| Environment Agency Reference: | DP2022-2839160078 |
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Please quote the reference number in all correspondence

# Drought Permit – modify existing abstraction

- Section 79A Water Resources Act 1991 as amended by the Environment Act 1995

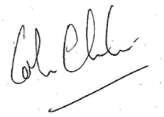
The Environment Agency grants this drought permit to:

Thames Water Utilities Limited ("the water company")
Clearwater Court
Vastern Road
Reading
Berkshire
RG1 8DB
Company registration number 02366661

This drought permit authorises the Water Company to abstract water pursuant to Licence No 28/39/16/78 with the provisions that 28/39/16/78 is modified as set out in the Schedule to this drought permit. This drought permit commences from the effective date shown below and shall remain in force until the date of expiry shown below.

All other provisions of the said Licence remain in full force and effect.

**Signed**



Colin Chiverton
West Thames Environment Manager
On behalf of Julia Simpson
Thames Area Director

Environment Agency
Goldcrest House
Alice Holt Lodge
Farnham
Surrey
GU10 4LH

**Date of issue**……..10 November 2022

**Date effective** ……10 November 2022

**Date of expiry**……31 March 2023

| Environment Agency Reference: | DP2022-2839160078 |
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# SCHEDULE OF CONDITIONS

## 1. FURTHER CONDITIONS

1.1 In the Licence under section 10 ‘Further Provisions’ the first paragraph which states,

‘At any time when the ‘naturalised’ mean daily flow in the River Thames as recorded by the Agency’s flow gauging station at Farmoor (at National Grid Reference SP 438 068) is less than 136,380 cubic metres per day abstraction shall not exceed the following quantities:

2,546 cubic metres per hour
59,100 cubic metres per day.’

Shall be replaced in its entirety by the following:

At any time when the ‘naturalised’ mean daily flow in the River Thames as recorded by the Agency’s flow gauging station at Farmoor (at National Grid Reference SP 438 068) is less than 136,380 cubic metres per day abstraction shall not exceed the following quantities:

3,750 cubic metres per hour
90,000 cubic metres per day.

1.2 The Water Company shall notify the Agency’s River Control Room immediately by phone and in writing within 1 hour of making changes to the abstraction rate at Farmoor.

## 2. ENVIRONMENTAL MONITORING

2.1 The Water Company shall undertake environmental monitoring as set out in Appendix 1 attached to this permit.

2.2 The Water Company shall undertake environmental monitoring and Storm Tank monitoring as set out in Appendix 2 attached to this permit.

2.3 The Water Company shall undertake flow monitoring as set out in Appendix 3 attached to this permit.

2.4 The Water Company shall carry out the actions specified in 3.1 and 3.2 if the environmental monitoring identifies signs of environmental impacts, including but not limited to those specified in Appendix 1.

## 3. MITIGATION

3.1 Immediately upon finding any signs of environmental impacts, including but not limited to those specified in Appendix 1, the Water Company shall notify the Agency in writing and by telephone on 0800 80 70 60 and shall provide details of the signs of distress and the location.

3.2 If environmental impacts or a significant risk to the environment is identified in accordance with condition 3.1, or if the Agency so specifies in writing, back-pumping and abstraction under the drought permit shall cease and the Water Company shall return to the abstraction rates specified in licence 28/39/16/78.

The Water Company shall return to the stated abstraction rates as soon as possible and within 24 hours of receipt of written notification from the Agency.

3.3 At any time when Condition 3.2 applies, the return to abstraction rates and cessation of back-pumping invoked under Condition 3.2 shall continue to apply until the Water Company has notified the Agency in writing that appropriate remedial action has been taken, and the Agency has confirmed in writing that it is satisfied with this.

3.4 At any time when the gauged mean daily flow in the River Thames as recorded by the Agency's flow gauging station at Farmoor (at National Grid Reference SP 438 068) is less than 54,000 cubic metres per day, back-pumping will take place unless otherwise directed in writing by the Agency or specified by the Agency as follows:

| Map reference | Abstraction location | Discharge location | Means of abstraction |
|---|---|---|---|
| D (Seacourt Stream) | Between National Grid References SP 47175 10125 and SP 47400 10179 as agreed in writing with the Agency. | Between National Grid References SP 47152 10085 and SP 47181 09999 as agreed in writing with the Agency. | A variable rate mobile pump rated to 20Ml/d |
| E (King's Lock) | Between National Grid References SP 47918 10258 and SP 48052 10050 as agreed in writing with the Agency. | Between National Grid References SP 47888 10275 and SP 47187 10103 as agreed in writing with the Agency. | A mobile pump rated to pump up to 30Ml/d |

For the pump at map reference 'D (Seacourt Stream)', the appropriate variable rate of the pump shall be determined in accordance with Appendix 2.

3.5 At any time when the gauged mean daily flow in the River Thames as recorded by the Agency's flow gauging station at Farmoor (at National Grid Reference SP 438 068) is less than 35,000 cubic metres per day back-pumping will take place unless otherwise directed in writing by the Agency or specified by the Agency as follows:

| Map reference | Abstraction location | Discharge location | Means of abstraction |
|---|---|---|---|
| F (Godstow Lock) | Between National Grid References SP 48418 09248 and SP 48707 08717 as agreed in writing with the Agency. | Between National Grid References SP 48505 08965 and SP 47918 10258 as agreed in writing with the Agency. | A mobile pump rated to pump up to 30Ml/d |

| | | | |
|---|---|---|---|
| G (Osney Lock) | Between National Grid References SP 50321 05897 and SP 50597 05655 as agreed in writing with the Agency. | Between National Grid References SP 50349 05878 and SP 48512 08932 as agreed in writing with the Agency. | A mobile pump rated to pump up to 30Ml/d |
| H (Iffley Lock) | Between National Grid References SP 52573 03642 and SP 52508 03349 as agreed in writing with the Agency. | Between National Grid References SP 52575 03691 and SP 50369 05848 as agreed in writing with the Agency. | A mobile pump rated to pump up to 30Ml/d |

