Yorkshire Water Drought Permit Application

South West Area Supporting Information

Document Version Control

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1.0	16/07/2025	Pre-application document for EA review	Jason Ball
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Contents

1. Executive summary for drought permit application

An application is being made for a series of drought permits in YW's South West area to reduce compensation flows because of a very dry spring and a forecasted dry summer in 2025. The sites are included as drought options in the Yorkshire Water Drought Plan 2022 available to view on the Yorkshire Water website. (https://www.yorkshirewater.com/about-us/our-vision-and-plans/resources/drought-plan/).

The South West area includes eight reservoir groups; some of the reservoirs located within these groups are used to supply water to water treatments works within this area. These in turn supply potable water to South West Yorkshire including the Wakefield, Huddersfield, Dewsbury, Holmfirth, Halifax and Hebden Bridge area.

As a result of the low rainfall our reservoirs are below average for the time of year and there is a risk to security of supply if we do not take action to conserve reservoir stocks as much as possible. We are applying for drought permits to conserve supplies in reservoirs in case the dry weather continues. These drought permits, if granted, will reduce the amount of water we release from reservoirs to rivers allowing us to maintain these compensation flows for longer, and aiding the recovery of these reservoirs.

2. Proposal Description

The South West area of our grid network is used to supply Wakefield, Huddersfield, Dewsbury, Holmfirth, Halifax, Hebden Bridge and the surrounding areas. It includes eight reservoir groups, which are described below. Not all the reservoirs provide water for public water supply. The South West area can also receive supply from sources in other areas as it is connected to our grid system.

We are applying for drought permits to temporarily reduce compensation flows from the following reservoirs and to reduce one maintained flow in the South West area:

- Blackmoorfoot Reservoir (to Brow Grains Dyke and Hoyle House Clough)
- Booth Wood Reservoir
- Ryburn Reservoir
- Withens Clough Reservoir
- Brownhill Reservoir
- Digley Reservoir
- Gorple Lower Reservoir
- Walshaw Dean Lower Reservoir
- Widdop Reservoir
- Warley Moor Reservoir
- Ogden Reservoir
- Butterley Reservoir
- Scammonden Water (to Black Brook and Bradshaw Clough)
- Turvin Clough prescribed flow
- River Colne at Marsden maintained flow

The Environment Agency has a Drought Order in place for Holme Styes Reservoir.

We have a drought option to reduce support to the Huddersfield Narrow Canal but this is done in agreement with the Canal and Rivers Trust therefore a permit application is not required.

We also intend to reduce the maintained flow at Slitheroe Bridge on the River Ryburn (Booth Wood and Ryburn Reservoirs), but this will not require a drought permit.

Compensation releases are a requirement under Acts of Parliament or licence agreements we hold with the Environment Agency. The flow releases support the environment by compensating the watercourses downstream from the reservoirs. We are applying for drought permits to conserve supplies to ensure continuation of public water supply and to help our reservoir stocks recover.

2.1 Location Map

Table 1 and Figures 1 and 2 show the reservoirs in the South West area of our grid network that will be impacted if the South West area drought permits are granted. The permits will allow compensation releases and a maintained flow to be temporarily reduced for the duration the permits are in place. The reservoirs are in the South West of Yorkshire and release compensation flows to tributaries of the River Calder, River Colne, and River Holme.

Reservoir Name	Grid reference	Location description	Reservoir / Reservoir Group
Blackmoorfoot Reservoir	SE 09 12	North of the village of Meltham	Blackmoorfoot / Deerhill group
Booth Wood Reservoir	SE 02 16	South of the village of Ripponden	Booth Wood / Ryburn group
Ryburn Reservoir	SE 02 18	West of the village of Ripponden	Booth Wood / Ryburn group
Withens Clough Reservoir	SD 98 23	West of the Hamlet of Cragg Vale	Booth Wood / Ryburn group
Brownhill Reservoir	SE 11 06	South West of the town of Holmfirth	Brownhill / Digley group
Digley Reservoir	SE 10 07	South West of the town of Holmfirth	Brownhill / Digley group
Gorple Lower Reservoir	SD 94 31	North West of the town of Hebden Bridge	Hebden Group
Walshaw Dean Lower Reservoir	SD 95 32	North West of the town of Hebden Bridge	Hebden Group
Widdop Reservoir	SD 93 32	North West of the town of Hebden Bridge	Hebden Group
Warley Moor Reservoir	SE 03 31	South of the Village of Oxenhope	Luddenden Group
Ogden Reservoir	SE 06 30	North of the town of Halifax	Hebble group
Butterley Reservoir	SE 04 10	South of the village of Marsden	Huddersfield group
Scammonden Water (to Black Brook and Bradshaw Clough)	SD 05 16	West of the town of Huddersfield	Scammonden / Wessenden Group

Table 1 - List of South West Drought permit and option locations

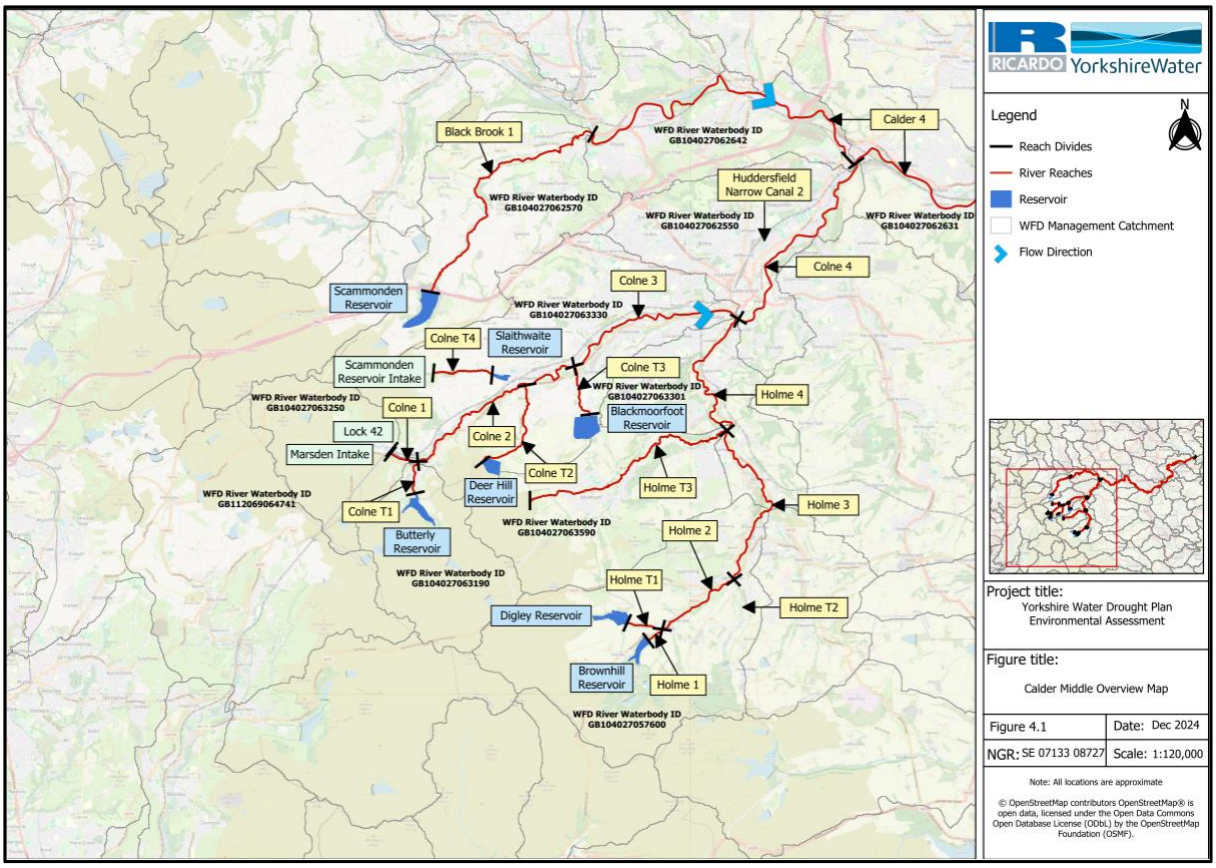


Figure 1a – Map of the South West Mid Calder Area drought permit sites

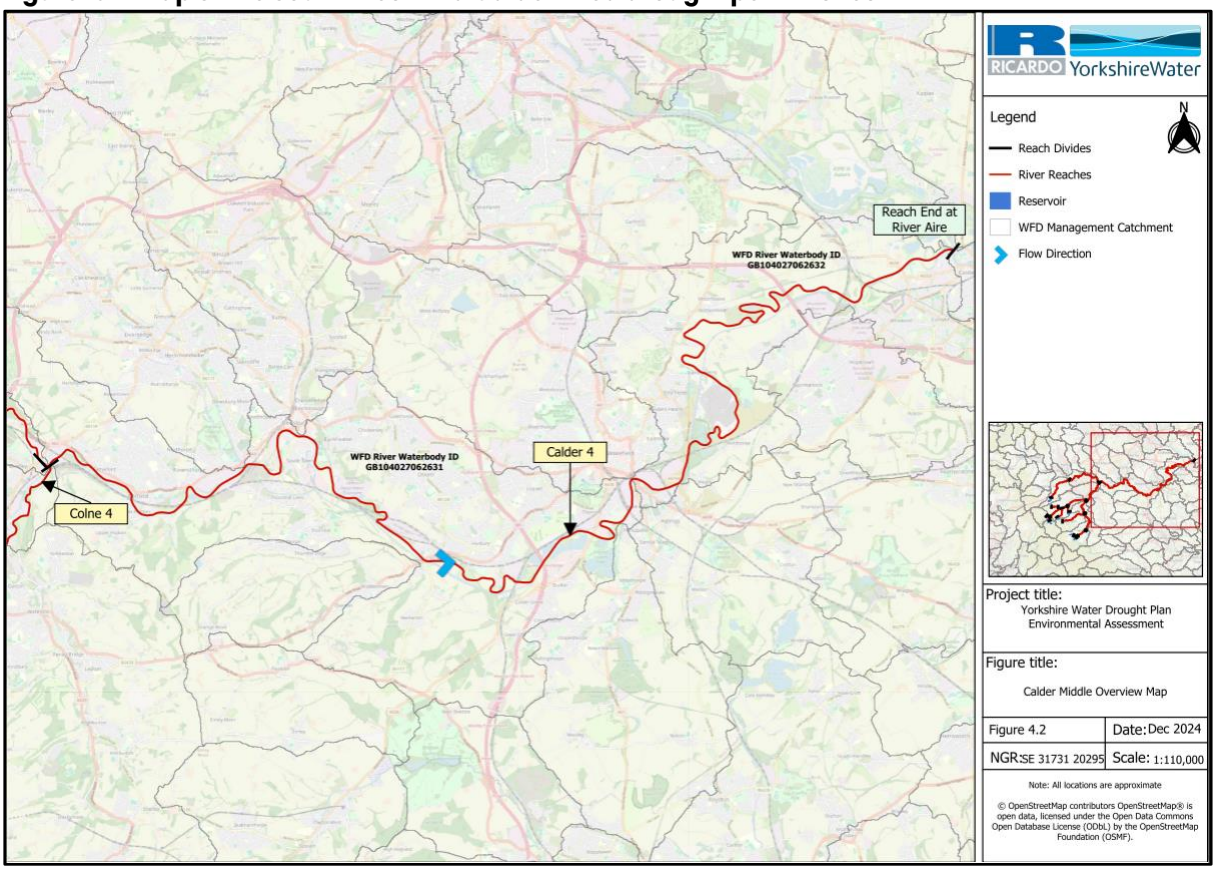


Figure 1b – Map of the South West Mid Calder Area drought permit sites

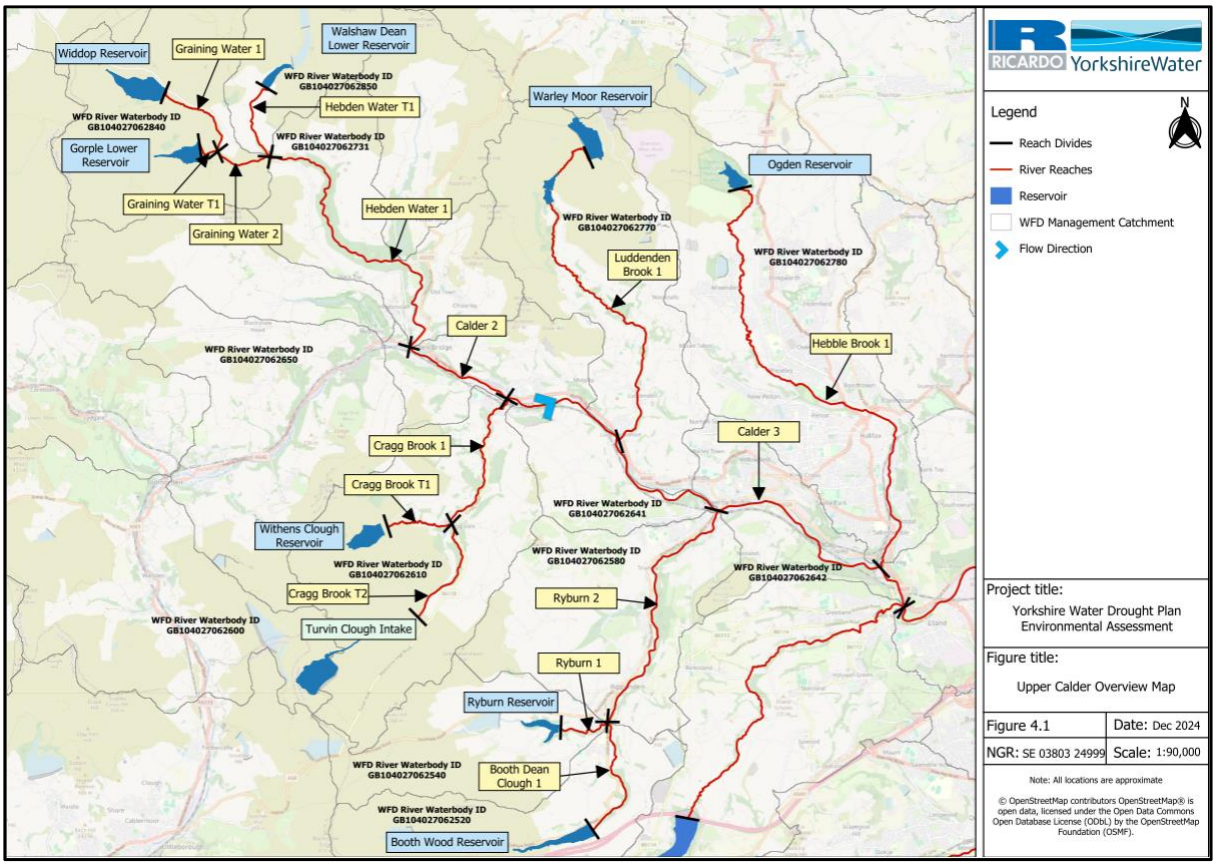


Figure 2 – Map of the South West Upper Calder Area drought permit sites

A brief description of the eight reservoir groups in the South West area is provided below. The group names have been defined for Yorkshire Water to use operationally and have been determined by the connectivity between the reservoirs that make up the groups.

Hebden Group

The Hebden Group feeds Albert Water Treatment Works (WTW) which supplies Halifax and the surrounding area. The group consists of Gorple Upper and Lower Reservoirs, Walshaw Dean Upper, Middle and Lower Reservoirs, and Widdop Reservoir.

The permit sites in this group are shown in Figure 2 and include Gorple Lower Reservoir, Widdop Reservoir and Walshaw Dean Lower Reservoir. Gorple Lower Reservoir and Widdop Reservoir release compensation flow to Graining Water and Walshaw Dean Lower Reservoir releases compensation flow to Alcomden Water. Both these watercourses are tributaries of Hebden Water, which flows into the River Calder.

Luddenden Group

The Luddenden Group feeds Albert WTW, which supplies Halifax and the surrounding area. The group consists of Dean Head, Castle Carr and Warley Moor reservoirs.

