence of internal flooding, but there is either some reference to a blockage or it occurred on dry days or in events with a return period of less than 1 year.	5	9	0	17	31	4%	608	73%	Insufficient evidence to meet the threshold of the Reporting Requirements
5	No flooding reported, but nearby property should clearly be on the register. Company has reliable property level information relevant to likely flooding mechanism	1	5	0	6	12	1%	620	75%	Not clear that these properties meet the threshold
6	Have documentary evidence that internal flooding has occurred on one occasion, but it was in a storm that the company had assessed as having a return period of more than 20 years, outside the specifications in the reporting requirements.	8	49	2	10	69	8%	689	83%	Not clear that these properties meet the threshold
7	Have multiple reports of internal flooding although either: rain fall events were assessed by the company as having a return period of more than 20 years; or precise dates of flooding are not known. There is also no evidence that a timely investigation by the company of the causes of flooding occurred.	16	14	13	47	90	11%	779	94%	Not clear that these properties meet the threshold
8	Have documentary evidence that internal flooding has occurred on one occasion in a storm that the company had assessed as having a return period of less than 20 years.	3	1	0	32	36	4%	815	98%	Not clear that these properties meet the threshold
9	Internal flooding reported more than once over the last twenty years and at least two storms were not severe (Rainfall return period <1 in 20. Events due to severe storms would be excluded from the registers). Timely investigation for at least one event concluded that it was not the result of a blockage.	0	2	1	2	5	1%	820	99%	We consider this category meets the threshold
10	Internal flooding reported more than once over the last twenty years and at least once in a storm with a return period more frequent than once in ten years. No indication of a blockage.	2	0	0	10	12	1%	832	100%	We consider this category meets the threshold
	Total	106	311	28	387	832	100%	832	100%	
11	Not investigated					35				We give Thames the benefit of the doubt
	Total Properties removed by company action					867				

2.7 Discussion of the results

34. Ofwat's investigation was based on a specific assessment of the evidence recorded separately by Thames Water for each of the 832 properties. Ofwat has classified the properties into 11 broad categories as set out in table 2 above.
35. These 11 categories allowed Ofwat to ascertain the extent to which there was sufficient evidence to meet the criteria set out in the reporting requirements as set out in section 2.2 above.
36. The reporting requirements set out clearly what was required by Ofwat in order for companies' June return reporting to be in compliance with Licence Condition J. Material departures from the reporting requirements risked breaching that Licence Condition. The further a company departed from the stated aims – for example, by including properties where there was no good reason to believe that it had flooded or was at high risk of flooding, in a 1 in 10 or 2 in 10 rainfall event – the greater the risk that it will have failed to comply with Licence Condition J when the June return report was submitted.

Category 1

37. For 341 of the properties, which represents 41% of the 832 entries that Ofwat investigated, Ofwat found a lack of supporting evidence to suggest that there has been internal flooding reported at the specific properties, nor was there any evidence that properties close by had also flooded and so should be on the high risk registers.

Category 2

38. In the case of category 2 properties, there is some documentary evidence of flooding having occurred. However, there is insufficient evidence to confirm that the flooding was internal, or that the source of the flooding was hydraulic incapacity of the public sewer. The primary purpose of the risk registers is to establish that incapacity of the public sewer is the source of flooding.

Category 3

39. In the case of category 3 properties there is evidence that flooding is occurring through cracks in walls or floors of cellars rather than from the sewer. Again, the primary purpose of the risk registers is to establish that incapacity of the public sewer is the source of flooding.

Category 4

40. In the case of category 4 properties, although there is evidence of internal flooding there is also evidence that the cause is blockages, such as that the flooding occurred on dry days, so it was unlikely to be due to hydraulic incapacity.

Further explanation of the results

Categories 1-4

41. These properties do not have **'historical information on actual flooding incidents'** that supports inclusion on the high risk registers. And also, Thames Water has not shown that there is verified hydraulic modelling that is consistent with their inclusion on the high risk registers.
42. The reporting requirements require that when verifying a hydraulic model, there must be a reasonable match between the predictions of the model and information already gathered from flooding events. It is clear, for the purposes of verification, that **'good reason to believe that unreported flooding has occurred'** cannot simply come from the results of a hydraulic model. 'Good reason to believe' means an external and independent factor which should confirm the predictions of the hydraulic model for the purposes of verification. Put simply, in light of the reporting requirements a hydraulic model cannot be used on a stand-alone basis to verify its own results.
43. The Section 203 Notice requested that Thames Water provide **'All evidence and records which the company believes demonstrates that each property has suffered sewer flooding and should be placed on the high risk register.'** Thames Water provided insufficient information to support it having good reason to believe that unreported flooding has occurred beyond its use of a hydraulic model.
44. Thames Water has different hydraulic models for its different schemes (Coldharbour Lane, Clova Road, West Ham and Norland Square). The evidence that it presented to Ofwat in response to the Section 203 Notice does not indicate a good match between the results of its hydraulic models and properties that have reported flooding (or where there could be good reason to think that unreported flooding incidents has occurred). Thames Water's models indicate that all the properties that it placed on the high risk registers are at risk of flooding more frequently than once in ten years. However, Ofwat has found a lack of clear evidence that flooding from the public sewerage system has led to internal

flooding at the majority of properties where the hydraulic model indicates such risk.