3.6 At any time as directed in writing by the Agency back-pumping will take place as follows:

| Map reference | Abstraction location | Discharge location | Means of abstraction |
|---|---|---|---|
| I (Sandford Lock) | Between National Grid References SP 52930 01685 and SP 53099 01011 as agreed in writing with the Agency. | Between National Grid References SP 53110 01365 and SP 52573 03642 as agreed in writing with the Agency. | A mobile pump rated to pump up to 30Ml/d |

3.7 At any time when the determinant trigger for dissolved oxygen as specified under the heading Water Quality Monitoring in Appendix 2 is reached in the River Thames at Cassington Sewage Treatment Works for a period of 2 consecutive hours or if otherwise notified by the Agency, abstraction under this drought permit and back-pumping shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78 until such time that the determinant trigger for dissolved oxygen is no longer reached for a minimum period of 2 consecutive hours.

3.8 At any time when Condition 3.6 applies and the determinant trigger for dissolved oxygen as specified under the heading Water Quality Monitoring in Appendix 2 is reached in the River Thames at Oxford Sewage Treatment Works for a period of 2 consecutive hours or if otherwise notified by the Agency, back-pumping and abstraction under the drought permit shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78 until such time that the determinant triggers are no longer reached for a minimum period of 2 consecutive hours.

3.9 At any time when Condition 3.6 applies when the level monitor installed on the first storm tank shows that the tank is 60% full at Oxford Sewage Treatment Works back-pumping and abstraction under the drought permit shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78.

3.10 At any time when Condition 3.6 applies when the Event Duration Monitor installed between the storm tank and the environment records any spilling from the storm tank at Oxford Sewage Treatment Works to the Littlemore Brook back-pumping and abstraction under the drought permit shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78.

3.11 At any time when the level monitor installed on the first storm tank shows that the tank is 60% full at Cassington Sewage Treatment Works back-pumping and abstraction under the drought permit shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78.

3.12 At any time when the Event Duration Monitor installed between the storm tank and the environment records any spilling to the storm tank at Cassington Sewage Treatment Works to the River Thames abstraction under the drought permit shall cease immediately and abstraction shall be carried out in accordance with licence 28/39/16/78.

3.13 At any time when abstraction is ceased in accordance with Condition 3.10 or 3.12 no abstraction under this permit or any back-pumping shall recommence for a minimum period of 24 hours unless otherwise agreed in writing by the Agency.

3.14 If the flow monitoring specified in Appendix 3 shows the back-pumping efficacy is insufficient, the Water Company shall alter the operation of the back-pumping or carry out mitigation actions or revert to abstraction in accordance with licence 28/39/16/78 as directed in writing by the Agency. The Agency's assessment of the back-pumping efficacy is conclusive.

3.15 (i) No back-pumping shall take place unless the Water Company has installed a fish screen on the back pumping abstraction points specified in conditions 3.4, 3.5 and 3.6 of suitable aperture to be agreed in writing with the Agency to prevent the entrapment, entrainment or impingement of fish at points of abstraction associated with back-pumping.

(ii) The Water Company shall maintain, repair or replace the screen type fish screen in accordance with the manufacturer's specifications OR to ensure that it remains effective at all times and keep records of such maintenance.

(iii) The Water Company shall keep records of such maintenance and shall make them available during all reasonable hours for inspection by the Agency.

## 4 MEANS OF MEASUREMENT OF WATER ABSTRACTED/DISCHARGED

4.1 (i) The quantity of water abstracted for the purpose of back-pumping shall be measured by the number of hours of operation of the pump multiplied by the defined output of the pump in one hour.

(ii) The Water Company shall also retain supporting documentation, including certification details of the pumps used in back-pumping, the pump rates and times of pump operation which enables the defined output, flow rate

and volume in time to be calculated for each pump associated with back-pumping.

## 5 RECORDS

5.1 Records of the hours of operation of the pumps associated with back-pumping, together with the corresponding quantity calculated by the means specified in condition 4.1 above shall be taken and recorded by the Water Company at the same time each day during the whole of the period during which back-pumping is authorised or as otherwise approved in writing by the Agency.

5.2 The Water Company shall send a copy of the record or summary data from it to the Agency within 28 calendar days of being so directed in writing by the Agency.

# ADDITIONAL INFORMATION

Note: the following information is provided for information only. It does not form part of the licence.

## REASONS FOR SUSPENSIONS AND/OR MODIFICATIONS

Condition 1 the hourly and daily volume at the Farmoor intake. This is to allow the Water Company to abstract at higher rates at lower flows in order to fill Farmoor Reservoir during low flows.

Condition 2 of this drought permit has been included to allow monitoring of signs of environmental impacts that may be caused by or affected by the Water Company reducing abstracting higher rates at low flows and using back-pumping to augment flows downstream of the abstraction.

Condition 3 of this drought permit has been included to mitigate against any environmental impacts that may be caused by or affected by the Water Company reducing abstracting at lower flow and using back-pumping to augment flows downstream of the Farmoor intake.

Condition 4 of this drought permit has been included as a means of measuring the abstraction of water associated with back-pumping and condition 5 requires that these measurements are recorded.

## IMPORTANT NOTES

### Environmental Monitoring Plan

The conditions and monitoring incorporated on this permit is in addition to the Environmental Monitoring Plan agreed annually between the Environment Agency and Thames Water Utilities Limited.