Warley Moor Reservoir is the only permit site in the Luddenden group and flow is released from this reservoir into Luddenden Brook. It then flows via Upper Dean Head, Lower Dean Head and Castle Carr Reservoirs to the River Calder upstream of Sowerby Bridge. Figure 2 includes the sites relevant to the Warley Moor permit application.

Hebble Group
The Hebble Group feeds Albert WTW, which supplies Halifax and the surrounding area. The group consists of Mixenden and Ogden reservoirs. Ogden Reservoir, shown on Figure 2, is the only permit site in the Hebble group, and its compensation flow is released to Hebble Brook, which joins the River Calder near the village of Greetland.

Booth Wood / Ryburn Group
The Booth Wood / Ryburn Group feeds Fixby and Kirkhamgate WTWs, which supply Wakefield, Dewsbury, and Greater Huddersfield. The Group consists of Ardsley Reservoir, Baitings Reservoir, Booth Wood Reservoir, Green Withens Reservoir, Ringstone Reservoir, Ryburn Reservoir, and Withens Clough Reservoir. The group includes the reservoirs which support the Slitheroe Maintained Flow and the Turvin Clough Prescribed Flow.

Figure 2 shows the sites relevant to the Booth Wood / Ryburn Reservoir group permit applications. There are three reservoir compensation reduction permit sites and two permits sites where the reductions are linked to gauged flow requirements.

Ryburn Reservoir compensation flow is released to the River Ryburn, which joins the River Calder downstream of Sowerby Bridge. Booth Wood compensation flow is released to Booth Dean Clough, which joins the River Ryburn between Ryburn Reservoir and the town of Ripponden. Ryburn, Booth Wood and Ringstone Edge reservoirs support a maintained flow at Slitheroe Bridge on the River Ryburn. The flow is monitored by the Environment Agency at its Ripponden Gauging Station. This maintained flow is operated according to an LEP agreed with the Environment Agency.

Turvin Clough
Compensation flow from Withens Clough Reservoir is released to Elphin Brook, which then flows into Turvin Clough. Flow in Turvin Clough is measured at the Turvin Clough Gauging Station.

Blackmoorfoot / Deerhill Group
The Blackmoorfoot / Deerhill Group feeds Blackmoorfoot WTW, which supplies Huddersfield and surrounding areas. The Group consists of the Blackmoorfoot Reservoir and Deerhill Reservoir.
Blackmoorfoot Reservoir is the only site relevant to the permit applications in the Blackmoorfoot / Deerhill Group.

Two compensation flows are released from Blackmoorfoot Reservoir. There is a release to Hoyle House Clough, which flows to the River Colne downstream of Slaithwaite. A compensation flow is also released from Blackmoorfoot Reservoir, which flows from Brow Grains Dyke, which then joins the River Holme at Honley.

Brownhill / Digley Group
The Brownhill / Digley Group feeds Holmbridge WTW, which supplies Holmfirth, Dewsbury and Wakefield. The group consists of Brownhill Reservoir, Digley Reservoir, Holme Styes Reservoir, Ramsden Reservoir, Riding Wood Reservoir, and Yateholme Reservoir.

Figure 1 shows the sites relevant to the permit applications for the Brownhill Digley Group. Compensation flow from Holme Styes Reservoir is released to the River Ribble, which joins the River Holme at Holmfirth. Brownhill Reservoir compensation flow is released into the River Holme upstream of Holmfirth and Digley Reservoir compensation flow is released into Digley Brook, which flows into the River Holme just downstream of Brownhill Reservoir.

Scammonden / Wessenden Group

The Scammonden Wessenden Group feeds Blackmoorfoot WTW and Longwood WTW, and supplies Huddersfield and surrounding areas. The Group consists of Wessenden Head Reservoir, Wessenden Old Reservoir, Scammonden Reservoir, Blakely Reservoir and Butterley Reservoir. The group also includes the River Colne maintained flow at Marsden and, in accordance with the Canal and River Trust supports the Huddersfield Narrow Canal.

The operation of the reservoirs in the Scammonden / Wessenden Group includes releases to an underground network, which is operated in conjunction with releases to the local watercourses. The reservoirs are operated to transfer flow to our treatment works, provide compensation flows to downstream reaches and to maintain support for the River Colne at Marsden and the Huddersfield Narrow Canal. Flow from intakes on the River Colne (River Colne catchwaters) and nearby watercourses also enter this system and provide supply to the treatment works, maintained flow and the canal.

Sites relevant to the Scammonden / Wessenden Group are shown in Figure 1. Two separate compensation flow releases are made from Scammonden Reservoir. A direct release to Black Brook, which flows towards Elland and a release to an underground pipe with an outflow to Bradshaw Clough. Bradshaw Clough flows into Slaithwaite Reservoir which is not owned by Yorkshire Water. Compensation flow from Butterley Reservoir is released into Wessenden Brook, a tributary of the River Colne.

Flow released from Butterley Reservoir and Scammonden Reservoir into the underground network, combined with flow from the River Colne catchwaters, supports the minimum maintained flow on the River Colne at Marsden and the Huddersfield Narrow Canal.

2.2 Current Abstraction Licence Conditions

The drought permit applications for the South West area propose temporary reductions in compensation releases and/or flow requirements. The licences / authorisations and the downstream receiving watercourses relating to the drought options in the South West area are summarised below:

- Gorple Lower Reservoir defined by Impoundment Licence NE/027/0012/033, releasing flow to compensate Graining Water.

- Walshaw Dean Lower Reservoir defined by Impoundment Licence NE/027/0012/031, releasing flow to compensate Alcomden Water.

- Widdop Reservoir defined by Impoundment Licence NE/027/0012/032, releasing flow to compensate Graining Water.

- Warley Moor Reservoir defined by the 1961 Calderdale Water Board Order, releasing flow to compensate Luddenden Dean Beck. However, current compensation flow requirements are specified in a 2014 Local Enforcement Position (LEP) from the EA

- Ogden Reservoir defined by the 1961 Calderdale Water Board Order, releasing flow to compensate Hebble Brook. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Booth Wood Reservoir defined by the 1966 Wakefield and district Water board Order, releasing flow to compensate Booth Dean Clough. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Ryburn Reservoir defined by the 1924 Wakefield Corporation Act, releasing flow to compensate the River Ryburn. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Slitheroe Bridge currently operating under a non-statutory maintained flow agreement. Flows are released from Ryburn, Booth Wood and Ringstone reservoirs.

- Withens Clough Reservoir defined by the 1890 Morley Corporation Act, releasing flow to compensate to the Elphin Brook. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Turvin Clough prescribed flow defined in the 1960 Wakefield Water Order, at Cragg Brook. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Blackmoorfoot Reservoir Dyke defined by the 1869 Huddersfield Water Act and amended by the 1908 Huddersfield Water Act releasing flow to compensate Brow Grain. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Blackmoorfoot Reservoir defined by the 1869 Huddersfield Water Act and amended by the 1908 Huddersfield Water Act releasing flow to compensate Hoyle House Clough. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Brownhill Reservoir defined by impoundment licence NE/027/0010/008, releasing flow to compensate the River Holme.

- Digley Reservoir defined by impoundment licence NE/027/0010/009, releasing flow to compensate the Digley Brook.

- Butterley Reservoir defined by the 1965 Huddersfield Corporation Act, releasing flow to compensate Wessenden Brook. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- Scammonden Reservoir defined by the 1965 Huddersfield Corporation Act, releasing flow to compensate both Black Brook and Bradshaw Clough. However, current compensation flow requirements are specified in a 2014 LEP from the EA

- River Colne at Marsden defined in the 1965 Huddersfield Corporation Act However, current compensation flow requirements are specified in a 2014 LEP from the Environment Agency

Huddersfield Narrow Canal as defined in the 1965 Huddersfield Corporation Act and the 1965 Huddersfield Narrow Canal Agreement between Yorkshire Water and British Waterways (now the Canal and River Trust). The conditions of the Act include a condition for Yorkshire Water to reduce the support to the canal if experiencing exceptional shortage of rainfall, therefore a permit application is not required.

Details on the drought permit proposals for the South West area reservoirs are provided below. Table 2 gives the statutory compensation volumes and the reduced volumes for the duration of the drought permits.

Further details on the drought permit applications are provided below. The reductions proposed relate to the water level (or stocks) in either individual reservoirs or the combined stocks of all the supply reservoirs we operate, referred to as "regional reservoir stocks." If granted the permits will be in place for 6 months from the date of approval. If we receive sufficient refill for our regional reservoirs stocks to recover to a level we refer to as 'the normal control line' and no individual reservoir group is below a level we refer to as our 'early warning trigger line,' we will increase the compensation flow to the volumes defined in the licence agreements. Plots of the reservoir stocks and further explanations about the triggers to be used for compensation flow reductions can be found in Section 4.3.

Gorple Lower Reservoir (grid reference SD 94 31) in the Hebden group
We are licensed to impound water in Gorple Lower Reservoir for supply to customers under conditions defined by the impoundment licence NE/027/0012/033. Under the terms of the licence we have a legal obligation to release 2.70 megalitres per day (Ml/d) from the reservoir to compensate the downstream receiving watercourse, Graining Water.

The drought permit application for Gorple Lower Reservoir is to reduce the compensation release by 50% to 1.35 Ml/d from the date the permit is granted and to reduce further to 0.89 Ml/d if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Walshaw Dean Lower Reservoir (grid reference SD 95 32) in the Hebden group
We are licensed to impound water in Walshaw Dean Lower Reservoir for supply to customers under conditions defined by impoundment licence NE/027/0012/031. Under the terms of the licence we have a legal obligation to release flow from the reservoir to compensate the downstream receiving watercourse, Alcomden Water.

The volumes released vary depending on the time or year. From January to September inclusive 3.78 Ml/d should be released. From October to December inclusive 15.12 Ml/d should be released unless the total volume of water in Walshaw Dean Upper Reservoir, Walshaw Dean Middle Reservoir and Walshaw Dean Lower Reservoir is equal to or less than 1,291.41 Ml, then 7.55 Ml/d should be released.

The drought permit application for Walshaw Dean Lower Reservoir is to reduce the compensation releases by 50% to 1.89 Ml/d from January to September inclusive or to 3.78 Ml/d from October to December inclusive when the combined volume in the Walshaw Dean reservoirs is equal to or below 1,291.41 Ml from the date the permit is granted, and to reduce further to 1.25 Ml/d from January and September inclusive or to 2.49 Ml/d from October and December inclusive, if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Widdop Reservoir (grid reference SD 93 32) in the Hebden group
We are licensed to impound water in Widdop Reservoir for supply to customers under conditions defined by impoundment licence NE/027/0012/032. Under the terms of the licence we have a legal obligation to release flow from the reservoir to compensate the downstream receiving watercourse, Graining Water.

The volumes released vary depending on the time or year. From January to September inclusive 3.24 Ml/d should be released, and from October to December inclusive 12.96 Ml/d should be released

unless the volume of water in Widdop Reservoir is equal to or less than 1385.36 Ml then 6.48 Ml/d should be released.

The drought permit application for Widdop Reservoir is to reduce the compensation releases by 50% to 1.62 Ml/d from January to September inclusive, or to 3.24 Ml/d from October to December inclusive if the volume of water in Widdop Reservoir is equal to or less than 1385.36 Ml from the date the permit is granted, and to reduce further to 1.07 Ml/d from January to September inclusive, or to 2.14 Ml/d from October to December inclusive, if Widdop Reservoir stocks are below its Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Warley Moor Reservoir (grid reference SE 03 31) in the Luddenden group
Under conditions defined by the 1961 Calderdale Water Board Order we must release flow from Warley Moor Reservoir to compensate the downstream receiving watercourse, Luddenden Dean Beck. The statutory requirement under the order is to release 1,222,000 gallons per day from Warley Moor Reservoir to Luddenden Brook.

Flow released from Warley Moor Reservoir into Luddenden Brook flows via Upper Dean Head Reservoir, Lower Dean Head Reservoir into Castle Carr Reservoir. We are currently operating under a local enforcement position agreed with the Environment Agency whereby the required release from Warley Moor Reservoir is replaced by a requirement to release 3.02 Ml/d from Castle Carr Reservoir to Luddenden Brook.

The drought permit application for Warley Moor Reservoir is to replace the requirement under the 1961 Calderdale Water Board Order with a requirement to release a compensation flow of 1.51 Ml/d from Castle Carr Reservoir from the date the permit is granted, and to reduce further to 1.00 Ml/d if Warley Moor Reservoir stocks are below its Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Ogden Reservoir (grid reference SE 06 30) in the Hebble group
Under conditions defined by the 1961 Calderdale Water Board Order we must release flow from Ogden Reservoir to compensate the downstream receiving watercourse, Hebble Brook. The statutory requirement under the order is to release 82,500 gallons per hour between the hours of 06:00 to 17:45 Monday to Friday and 06:00 to 11:00am on Saturday. We currently operate a compensation release of 3.42 Ml/d under an enforcement position agreed with the Environment Agency.

The drought permit application for Ogden Reservoir is to reduce the compensation release by 50% to 1.71 Ml/d from the date the permit is granted and reduce further to 1.13 Ml/d if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Booth Wood Reservoir (grid reference SE 02 16) in the Booth Wood / Ryburn group
Under conditions defined by the 1966 Wakefield and District Water Order we are required to release flow from Booth Wood Reservoir to compensate the downstream receiving watercourses, Booth Dean Clough and the River Ryburn. The statutory requirement under the order is to release 18.005 Ml/d (165,028 gallons) between 06:00 and 18:00 Monday to Saturday and 3.41 Ml/d (31,250 gallons) all other hours. We currently operate under the terms of a flow trial agreement with the Environment Agency whereby we release 3.41 Ml/d continuously.

The drought permit application for Booth Wood Reservoir is to reduce the compensation release to 1.71 Ml/d from the date the permit is granted and to reduce further to 1.13 Ml/d if regional reservoir

stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Ryburn Reservoir (grid reference SE 02 18) in the Booth Wood / Ryburn group
Under conditions defined by the 1924 Wakefield Corporation Act we are required to release flow from Ryburn Reservoir to compensate the downstream receiving watercourse, the River Ryburn. The statutory requirement under the terms of the Act is to release a total continuous flow of 1,298,500 gallons per day to compensate both a mill pond and the River Ryburn. We currently operate under the terms of an enforcement position agreed with the Environment Agency, whereby we release 5.90 Ml/d.

The drought permit application for Ryburn Reservoir is to reduce the compensation release to 2.95 Ml/d from the date the permit is granted and to reduce further to 1.95 Ml/d if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Slitheroe Bridge Maintained Flow (grid reference SE 03 18) in the Booth Wood group
We have a historical local enforcement position with the Environment Agency to support a maintained flow of 18 megalitres per day at Slitheroe Bridge on the River Ryburn. Under the terms of the agreement the Environment Agency notify Yorkshire Water of the daily flow at Slitheroe Bridge and if it falls below 18Ml, Yorkshire Water will release additional flow as necessary from Booth Wood, Ringstone and Ryburn Reservoirs. As stated in the agreement changes to these releases will be made on working days. The drought action for Slitheroe Bridge Maintained Flow is to half the maintained flow to 9 megalitres per day and to reduce further to 6 megalitres per day if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

As there is no statutory requirement for Yorkshire Water to maintain the flow at Slitheroe Bridge a permit would not be required to make this change. However as the maintained flow is tied to the releases from Booth Wood Reservoir and Ryburn Reservoir as part of the LEP, a reduction to the maintained flow would be specified as a condition in the Booth Wood Reservoir and Ryburn Reservoir drought permits.

Withens Clough Reservoir (grid reference SD 98 23) in the Booth Wood group
Under conditions defined by the 1890 Morley Corporation Water Act we are required to release water from Withens Clough Reservoir to compensate the downstream receiving watercourses, Elphin Brook and Turvin Clough. Under the terms of the Act 2.64 Ml/d should be released (defined in the Act as 580,000 gallons per day).