45. For a significant number of properties where flooding has been reported it has occurred in rainfall that Thames Water has assessed is much more severe than a 1 in 10 return period rainfall. To use this evidence to verify the results of the model, the assumptions within the model, such as the level of rainfall, should be comparable to those recorded at the time of flooding. Ofwat has not seen any evidence that the company has attempted to predict flooding using its hydraulic models in comparable conditions that it could correctly compare to the reported flooding.
46. In addition, there should be a good match between the properties the model predicts as flooding and those reported as flooding. The model could not be considered verified by such information if either it predicts less properties flooding than actually reported flooding, or if it predicts that a number of properties would flood but there are no reports of flooding and no good reason to think that unreported flooding occurred. In the present case, there is a lack of evidence to support the addition to the high risk registers of 41% of the properties investigated and reasonable doubts around further 32% of the investigated properties. A discrepancy of such magnitude leads Ofwat to conclude that Thames Water's hydraulic models are not verified in the way that the reporting requirements describe and are therefore not '**verified hydraulic models**' for this purpose.
47. For all four categories, Ofwat considers that there is insufficient evidence to justify inclusion on the high risk registers. Cumulatively, categories 1-4 cover 608 of the 832 properties, or 73%.

Categories 5-8

48. For these categories, Ofwat believes that the evidence for placing properties on the high risk registers is not as strong as it would expect. For instance, these categories include properties in respect of which flooding was due to a storm with a return period much longer (the storm was much more severe) than the appropriate ranges for inclusion of properties on the high risk registers.
49. While these properties do not have '**historical information on actual flooding incidents**' that supports inclusion on the high risk registers, there is evidence of flooding. It is therefore possible that a hydraulic model could be constructed which could be verified with the actual reports of that flooding. While Ofwat has not seen evidence that Thames Water has properly added these properties to the

high risk registers, it is possible that it could have added these properties if a hydraulic model had been appropriately verified.

50. Cumulatively categories 5 to 8 account for 207 properties, or 24% of the properties investigated.

Categories 9-10

51. Ofwat considers that Thames Water has reasonable evidence that meets the standards required in 17, or 2%, of the properties. These properties can be added to the high risk registers on the basis of '**historical information on actual flooding incidents**' without the need for a verified hydraulic model.

Category 11

52. Ofwat did not investigate these 35 properties and so has not reached a conclusion in relation to Thames Water's reporting of them.

Other assumptions used in the assessment of evidence

53. With regard to Ofwat's 'property by property' approach; Ofwat fully considered Thames Water's response to the Section 203 Notice at the different stages of the investigation, but remains of the view that a consideration of whether or not a model is 'verified' for the purposes of the reporting requirements needs to take into account property level information and it is not sufficient to merely assert that a model is verified at a scheme level basis, without clearly explaining why there are significant and extensive discrepancies at a property level (as there are in this case). This suggests that Thames Water's hydraulic model is not verified as required by the reporting requirements. As a non-verified model increases the risk of discrepancies at property level Ofwat has focused its attention at this more detailed level.

54. Ofwat concludes that Thames Water's generic approach at scheme level is flawed as a result of several factors:

- a hydraulic model that is not verified in compliance with the Reporting Requirements;
- the lack of historical information; and
- the insufficiency of complementary actions that Thames Water alleges to have carried out (such as site visits).

3 Ofwat's investigation

3.1 Up to the issue of the Section 203 Notice

55. Between 2003 and 2009, there was correspondence between Ofwat and Thames Water which discussed the removal of properties from the high risk registers and the design standard (that is, the level of protection from flooding that the company aims to give its customers from the investment it makes).

56. In 2009-10 the Reporter's commentary on the 2010 June return data raised serious concerns about the number of properties Thames Water had reported as 'removed from the register by company action'. Given the concerns raised by the reporter, Ofwat decided to take a closer look at the supporting evidence behind specific properties that Thames Water had entered onto the high risk registers.

57. In November 2010, Ofwat met with Thames Water and it was agreed that the Reporter (Halcrow) would conduct an in depth study on the Coldharbour Lane scheme, which was the largest scheme carried out in AMP4 and also had the highest proportion of properties that did not have reports of flooding.

58. On 9 June 2011 Ofwat issued a Notice, under Section 203(2), requesting information and documents including:

- Board minutes relating to AMP4 sewer flooding outputs;
- minutes of meetings commissioning and signing off AMP4 sewer flooding schemes, and
- an explanation of systems and processes at Thames Water for detecting and investigating internal sewer flooding incidents.

59. The Section 203 Notice preserved Ofwat's ability to impose a penalty on Thames Water in relation to relevant contraventions which occurred in the 12 months prior to the date of the Section 203 Notice. In compliance with section 22C WIA 91, a financial penalty can be imposed in respect of the June Return submitted by Thames Water on 11th June 2010.

3.2 After the issuing of the Section 203 Notice

60. In July 2011 Thames Water provided information in response to the Section 203 Notice.

61. In September 2011 Halcrow produced its final report on the Coldharbour Lane scheme. The report contains the following findings, amongst others:

“The model does not appear to meet standards appropriate to the size and complexity of the project” [Coldharbour Lane]...

“It is normal practice as part of model verification to carry out Historical Verification, where the model is run using either design storms, or recorded actual events, and the predicted flooding and surcharging is compared with recorded performance. This is an important part of the verification process because it allows the model to be tested in more extreme rainfall than is usually captured during short term flow surveys. The Hyder model verification report does not include any reference to historical verification having been carried out.”...

“Having reviewed the data and process, we find it difficult to have confidence in the outputs reported from modelling alone.”

62. In January 2012 Ofwat and Thames Water held a meeting to discuss the evolution of sewer flooding processes with a particular focus on changes in process since 2010. Ofwat concluded that Thames Water had demonstrated a significant improvement since 2010. The most persuasive changes seen at the January meeting were a significantly improved collation of the facts and evidence on internal flooding at properties base and a structured sign off process when a property is added to or removed from the high risk registers. Ofwat accepted these changes were a marked improvement to the situation when the Section 203 Notice was served.