### Mitigation

With regards to condition 3 the Agency will take into consideration any other actions the Water Company are taking or plan to take in order to mitigate effects on the environment, such as mitigation actions identified in their Farmoor Drought Permit Environmental Assessment Report, September 2022.

### Naturalised flow

For the purpose of this permit ‘naturalised’ flow shall mean the recorded mean daily flow at Farmoor Gauging Station plus the quantity abstracted at Farmoor intake (Point ‘A’) during previous 24 hour period plus the wash-water discharge from Farmoor treatment works to the River Thames during preceding 24 hour period. The wash-water discharge quantity shall not exceed the consented daily volume.

### Environment Agency River Control Room

For the purpose of condition 1.2 the Environment Agency’s River Control Room shall be notified in writing by e-mail rcdo-reading@environment-agency.gov.uk and by phone on 0800 141 2698.

### Back-pumping

For the purpose of this permit ‘back-pumping’ shall mean the abstraction from a reach of the River Thames with the abstracted water pumped over or around the upstream lock and weir structure and discharged into the upstream reach. Where ‘back-pumping’ is

referenced in this permit, it includes ‘over-pumping’ in which water is abstracted from a reach of the River Thames with the abstracted water pumped over or around a weir structure and discharged downstream of the structure. Over-pumping shall occur at Seacourt Stream and King’s Lock at point D and E on the maps. Back-pumping shall occur at Godstow Lock, Osney Lock, Iffley Lock and Sandford at points F, G, H and I respectively on the maps.

**The maps**
The points on the maps show the locations of the structures only and do not include the reaches specified in condition 3.4, 3.5 and 3.6.

**Contact**
The Water Company will contact the Agency in writing by e-mail IEP_THM@environment-agency.gov.uk to seek our agreement where this is specified in the permit conditions.

| Environment Agency Reference: | DP2022-2839160078 |
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## APPENDIX 1

### Walkover and environmental monitoring schedule

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| Assessment Type | Visual monitoring “walkover surveys” of the riverine environment.<br><br>Visual monitoring “spot checks” of the riverine environment.<br><br>Water quality monitoring using spot water quality samples in the center of the channel to measure real-time values of dissolved oxygen concentration (mg/l) and saturation (%), conductivity, temperature, and pH .<br><br>Water quality monitoring using laboratory analysis of a water sample for E.coli and Intestinal Enterococci at Wolvercote Mill Stream bathing water.<br><br>Water quality monitoring using laboratory analysis of orthophosphate and total oxidised nitrogen concentration to identify environmental problems on the fine-lined pea mussel which may be affected or caused by the water company implementing use of the drought permit.<br><br>The Water Company shall discuss and agree with the Agency any proposed changes to this monitoring schedule in advance of carrying out any of the survey work. |
| Duration and frequency of Monitoring | The visual monitoring walkover surveys in Reach 1 and Reach 2 shall take place within the first three days from when this permit is implemented and then monthly unless required more frequently as specified in writing by the Agency. The Subset of walkover surveys shall be carried out every two weeks from the second week that this permit is implemented. Walkover surveys shall be carried out until the drought permit expires or is revoked.<br><br>The visual monitoring spot checks shall take place every three working days following completion of the first walkover surveys in Reach 1 and Reach 2 until the Subset of walkover surveys commences in the second week that this permit is implemented. The spot checks shall also take place every three working days from the commencement of back-pumping until the next Reach 1 or Subset walkover surveys are carried out following the commencement of back-pumping. The frequency of spot checks may be modified in writing by the Agency.<br><br>The water quality monitoring shall take place within the first three days from when this permit is implemented and then monthly unless required more frequently as specified in writing by the Agency until the drought permit expires or is revoked. |
| Environmental impacts | The following are suggested signs of environmental problems but are not exhaustive. If advice is required, then the Agency can be contacted on 0800 80 70 60.<br><br>• Fish in distress, for example gasping at the surface or leaping out of the water |

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| | • Dead or dying fish.<br>• Concentration of fish in restricted areas/pools which could increase susceptibility to predation.<br>• Inhibition of movement of fish past river structures or other barriers.<br>• Reduced habitat availability for adult and juvenile life stages (including spawning/nursery areas).<br>• Signs of polluting discharges during walkover surveys, problems exacerbated during lower flows and/or reduced dilution.<br>• Algal blooms.<br>• Changes in wetted width and exposure or normally submerged marginal feature in the watercourse.<br>• Exposure of key functional habitat, particularly where there are reduced flows over or siltation of brown trout redds.<br>• Stranding of fish in marginal areas<br><br>Spot checks:<br><br>A general check of watercourse condition from bridges. Fixed features on the first spot check could be used as a marker for changes to the water course condition in subsequent spot checks at locations where suitable fixed features exist to assess the changes to the level of flow.<br><br>The following are suggested signs for observing any noticeable change to river conditions from the first spot check but are not exhaustive:<br><br>• A drop or rise in water level against a fixed feature.<br>• A change in the wetted perimeter, including width and depth of the watercourse channel.<br>• Changes in the character of the flow in the watercourse<br>• Any reduction in the flow to any flow dependent features<br>• Changes in the extent of exposure or submerging of in-river and marginal features |
| Monitoring Method & Standard of Assessment | The Water Company shall measure and record the following information.<br><br>For all environmental problems identified:<br>• The location of the site of environmental problems observed.<br>• Dissolved oxygen concentration, water temperature and pH measurements should be taken and recorded anywhere in the survey area where (if) signs of environmental stress are identified.<br>• A photo or photos should be taken of any signs of environmental distress.<br>• Weather conditions at the time of the observations.<br><br>Where relevant to the environmental problem observed:<br>• Approximate number of dead fish.<br>• Any signs of damage or disease.<br>• Approximate number of fish in distress, gasping at the surface or leaping out of the water.<br>• Whether the fish are being stranded in shallow pools. |