The drought permit application for Withens Clough is to reduce the compensation release by 50% to 1.32 Ml/d from the date the permit is granted and reduce further to 0.87 Ml/d if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Turvin Clough Prescribed Flow (grid reference SD 99 21) in the Booth Wood / Ryburn group
Under conditions defined in the 1960 Wakefield Water Order we are authorised to abstract water for public water supply from Turvin Clough provided the flow of water immediately below the weir on Turvin Clough is not less than 6.82 Ml/d (defined in the Act as 1,500,000 gallons per day).

The drought permit application for Turvin Clough is to reduce this prescribed flow condition by 50% to 3.41 Ml/d from the date the permit is granted and reduce further to 2.25 Ml/d if regional stocks are

below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Blackmoorfoot Reservoir Brow Grains Dyke (grid reference SE 12 12) in the Blackmoorfoot / Deerhill group

Under conditions defined by the 1869 Huddersfield Water Act and amended by the 1908 Huddersfield Water Act we are required to release flow from Blackmoorfoot Reservoir to compensate the downstream receiving watercourses, Brow Grains Dyke, Meltham Dyke and the River Holme. The statutory requirement is to release 951 gallons per minute between the hours of 06:00 to 18:00 Monday to Saturday. We currently operate under an 'enforcement position' agreed with the Environment Agency to release a compensation flow of 2.668 Ml/d.

The drought permit application for Blackmoorfoot Brow Grains Dyke is to reduce the compensation release by 50% to 1.33 Ml/d from the date the permit is granted and reduce further to 0.88 Ml/d if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Blackmoorfoot Reservoir Hoyle House Clough (grid reference SE 09 13) in the Blackmoorfoot / Deerhill group

Under conditions defined by the 1869 Huddersfield Water Act and amended by the 1908 Huddersfield Water Act we are required to release flow from Blackmoorfoot Reservoir to compensate the downstream receiving watercourses, Hoyle House Clough and the River Colne. The statutory requirement is to release 156,960 gallons per day, with six sevenths of this released between the hours of 06:00 to 18:00 Monday to Saturday, and one seventh of this being released between the hours of 18:00 to 06:00 Monday to Saturday, and no release on Sunday. We currently operate under an 'enforcement position' agreed with the Environment Agency to release a compensation flow of 0.61 Ml/d.

The drought permit application for Blackmoorfoot Hoyle House Clough is to reduce the compensation release by 50% to 0.31 Ml/d from the date the permit is granted and reduce further to 0.20 Ml/d if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Brownhill Reservoir (grid reference SE 11 06) in the Brownhill / Digley group

Under conditions define by the Brownhill Reservoir impoundment licence (licence number NE/027/0010/008) we are required to release flow from Brownhill Reservoir to compensate the downstream receiving watercourse, the River Holme. Under the terms of the impoundment licence the following seasonal flows must be released: 6.90 Ml/d from November to March (winter); 5.40 Ml/d from April to May and August to September (spring and autumn); 4.80 Ml/d in June and July (summer).

The drought permit application for Brownhill Reservoir is to reduce the compensation release by 50% to 3.45 Ml/d in winter, 2.70 Ml/d in spring and autumn, and 2.40 Ml/d in summer from the date the permit is granted. Further reductions will be permitted to 2.28 Ml/d in winter, 1.78 Ml/d in spring and autumn, and 1.58 Ml/d in summer if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Digley Reservoir (grid reference SE 11 07) in the Brownhill / Digley group

Under conditions defined by the Digley Reservoir impoundment licence (licence number NE/027/0010/009) we are required to release flow from Digley Reservoir to compensate the downstream receiving watercourses, Digley Brook and the River Holme. Under the terms of the

impoundment licence the following seasonal flows must be released; 10.6 Ml/d from November to January (winter); 5.8 Ml/d from February to May and August to November (spring and autumn); 4.5 Ml/d in June; and 3.2 Ml/d in July.

The drought permit application for Digley Reservoir is to reduce the compensation release by 50% to 5.3 Ml/d in winter, 2.9 Ml/d in spring and autumn, 2.25 Ml/d in June, and 1.6 Ml/d in July from the date the permit is granted. Further reductions will be permitted to 3.5 Ml/d in winter, 1.91 Ml/d in spring and autumn, 1.49 Ml/d in June, and 1.06 Ml/d in July if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Butterley Reservoir (grid reference SE 04 10) in the Scammonden Wessenden group
Under conditions defined by the Huddersfield Corporation Waterworks Act 1890 as amended by the Huddersfield Corporation Act 1965 we are required to release flow from Butterley Reservoir to compensate the downstream receiving watercourse, Wessenden Brook. The statutory requirement is to release 2,000 gallons per minute between 06:00 and 18:00 and 465 gallons per minute between 18:00 & 06:00. We currently operate under an 'enforcement position' held with the Environment Agency whereby we continuously discharge not less than 8.07 Ml/d.

The drought permit application for Butterley Reservoir is to reduce the compensation release by 50% to 4.04 Ml/d from the date the permit is granted and to reduce further to 2.66 Ml/d if regional reservoir stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Scammonden Water Black Brook (grid reference SE 07 19) in the Scammonden / Wessenden group
Under conditions defined by the 1965 Huddersfield Corporation Act we are required to release flow from Scammonden Water to compensate the downstream receiving watercourse, Black Brook. Under the terms of the Act, we must continuously discharge not less than 3.49 Ml/d (defined as 768,000 gallons per day).

The drought permit application for Scammonden Water Black Brook is to reduce the compensation release by 50% to 1.75 Ml/d from the date the permit is granted and to reduce further to 1.15 Ml/d if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Scammonden Water Bradshaw Clough (grid reference SE 06 14) in the Scammonden / Wessenden group
Under conditions defined by the 1965 Huddersfield Corporation Act we are required to release flow from Scammonden Water to compensate the downstream receiving watercourse, Bradshaw Clough (also referred to as Merry Dale Clough). Under the terms of the Act, we must continuously discharge not less than 1.36 Ml/d (defined as 300,000 gallons per day).

The drought permit application for Scammonden Water Bradshaw Clough is to reduce the compensation release by 50% to 0.68 Ml/d from the date the permit is granted and to reduce further to 0.45 Ml/d if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

River Colne Maintained Flow at Marsden (grid reference SE 04 11) in the Scammonden / Wessenden group
Under conditions defined by the 1965 Huddersfield Corporation Act we are required to maintain a flow in the River Colne, as measured by the gauging station at Marsden, of no less than 7.27 Ml/d (defined as 1,600,000 gallons per day).

The drought permit application for the River Colne is to reduce the maintained flow by 50% to 3.64 Ml/d from the date the permit is granted and reduce further to 2.40 Ml/d if regional stocks are below the Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Compensation Water Source	***Receiving Watercourses***	***Relevant Authorising Act or Licence***	***Current Legal Compensation/ Maintained Flow Requirement (Ml/d)***	***Drought Permit Quantities applied for***	
				Flow reduced by half (Ml/d)	***Flow reduced by two thirds (Ml/d)***
Gorple Lower Reservoir	*Graining Water (Hebden Water)*	*Impoundment licence NE/027/0012/033*	*2.7*	*1.35*	*0.89*
Walshaw Dean Lower Reservoir	*Alcomden Water (Hebden Water)*	*Impoundment Licence NE/027/0012/031*	*3.78 Jan – Sept*	*1.89 Jan – Sept*	*1.25 Jan – Sept*
			15.12 Oct – Dec or 7.56 when stocks below 50%	*3.78 Oct – Dec*	*2.49 Oct - Dec*
Widdop Reservoir	*Graining Water (Hebden Water)*	*Impoundment Licence NE/027/0012/032*	*3.24 Jan – Sept*	*1.62 Jan – Sept*	*1.07 Jan – Sept*
			12.96 Oct – Dec or 6.48 when reserves below 50%	*3.24 Oct – Dec*	*2.14 Oct – Dec*
Butterley Reservoir	*Wessenden Brook*	*1965 Huddersfield Corporation Act (LEP)*	*8.07*	*4.04*	*2.66*
	River Colne				
Scammonden Water Black Brook	*Black Brook*	*1965 Huddersfield Corporation Act*	*3.49*	*1.75*	*1.15*
Scammonden Water Bradshaw Clough	*Bradshaw Clough*	*1965 Huddersfield Corporation Act*	*1.36*	*0.68*	*0.45*
Booth Wood Reservoir	*Booth Dean Clough*	*1966 Wakefield & District Water Board Order (LEP)*	*3.41*	*1.71*	*1.13*
Ryburn Reservoir	*River Ryburn*	*1924 Wakefield Corporation Act (LEP)*	*5.90*	*2.95*	*1.95*
Slitheroe Bridge Maintained Flow	*River Ryburn*	*1966 Wakefield & District Water Board Order.*	*18.00 Ml/d specified from Booth Wood reservoir during business hours as part*	*9*	*6*
	Booth Dean Clough				
	Butts Clough	*2014 Historic Act LEP*			

	River Calder		*of the 1966 Wakefield & District Water Board Order. 2014 Historic Act LEP requires 18 Ml/d to be constant and uniform and measured at Slitheroe Bridge Weir downstream of the confluence of the Ryburn and Booth Dean Clough.*		
Warley Moor Reservoir	*Luddenden Dean Beck*	*1961 Calderdale Water Board Order (LEP)*	*3.02*	*1.51*	*1.00*
Ogden Reservoir	*Hebble Brook*	*1961 Calderdale Water Board Order (LEP)*	*3.42*	*1.71*	*1.13*
Withens Clough Reservoir	*Elphin Brook* *Turvin Clough*	*1890 Morley Corporation water act*	*2.64*	*1.32*	*0.87*
Turvin Clough Prescribed Flow	*Turvin Clough* *Cragg Brook*	*1960 Wakefield Water Order*	*6.82*	*3.41*	*2.25*
Blackmoorfoot Reservoir Brow Grains Dyke	*Brow Grains Dyke* *Hall Dyke*	*1869 Huddersfield Water Act (LEP)*	*2.668*	*1.33*	*0.88*
Blackmoorfoot Reservoir Hoyle House Clough	*Hoyle House Clough* *River Colne*	*1908 Huddersfield Water Act (LEP)*	*0.61*	*0.31*	*0.20*
River Colne Maintained Flow at Marsden	*River Colne*	*1965 Huddersfield Corporation Act*	*7.27*	*3.64*	*2.40*
Digley Reservoir	*Digley Brook*	*Impoundment Licence NE/027/0010/009*	*10.6 Nov – Jan*	*5.3 Nov – Jan*	*3.5 Nov – Jan*
			5.8 Feb – May & Aug – Oct	*2.9 Feb – May & Aug – Oct*	*1.91 Feb – May & Aug – Oct*
	River Holme		*4.5 June*	*2.25 June*	*1.49 June*

			3.2 July	*1.6 July*	*1.06 July*
Brownhill Reservoir	*River Holme*	*Impoundment Licence NE/027/0010/008*	*6.9 Nov – Mar*	*3.45 Nov – Mar*	*2.28 Nov – Mar*
			5.4 Apr – May & Aug – Sept	*2.7 Apr – May & Aug – Sept*	*1.78 Apr – May & Aug – Sept*
			4.8 Jun - Jul	*2.4 Jun – Jul*	*1.58 Jun – Jul*

Table 2: Summary of drought permit proposals and relevant licenses

2.3 Proposed Start & Expiry Date for Permit

Yorkshire Water propose the drought permits are implemented as soon as determined and be in place for a period of 6 months.

3. Draft Permit

See appended draft Drought Permits for each drought option

4. Drought Permit Justification

4.1 Why the Permit is Necessary?

The drought permit applications are necessary due to an exceptional shortage of rain threatening a serious deficiency of supplies of water in the area supplied by Yorkshire Water. Evidence to demonstrate the exceptional shortage of rain is shown in section 5 "Case for an Exceptional Shortage of Rainfall"

We are applying for drought permits in the South West area to reduce the rate of decline in reservoir stocks, and to aid the recovery of reservoir stocks during the winter. Furthermore, by maximising our prospects for winter recovery, we will decrease the likelihood of requiring drought permits in 2026.

4.2 Supply Areas and Respective Populations Impacted

This drought permit application will alter how we operate our reservoirs in our South West Area operating zone. The South West Area is connected to our conjunctive use grid system, and we may also look to apply for drought permits in other parts of our region.

The following supply areas are impacted in Yorkshire Water's SW area:

- Halifax
- Huddersfield & surrounding areas
- Wakefield
- Dewsbury
- Mirfield
- Morley

The population estimated to be affected can be estimated from WTW production sites as follows:

Albert WTW – 44Ml/d – Population = 182,500
Fixby WTW – 17Ml/d - Population = 70,500
Kirkhamgate WTW – 16Ml/d – Population = 66,300
Longwood WTW – 20Ml/d – Population = 83,300
Holmbridge WTW -21Ml/d – Population = 87,100
Blackmoorfoot WTW – 18Ml/d - Population = 74,600

Total population served – 564,300

4.3 Daily Water Demand and How it is Met from the Available Source

Our reservoir control lines represent the value of reservoir storage that is required to guarantee a continuous rate of supply (equivalent to yield) such that the reservoir storage never falls below a critical storage line given the minimum historical inflows.

We calculate two sets of control lines:

- Drought Control Line (DCL) - the DCL is designed such that stocks will never fall below marginal storage when the reservoirs supply 85% of their calculated yield.
- Normal Control Line (NCL) - the NCL is designed such that stocks will never fall below the DCL when the reservoirs supply their calculated yield.

Once we have calculated the NCL and DCL, we linearly interpolate between the 100% full level and the NCL, the NCL and DCL, and the DCL and emergency storage level, to obtain the ten control lines (CLs) used in our modelling and reservoir stocks monitoring. The NCL is control line (CL) 3, the DCL is CL7, and we use CL4 as the Environment Agency trigger line. This is the trigger for Yorkshire Water and the Environment Agency to initiate communications around a potential emerging dry weather situation.

The control lines are updated on a regular basis and were last updated in 2022 based on minimum inflows to the reservoirs from 1900 to 2020. We have remodelled our historic inflows using GR6J rainfall runoff models and extended our historic record back to 1900.

Control lines have been revised since our most recent drought plan, but the triggers in our drought plan related to control lines are still applicable to the updated control lines. We will carry out a further review of our control lines after the current drought period has ended, and when reservoir inflows are updated to include this current period.

In the operation of our reservoirs, we aim to abstract the reservoir yield when stocks fall below the NCL, but at times of high demands or in response to other system constraints we will often use a source above its yield for periods of time, and then reduce to below yield later in the year to compensate.

4.4 Forecasted Effects of Continued Dry Weather on Customer Supplies

Our current modelling is based on a 1995/1996 inflow scenario which is our worst case 12-month period with approximately 60% long-term average (LTA) rainfall over a 12-month period. The model outcome indicates that with current WTW availability and a similar reservoir inflow to 1995/96, we require further drought permits (on rivers and in other areas) in addition to the TUB that was enforced on 11th July. Our latest WRPR forecast (at the time of preparing this application) indicates that the forecast date for drought order / drought permit implementation across the Yorkshire Water region will be 03/11/25 if we follow the 1995/96 trend.

It should be noted that we have been using and modelling an extreme rainfall-based scenario alongside the 1995/96 scenario. This was done to align with the current dry weather scenario we are experiencing this year and to make our assessment more rigorous. This scenario consists of 40% LTA rainfall in August and 60% LTA thereafter. The trigger date for different levels of restrictions forecast under this scenario has a close approximation to those under the 1995/96 scenario.

5. Case for an Exceptional Shortage of Rain (ESoR)

Full details of events and climatic conditions that have led to the need for the drought permits is described in this section.

5.1 Introduction

In this document, we demonstrate an exceptional shortage of rainfall by analysis of monthly rainfall following the Environment Agency guidance document ('Hydrological guidance for the assessment of an Exceptional Shortage of Rain (ESoR)', 2025). We demonstrate that ESoR has primarily led to a serious risk of deficiency of supplies in our South West (SW) region. The geographical extent and the time period of analysis have been agreed with the local Environment Agency Hydrology Yorkshire team.