63. In February 2012 Ofwat sent a letter to Thames Water setting out its general concerns regarding the reporting in 2009-10, together with 16 case studies to illustrate these concerns.

64. In November 2012, Ofwat commissioned Strategic Management Consultants (SMC) to produce a report to understand whether it is typical practice within the industry to report properties as being removed from the high risk registers by company action where there is no clear evidence of flooding from hydraulic incapacity, but instead those properties have been assessed to have flooded on the basis of a hydraulic model. This report was received on 20 December 2012. The conclusions were:

“From the information provided by Ofwat, Thames appears to have attributed sewer flooding to hydraulic overloading where the evidence is uncertain – for example where the flooding may be as likely, or more likely to be attributable to blockages.

In other cases there remains some uncertainty whether the properties recorded have experienced flooding; for example where no contemporary record has been retained and consequently sometimes the only evidence is from modelling.

We conclude from this review of the case studies supplied that in a number of cases the justification for adding properties to the register is conflicting and not robust. Specifically we have concerns about properties added to the register where no history of flooding has been reported. From discussions and sample audits of schemes at companies we have reviewed, we have not been aware of additions to the high risk registers solely on the basis of modelling.

We have reviewed the June Return 2010 reports for the other nine WaSCs, [water and sewerage companies], including those for whom we have acted as a reporter. We have not seen evidence of additions (and subsequent removals) where sewer flooding was not reported, at a scale similar to that at Thames Water or of properties being added after a scheme has been completed and signed off.”

65. SMC noted that the guidance allows for the use of verified hydraulic models to add properties to the high risk registers. However, it expressed doubts on the models used by Thames Water:

“From the investigations carried out by Ofwat on the 16 case studies it is clear that some of the reported flooding incidents identified by the company and presumably used to build the models were found to be ‘other causes’ or were potentially severe weather events...If these are examples of data used to build the models we have reservations about the quality of the models and the accuracy of the predictions. In our view models verified against flooding evidence of this kind would be unlikely to provide accurate estimates of the risk of flooding.”

66. In May 2013 Ofwat wrote to Thames Water sharing details of its concerns and seeking Thames Water's response.

67. In June 2013 Ofwat received representations from Thames Water on the evidence shared. In conclusion, Thames Water states:

“(w)e remain of the view that the processes in place throughout AMP4 with respect to the sewer flooding programme were consistent with the Reporting Requirements at that time.”

68. Thames Water made a number of general points about Ofwat's concerns and some specific ones on the detail of the information Ofwat shared with Thames Water. General points made by Thames Water were:

- Ofwat had not provided evidence of customer detriment;
- Ofwat's sharing of information omitted relevant evidence;
- Ofwat had mis-characterised Thames Water's process for adding properties to the high risk registers;
- Ofwat was retrospectively applying the 2010 reporting requirements to early years in AMP4; and
- the information shared was not relevant to the analytical framework Ofwat had told Thames Water it was using.

69. Thames Water also commented under seven headings on the detail of the information shared.

70. In July 2013 Ofwat replied to Thames Water's representations, explaining why it did not agree with the majority of their points. A summary of Ofwat's views on Thames Water's points is provided in Appendix 1.

3.3 Minded to letter

71. On 25 October 2013 Ofwat issued a 'minded to' letter (together with a copy of a draft Notice of Ofwat's proposal to impose a penalty) to Thames Water setting out the facts, circumstances and evidence on which it was basing its misreporting case.

72. On 18 December 2013 Thames Water submitted representations on the 'minded to' letter. A summary of Thames Water's views and Ofwat's responses is provided in Appendix 1.

73. On 28 March 2014 the [Ofwat Board agreed in principle to Ofwat issuing a Notice proposing a financial penalty to Thames Water](#). It delegated authority to its Chief Executive to engage with Thames Water regarding a possible early resolution of the case, and agreed the relevant parameters within which the Chief Executive could agree early resolution or was required to revert back to the Board for agreement. In the event that an early resolution was not a viable option, the Board agreed to delegate authority to the Chief Executive to publish the said Notice and seek to remedy consumer harm via the PR14 process.

74. On 15 May 2014 the Chief Executive provided the Board with an update on the engagement that had taken place with Thames Water and the package of

measures Thames Water had put forward. The Board agreed to delegate responsibility to the Chief Executive to finalise agreement with Thames Water.

4 Contravention of Condition J and customer harm

75. Ofwat is satisfied that, when Thames Water submitted its June return on 11 June 2010, it misreported information to Ofwat relating to the number of properties at high risk of internal sewer flooding and the outputs relating to reducing the risk of sewer flooding at properties on the high risk registers by company action. Ofwat is consequently of the opinion that Thames Water contravened Condition J in failing to ensure that the information in the 2010 June return contained the information it was required to contain.

76. Ofwat has considered the following information in satisfying itself that Thames Water has contravened Condition J of its Appointment, and in deciding whether to impose a penalty, and on the amount of any penalty:

- Condition J;
- the reporting requirements;
- the information submitted by Thames Water on 11 June 2010, which constitutes its 2010 June return;
- Ofwat's response to Yorkshire Water's clarificatory question with regard to the reporting of sewer flooding information;
- Thames Water's response to the Section 203 Notice;
- the reports prepared by Halcrow on 11 September 2011;
- the reports prepared by SMC on 22 December 2013;
- Thames Water's representations of 27 June 2013 on the information shared with it on 3 May 2013;
- Thames Water's response dated 18th December 2013 to the 'minded to' letter dated 25 October 2014;
- Thames Water's response dated 6 February 2014 to Ofwat's clarification letter dated 29 January 2014;
- Thames Water letter dated 19 February 2014; and
- Thames Water package of measures of 8 May 2014.