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| | • Description of structures and stretches of any watercourses that have no flow or significantly reduced flow.<br>• Approximate size of the fish affected.<br>• The species affected.<br>• Signs of pollution.<br>• Presence of algal blooms/scums.<br>• Species, location and extent of invasive non-native species.<br><br>Fish and eel rescue and relocation:<br>• If fish continue to show signs of distress, they should be captured and held for a short period, allowing recovery of both the fish and the levels of instream dissolved oxygen.<br>• If water levels fail to recover, the fish should be moved to a suitable release site downstream where appropriate conditions exist on the day.<br>• Fish should be relocated across barriers where fish movement is restricted between two areas as a result of an instream barrier.<br>• Any eel captured should be kept in a separate tank to all other fish species as they secrete mucus which can infest the gills of other fish.<br>• Dissolved oxygen concentration should be monitored and optimum concentrations maintained by continuous infusion, using an oxygenation unit.<br><br>Spot checks:<br>• The nature of any noticeable changes in watercourse condition shall be recorded in a comparison to the first spot check<br>• The location of the spot check and the watercourse observed shall be recorded<br>• If any acute changes in river condition is observed, this will direct a need as soon as possible for a further walkover survey at all locations relevant to the affected watercourse.<br>• The record of any acute changes to river condition and location shall be considered in the subsequent walkover survey. |
| Location of Monitoring | Reach 1 walkover surveys:<br><br>Walkover 1: between SP 43783 06377 and SP 43841 06786<br>Walkover 2: between SP 44358 08678 and SP 44805 08791<br>Walkover 3: between SP 47078 10200 and SP 47394 10213<br>Walkover 4: between SP 47669 09520 and SP 47743 09052<br>Walkover 5: between SP 48421 07858 and SP 48832 07320<br>Walkover 6: between SP 50272 06555 and SP 49834 06415<br>Walkover 7: between SP 48529 08905 and SP 48197 09350<br>Walkover 8: between SP 49415 05646 and SP 49927 05281<br>Walkover 9: between SP 52537 03841 and SP 52530 03378<br>Walkover 10: between SP 46817 09967 and SP 47133 10044<br>Walkover 11: between SP 49370 06750 and SP 49580 06448<br>Walkover 12: between SP 45989 09673 and SP 46250 09825<br>Walkover 13: between SP 50126 06056 and SP 50233 06216<br>Walkover 14: between SP 50146 07254 and SP 50343 07286<br>Walkover 15: between SP 48648 09426 and SP 48614 09164<br>Walkover 16 (Control): between SP 40123 01449 and SP 40573 01337 |

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| | Reach 2 walkover surveys:<br><br>Walkover 1: between SP5311901421 and SP5311100922<br>Walkover 2: between SU 50834 97154 and SU 50176 97008<br>Walkover 3: between SU 50780 94557 and SU 51214 94760<br>Walkover 4: between SU 54020 93963 and SU 54215 93743<br>Walkover 5: between SU 61363 91462 and SU 61404 90954<br>Walkover 6: between SU 60126 81888 and SU 5995 981410<br>Walkover 7: between SU 63264 76836 and SU 63750 76828<br>Walkover 8: between SU 71881 74106 and SU 72336 74180<br><br>Subset walkover surveys:<br><br>Walkover 4: between SP 47669 09520 and SP 47743 09052<br>Walkover 6: between SP 50272 06555 and SP 49834 06415<br>Walkover 10: between SP 46817 09967 and SP 47133 10044<br>Walkover 13: between SP 50126 06056 and SP 50233 06216<br>Walkover 14: between SP 50146 07254 and SP 50343 07286<br>Walkover 15: between SP 48648 09426 and SP 48614 09164<br><br>Spot check sites:<br><br>Seacourt Stream: SP 47646 08760<br>Seacourt Stream: SP 49062 06299<br>Wolvercote Mill Stream: SP 48644 09430<br>Bulstake Stream: SP 49708 06229<br>Osney Stream: SP 50116 06217<br>Osney Stream: SP 50289 06225<br>Castle Mill Stream: SP 50790 06334<br>Castle Mill Stream: SP 50830 06344<br>Castle Mill Stream: SP 50858 06145<br>Castle Mill Stream: SP 50903 06158<br><br>Fine-lined pea mussel water quality sampling sites:<br><br>River Thames at Farmoor intake: SP 43979 06495<br>River Thames at Sutton Bridge: SU 50910 94811<br>Kennington Pool SNCI: SP 51858 03406<br><br>Wolvercote Mill Stream bathing water at SP 48667 09359 |
| Survey Results | In addition to any notification given under condition 3.1 a copy of the monitoring results shall be sent to the Environment Agency IEP (Integrated Environmental Planning) team **IEP_THM@environment-agency.gov.uk** within 14 days of the survey taking place. |

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| Responsibility | It is the responsibility of the Water Company to ensure that the environmental monitoring is carried out to the satisfaction of the Agency. Unless otherwise discussed and agreed in writing, the water company will be responsible for all of the costs associated with this monitoring programme.<br><br>Health and safety requirements whilst carrying out the surveys are the responsibility of the water company. |

| Environment Agency Reference: | DP2022-2839160078 |
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## APPENDIX 2