The following rainfall analysis has been conducted to support our assessment:

- Plots of 2025 rainfall in relation to long term average (LTA) and previous droughts
- Standardised Precipitation Index (SPI)
- Rainfall ranking compared to records starting in 1871
- Calculation of Cunnane plotting position

We also present additional evidence for the following non-rainfall variables:

- Reservoir storage
- MORECS Soil Moisture Deficit

In each subsection, we start by showing the requirements as set out by the Environment Agency (Appendix A – ESoR checklist for water companies March 2025 v2.1) in grey boxes. Following such text boxes, we present our approach and analysis in response to those.

5.2 Rainfall Data

- You must use areal rainfall data for the catchment area of interest.
- In most circumstances, you should use the Environment Agency's HadUK/DRT dataset Data for hydrological areas is provided to water companies monthly. If the Hydrological Areas are not appropriate, then rainfall data can be extracted for a bespoke catchment area from the HadUK/DRT dataset by Environment Agency hydrologists. You must fully explain which dataset has been used and why. Recent data from third party websites may underestimate complete monthly rainfall totals.

The rainfall data used in this assessment was provided by the Environment Agency Hydrology Yorkshire team. The data included is the HadUK v1.2.0.0 monthly totals covering January 1871 to December 2023 (inclusive) and the Environment Agency Daily Rainfall Tool (DRT) monthly totals covering January 2024 to July 2025 (inclusive). The use of the HadUK / EA DRT rainfall data allows analysis of long time series dating back to 1871. The rainfall data covers the catchments of our reservoirs in our SW region that are relevant to this permit application. The geographical extent will be provided and described in greater detail in section 5.4.

- If you have calculated areal rainfall yourself (you are strongly advised to avoid this):
- You will need to demonstrate that your data is of better quality and/or more hydrologically relevant than the HadUK/DRT dataset.
- Set out the limitations of the dataset.

- Your areal rainfall should be calculated in accordance with British Standard BS7843-4:201296. The rain gauges used must be quality controlled, have minimal missing data and be operated in accordance with British Standard.

We can confirm that we have not calculated the areal rainfall data ourselves and have used the data provided by the Environment Agency as explained above.

5.3 Period of Analysis

- Determine the start and end point of the period of analysis before starting the assessment. This is the period of the rainfall deficit which is used to support the ESoR case. You should agree the period of analysis with the relevant Environment Agency hydrologist, the Area Drought Coordinator and water company lead.
- The application should be submitted as soon as possible once the need for a Drought Permit has been identified a or as soon as possible. [as written]
- Start of the period of analysis:
- Provide clear evidence (e.g. charts/graphs) of the point at which rainfall is lower than normal.
- Justify how the variables used here are reflective of the water supply situation in the catchment area of interest.
- End of the period of analysis
- Provide clear evidence (e.g. charts/graphs/reference to Drought Plan) that the rainfall deficit has triggered the need for a drought permit.
- Use the latest rainfall data at the point of the application.

The period over which the analysis has been conducted was agreed with the Environment Agency Hydrology Yorkshire team. This drought can be characterised as relatively short but of high intensity compared to previous recorded droughts. The onset of the exceptional shortage of rainfall was agreed to be February 2025. Although January 2025 has also seen lower than average rainfall in our SW region (see **Error! Reference source not found.**), to be consistent with the assessment in our other regions, February 2025 will be the start of the period of analysis for all of our regions. The latest rainfall data up until the point of application has been used in this assessment representing a 6-month period from February to July 2025.

5.4 Geographical Extent of Analysis

- Provide justification for the catchment area used in the analysis, this may be one or several of the Environment Agency's hydrological areas, a bespoke catchment or water resources zone.
- Provide evidence of how the rainfall deficit is relevant to the catchment area of the public supply source or the wider integrated water resource zone/subunit of this zone.
- It is recommended that catchments should contain one or more Met Office registered rain gauge located within them.

The geographic extent of the analysis was agreed with the Environment Agency Hydrology Yorkshire team. We have used a bespoke area that covers all reservoir catchments that are included in the SW group of permits. The catchments have been grouped into a single geographic extent shown in Figure 3. This group of reservoirs are the primary source of supply to our customers in the SW region. The rainfall has been consistently low across this whole region and therefore there was no need to investigate individual areas separately. Yorkshire Water uses a grid system to balance supplies across the network, therefore the shortage of rainfall in this area is relatively uniformly felt across the Yorkshire Water supply zone.

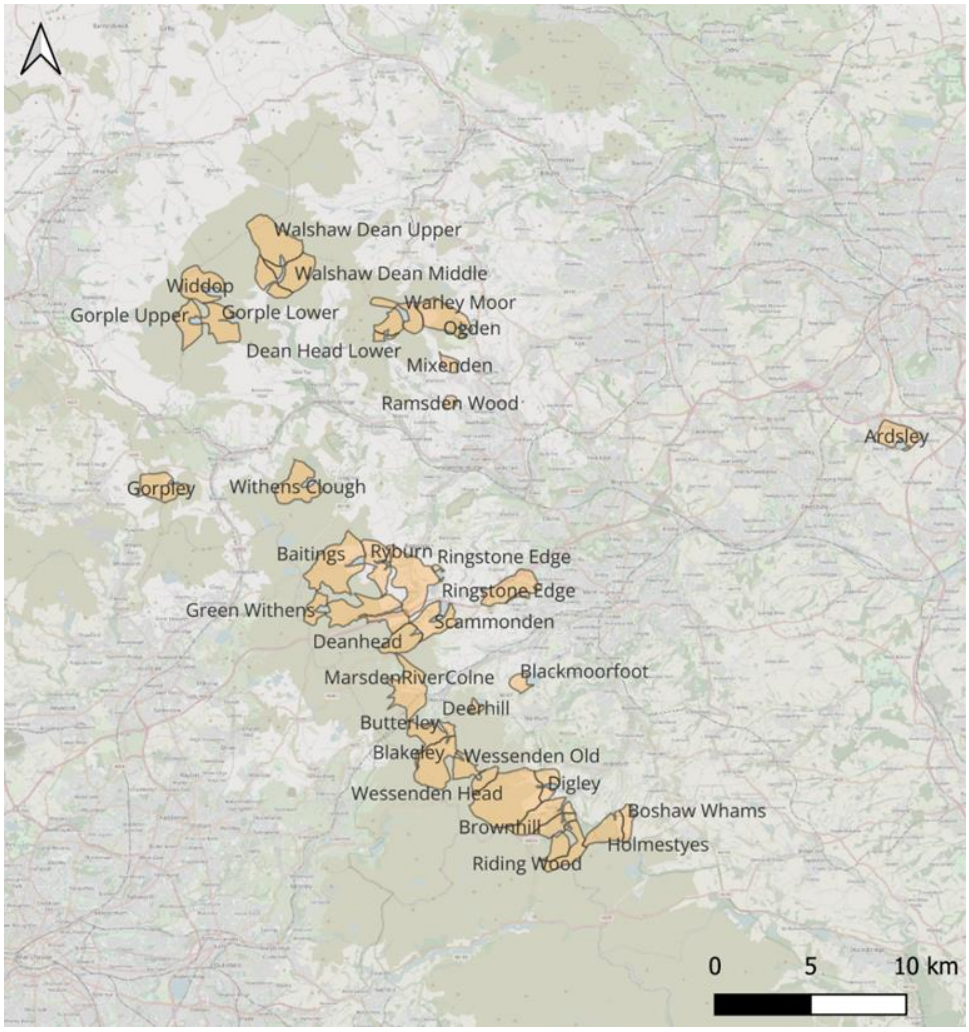


Figure 3: Geographic extent of the exceptional shortage of rainfall analysis

5.5 Technical Rainfall Analysis Methods

- Refer to the Environment Agency's supplementary guidance on drought permits and drought orders, available on request from Water-company-plan@environment-agency.gov.uk
- Use the same rainfall dataset (usually HadUK/DRT) for each analysis method (asset out in the sections above) and the same historic period of record (from 1871)
- 1961 to 1990 should currently be used as the period of record for Long Term Averages (LTA) assessment (this is planned to be updated to 1991 to 2020, and this document will be updated to reflect that)
- Use your assessment period of analysis for each method as your main evidence. If you use any shorter periods as supporting evidence (for example, the winter refill period), you must justify how these are relevant to the water resource situation
- Detail any limitations and uncertainties associated with the methodology, and the possible impacts on the results

Rainfall comparison with the LTA and historical droughts

Figure 4 shows the rainfall during December 2024 to June 2025 in comparison to the monthly long-term averages (LTA). The LTA was calculated using the new 1991-2020 standard period which was confirmed by the Environment Agency Hydrology Yorkshire team to be taken for the calculation of LTA. The rainfall is significantly below average for this time of year across the analysis period, with particularly low rainfall between February to May. Although it can be seen that January 2025 has also

seen below average rainfall, it is not part of the period of analysis adopted by Yorkshire Water for two reasons: (1) Yorkshire Water uses a grid system to balance supplies across the network, therefore the shortage of rainfall in the entire area is relatively uniformly felt across the Yorkshire Water supply zone; and (2) In order to be consistent in the assessment of ESoR with other regions (where January 2025 did not have below average rainfall), February 2025 will be the start of the period of analysis.

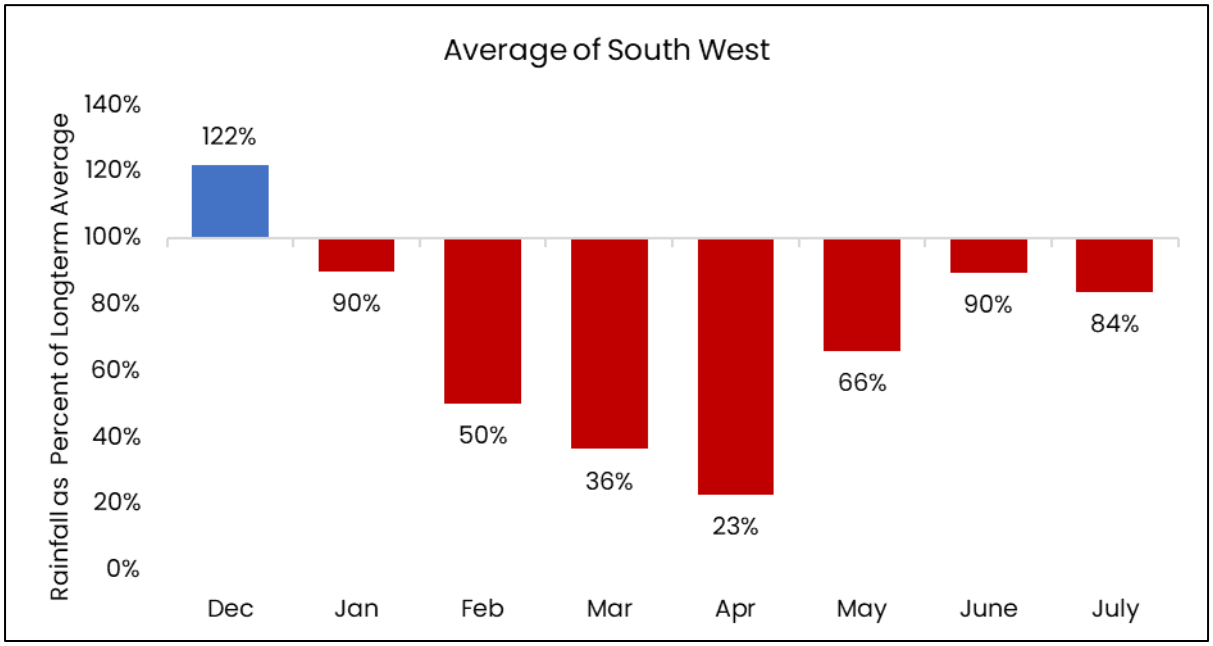


Figure 4: Rainfall compared to long-term average

Figure 5 shows the cumulative rainfall starting from the end of January, in comparison with the LTA and the two most significant recent droughts (2022 and 1995). Rainfall from 2020 is also included as the year was characterised by very low rainfall in the springtime. The rainfall for this period is notably lower than the historic droughts and LTA.

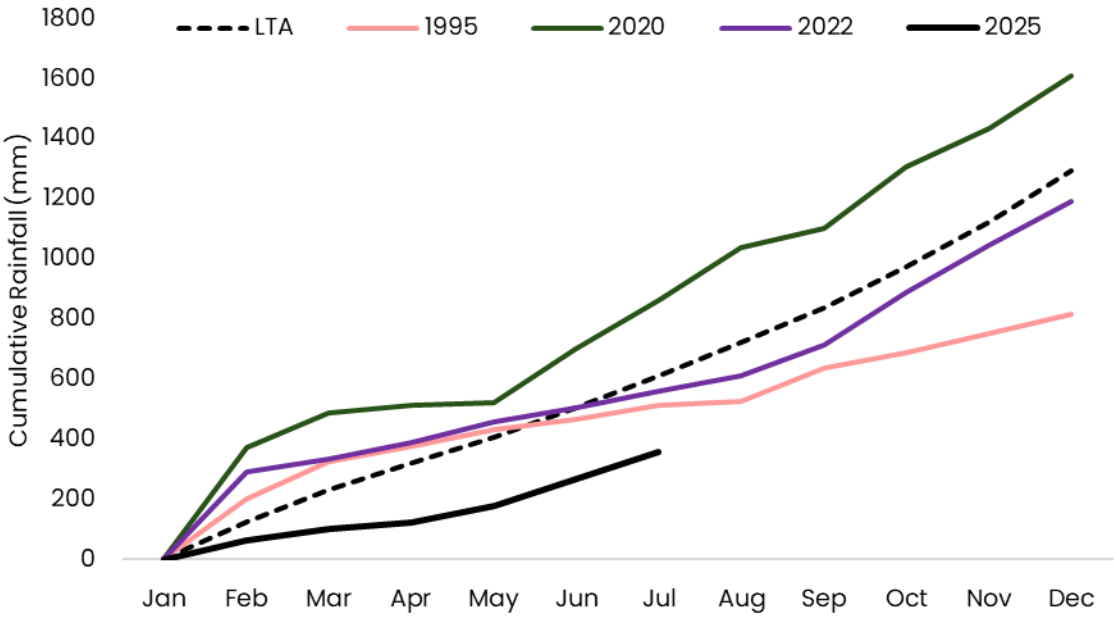


Figure 5: Cumulative rainfall plotted against previous droughts and long-term average

Standardised Precipitation Index (SPI)

The Standardised Precipitation Index (SPI) values can be interpreted as the number of standard deviations by which the observed anomaly deviates from the long-term mean. The SPI can be calculated for differing periods using monthly input data. We have calculated the SPI for all the monthly rainfall data listed in Figure 6 for a 1-month, 3-month and 6-month duration (i.e., 1-, 3-, and 6-month window respectively leading to the month shown in the first column). The 6-months from February to July are considered severely dry according to the index categorisation, marginally below the threshold of extremely dry. The 3-months leading up to May and April are both considered extremely dry for the SW region.

SPI of 2025 rainfall for the South West

2025	SPI - 1month	SPI - 3month	SPI - 6month
February	-0.54	0.25	0.22
March	-1.43	-1.12	-0.58
April	-2.01	-2.33	-0.81
May	-0.60	-2.53	-0.90
June	0.25	-1.33	-1.67
July	-0.13	-0.43	-1.96

SPI Category:						
Extremely Wet (≥ 2.0)	Severely Wet (1.5 → 2.0)	Moderately Wet (1.0 → 1.5)	Near Normal (1.0 → -1.0)	Moderately Dry (-1.0 → -1.5)	Severely Dry (-1.5 → -2.0)	Extremely Dry (≤ -2.0)

Figure 6: SPI values across the period of analysis

Rainfall Ranking

The ranking of the rainfall periods compared to the historic dataset is shown in Figure 7. Different periods preceding the period of analysis are presented up to twelve-month durations. For example, the accumulated rainfall for the 11 months leading up to February 2025 was the 94th driest on record. The Cunnane probability ranking has been calculated for each duration and the rankings are shaded accordingly. The 6-month period from February to July 2025 is classified as exceptionally low rainfall according to the Cunnane ranking and is the sixth lowest rainfall on record. Rainfall durations of three to five months preceding May 2025 are all in the top three driest years on record.