77. Capital solutions to reduce the risk of sewer flooding for properties added to the high risk registers which were not actually at high risk of hydraulic flooding will not deliver benefits to those customers comparable to the benefits of company action for customers who are actually at high risk of sewer flooding.

78. Ofwat has examined the evidence supporting 832 out of the 867 removed from the high risk registers by company action in the 2010 June return. The results of Ofwat's investigation indicates that about 73% of the properties reviewed should not have been removed by company action as they should not have been on the high risk registers in the first place. On the basis that Ofwat assumed Thames

Water would incur £130,000 per property removed from the high risk registers by company action to alleviate sewer flooding problems (in 2012-13 prices) in AMP4, Ofwat estimates that the misreported properties would have resulted in an overstatement of the costs of the price control of £79m.

5 Financial Penalties

79. Under section 22A(1)(a) WIA91 Ofwat may impose on an undertaker a penalty of such amount (not exceeding 10% of the company's turnover) as is reasonable in all the circumstances of the case where it is satisfied that the undertaker has contravened or is contravening any Condition of its Appointment.
80. Section 22A(9) WIA91 provides that penalties imposed under section 22A WIA91 are paid into the Consolidated Fund.

5.1 Statement of policy

81. In accordance with section 22B WIA91, Ofwat has prepared (jointly with the Secretary of State for the Environment, Food and Rural Affairs and the National Assembly for Wales) and published on 24 November 2010 a statement of policy with respect to the imposition of penalties and the determination of their amount (the '**statement of policy**'). Ofwat must have regard to the statement of policy in deciding whether to impose a penalty, and in determining the amount of any penalty. [The statement of policy is available on Ofwat's website](#), and is the version of the policy that was in force at all times relevant to the case.

5.2 Period for which a penalty may be imposed

82. Pursuant to section 22A(10) WIA91, the power to impose a penalty under section 22A WIA91 is not exercisable in respect of any contravention or failure before the commencement of that section (on 1 April 2005, as provided by the Water Act 2003 (Commencement No. 4, Transitional Provisions and Savings) Order 2005, SI 2005 No. 968, Article 2(i)). Further, pursuant to section 22C(1) WIA91, in a case where no final or provisional order has been made in relation to the contravention or failure in question (as is the situation in the present case), Ofwat may not impose a penalty in respect of the contravention or failure later than the end of the period of twelve months from the time of the contravention or failure, unless before the end of that period:
- i. a Notice under section 22A(4) WIA91 relating to the penalty is served on the undertaker under section 22A(8) WIA91; or
 - ii. a Notice relating to the contravention or failure is served on the undertaker under section 203(2) WIA91.
83. In the present case, the Section 203 Notice was served by Ofwat on Thames Water on 9 June 2011. Accordingly, Ofwat cannot impose a penalty on Thames Water in respect of any contravention of Condition J that occurred prior to 10

June 2010. This Notice under section 22A(4) deals with the contraventions that occurred on 11 June 2010, when Thames Water submitted its 2010 June return.

6 Ofwat's reasons for considering it appropriate to impose a penalty and the broad level of such penalty.

84. Under section 22A(4) WIA91, Ofwat is required to specify the '*other facts*' which, in Ofwat's opinion, justify the imposition of the penalty and the amount of the penalty proposed.

85. Ofwat is satisfied that Thames Water contravened Condition J of its Conditions of Appointment when it submitted its 2010 June return on 11 June 2010. In determining whether to impose a penalty in this instance, and the amount of such penalty, Ofwat has had regard to the statement of policy and in particular to the following factors:

- the seriousness and duration of the contravention or failure;
- whether the contravention has damaged the interests of customers or other market participants, the degree of harm caused and any increased costs incurred by customers;
- the incentive to comply;
- whether the contravention is of a trivial nature;
- whether the contravention would not have been apparent to a diligent undertaker; and
- any gain (financial or otherwise) made by the undertaker as a result of the contravention.

6.1 The appropriateness of a penalty

86. Ofwat considers that the proposal to impose a financial penalty is justified in the present case for the following reasons,

- Thames Water misreported information in Table 3 of its 2010 June return submission, and has therefore contravened Condition J of its Instrument of Appointment. Specifically, Thames Water has reported a substantial number of properties as removed from the high risk registers by company action in 2009-10 when these properties should not have been on the high risk registers as there was insufficient evidence of prior flooding at these properties.
- Thames Water's misreporting has prejudiced the regulatory regime and compromised Ofwat's ability to regulate Thames Water. The regulatory regime relies on the provision of data which is reliable, accurate and complete. This is expected of all companies.
- Ofwat considers that misreporting of regulatory information is a serious contravention with serious consequences. Misreporting is unacceptable

and is well below the standards that Ofwat requires of any undertaker acting with due diligence.

6.2 The appropriate broad level of the penalty

87. Section 22A(10) limits a financial penalty imposed by Ofwat to a maximum of 10% of the turnover of the company. For these purposes Ofwat considers relevant turnover to be that related to the sewerage service elements, as the relevant activities in respect of which the penalty is imposed.

88. Having regard to each of the relevant facts and matters and to all factors set out in the statement of policy, Ofwat judges that the level of penalty should be calculated by reference to a starting point of 0.7% of the relevant turnover. This represents the broad level of the penalty.