### Back-pumping monitoring schedule

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| Assessment Type | Water quality monitoring using in situ probe reading and spot water quality samples in the centre of the channel to measure real-time values of dissolved oxygen concentration (mg/l) and saturation (%), conductivity, temperature, and pH.<br><br>Storm tank monitoring by means of the Storm Tank Level Monitor and the Event Duration Monitor relating to Sewage Treatment Works Storm Tanks to prevent spilling from the storm tank at Oxford Sewage Treatment Works to the Littlemore Brook and to prevent spilling from the storm tank at Cassington Sewage Treatment Works to the River Thames. This is in order to minimise the risk of environmental problems on the River Thames that may be affected or caused by the water company back-pumping water during storm events.<br><br>The water company shall discuss and agree with the Agency any proposed changes to this monitoring schedule in advance of carrying out any back-pumping. |
| Duration of Monitoring | For Oxford Sewage Treatment Works from the commencement of any period of back-pumping and for the entire period during which any back-pumping takes place.<br><br>For Cassington Sewage Treatment Works from the commencement of use of this permit and for the entire period of use of this permit. |
| Monitoring Method & Standard of Assessment | <u>Water quality monitoring</u><br><br>The water company shall measure and record the level of Dissolved Oxygen.<br><br>The trigger is reached if Dissolved Oxygen drops below 6.0 mg/l or 80% saturation.<br><br><u>Flow monitoring</u><br><br>The water company shall gather the results of flow monitoring in accordance with Appendix 3 to direct the appropriate variable rate of the pump at Seacourt Stream. The water company shall discuss and agree with the Agency any proposed changes to the pumping rate based on using the visual assessment of channel condition from walkovers in accordance with Appendix 1 and contemporary flow data gathered in accordance with Appendix 3.<br><br><u>Storm tank monitoring</u><br><br>At any time when storm tank level monitoring indicates the first storm tanks being 60% full at Cassington Sewage Treatment Works or Oxford Sewage Treatment Works respectively.<br><br>An event where the Event Duration Monitor installed on the storm weir between the main works and the storm tank records any spilling from the storm tanks at Cassington Sewage Treatment Works or Oxford Sewage Treatment Works respectively. |

<table>
<tr><td></td><td>At any time when abstraction or back-pumping is ceased, abstraction or back-pumping will not commence for a minimum period of 24 hours.</td></tr>
<tr><td>Frequency of monitoring</td><td>Continuous for the duration of monitoring.</td></tr>
<tr><td>Location of Monitoring</td><td>
<u>Water quality monitoring</u>
<table>
<tr><td colspan="2">River Thames at Cassington Sewage Treatment Works in-river monitoring</td></tr>
<tr><td>Upstream location</td><td>In the reach between SP 458400 9808 and SP 46158 09918</td></tr>
<tr><td>Downstream location</td><td>In the reach between SP 46843 10148 and SP 47158 10083</td></tr>
<tr><td colspan="2">River Thames at Oxford Sewage Treatment Works in-river monitoring</td></tr>
<tr><td>Upstream location</td><td>In the reach between SP 52804 02415 and SP 52957 01856</td></tr>
<tr><td>Downstream location</td><td>In the reach between SP 53051 01729 and SP 53097 01164 and in the channel upstream of the point of abstraction for back-pumping</td></tr>
</table>
<u>Storm tank monitoring</u>
<table>
<tr><td>Cassington Sewage Treatment Works</td></tr>
<tr><td>Oxford Sewage Treatment Works</td></tr>
</table>
</td></tr>
<tr><td>Survey Results</td><td>Monitoring results recorded upstream and downstream of the Cassington Sewage Treatment Works and Oxford Sewage Treatment Work shall be shared with the Environment Agency Integrated Environmental Planning team IEP_THM@environment-agency.gov.uk in real-time, or in any near real-time method as is available.<br><br>Any data recorded by the Event Duration Monitors at Cassington Sewage Treatment Work and Oxford Sewage treatment work will be shared with the Environment Agency IEP (Integrated Environmental Planning) team IEP_THM@environment-agency.gov.uk in real-time, or in any near real-time method as is available.</td></tr>
<tr><td>Responsibility</td><td>It is the responsibility of the Water Company to ensure that the environmental monitoring is carried out to the satisfaction of the Agency. Unless otherwise discussed and agreed in writing, the Water Company will be responsible for all of the costs associated with this monitoring programme.<br><br>Health and safety requirements whilst carrying out the surveys are the responsibility of the water company.</td></tr>
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| Environment Agency Reference: | DP2022-2839160078 |
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## APPENDIX 3

### Flow measurement survey schedule

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| Assessment Type: | Flow measurement on the Seacourt Stream, Bulstake Stream, Wolvercote Mill Stream, Castle Mill Stream and Osney Stream.<br><br>The Water Company shall discuss and agree with the Agency any proposed changes to this schedule in advance of carrying out any of the survey work. |
| Duration of Monitoring: | Before the commencement of abstraction under this drought permit the flow measurement surveys shall take place and within 7 days of the first day that any back-pumping commences.<br><br>For the life of the permit at any time a walkover is conducted in accordance with Appendix 1. |
| Monitoring Method & Standard of Assessment: | Unless otherwise advised by the Agency, the flow measurements shall be conducted using either:<br><br>i) An impellor type current meter, or<br>ii) acoustic doppler current profiling.<br><br>The flow monitoring survey shall endeavor to establish current conditions; understand better the accretion at the specified and assess the effect the back-pumping has upon the distributaries of the River Thames.<br><br>Within each survey the local weather conditions shall be recorded, along with comment on any significant weather events during the preceding days that could influence the survey results. |
| Frequency of Monitoring | Once before the commencement of abstraction under this drought permit.<br><br>As soon as possible after back-pumping commences and at any time a walkover is conducted in accordance with Appendix 1. |
| Location of Monitoring: | At the locations listed below. National Grid References to be agreed in writing with the Agency:<br><br>• Seacourt Stream,<br>• Bulstake Stream,<br>• Wolvercote Mill Stream,<br>• Castle Mill Stream<br>• Osney Stream.<br><br>At the walkover locations in accordance with Appendix 1. |