Rank of 2025 rainfall in period since 1871													
South West		Duration (months)											
2025		1	2	3	4	5	6	7	8	9	10	11	12
End Month	Feb	43	50	91	78	67	92	68	67	63	75	94	103
	Mar	13	10	25	59	53	38	65	46	46	40	64	80
	April	9	2	4	6	38	32	26	47	31	28	30	39
	May	40	8	1	2	3	32	27	22	41	28	24	24
	June	92	57	15	5	5	8	37	30	24	43	31	25
	July	71	80	53	19	6	6	6	29	25	18	37	26

KEY: Cunnane Probability Ranking:						
Exceptionally high (> 0.95)	Notably high (0.87 → 0.95)	Above normal (0.72 → 0.87)	Normal (0.28 → 0.72)	Below normal (0.13 → 0.28)	Notably low (0.05 → 0.13)	Exceptionally low (< 0.05)

Figure 7: Ranking of the rainfall against historic records

5.6 Supporting Information

The following section summarises non-rainfall analysis as supporting evidence.

Soil Moisture Deficit (MORECS)

We have used the Met Office Rainfall and Evaporation Calculation System (MORECS) to estimate Soil Moisture Deficit (SMD). Data from the MORECS database is much less granular than rainfall data being aggregated to 40 x 40km grids. This limits our ability to present data more accurately for the geographic extent of the SW region. As advised by the Environment Agency Hydrology Yorkshire team, we present data for grid square 98 which covers the largest extent of the SW region. Figure 8 highlights the current trend in 2025 versus historical years dating back to 1993 as well as key droughts in this time. The SMD is currently above the 90th percentile and was tracking significantly above the 2022 and 1995 drought years between April and the end of June.

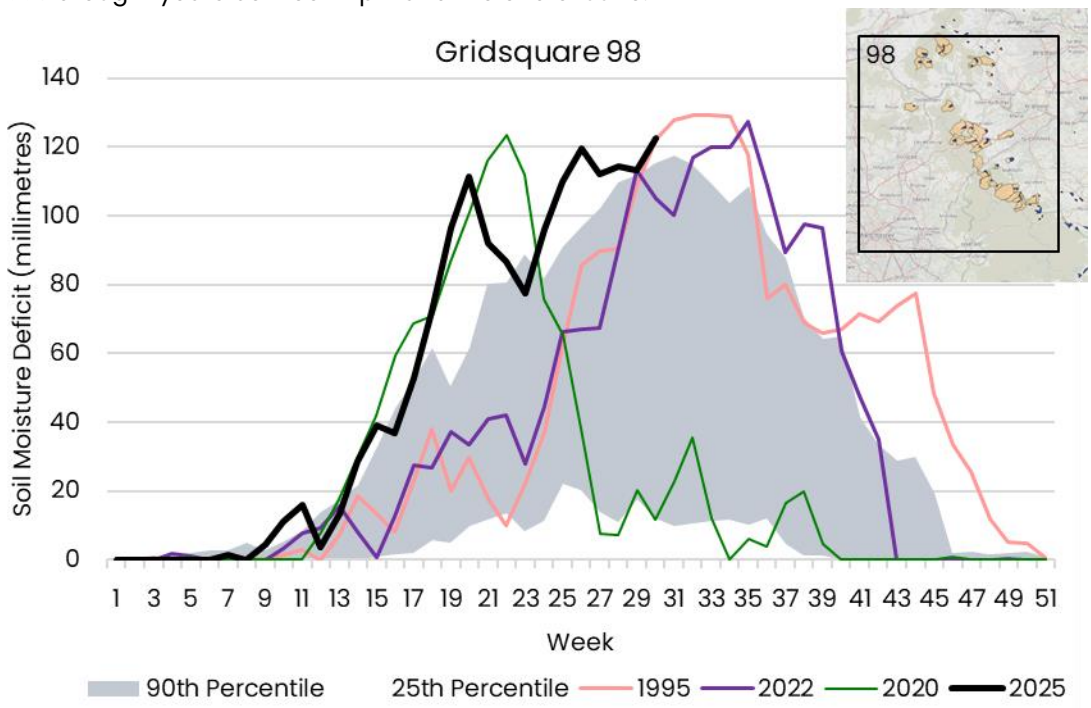


Figure 8: Local soil moisture deficit compared to historic droughts and long-term average

Reservoir Levels

Figure 9 shows the reservoir levels in our SW group; the levels are significantly lower than any other year at this point in the year. Reservoir levels were above 90% at the start of the year following a relatively wet autumn and winter of 2024. However, from February, the stocks declined steeply at a consistent rate, approximately 3% each week. The stocks briefly levelled off for approximately two weeks at the start of June following some wet weather, however, they have since returned to a consistent decline. The reservoir levels show that the dry weather has impacted on the water stocks in the SW region.

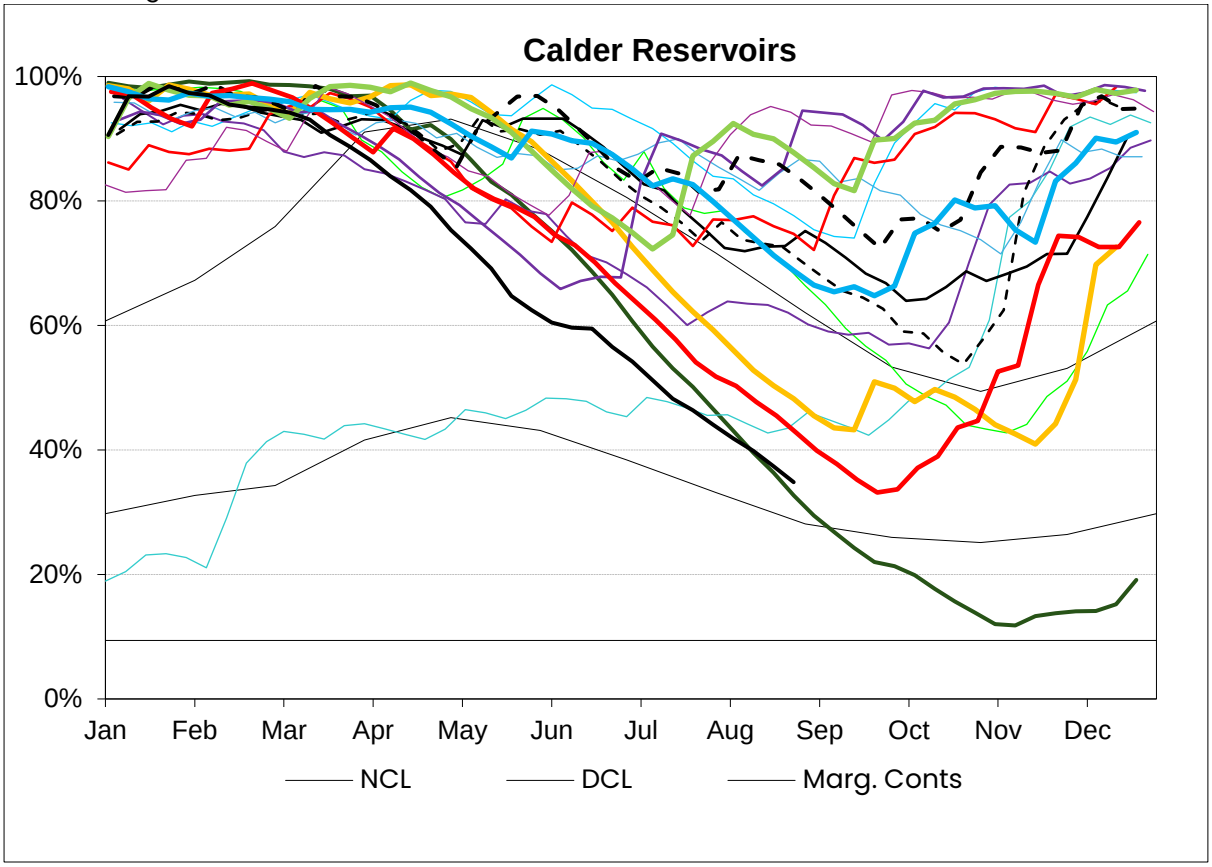


Figure 9: Reservoir levels of the South West group

5.7 Summary and Conclusions

The spring of 2025 has been exceptionally dry. Across our SW region, the 6-month period to June was the sixth driest since records began in 1871, and the 3-month period to May was the driest on record. The SPI and ranking analyses indicate conditions were extremely or exceptionally dry across several durations within the analysis period.

The low rainfall so far in 2025 has been accompanied by periods of hot dry weather which has resulted in high SMD values. As a result, when there has been intermittent rainfall, it has not resulted in significant increases in reservoir stocks leading to record low reservoir levels for this time of year.

The dry weather means we must be ready to take action to preserve reservoir stocks and maintain compensation flows for longer should there continue to be lower than average rainfall. If the exceptionally low rainfall continues (or if there is below LTA rainfall during the summer and autumn), our forecasting models predict extremely low reservoir levels and the need for further drought measures according to our drought plan.

6. Evidence Supporting Drought Plan has been followed

Our Drought Plan details a number of actions that we would follow when triggers are met. These can be found in Table 2.3 "Drought plan triggers and associated actions" of our Plan (https://www.yorkshirewater.com/media/ny5nq2vk/yorkshire-water_drought-plan-2022_final_public-april-2022.pdf). The triggers and actions are detailed in the subsections below.

6.1 Triggers

6.1a Trigger: Reservoir Storage Crossed our Normal Control Line

We meet customer demand through use of our licensed water resources, which include reservoir, river, and groundwater supplies. On average regional reservoir stocks fall below normal control line (NCL) for 12 weeks a year, this normally occurs between mid-April and June. When we are below NCL we balance raw water resources by reducing reservoir abstraction and increasing river abstraction, which helps to conserve reservoir stocks.

In 2025 regional reservoir stocks crossed the normal control line on 25th March 2025. As part of our proactive approach to dealing with dry weather we instigated our Bronze Company response early (on the 3rd April) to the developing dry weather situation.

In reaction to this we increased grid production (river supplied water treatment works) to support our reservoir supplied water treatment works (WTWs) with treated water. We actively assess each area weekly and decide which area requires what volume of grid support to balance supply/resources.

We also maximised our river abstractions (where the river level allowed) on the rivers Wharfe, Ouse and Ure to support the reservoir groups with raw water, this then allows us to balance the decline in groups through our strategic raw water network.

Although we crossed the NCL regionally on the 25th March, each group has different control lines, we use these control lines to effectively balance the drop in each area through use of our strategic raw and treated water links, with the aim to bring each group as close to yield as possible whilst managing the supply to customers.

We have also increased leakage focus within the South West area by escalating a leakage hub, to enable us to minimise leakage and as a result reduce demand in the SW area, with the team focus ensuring we prioritise any work to repair leaks within district metered areas (DMAs) and on trunk mains within the area as quickly as possible.

We have an 'always on' approach to water saving messaging, meaning we proactively push out messaging whatever the weather. Over winter, we've created 14.8m opportunities to see and hear our water saving messaging. All year, free water saving packs are available for customers to order through the Yorkshire Water website. In line with our Drought Plan, when we crossed our normal control line, we activated our dry weather communications plan to ensure we were communicating to customers the importance of saving water during dry weather.

6.1b Trigger: Reservoir Storage crossed Environment Agency Early Warning Trigger Line

Regional reservoir stocks reached the Environment Agency early warning trigger on 22nd April 2025 and we initiated weekly discussions with the Environment Agency at this time as per our Drought Plan. Taking a continued proactive approach to the situation we also instigated our Silver (escalating from Bronze) incident meetings in line with our Company Incident Management Plan on 22nd April. At this

stage, our region was not considered to be in drought but this trigger ensures we start implementing actions early to lessen the impacts if the situation worsens.

Following our regional reservoir stocks crossing the Environment Agency control line our Grid output remained maximised transferring treated water to reduce reservoir abstraction across the region including in the South West. However, due to persistent high demand (peak week 1419Ml/d, peak day 1479Ml/d) reservoir abstractions have had to remain above yield to meet customer supplies.

The prolonged dry weather coupled with multiple heatwaves has resulted in demand spikes with two peaks in April, one peak in May and two peaks in June, and another at the start of July. These demand peaks combined with persist dry weather has resulted in higher average demand in April, May and June.

As outlined in Section 6.1a river abstractions, on the River Derwent, River Hull, River Wharfe, River Ouse and River Ure have been maximised, within licence constraints. River levels in April, May and June have been lower than average limiting abstraction on River Wharfe at Arthington, River Ouse at Moor Monkton and River Ure at Kilgram Bridge.

The lower river flows and the higher demand has required higher reservoir abstractions to meet supply.

We have continued the leakage focus on the South West including proactive targeted leakage detection on upstream trunk mains to ensure we are on top of any leakage on our trunk main system. DMA focus groups in place identify any areas above our minimum leakage levels, which then allows a targeted approach to locating leaks in specific areas within the South West, again with the aim to minimise leakage, demand and therefore abstraction from the South West reservoir group.

Following our Drought Plan, we also enhanced our water conservation activities. We pushed our water saving messages via a range of media and started communications with key stakeholders such as political stakeholders, inset appointees, retailers and new appointments and variations (NAVs).

As this stage we liaised with the Environment Agency over the onset of drought walkovers and preliminary permit/order preparation (including in-river works permits where required). It was agreed that a series of walkovers would be carried out to validate and cross reference data collected in 2022. As part of our Drought Plan, we also sent out letters and emails to our key downstream abstractors and stakeholders to notify them of our dry weather escalation plans and invited them to contact us should they have any concerns, or wished to report any signs of environmental stress.

6.1c Trigger: Reservoir Storage Predicted to be 10 weeks from Crossing the Drought Control Line

The next trigger for implementing drought actions is when regional stocks are predicted to be 10 weeks from the drought control line. During dry periods we model reservoir stocks against forecasts of a repeat of previous droughts in our region. Modelling was commenced at the start of April; this predicted a risk of reservoir stocks reaching the 10 weeks from crossing drought control line (4 weeks before implementing TUBs) on 16th June across Yorkshire Water area if we had a repeat of the 1995/96 rainfall. Rainfall in April and May has been less than in the same period in 1995. The modelling carried out at the end of April predicted a risk of reservoir stocks reaching the 10-week trigger on 16th June. As the dry weather has persisted more extreme theoretical rainfall-based scenarios, i.e., 40% of the LTA rainfall in June and 60% LTA rainfall thereafter, have been used which showed close resemblance of 1995/96 pattern. Our latest WRPR run using this extreme scenario indicated we have crossed the 10-

week trigger on 16th June similar to 1995/96 scenario. According to our Drought Plan we would escalate to Silver at this stage, but being proactive, we instead escalated to Gold on 12th May.

Throughout all this time, we have continued liaising with the Environment Agency on a weekly basis to discuss triggers reached and actions that we have been carrying out. Alongside this, we continued the preparation of environmental assessment reports and drought permit / drought order applications and also approached Natural England to ensure they were aware of the situation although there are no designated sites under the Conservation of Habitats and Species regulations 2017 as amended or Wildlife and Countryside Act which could be impacted by our South West drought permits.

Operationally we took the decision to start implementing some of the actions triggered by reservoir stocks being 10 weeks from crossing the drought control line earlier than the trigger date, rather than wait until we reached this trigger. These actions have been outlined in previous sections but are also summarised below:

- Increasing grid water import to reduce abstraction from South West reservoir group stocks when possible. As mentioned previously this action was limited because of persistent high demand.

As part of our Drought Plan, we also enacted a plan for enhanced leakage detection through multiple methods in risk areas, that is, increase find and fix, lift and shift logger deployment for generating points of interest. We also directed focus on 'unaccounted for water' in areas with maintained high demand, but in which reported leakage had reduced beyond the levels of which demand had reduced. We switched to targeted detection of unmetered areas, that is, upstream mains with limited metering, and in areas where meters had failed.