89. This starting point is consistent with previous enforcement action taken against Thames Water for misreporting of information. In the previous case, Ofwat's investigation found that Thames Water had misreported some of its customer service information. This damaged the regulatory process. Thames Water had also delivered poor service to customers. Ofwat fined Thames Water [0.6% of 2006-07 turnover for misreporting information](#), and [0.1% of 2005-06 turnover for failing to meet minimum service standards](#).

90. Ofwat considers that the previous penalty imposed on Thames Water constitutes a reasonable benchmark to set the broad level of the penalty since it is proportionate to the seriousness of the breach and in both cases there is lack of evidence of deliberate misreporting.

91. As set out in the statement of policy, once the broad level of the penalty has been considered, other factors such as aggravating and mitigating factors may be taken into consideration.

6.3 Aggravating factors

a) Failure to compensate those affected

92. Ofwat estimates that the misreported properties represent the amount customers have paid, and will pay, for schemes resulting in the illegitimate removal of properties from the high risk registers, amounting to about £79m (in 2012-13 prices). Until Thames Water's proposal on 8 May 2014 Thames Water had not considered compensating customers.

b) Repeated contraventions or failures

93. Ofwat is only concerned with misreporting in 2009-10.

94. However, Thames Water has previously been penalised for mis-reporting. As a result, an additional increment of 0.1% of applicable turnover has been applied to the initial penalty level.

6.4 Mitigating factors:

a) The continuation of a contravention or failure

95. Ofwat is not concerned with a continuing contravention. Thames Water has demonstrated a significant improvement since 2010, including improved collation of the facts and evidence on internal flooding at properties base and a structured sign off process when a property is added to or removed from the high risk registers. As a result, a deduction equivalent to 0.1% of applicable turnover has been made to the initial penalty level.

b) The level of co-operation with any investigation carried out

96. Thames Water has co-operated with the investigation. It has responded to Ofwat's Section 203 Notice in full, and it has provided representations on the information Ofwat shared on 3 May 2013.

c) Taking appropriate action to acknowledge and rectify the contravention or failure

97. On 8 May 2014, Thames Water offered a package of measures for its customers as a result of Ofwat's investigation into this issue. Ofwat is minded to accept these measures from Thames Water, because they provide direct and quicker redress to customers. Thames Water has said it will:

- accept a £79 million (2012-13 prices) reduction by Ofwat to its regulated capital value (RCV), plus a financial adjustment to remove any benefit Thames Water received from this expenditure being included in its RCV during 2010 to 2015. This will result in lower bills for Thames Water's 14 million sewerage customers for years to come; and
- spend £7 million on customers, over and above what it would otherwise have spent, over the next five years through:

- increasing the amount of money available to the Trustees of the Thames Water Trust Fund (£2 million) to assist customers who are having difficulty paying their bills; and
- invest £5 million to support additional community projects such as local programmes to better protect rivers and improve the natural environment.

98. Ofwat considers the above measures will be of greater benefit to customers than if a substantial financial penalty were to be imposed.

99. Having regard to each of the relevant mitigating factors, a deduction equivalent to 0.7% of applicable turnover has been made to the initial penalty level leaving a nominal financial penalty of £1.

6.5 The penalty which Ofwat is imposing

100. In its consideration of the amount of the penalty to be imposed, Ofwat has taken account of the fact that the contravention, while serious, was not deliberate in origin. Nevertheless, Ofwat considers that misreporting of information to the regulator, whatever its cause, is a serious breach of an undertaker's duties, as it compromises Ofwat's ability to regulate the water industry. This in turn causes harm to customers and other undertakers alike.

101. Ofwat has taken due account of the mitigating factors in this case, including the absence of continuation, the subsequent improvements in Thames Water's methodology and practices and the level of co-operation with the investigation.

102. In particular Ofwat has taken into account Thames Water's pledge of a package of measures that will offer greater benefits to customers than a financial penalty would.

103. In the absence of these measures Ofwat would have been minded to impose a penalty of 0.7% of Thames Water's applicable turnover (for 2012-13). This amounts to £6.213 million.

104. However having regard to the balance of mitigation and aggravation and all other relevant factors, including the package of measures put forward by Thames Water, Ofwat now considers it appropriate to impose a nominal penalty of £1.

7 How to make representations or objections

105. Pursuant to section 22A(4) WIA91, Ofwat, in publishing a Notice under that section of a proposal to impose a penalty under section 22A(1) WIA91, is required to specify a period (of not less than twenty-one days from the date of publication of that Notice) within which representations or objections with respect to the proposed penalty may be made.

106. Ofwat has decided, in this case, to specify a period of 21 days from the date of publication of this Notice within which any representations or objections with respect to the proposed penalty may be made. Accordingly, any such representations or objections should be made so as to be received by Ofwat by 5 pm on 26 June 2014. Representations or objections should be made in writing to:

Harpreet Atwal
Principal Case Officer
Ofwat
Centre City Tower
7 Hill Street
Birmingham
B5 4UA
E-mail: TMSnoticeinbox@Ofwat.gsi.gov.uk

107. Representations and objections will be placed on Ofwat's website and made available to the public unless the person making those representations or objections has, in so doing, clearly indicated that they consider some aspects of the representations to be commercially confidential. Ofwat would require notice of which sections of the representations were confidential, and why. In general, Ofwat will seek to honour any requests for representations or objections to be kept confidential. There may, however, be circumstances in which representations or objections may have to be disclosed notwithstanding the wishes of the makers of those representations (for example, if disclosure is required under the Freedom of Information Act 2000 or in legal proceedings, or for the purposes of discharging Ofwat's regulatory functions).

