Annexe 1 – Leeming Reservoir, DP2022-NE0270014010

A. Summary of the proposal

Yorkshire Water Services Limited (YW) is applying for drought powers under the Water Resources Act 1991 (as amended by Environment Act 1995) to replace the conditions on licence NE/027/0014/010. The licence permits the impoundment of water at Leeming Reservoir, Oxenhope, Keighley, West Yorkshire.

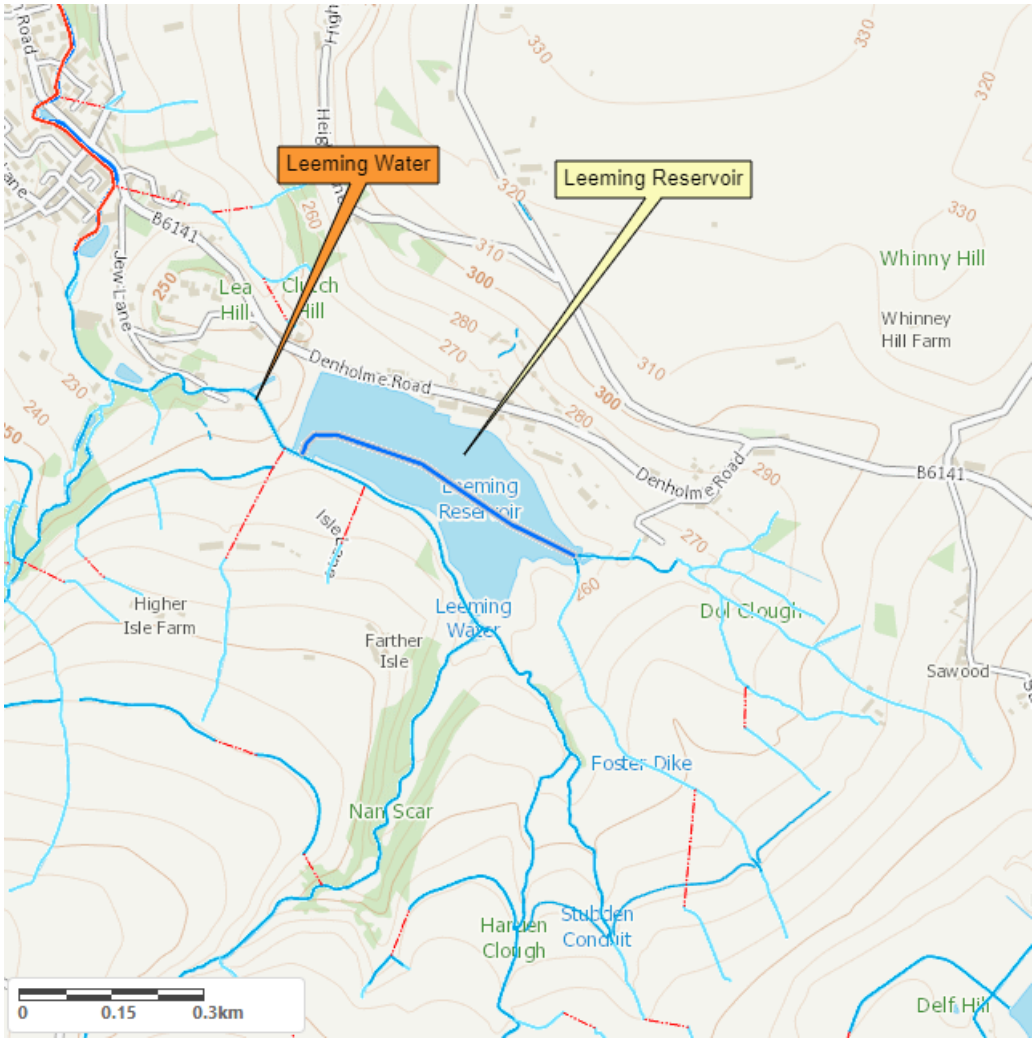

Figure 1: Leeming Reservoir and Leeming Water (Receiving Watercourse)

The terms of the licence state that YW must release water from Leeming Reservoir to maintain a compensation flow at Leeming Water. The volume released is dependent on the stock levels in Leeming Reservoir and in Leeshaw Reservoir, which is operated under the terms of the Leeshaw Reservoir impoundment licence (number NE/027/0014/011). Under the Leeming Reservoir impoundment licence conditions, YW must continuously discharge not less than 4.00 Ml/d when both the Leeshaw and Leeming reservoir levels are above the control lines defined in the licences, or 5.250 Ml/d when the Leeming reservoir level is above the control line and Leeshaw reservoir level is below the control line, or 3.250 Ml/d when both the Leeshaw and Leeming reservoir levels are below the control lines.

YW are applying to reduce the compensation release required when the Leeming reservoir level is above the control line and Leeshaw reservoir level is below the control line to 2.63 megalitres per day (Ml/d) and to reduce further when the reservoirs are both below the control lines to 1.625 Ml/d. There would then be a further reduction to 1.75 Ml/d when the Leeming reservoir level is above the control line and Leeshaw reservoir level is below the control line or 1.083 Ml/d when both the Leeshaw and Leeming reservoir levels are below the control lines, if regional reservoir stocks were below the regional Drought Control Line (DCL) for four consecutive weeks or more.

The reason for the proposal is to reduce the compensation flow from Leeming Reservoir to conserve water levels within the two reservoirs to maintain public water supply during winter 2022–23 and increase the chance of returning to normal reservoir levels by April 2023.