In addition to operational changes made we also preparing for TUBs with the following actions:

- This included recreating communication assets such as adverts and notices as well as identifying where they would be best placed to notify customers so they were ready in advance of the announcement that we would be implementing TUBs.
- Reviewing all our in house standard operating procedures for contacts relating to TUBs as well as refreshing all upskill material
- Producing FAQs to support with the management of customer interactions, with clear information given around the environmental impacts and the need for this action.
- Forecast modelling to understand potential increase in customer contacts, so that we're able to effectively resource to support any surge in demand across all our contact centres.
- Setting up of a dedicated TUBs line to direct customers to the right support. As well as increasing our social media opening hours, after reviewing historic data, to better support customers.
- Call to All across the business to pledge support for customer support activity; taking contacts, supporting at water saving events or during operational incidents across the summer, with appropriate upskills in place to support colleagues

We uplifted our water saving campaign and increased our spend on advertising. Our messages changed from green to amber week commencing 5th May and we introduced our TV advert on 17th May which features red messaging. We held weekly broadcast media interviews to keep customers up to date on our water resources position and explained how they could help play their part in reducing water usage. We ramped up the social media posts across our channels (Instagram, Facebook, X and Linked In) to increase the reach of our campaign. We supplemented bills and letters

with water saving leaflets, sent text messages to hotspot areas of customers, and sent an email to our customers who have an online account with us. Alongside all this, we provided weekly updates to stakeholders including MPs, local authorities, eNGOs, retailers and NAVs.

As part of our ongoing planning, we have carried out an appraisal for a demand side drought order to restrict non-essential use (NEUB). We have considered the UKWIR 2023 Drought Code of Practice on Water Use restrictions and the UKWIR 2025 project on 'Assessing the Costs and Benefits of Non Essential Use Bans – A Feasibility Study', alongside identifying exceptions and FAQs. We have also been working with other water companies to understand best practice. We have developed our communications approach and undertaken a cost-benefit assessment. We are continually reviewing the status of our resources and future rainfall scenarios to determine if a NEUB is beneficial.

6.1d Trigger: Reservoir Storage Predicted to be 8 weeks from Crossing the Drought Control Line

The 8-week trigger was initially predicted to be crossed on 7th July, this was revised to 30th June, after ongoing dry weather. The extreme theoretical scenarios modelled have shown the 8-week trigger will be breached on 30th June similarly across Yorkshire Water's area.

All the actions outlined when previous triggers have been crossed continue as part of the drought response. In addition, Yorkshire Water moved to impose a Temporary Use Ban on all customers on 11th July 2025. This was widely publicised through the advertising, mainstream media, social media and explained on the Yorkshire Water website. We also provided a dedicated phoneline for customers to get in touch with us if they had any queries.

Yorkshire Water commenced pre-application discussions with the Environment Agency, and proactively submitted documentation early for the Environment Agency review to ensure delays would be mitigated should permit applications need to be formally submitted.

6.2 Operational Practice Changes

Our target is to reduce output from all reservoirs in the South West to as close to yield as possible, by supporting via treated water (grid import).

Specific actions we have taken to support the South West are as follows:

- Increased treated water support from the Grid where possible into the South West
- Increase treated water support from the North West via Chellow WTW where possible to balance the stocks between the North, North West and South West

Further possible actions include:

- Increase raw water support from the North / North West via Chellow RPS to support the South West, this will depend on rainfall, river level and stock balance in the North and North West vs the South West

Our Drought Plan includes long term options that we will consider if the drought continues into 2026. These options will provide additional resources for public supply and will only be implemented if there is a risk that our current available resources will not be able to meet demand if the drought continues.

The decision to implement long term options will be dependent on the severity of the situation and scenario modelling to assess the potential risk. The trigger in our Drought Plan is to review the need for long term options if we are six weeks away from our regional drought control line in the second

year of a drought. We are currently reviewing the scope of the long-term options and the timescales for delivery. If we were approaching the trigger for implementing long term options, this information will help determine which long-term options we should implement if required.

In line with our drought planning process, once the situation recovers, we will carry out a full review of our drought triggers and actions and their impacts. We will produce a "lessons learnt report" within six months of the situation returning to normal. This will include a review of operations and any opportunities to operate differently to improve our resilience to future droughts.

6.3 Conserving Supplies

Since crossing the NCL in March 2025 we have increased our leakage activity within DMAs and on trunk mains in the South West. We will continue with the increased leakage focus in this area with the aim to drive leakage as low as possible, reducing demand and as a result abstraction from the reservoirs in the South West.

Actions carried out in sections 6.1 and 6.2 will reduce abstraction from the South West reservoir group conserving customer supplies where possible.

7. Customer Engagement

Our Communications Team activated our dry weather communications plan in early April to explain to our customers about why it is important to save water during dry weather. As part of our dry weather plan, we have a RAG approach to messaging which allows us to be flexible with our campaign and target the messaging, so it lands with our customers. We started our 'green' adverts in early April across radio, paid social media, digital and out of home. Alongside the advertising campaign, we communicated with our stakeholders, colleagues, retailers and NAVs to encourage them to share our water saving messaging, as well as raising awareness of the developing drought situation, provided an update on water resources and promoted customer side leak reduction advice. This was in addition to media and organic social media activity to support our key messages.

As the dry weather escalated, our messaging switched to 'amber' on 5th May. This was enhanced with a significant uplift in advertising spend. We have fortnightly updates for stakeholders, retailers, NAVs, Local Resilience Forums (LRFs) and river health partners. We also have undertaken a number of broadcast interviews with media, as well as utilising as many touchpoints as possible to remind customers about the importance of saving water, including our website homepage, the hold message on our customer helpline, customer letters and text messages to customers in hotspot areas. We have customer events taking place between May and August to talk to customers face to face about the importance of saving water. Our 'red' messaging was live from 17th May with our TV advert being shown. We are sharing our reservoir levels with customers on a weekly basis on social media so they can see the impact the continued dry weather is having. We will continue to raise awareness of our key messages to help customers understand why they need to use water carefully at this time of the year and provide them with behavioural nudges to make changes.

The weather (temperature and rainfall) has a particularly strong relationship with customer demand making it hard to prove any changes in demand is directly linked to communication campaigns.

Based on a few sources of information, there are some estimates available for assumed demand reduction from communications activity including London Economics' White Paper 2018 and UKWIR's 'Review of 2022 Drought Demand Management Measures – Main Report'. The London Economic White Paper states a range of measured effects of 'messaging' between 1 and 4.8% in the short term. The

UKWIR review of the demand drought measures in 2022 concluded that quantitative effect of communication campaigns is difficult to determine analytically because the nature of campaigns is more subtle than TUBs (which have a clear on – off nature) and the campaigns are delivered in a continuous manner from 'background activity' to more 'explicit calls for restraint via a diverse range of media'. The UKWIR study concluded that extensive modelling undertaken did show a reduction in consumption of an average of 0.58%. However, it was noted that 'however the standard deviation of these savings is 1.14%, indicating that this result is small and highly uncertain'.

When we announced TUBs, we utilised all our communication channels to let customers know about the upcoming restrictions. These included all our advertising channels, substantive information on our website detailing the restrictions, legal notices, social media, traditional media including over 10 broadcast interviews taking place, an email to customers, updating our marketing channels, stakeholder updates and briefings, as well a detailed webinar with NAVs.

8. Implementation of a TUB

In our drought plan TUBs need to be in place before a drought permit or order application is made between the 1 April and 1 October. A TUB also needs to be in place long enough to show if they have had a measurable impact on our demand. Throughout spring, we have continually modelled and monitored our water resources situation, including estimates of the projected date that the TUB and drought permit triggers could be crossed.

The potential threat to water supplies is a direct result of the weather conditions throughout February to July 2025. The threat will occur if the conditions continue to be dry, or if we experience a prolonged period of high demand. We have acted in line with our drought plan triggers, preparing for TUBs in the spring when models suggested they would be required, and implementing TUBs, in line with our drought plan and model forecasts.

In order to better reflect the dry condition, we are experiencing this year and to be prepared for more adverse conditions than 1995 and 2022, we have been exploring and evaluating additional 'extreme scenarios' in our weekly WRPR forecast. One such extreme scenario assumed 40% LTA in June then 60% LTA thereafter. Our assessments showed that under this extreme scenario as well as the 1995 scenario, a TUB was required no later than 11th July 2025 - which was the same date it was implemented across YW.

We are using several ways of tracking the impact of the TUB on demand reduction, we have an unmeasured household sample known as the Domestic Consumption Monitor (DCM) and measured household consumption from our newly deployed Advanced Metering Infrastructure (AMI) smart meters that provide more real-time data that can be used to track the impact.

Both data sets can be used to determine the saving from implementing a TUB for both unmeasured and measured households and will enable us to identify if the impact varies dependent on how the customer is billed.

The customers on the DCM sample, circa 1000 unmeasured customers, still pay a ratable value bill but have had a meter installed so we can obtain consumption data which is then scaled to represent total unmeasured household consumption in Yorkshire used in our per capita consumption (PCC) calculations.

Figure 10 below shows the comparison of the total daily average consumption, the predicted consumption based on the temperature and rainfall and the normalised consumption that is actual

consumption adjusted to remove the weather effect and weekends. These trends have been calculated from the metered customers on the DCM sample who still pay on a rateable value.

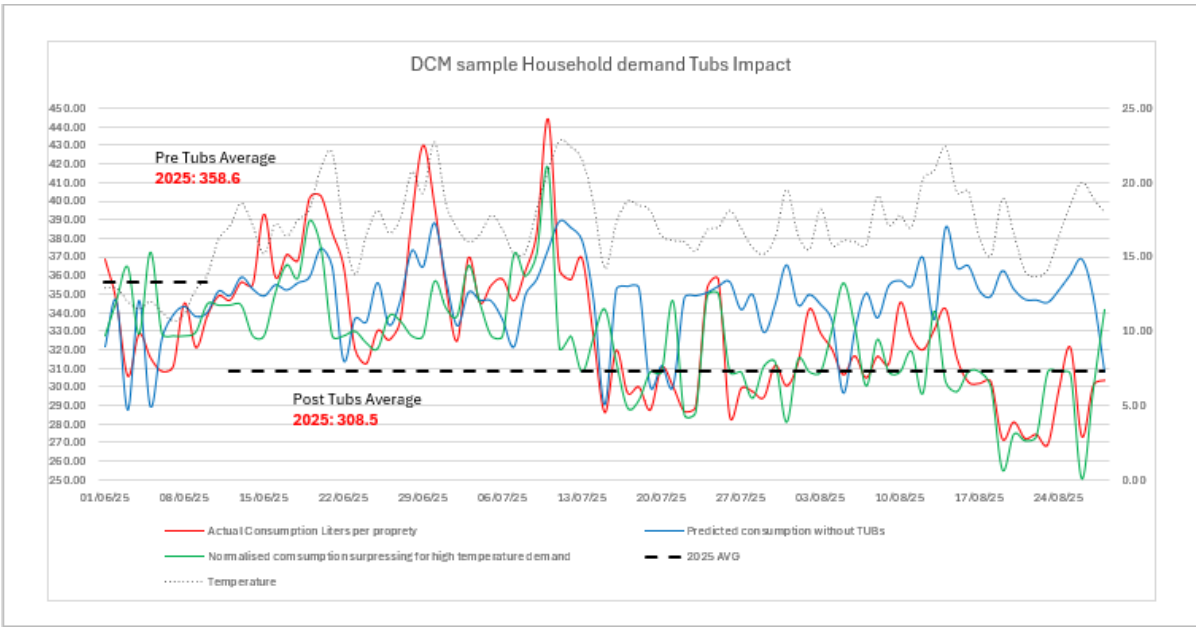


Figure 10: Profile of unmeasured per household consumption (PHC) from the domestic consumption monitor pre and post implementation of the TUBs restriction

You can see from Figure 10 that unmeasured household daily consumption from the DCM sample shows that the pre-TUBs average PHC consumption was 358.6 l/day per property and since implementation of the TUB, average PHC consumption has dropped by 50.1 l/day per property to 308.5 l/day per property.

In addition to the DCM sample, we commence our AMI installation on Yorkshire Water customers in 2024 and all new developments and DMO customers received an AMI meter. The AMI sample includes circa 120,000 customers where we have deployed smart meters across Yorkshire to date which transmit daily data and enables us to notify customers of continuous flows to help reduce leakage and provides granular consumption data that can be used to understand when and how much water our customers use each day.

Figure 11 below shows the comparison of the total daily average consumption, the predicted consumption based on the temperature and rainfall and the normalised consumption that is actual consumption adjusted to remove the weather effect and weekends. These trends have been calculated from the AMI metered customers. There are also details of the pre and post average consumption for this sample which can be used to understand the impact of the TUB on demand reduction.

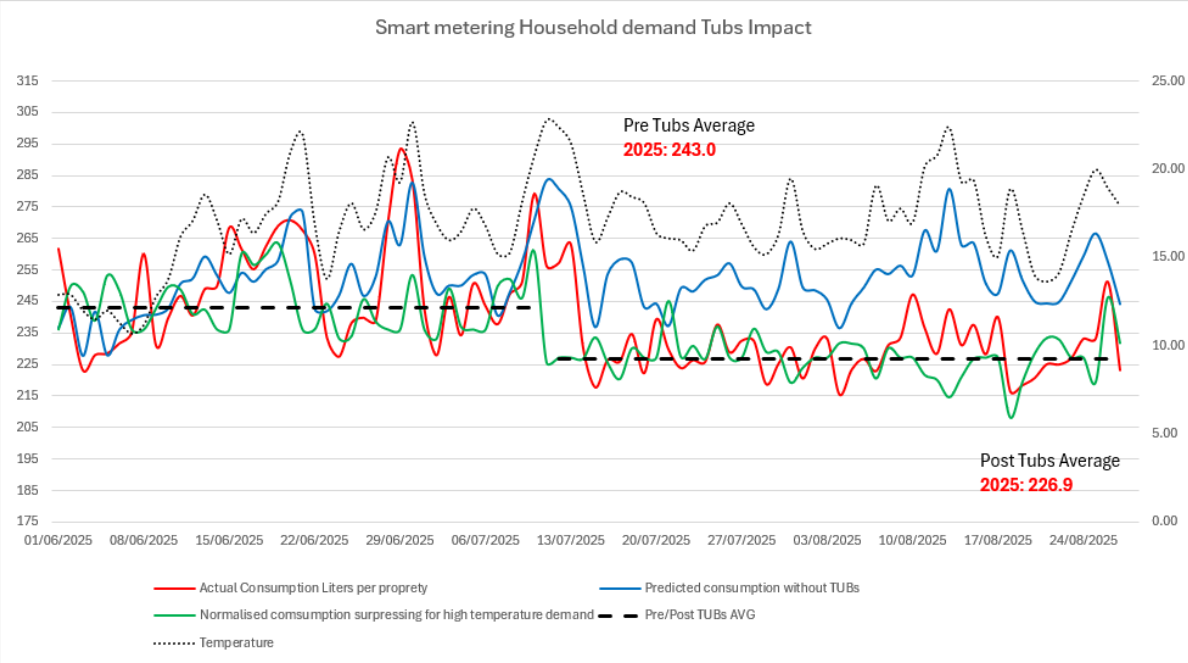


Figure 11: Profile of measured household consumption from all AMIs in June and July 2025 to see the impact of the temporary use restriction

The metered household consumption from the AMI data in Figure 11 shows that the pre-TUBs average PHC consumption was 243.0 l/d per property and since implementation of the TUB average PHC consumption has dropped by 16.1 l/d per property to 226.9 l/d per property.

In addition to these two methods, we have also reviewed regional daily demand both as a daily average and across the diurnal demand profile. Both these methods to can be used to determine the saving from implementing a TUB, helping us assess the impact at a regional level.