Appendix 1: Ofwat's views on Thames Water's submissions

Table A1 Ofwat's views on defences raised by Thames Water before we issued the 'minded to' letter

Issue	Thames Water's view	Ofwat's view
Evidence of customer detriment	<p>"Ofwat has not presented any evidence of customer detriment or harm." Thames considers that it is unlikely that there could have been an adverse impact on its customers because:</p> <ul style="list-style-type: none"> a) "for those properties where our customers have not reported flooding, we have good reason to believe that unreported flooding had occurred". b) A "marginal change in the number of properties for a scheme" would not impact the engineering of that scheme, the overall cost of that scheme, or the decision to include the scheme within Thames Water's programme. c) Thames Water "delivered more outputs than were required in the AMP", and it "overspent the PR04 capex allowance for its sewer flooding programme" at shareholders' expense. 	<p>We have concerns that a high proportion of the properties claimed to have been removed from the 1 in 10 and 2 in 10 registers in 2009-10 were not valid, as these properties should not have been on the registers in the first place. We think that properties added to the high risk registers should have prior evidence of flooding.</p> <p>If this is the case, the benefits to customers of this expenditure will have been significantly less than we would have assessed in PR04. Where these outputs were not justified, we consider that capex for the AMP was higher than it should have been, and consequentially, prices to all of Thames Water's customers have been higher than they should have been. However, we acknowledge that when assessing the level of detriment arising from this harm, it is important to consider any potential benefit arising from a reduction in the level of sewer flooding (or from a reduction in the level of risk of flooding).</p> <p>Our analysis does not suggest that we are concerned with marginal impacts. When the extent of misreporting in 2009-10 is taken into account, we do not think that Thames has over-delivered its outputs for AMP4.</p>

Issue	Thames Water's view	Ofwat's view
Halcrow report	<p>In 2011, Ofwat commissioned a report from Halcrow to undertake an audit of Thames Water's compliance with the relevant reporting requirements. At a meeting on 7 October 2011, we confirmed to Thames that this report and its conclusions would be taken into account in our investigation.</p> <p>Thames is "concerned that the evidence provided...is not representative, in that it omits relevant evidence. In particular, Ofwat has not included the report it commissioned from Halcrow to undertake an audit of our compliance with the relevant reporting requirements". This report concludes that "...Thames Water's approach to the reporting of sewer flooding across the whole of AMP4 was generally reasonable and consistent with the reporting requirement".</p>	<p>We agree that the Halcrow report is an important piece of evidence, for the reasons outlined in Thames Water's response. This report has been taken into account in our analysis. We note the executive summary of the report, but we consider that Thames has quoted selectively. The full text in this summary is as follows:</p> <p>"Having reviewed the data and process, we find it difficult to have confidence in the outputs reported from modelling alone.</p> <p>"However, in the broader context, throughout AMP4, on a sample basis we have annually audited Thames Water's procedures and the resulting sewerage data reported in the Company's June Returns. These audits confirmed that overall the procedures were reasonable, methodology and assumptions had been disclosed and that the confidence grades in relation to the Reporting Requirements were appropriate. We concluded that Thames Water's approach to the reporting of sewer flooding across the whole of AMP4 was generally reasonable and consistent with the reporting requirements and that remains our overall view. Nevertheless, we identified particular aspects of reporting (including the Coldharbour Lane outputs) where there was scope for improving the robustness of procedures or reliability of data."</p> <p>We do not consider that the extracts that Thames quotes are representative of the concerns outlined in the body of the</p>

Issue	Thames Water's view	Ofwat's view
		<p>report. We think Halcrow is referring to its views on the AMP programme as a whole, and is seeking not to contradict the verdict it gave as Thames Water's Reporter. We have now examined more properties, in more depth, than Halcrow – it is this analysis which is the central part of our evidence, and on which we ultimately rely. The expert opinions are informative but not definitive.</p>
<p>Mischaracterisation of Thames Water's processes</p>	<p>Thames considers that “the evidence presented mischaracterises Thames Water's processes for adding properties to the DG5 registers. The assertion...that Thames Water's processes allowed properties to be added on the basis of modelling alone is not correct.”</p> <p>In its letter to Ofwat of 17 November 2010, “Thames Water confirmed that its approach to assessing properties at risk of sewer flooding involves a combination of (i) information provided by Thames Water's customers, (ii) physical measurements of systems and properties, (iii) verified hydraulic models.”</p>	<p>In our view it is not possible to have a verified model without physical measurements. The key here is that we have evidence that about 41% of the properties are not covered by the three activities described and about a further 32% may be partly covered but not to the extent required by the guidance for their inclusion on the high risk registers.</p>

Appendix 1: Ofwat's views on Thames Water's submissions

Issue	Thames Water's view	Ofwat's view
Retrospective application of reporting requirements	Thames is concerned that "Ofwat is trying to apply the newer March 2010 reporting requirements to properties which were added to and/or removed from the relevant registers before March 2010 (that is, before these reporting requirements came into force)."	<p>We consider that the reporting requirements should be applied to all information supplied to Ofwat for the relevant reporting year. Therefore, all properties on the sewer flooding registers, whether they have been added in 2009-10, or before then, must comply with the 2009-10 reporting requirements.</p> <p>Thames has not made clear how the changes in the wording of the guidance make any difference to how it interprets the guidance. For instance it is clear that it has always only added properties that it believes have flooded.</p>

Table A2 Ofwat's views on new defences raised by Thames Water in its response to our 'minded to' letter