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| Standard: | All current meter flow measurements shall be conducted to ISO 748:2007 standard, or current equivalent.<br><br>All flow measurement using an ADCP (Acoustic Doppler Current Profiler) method shall be conducted to the appropriate and accepted standard. |
| Results: | Following the completion of each of the flow measurements the water company shall provide:<br><br>• Confirmation of the calculated flow value.<br><br>The results shall be sent to the Environment Agency (Integrated Environmental Planning) team **IEP_THM@environment-agency.gov.uk** within 7 days of completion of each of the surveys, unless otherwise agreed in writing with the Agency. |
| Responsibility: | Unless otherwise discussed and agreed in writing with the Agency, the water company will be responsible for all of the costs associated with this monitoring programme.<br><br>Health and safety requirements whilst carrying out the surveys are the responsibility of the water company. |

| Environment Agency Reference: | DP2022-2839160078 |
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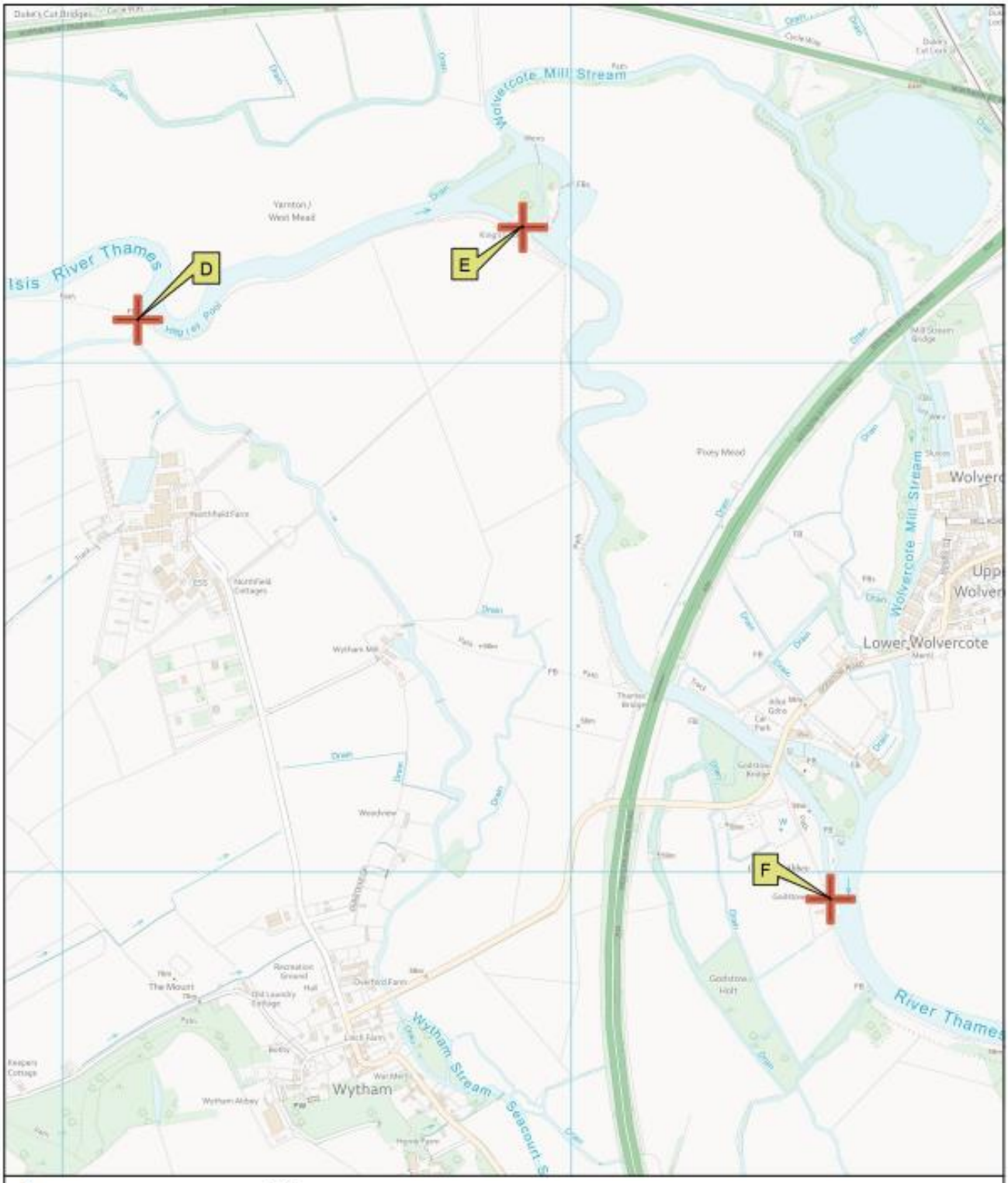