Figure 12 shows the diurnal demand profile for a sample of 25% of Yorkshire Water's supply aggregated to create a regional demand total on 11th July (1st day TUB was in force) compared to 20th June. The weather conditions on both days were very similar with very high temperatures, no rainfall and both were Fridays when the demand profile is slightly different to other weekdays.

Figure 12 clearly shows the reduction in use during the day with a significant reduction in evening demand. This reduction equates to 78Ml/d or a 5.5% reduction in total demand. The reduction when leakage and commercial demand is removed from total demand shows an approximately 10% reduction in domestic demand.

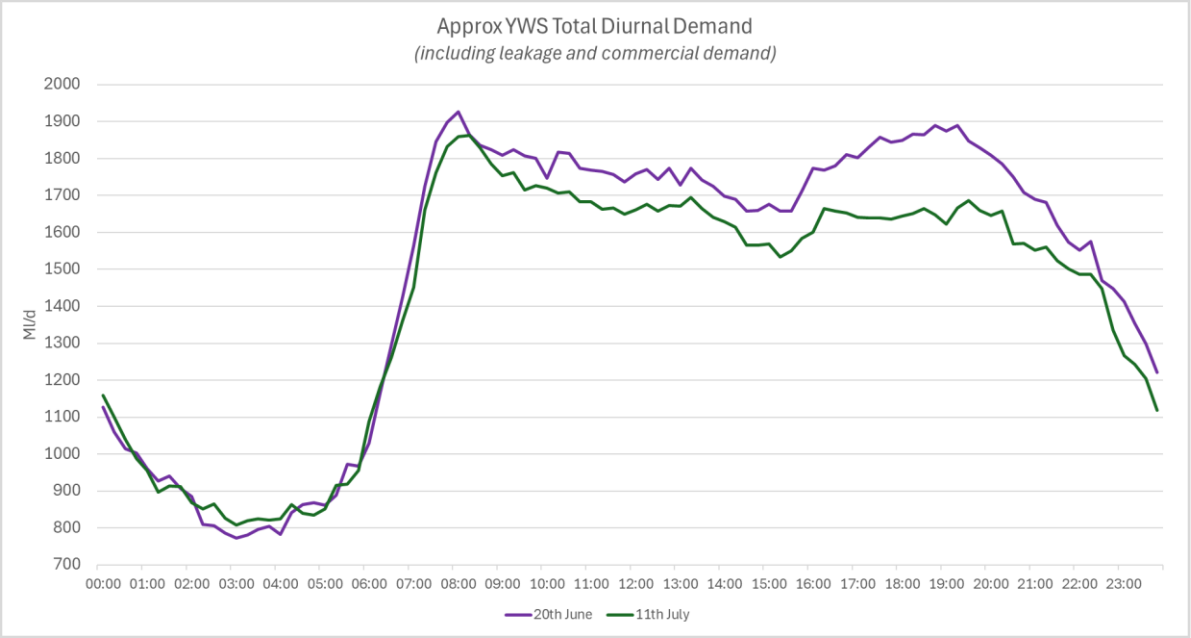


Figure 12: Profile of YWS approximate total diurnal demand pre and post implementation of the temporary use restriction

Figure 13 below shows the daily demand before and after the implementation of the TUB. It compares the actual daily demand with the predicted demand based on weather conditions using June 2025 demands as the benchmark. Figure 13 shows a 5% reduction in demand in dry weather when temperatures were 25C or above. This reduction when leakage and commercial demand is accounted for is approximately 9%. The impact of the TUB reduced when the temperatures were lower was reduced to approximately 3% of total demand or 5% when leakage and commercial use

was accounted for. Interestingly a reduction was still seen on Tuesday 15th July when there was between 10-25mm of rainfall across the region.

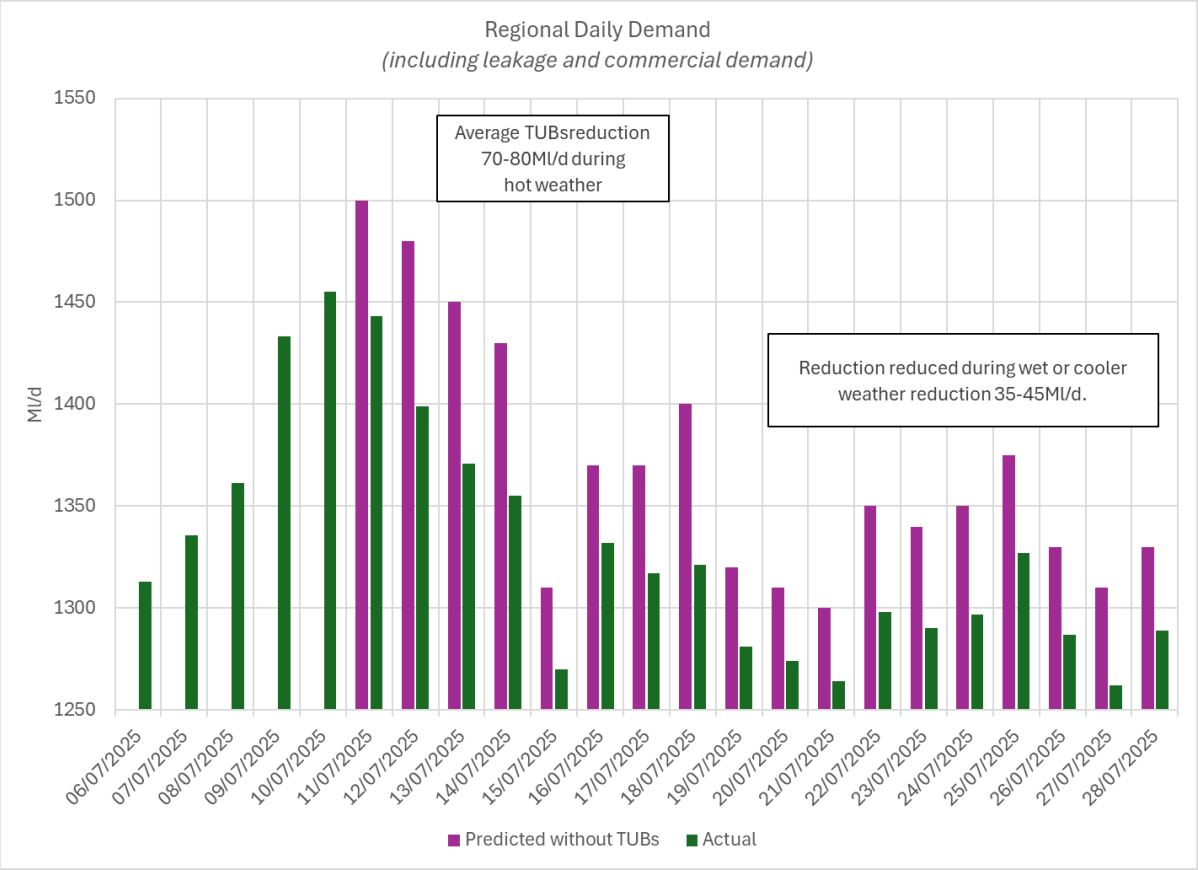


Figure 13: Regional daily demand including leakage and commercial demand actual verses predicted without a TUB

We can see from the evidence above that the introduction of the TUB, decreased temperatures and rainfall has resulted in a regional demand reduction in Yorkshire. There was an immediate and sustained reduction in demand following the intervention. Both the bottom-up (using available data for DCM and AMI samples) and top-down (regional DI) calculations align, showing a total impact of 66.8 Ml/d and 78 Ml/d respectively, which equates to approximately a 9% reduction in household demand. This suggests that the observed impact is largely driven by changes in household customer behaviour and the impact of the TUB on water consumption is more significant for unmetered customers compared to metered ones.

9. Enhanced Leakage Control

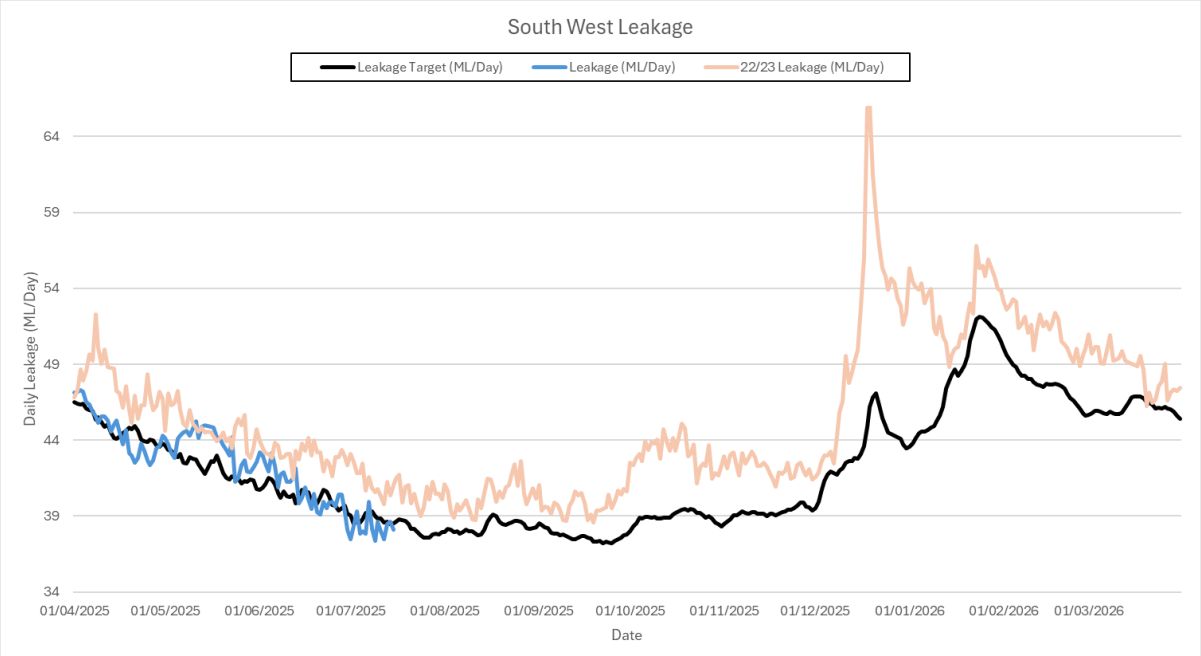
9.1 Leakage Reduction Figures

Since crossing the NCL regionally based leakage resources have been directed towards the more water stressed parts of the regions including the South West to reduce leakage over and above planned levels. We have delivered a weekly leakage reduction of 15.5Ml/d from Jan to July across these areas. Daily leakage profiles in the South West region are shown Figure 14 below.

Table 3: Reported Leakage levels in each Water Supply System in the South West; Jan to July 25.

Water Supply System (Ml/d)	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25
Albert	11.54	12.25	11.56	10.57	11.33	10.34	9.81
Blackmoorfoot	6.38	6.37	5.70	5.14	4.98	4.92	4.47
Dewsbury	7.10	6.64	8.94	5.89	5.86	5.20	5.06
Fixby	6.31	6.05	5.11	5.49	5.31	4.80	4.35
Holmebridge	2.21	2.13	2.00	2.00	1.71	1.51	1.34
Longwood	5.94	5.83	5.71	5.19	4.85	4.43	3.85
Rusby Wood	4.14	3.87	3.48	3.38	3.14	3.17	3.13
Wakefield	9.83	8.32	7.45	6.92	6.42	6.43	5.97
Total	**53.43**	**51.46**	**49.95**	**44.57**	**43.60**	**40.80**	**37.98**

Figure 14: South West Daily Leakage Profiles. Daily leakage for 2025-26 is below the 2022-23 position and is following its target reduction for this year.



Regionally, leakage is over 20Ml/d lower than in 2022-23 and has reduced in line with target reduction for 2025-26. The annual reduction target for 2025-26 is 9.5Ml/d. Regional weekly leakage has reduced by 33Ml/d from the first week or April to present position.

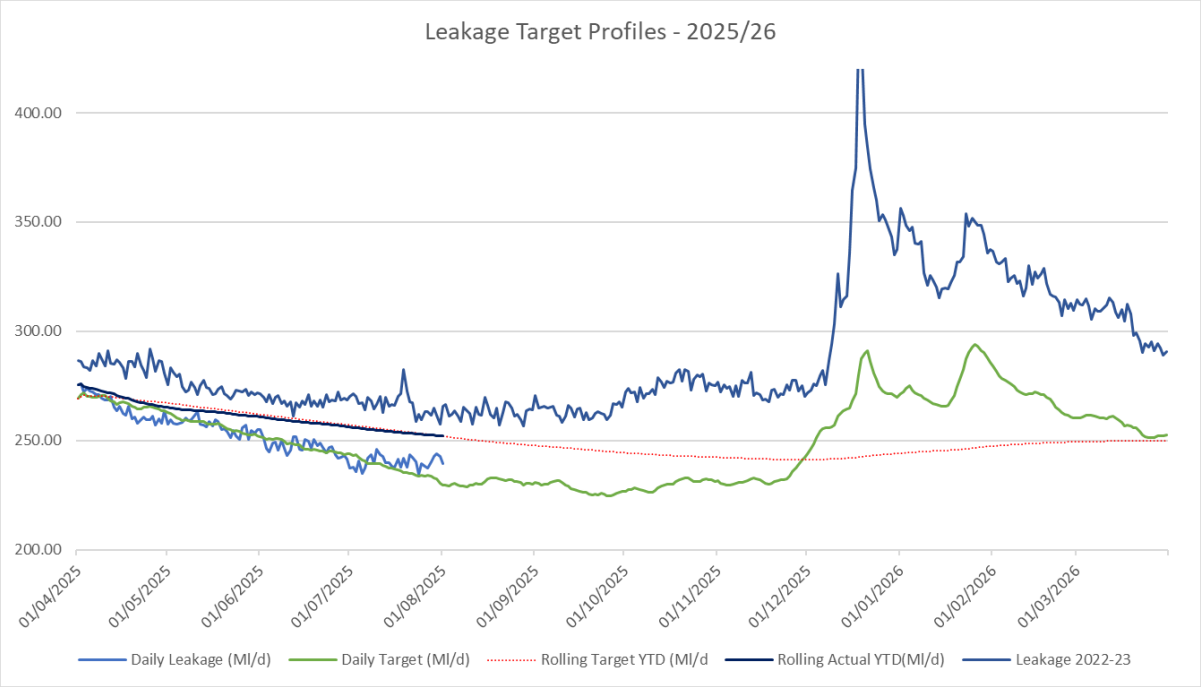


Figure 15: Leakage target profiles: Regionally leakage is 240 Ml/d this is on target and 22 Ml/d below levels in 2022-23 when we last experienced dry weather conditions.

9.2 Increase in Leakage Resource

Overall leakage resources across Yorkshire have increased by 100 full time equivalent (FTE) staff since April this year. The majority of these resources are part of teams which are regionally based, these include customer side leakage, nightwork teams, upstream teams and a team which lift and shift acoustic loggers. Since crossing the NCL we have been able to shift these resources from being spread evenly across the region based on levels of leakage to being focused on the areas where water resources are more stretched. We have started evening and weekend working to increase the volume of leak detection in the area. Additional activities over and above 'business as usual' (BAU) as summarised below.

Since 1st April, we have completed 797.58 overtime hours on leakage find activities across the South West area.