Issue	Thames Water's view	Our view
<p>Inconsistency between the categorisation of properties and the reporting requirements 2010</p>	<p>Thames expressed its concern over the fact that 'the categories adopted are not consistent with the JR10 or the earlier reporting requirements. Specifically, the exercise assumes that Categories 1 to 4 of the Table only capture properties in respect of which there is insufficient evidence to meet the threshold of the reporting requirements (see the final column headed 'Ofwat conclusion'). However, the reporting requirements expressly permitted the use of verified hydraulic models as a means of identifying and then placing properties on the high risk registers. This is not reflected in these categorisations'.</p>	<p>The categorisation is consistent with the reporting requirements. The reporting requirements entail considering property level information which is the reason for the categorisation. This property level information can be sufficient to add properties to the register without a verified hydraulic model and/or used in verifying hydraulic models. There is a large discrepancy between the reports of flooding (or where there could be good reason to think that flooding has occurred) and the predictions of Thames Water's hydraulic models. Thames Water's main contention is that it has verified hydraulic models. We do not agree that its models are verified in the way that the reporting requirements require because there is a complete absence of information provided by Thames Water's customers in 41% of cases and a further 32% of properties do not have a clear report of flooding from the public sewerage system as a result of lack of capacity. Therefore these models cannot be used to add properties to the sewer flooding register.</p>
<p>Ofwat's assessment of evidence does not take into account Thames Water's general approach at scheme level</p>	<p>Thames Water also states 'We are also concerned that an assessment which has been conducted on a property-by-property basis cannot take sufficient account of Thames Water's general approach at scheme level and wider. Indeed, Ofwat's assessment does not appear to us to take into account the scheme level information provided by Thames in response to</p>	<p>Thames Water's generic approach at scheme level appears to be flawed as a result of several factors:</p> <ul style="list-style-type: none"> • a hydraulic model that is not verified; • the lack of historical information; and • the insufficiency of complementary actions that Thames alleges to have carried out (such as site visits).

Issue	Thames Water's view	Our view
and wider.	the Section 203 Notice'	Moreover, the reporting requirements entail a property by property approach. The outputs we set for AMP4 also relate to the net reduction of the number of properties on the high risk register. This suggests that property level is the relevant measure.
Category 1 is not consistent with the reporting requirements	<p>'Category 1 appears to encompass properties where Thames Water had good reason to believe that unreported flooding had occurred, and which should, therefore, be included on the high risk registers'.</p> <p>Example: property at (redacted) (part of the Coldharbour Lane Scheme) where both neighbouring properties (40 and 44) have reported internal sewer flooding and were classified by Ofwat as being in Category 6.</p>	With regards to the specific category 1 properties identified by Thames in their response: the two properties adjacent to the relevant property in the Coldharbour Lane scheme reported that they flooded during an extreme storm. This does not automatically mean that they should be added to the register, and if it was it would normally be added to the 1 in 20 year register, not the high risk register. In respect of properties that experience flooding as a result of severe storms (rare/exceptional events) it is not adequate to extrapolate or infer recurrence.
Category 2 is not consistent with the reporting requirements	<p>In respect of category 2, Thames notes that 'a flooding incident at a property reported on the basis of causes other than hydraulic incapacity is not inconsistent with connected or separate flooding incidents at the same property which are associated with hydraulic incapacity. Properties do not experience exclusively one mechanism of flooding, and properties which are hydraulically impaired are more likely to suffer blockages or collapses'.</p> <p>Example: [redacted] (part of the Clove Road scheme) where flooding was reported as internal, triggered by a</p>	<p>Category 2 property identified by Thames – [redacted].</p> <p>As a result of the further analysis we carried out in respect of this property we have concluded:</p> <ul style="list-style-type: none"> on 21 November 2005 some report of flooding was received by the customer service unit that flooding had occurred over two months previous on 10 September 2005 which was designated as internal Hydraulic Overload ; on 13 March 2006, a Thames Water employee noted that the customer reported flooding in the investigation

Issue	Thames Water's view	Our view
	<p>rainfall event. A guaranteed standards scheme (GSS) payment was made to the customer for having experienced internal hydraulic flooding from the sewerage system. Thames hydraulic model predicted a 10 year storm and a further questionnaire returned by customer at [redacted] indicated its basement flooded during rainfall events. According to Thames these constitute good reasons to believe that [redacted] had flooded and was at risk of flooding.</p>	<p>which was thought to be in a 1 in 7 year storm – presumably this refers to the 10 September flooding incident.</p> <ul style="list-style-type: none"> On 05 February 2010, a Thames Water employee recorded that a payment had been made for the 10 September flooding incident. <p>A GSS payment almost 5 years after the event does not constitute sufficient evidence. On the other hand, the fact that the report of flooding was received several months after the event took place is not significant since according to our description of category 1 we concede that flooding reporting and information recording by company personnel may occur at any point in time.</p> <p>Nonetheless, we would expect the company to have evidence as to why it abruptly concluded there was flooding after several months. The requirements state that 'Companies must maintain verifiable records for DG5(...) the records should include (...) cause of flooding (including source and reason, where known)'. Moreover, it appears that Thames Water presumed hydraulic flooding without necessarily carrying out any investigation to understand the flooding incident. This evidence therefore corroborates our provisional view according to which Thames procedures did not meet the required standards.</p>