Environment Agency

**MAP ACCOMPANYING LICENCE NUMBER**

**DP2022-2839160078**

Scale 1:10,000

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| Environment Agency Reference: | DP2022-2839160078 |
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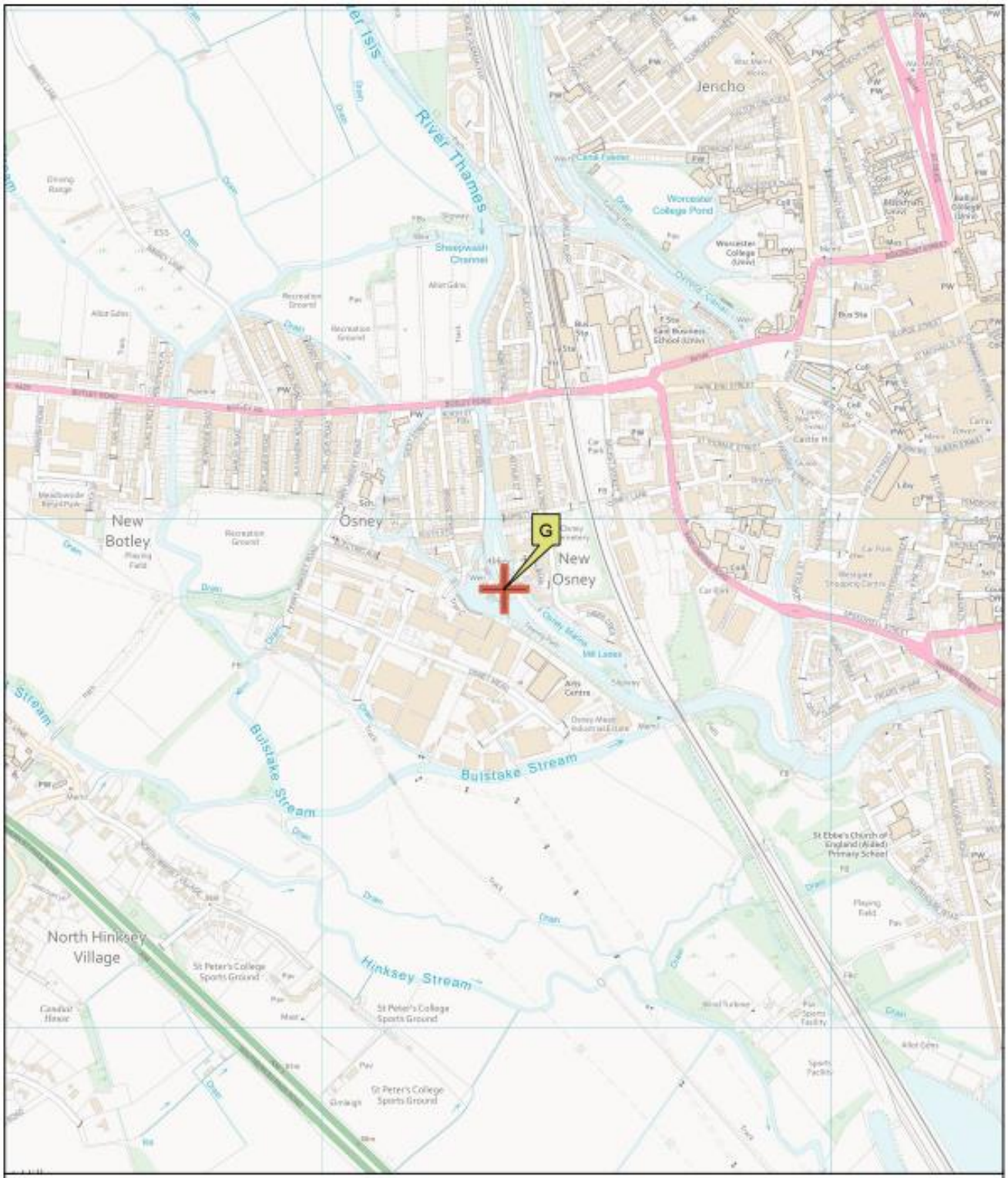


Environment Agency

**MAP ACCOMPANYING LICENCE NUMBER**

**DP2022-2839160078**

Scale 1:10,000

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| Environment Agency Reference: | DP2022-2839160078 |
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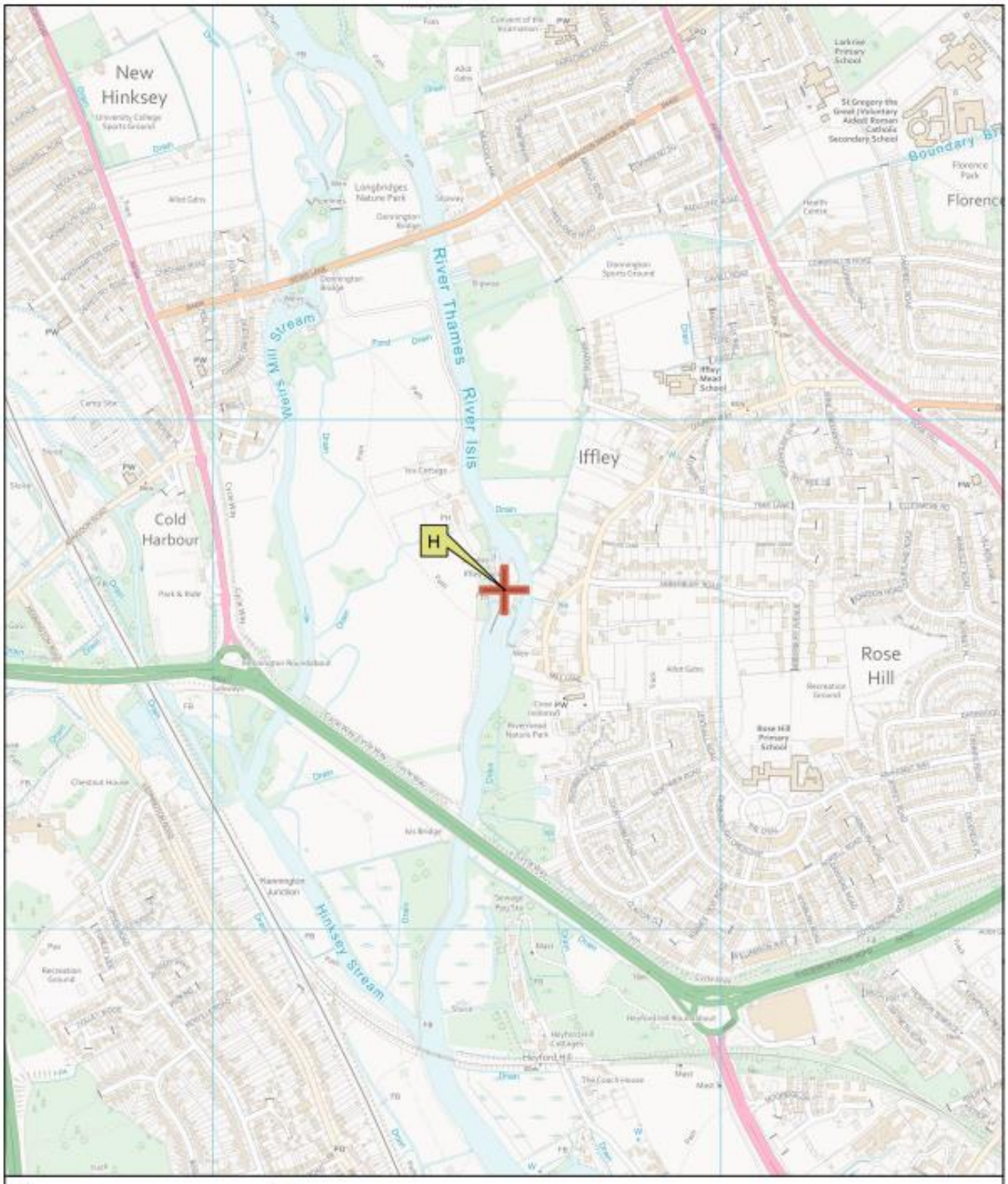