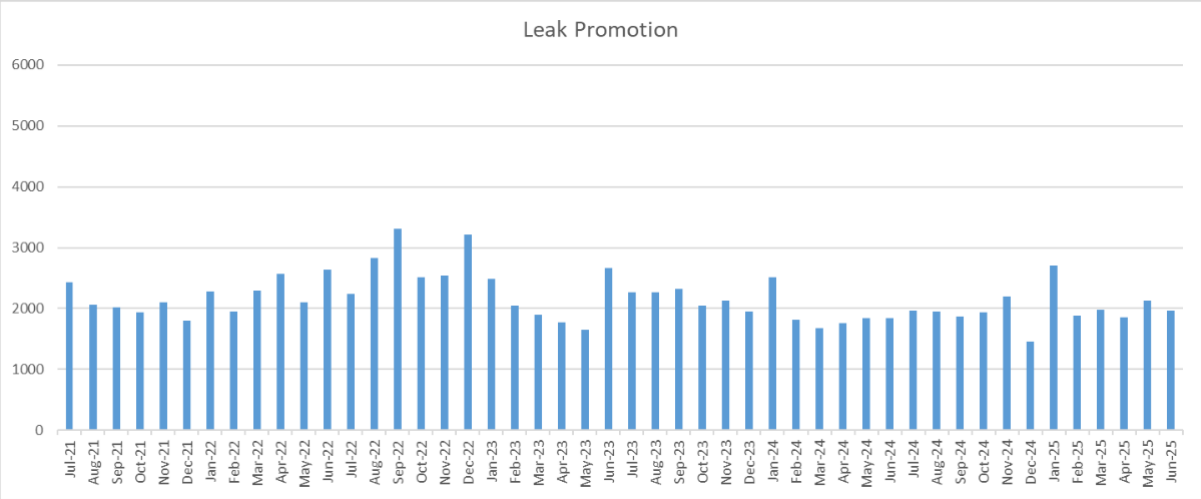
Team	**Total hours Overtime (to mid July)**
Upstream & Raw Water	94.58
DMA Leakage (Central Teams)	540.2
Customer Leakage Team	88.8
Logging Team	74
Total	**797.58**

In addition to targeting reported leakage volumes, we have ramped up activities on the upstream network and into unaccounted for water:

- Targeted upstream (trunk main) proactive leakage detection surveys in all impacted trunk mains systems. These areas have been prioritised whereas during previous years they would have only been surveyed as part of an annual cyclical survey.
- Proactive and targeted leakage detection surveys carried out by the Upstream Leakage Team in the small number of unmetered or non-reporting district metered areas (DMAs) within the South Water Supply systems.
- Service reservoirs, pumping stations, water and sewage treatment work sites have been proactively inspected for leakage. This includes overflows and assets within the site grounds such as valves, meters and hydrants.

9.3 Find and Fix Rate

Promotion of leaks through to our R&M Service Partner M Group for repair is higher this year. The graph below shows regional monthly promotion. Promotion in since the start of the year has been higher than the same month over the previous years. Hundreds of extra leaks have been promoted compared to the same time last year.



9.4 Underground Supply Pipe Leakages (USPL) & Fix Rates

- More than 7,500 additional customer meters are being read weekly in the South West areas to proactively generate more proven continuous flow (leaks) which are then prioritised for a fix via our Service Partner.
- Specialist customer side leakage technicians are also working additional hours on a weekend to attend high priority / high volume leaks on customer owned pipes.
- We have identified and visited 65 commercial users in the South West with significant water consumption, for example, farms, industrial, schools, HMPs, hospitals with 'unusual' consumption profiles to confirm leaks and manage expectations to fix at the earliest opportunity.
- A recent recruitment drive has increased our team of specialist customer side leakage technicians by an additional 13 FTE this includes 2 FTE dedicated to the South West group.

9.5 Public Awareness Campaigns on Leakage Reporting

We know customers rightly challenge our leakage performance particularly during dry weather so we made sure talking about Yorkshire Water's action was a clear part of our communications plan. We issued press releases and social media posts explaining the £16m investment Yorkshire Water is making into reducing leakage over the next year, including recruitment of additional leakage

inspectors, alongside a call to action for customers to report any leaks they find to us as quickly as possible.

9.6 Leakage Performance Improvement Plans

We are continuing with the enhanced leakage reduction in the South West, whilst not impacting on the region wide leakage reduction plan for Yorkshire. The additional focus areas have already been detailed in the various sections above, and include but not limited to:

- Operational leakage detection overtime – evenings and weekends
- Increase intensity of find and fix activity – promote and repair more
- 'Lift and Shift' logger deployment to generate point of Interest for leakage investigation
- Additional meter reads to identify leaks on customer props ahead of current meter read cycle
- Focus on abnormal demand at large non-household (NHH) customers
- Escalating optimisation schemes at DMA level, that is, meter replacement, DMA sizing etc
- Leak detection on raw water mains and investigation into any leaks at Yorkshire Water assets
- Pressure management solutions to reduce background leakage
- Resolving 'demand' - both consumption and leakage on concessionary supplies
- Drive leakage to at least the best achieved for the South West area over the last 5 years which equates to a 4.17Ml/d reduction.

10. Outage Management

10.1 Outage Data

As described in Section 6 we meet customer demand through use of our licensed water resources, which include reservoir, river, and groundwater supplies. In the South West group when the level drops below Normal Control Line (NCL) in individual reservoirs or reservoir groups we reduce abstraction by either importing raw water or treated water to meet supply.

The treated water import is from our grid network which originates at Elvington WTW and Loftsome Bridge WTW, both of which abstract water from the River Derwent. The grid water is imported into the area the South West reservoir group supplies through a series of trunk mains and pumping stations. An outage at any of these assets will have an impact on South West reservoir stocks.

Since the start of the dry weather, there was an outage of 29.4Ml/d at Loftsome Bridge WTW. Proportionally this outage has reduced the grid import to the SW supply area by an average of 7.4Ml/d and although that has since been resolved it did impact prior to the resolution.

Outage data for Loftsome Bridge WTW was a mixture of both planned and unplanned outages and linked to the condition of rapid gravity filters and granular activated carbon units on site. Although the site flow from Loftsome Bridge has increased post work being carried out it had an impact in the earlier parts of the year.

10.2 Sources Impacted by Outage

The sources impacted by the outage are reservoirs that supply all the WTW in the South West area which are as follows:

- Hebden Group
- Luddenden Group
- Hebble Group
- Booth Wood / Ryburn Group
- Turvin Clough

- Blackmoorfoot / Deerhill Group
- Brownhill / Digley Group
- Scammonden / Wessenden Group

The 7.4Ml/d reduction in grid import because of the Loftsome Bridge WTW outage, has resulted in the SW group stocks being 1.5% lower at the end of June assuming the import would have been in place throughout April, May and June.

10.3 Outage Impact

As stated in sections 10.1 and 10.2, the impact of this outage is that we have been unable to support the South West with a further 7.4Ml/d of grid water. Had we been able to support then as a result the reservoir stocks would have been 1.5% higher at the end of June.

To resolve this outage, work on filter refurbishment on the Loftsome Bridge WTW site was accelerated. We increased the number of teams working on the issues and the working hours accordingly. We had reviewed alternative options to increase the flow from Loftsome Bridge WTW but unfortunately due to lead times and / or issues with compliance with Regulation 31, we were unable to source temporary units. The acceleration of the refurbishment works has meant we have been able to resolve the outage and increase Loftsome Bridge WTW output to pre-outage capacity.

10.4 Resource Impact

As stated in previous sections, the reduced output from Loftsome Bridge WTW has prevented us from supporting the South-West as we would have liked. Since crossing the NCL we could have supported the South-West with on average 7.4Ml/d of additional treated water. Without this increased support it means we have had to increase production from WTW in the SW area and therefore abstraction from the reservoirs supplying these WTW as stated in section 10.2 these are:

- Hebden Group
- Luddenden Group
- Hebble Group
- Booth Wood/Ryburn Group
- Turvin Clough
- Blackmoorfoot / Deerhill Group
- Brownhill / Digley Group
- Scammonden / Wessenden Group

11. Copy of the Notices and Advertisements Required under Paragraph 1 of Schedule 8 to the WRA 1991

Written notices of the South West Area Drought Permit applications have been sent to third parties with an interest in the sites.

These include;

- Local authorities responsible for areas affected by the permit;
- Kirklees Council
- Calderdale
- Bradford District Council
- West Yorkshire Combined Authority
- Other abstractors operating in the areas affected by the permit.
- Canal and River Trust

- Local rivers trusts and wildlife groups.
- Local angling clubs in the areas affected by the permits if granted.
- Local wildlife sites.
- Fish farms in the area affected by the permits if granted.

The notice provides information on where the full application can be inspected free of charge for a period of seven days from the date the notice is served. A copy of the notice is provided in Appendix 2.

The notices are to be published in newspapers on Wednesday 3rd September in the Huddersfield Daily Examiner and the Yorkshire Post and Thursday 4th September in the Halifax Courier, which are circulated in the areas potentially affected if the permits are granted, and in the London Gazette, in accordance with Environment Agency guidance. If the application is successful, we will provide notice the permit has been granted in the same newspapers.

A Yorkshire Water webpage (www.yorkshirewater.com/drought-permits) has been created to provide information on drought permit applications, including copies of all supporting documents. Further permit application notices will be added on the dates we apply. The webpage includes information to explain why we are making the applications and a list of frequently asked questions.

12. Public Inspection Arrangements

Documents relating to the South West Area drought permit applications have been made available, free of charge, for inspection by any interested parties from the date the notices are advertised in the Huddersfield Daily Examiner, Halifax Courier, Yorkshire Post and the London Gazette. The documents include a copy of the drought permit application and supporting information including environmental reports and were made available at the following locations for seven days starting Wednesday 3rd September:

- Yorkshire Water, Western House, Halifax Road, Bradford, BD6 2SZ.
- Environment Agency, Lateral, 8 City Walk, Leeds, LS11 9AT.
- Meltham Post Office - Carlile Institute, Huddersfield Rd, Meltham, Holmfirth HD9 4AE (Blackmoorfoot Reservoir).
- Marsden Post Office - 3 Peel St, Marsden, Huddersfield HD7 6BR (Butterley Reservoir and River Colne maintained flow).
- Barkisland Post Office -Saddleworth Rd, Barkisland, Halifax HX4 0AL (Booth Wood and Ryburn Reservoirs and Slitheroe Bridge maintained flow).
- Mytholmroyd Post Office, Grange Dene, Burnley Road, Hebden Bridge, Halifax, HX7 5LF (Withens Clough Reservoir and Turvin Clough Prescribed flow).
- Holmfirth Post Office - Station Rd, Holmfirth HD9 1AD (Brownhill, Digley).
- Heptonstall Post Office, 29 Towngate, Heptonstall, Hebden Bridge, HX7 7NB (Gorple Lower, Walshaw Dean Lower, and Widdop Reservoirs).
- Oxenhope Post Office, The Cooperative, Station Road, Oxenhope, Keighley BD22 9JJ (Warley Moor Reservoir).
- Illingworth Moor Post Office - Illingworth Rd, Halifax HX2 9RX (Ogden Reservoir).
- Slaithwaite Post Office -Lewisham Rd, Slaithwaite, Huddersfield HD7 5AL (Scammonden Water).

The post offices selected are within eight kilometres of the reservoirs impacted by the drought permit applications, named in brackets. The supporting documents are available at the Yorkshire Water Head Office in Bradford. The Environment Agency guidelines state drought permits must be advertised at the water company's head office and the office most local to the relevant area. We have

a number of water treatment works nearby the permit application sites however, they are not suitable for public access and we are therefore only able to provide the information at our head office in Bradford, which can be accessed by the public.

13. Environmental Report

During the preparation of our Drought Plan 2022, a 'shelf copy' Environmental Assessment Report (EAR) was produced for each supply side drought option or group of options. The EAR provides an independent and robust assessment of the potential environmental effects of the implementation of our drought options.

The environmental assessment was conducted in accordance with Government regulations and using the Environment Agency's 2020 Drought Plan Guideline (DPG) and the Environment Agency's July 2020 'Environmental Assessment for Water Company Drought Plans- supplementary guidance', and comprised the following components:

- an assessment of the likely changes in hydrology (flow/level regime) due to implementing the proposed drought options;
- identification of the key environmental features that are sensitive to these changes and an assessment of the likely impacts on these features;
- identification of mitigation that may be required to prevent or reduce impacts on sensitive features; and
- recommendations for baseline, in-drought and post-drought order monitoring requirements.

The environmental assessment focuses on the potential changes to water availability (levels and flows) and any consequent implications for geomorphology, water quality, ecology, and other relevant environmental receptors, for example, landscape, navigation, recreation, and heritage. Cumulative impacts with other drought options are also considered.

The assessments undertaken confirm the features requiring consideration of monitoring and mitigation; which are provided in full in the Environmental Monitoring Plan (EMP).

Throughout the environmental assessment process, we have proactively engaged key stakeholders, including the Environment Agency and Natural England.

During the prolonged dry weather, dialogue was initiated with the Environment Agency and consultants were instructed to prepare 'application-ready' EARs and undertake the onset of drought walkovers. The application ready EAR, and EMP, are provided alongside this drought permit application, and have been updated in line with new DPG2025.

14. Other Options Considered

Alongside the leakage and outage management activities we have mentioned in sections 9 and 10 above, we are accelerating capital schemes and maintenance activity to minimise outage across the grid zone to maximise water availability, protect reservoir stocks and reduce demand.

If these permits are granted, we will be able to manage our system in a more resilient way. If these permits are not granted (or the decision to grant them occurs too late for us to manage supplies as if it were granted), we will have to operate according to the current licence conditions, and this may

result in the overdrawing of reservoirs. We would also face the risk of entering winter with the reservoir stocks below the drought control line throughout the South West area. In respect of specific hotspots, there is also heightened risk in that public water supply could be impacted due to the higher rate of decline of stocks in this area. Additional mitigation measures are being developed to reduce the risk of this situation materialising, though these measures alone shall not alleviate the risk to the public water supply.

15. Consultees

15.1 Environment Agency

We initiated the formal dry-weather governance meetings with our local Environment Agency in April following reservoirs stocks crossing the Environment Agency early warning trigger line. We have continued to consult and engage weekly with the Environment Agency on the drought situation as it has escalated. We will continue to meet regularly until the situation recovers.

15.2 Natural England

Natural England were consulted throughout the process of writing our Drought Plan 2022. If there is potential for a proposed drought permit to impact on a designated area, we are required to consult Natural England prior to submitting the application. The environmental assessment of these drought options confirmed there would be no impacts on any designated sites by any of the drought options in the South West area. The results of the assessment can be found in the accompanying EAR. We have shared the updated Environmental Assessment Reports and monitoring programme with NE to ensure they were aware of the applications being submitted during the continuing dry weather situation.

15.3 Local Rivers Trust & Wildlife Trusts

We have met with the Calder catchment partnership to explain our proposals in more detail.

15.4 Navigation Authority Consent

We have notified the Canal and River Trust of our permit application.

15.5 Internal Drainage Board

We have notified the relevant Internal Drainage Boards of our intention to submit drought permit applications. We have been giving fortnightly updates to the IDB contacts since 28th April about our water resources position.

15.6 Retailers

An email was issued to all active in area retailers on 24th April and 2nd May raising awareness of developing drought and providing advice on water efficiency and customer side leak reduction. The Retailer-Wholesaler Group (RWG) hosted a drought webinar for retailer contract managers on 28th May outlining the current situation nationally, with updates from all wholesalers.

Further web events will be hosted monthly, with a weekly update email to retailers advising of any additional communications in the meantime. Retailers are also being consulted on a potential Water Incentive scheme to incentivise reduction in usage through the dry weather period.

15.7 NAVs

We have notified all active in-area NAVs on 24th April, and thereafter fortnightly, raising awareness of current water resource status developing drought and providing advice on water efficiency and

customer side leak reduction. A meeting was held on 19th May with all NAVs and three other water companies (United Utilities, Southern Water and Severn Trent) to raise awareness of the drought situation and to drive closer co-ordination and collaboration of drought communications across water company areas. A further preparation webinar was held with NAVS on 30th May, co-hosted by Yorkshire Water and United Utilities. Ongoing engagement with NAVs is now taking the form of a weekly update email to all NAV contract managers.

All active in-area NAVs have been included in the list of specified bodies who will receive a statutory notification letter.

15.8 Peak District National Park

We have notified the Peak District National Park of our permit application.

15.9 Objections

No objections have been raised to date.

16. Appendices

Appendix 1: Copies of existing abstraction licences, statutory instruments or Local Act governing the abstraction, or discharge of compensation water relating to the permit

Appendix 2: Copies of the notices and advertisements required under paragraph 1 of Schedule 8 to the WRA 1991.

Appendix 3: Draft Permits