Issue	Thames Water's view	Our view
<p>Category 3 is not consistent with the reporting requirements</p>	<p>Category 3 includes cases in which flooding was through cracks in the wall or floors of cellars. According to Thames, the 'reporting requirements state that damp patches on walls should be excluded but all other incidents should be recorded irrespective of the size. As such, properties experiencing flooding through cracks in the floors caused by hydraulic incapacity should be included on the high risk registers. As a result, Category 3 appears to encompass properties that were rightfully placed by Thames Water on the high risk registers'. Example – [redacted] (Clova Road scheme) where a survey recorded by the customer was consistent with flooding due to sewer surcharge. A nearby property at 55 [redacted], which also reported flooding around the same time as number 35A, confirmed that the flooding was linked to the sewerage system. For these reasons, Thames claim to have had good reason to believe that [redacted] Road had flooded and was at risk of flooding.</p>	<p>Category 3 property identified by Thames – [redacted].</p> <p>There are letters from the property owner that clearly show the property has flooded more than once. However, the last evidence we have is that a contractor for Thames Water visited the property on 18 August 2006 and concluded that the cause of the flooding was:</p> <p style="padding-left: 40px;">“Flooding of the basement, possibly due to inadequate tanking of the basement. The source of the flooding is either groundwater or a broken pipe.”</p> <p>Further investigation by Thames Water would be required in order to consider whether or not this property was clearly at risk of flooding from the sewerage system. We have found no evidence that this has occurred. The company cannot conclude the property is clearly at a high risk of flooding from the sewerage system, if it does not know whether the cause of flooding is indeed the sewerage system, groundwater or deficient private drainage.</p>
<p>Category 4 is not consistent with the reporting requirements</p>	<p>Category 4 comprises properties, in respect of which there is some documentary evidence of internal flooding, but there is either some reference to a blockage or it occurred on dry days or in events with a return period of less than 1 year.</p> <p>Again, Thames notes that properties do not exclusively experience on mechanism of sewer flooding. Equally sewers that are hydraulically impaired are often also the</p>	<p>Category 4 property identified by Thames – [redacted].</p> <p>The reporting requirements do not specifically state what constitutes flooding incidents “attributed to other causes such as a blockage or a collapse”. Nevertheless it is common ground that where flooding only occurs in dry weather or very light rain and there is no evidence of flooding in heavier rain, the incidents can clearly be attributable to other causes. More than half of flooding incidents occur because of other causes rather</p>

Issue	Thames Water's view	Our view
	<p>subject of blockages. Therefore, these properties should rightly be added to the flooding register.</p> <p>Example – [redacted] (part of the West Ham scheme) – the customer at the property confirmed cases of severe flooding during times of heavy rainfall. Thus, Thames claims to have had a good reason to believe that [redacted] had flooded and was at risk of flooding.</p>	<p>than hydraulic incapacity, such as blockages. We agree that flooding could occur both due to hydraulic incapacity and other causes, such as blockages. However, it is also possible that a property can flood due to other causes alone. Flooding from other causes does not constitute clear evidence that a property is also at high risk of hydraulic sewer flooding.</p> <p>Thames Water has provided 11 telephone reports from its records over the period from 15/08/1997 to 3/10/2006 where flooding has occurred in no or little rain. It has no record of a report of flooding in any of the more significant storms that have occurred. A questionnaire on 16 November 2007 indicated that flooding had occurred, but did not indicate why. Appended to this, there is an undated written note. "Johnny Lee interviewed Mr [redacted] on 16/11/2007. He says Mr [redacted] reported severe flooding to cellar in times of heavy rain." There is no explanation as to why this information was not included on the questionnaire. There is also no explanation of how we can have confidence that "heavy rain" does not refer to flooding in normal rain in respect of which we have verifiable records reported at the time of flooding.</p> <p>Thames Water has no evidence it has taken any action in response to the 11 incidents of flooding. We do not think that the undated and unreferenced handwritten note constitutes evidence of the standard we would expect given the clear requirements of the reporting guidelines.</p>

Issue	Thames Water's view	Our view
<p>Relevance of the Yorkshire clarification</p>	<p>Irrelevant information is being taken into account. For example, we do not see the relevance of the Yorkshire clarification related only to whether properties might be added to the registers when they had not flooded in the past. TWUL's processes were designed to only find properties where there was good reason to believe that they had flooded.</p>	<p>Thames Water assertions in this regard are contradictory as in some occasions it claims that there was a change in the guidance and in other occasion it claims that the Yorkshire clarification (which regards the changes in the guidance) is irrelevant.</p> <p>The changes in the reporting requirements from 2009 to 2010 are indeed irrelevant to the case as they simply clarify guidance that Thames Water states it was already following (only properties that have flooded should be added onto the register)</p> <p>Our view is that the changes in guidance from 2009 to 2010 are not materially relevant. Therefore, Thames Water's argument according to which there was a material change in the guidance is flawed. Thames assertion that the Yorkshire clarification is irrelevant contradicts its previous assertions (according to which a material change in the guidance occurred in 2010) and confirms that the change in the guidance was, in fact, materially irrelevant.</p>
<p>Consumer detriment</p>	<p>When assessing any level of customer harm caused, Ofwat should consider not only the benefit arising from the flooding programme, but also whether the flooding programme would have been any different had Thames Water taken an alternative approach to the reporting of sewer flooding information.</p>	<p>Capital solutions to reduce the risk of sewer flooding for properties added to the register which were not actually at high risk of hydraulic flooding will not deliver benefits to those customers comparable to the benefits of company action for customers who are actually at high risk of sewer flooding.</p> <p>This necessarily impacts the scope of any flooding programme.</p> <p>Our concern is not that Thames has not spent the money it was</p>

Appendix 1: Ofwat's views on Thames Water's submissions

Issue	Thames Water's view	Our view
		<p>allowed. Rather, it has reported that it has met the outputs required but a significant proportion of those properties did not have sufficient evidence to be included on the registers in the first place. We therefore consider that this spending was either poorly targeted, or inefficient, or both. In either case we would not consider that customers had received benefits sufficient to justify the expenditure.</p>