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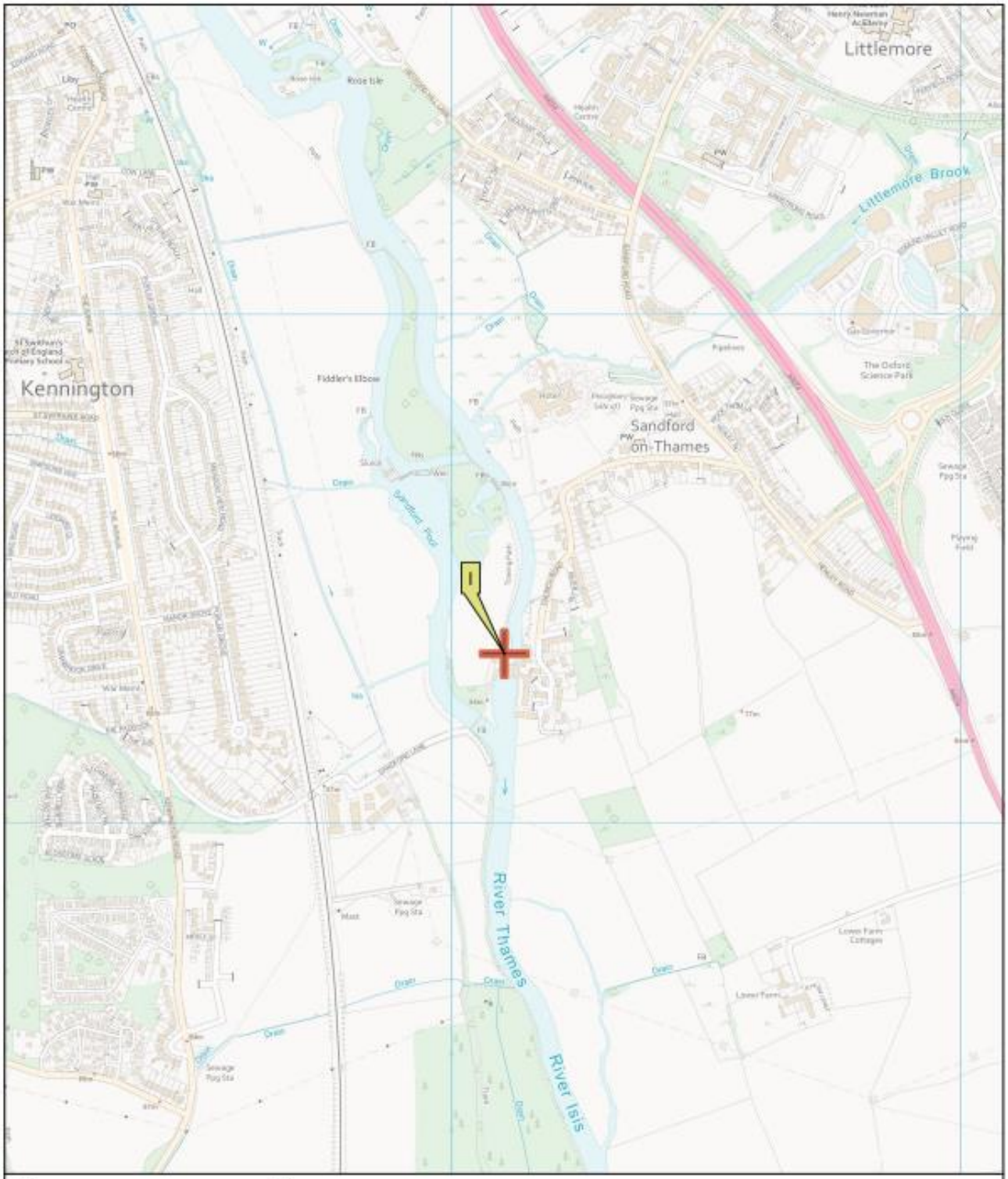


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