The drought permit has been requested until 31st March 2023.

B. Details of proposal

Impoundment details	Existing Licence	New Proposal
Name and/or description of inland water to be impounded	Midge Holme at Oxenhope, Keighley, West Yorkshire	No change
Point of impoundment	SE 03761 34361	No change
Manner and extent of impoundment	Earth fill with clay core dam not exceeding 254.6 metres above Ordnance Datum in height and capacity of the impoundment reservoir not to exceed 562,912 cubic metres.	No change
Further conditions	See 'Existing further conditions' section below this table	See below this table

Existing further conditions (numbering corresponds with licence condition references)

4. FURTHER CONDITIONS

4.1 Subject to conditions 4.2 and 4.3, the Licence Holder shall release water from Leeming Reservoir created by the works so as to maintain a flow of no less than 4 megalitres per day in Leeming Water immediately downstream of the works. This flow shall be known as the Compensation Flow.

4.2 Subject to condition 4.3, if the Compensation Flow under conditions 4.1 and 4.2 of licence serial number NE/027/0014/011 (Leeshaw Reservoir) decreases from no less than 4 megalitres per day to no less than 2.75 megalitres per day, the release from Leeming Reservoir shall increase to no less than 5.25 megalitres per day.

4.3 At all times when the Licence Holder maintains the gauge in condition 4.4 in Leeming Reservoir for measuring the distance between the level of water therein and the top water level of 254.96 metres above Ordnance Datum (Newlyn):

If the Compensation Flow under conditions 4.1 and 4.2 of licence serial number NE/027/0014/011 (Leeshaw Reservoir) decreases from no less than 4 megalitres per day to no less than 2.75 megalitres per day

AND

the said distance as gauged on any Monday equals or exceeds the value shown in column 2 of the table below, as relates to the number of that Monday in column 1, the quantity of water that the Licence Holder shall release from Leeming Reservoir to Leeming Water on each subsequent day shall reduce from no less than 4 megalitres per day to no less than 3.25 megalitres per day, until the said distance on any subsequent Monday is equal to or less than the value in column 3 of the table below as relates to the number of that Monday in column 1, whereupon condition 4.1 shall apply. The first Monday in each calendar year is numbered 1 and each subsequent Monday is numbered consecutively thereafter.

4.5 The Licence Holder shall use an ultrasonic level meter to measure the rate of Compensation Flow at the rectangular weir at National Grid Reference SE 03698 34382 shown on the map marked 'Weir'.

4.6 (i) The Licence Holder shall monitor and maintain the ultrasonic level meter so that at all times it measures the compensation flow accurately, and promptly replace it if it ceases to be fit for purpose.

(ii) The Licence Holder shall maintain such rectangular weir to prevent leakage and to be free from obstruction at all times and remain effective at all times.

4.7 (i) The Licence Holder shall use the measuring device specified in condition 4.5 to record the Compensation Flow at the same time each day or as otherwise approved in writing by the Agency.

(ii) The Licence Holder shall keep each record required by conditions 4.4 and 4.7(i) and make them available during all reasonable hours for inspection by the Agency for at least 6 years.

Column 1	Column 2	Column 3	Column 1	Column 2	Column 3
1	5.02	4.56	28	2.88	2.52
2	4.66	4.22	29	3.11	2.74
3	4.32	3.89	30	3.35	2.96
4	3.99	3.58	31	3.59	3.19
5	3.67	3.27	32	3.83	3.43
6	3.25	2.87	33	4.09	3.67
7	2.78	2.42	34	4.35	3.92
8	2.33	1.99	35	4.61	4.17
9	1.90	1.57	36	4.90	4.44
10	1.61	1.28	37	5.21	4.74
11	1.41	1.09	38	5.53	5.04
12	1.21	0.90	39	5.87	5.36
13	1.02	0.71	40	6.21	5.69
14	0.86	0.55	41	6.21	5.69
15	0.91	0.60	42	6.21	5.69
16	0.96	0.65	43	6.21	5.69
17	1.02	0.70	44	6.21	5.69
18	1.07	0.75	45	6.14	5.62
19	1.22	0.91	46	6.02	5.50
20	1.40	1.08	47	5.89	5.39
21	1.57	1.25	48	5.77	5.27
22	1.75	1.42	49	5.64	5.15
23	1.93	1.60	50	5.49	5.00
24	2.11	1.77	51	5.34	4.86
25	2.29	1.94	52	5.19	4.72
26	2.47	2.12	53	5.02	4.56
27	2.66	2.30			

4.4 (i) The Licence Holder shall use a staff gauge to measure and record the water level in Leeming Reservoir at National Grid Reference SE 03781 34356 each week.

(ii) The Licence Holder shall position and install the staff gauge so as to be capable of continuous measurement of the water level in Leeming Reservoir.

(iii) The Licence Holder shall keep it installed at all times.

Drought permit further conditions

The proposed drought permit is to reduce the compensation release. Please see section C for quantities and sections E and G for recommendations.

C. Quantities

This is an impoundment licence so there are no abstraction quantities associated with the licence. However, the application is to amend the compensation flow quantities required as part of the impoundment. Under the existing licence, YW are required to provide a compensation release at the quantities in the table below, from the Leeming Reservoir to Leeming Water. The quantity of the compensation release is dependent on the water level in both Leeming and Leeshaw Reservoirs.

Under the proposed Drought Permit, the compensation release would be reduced to the quantities in the table, with a further potential reduction if the regional reservoirs stocks were below the Drought Control Line (DCL) for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Water levels in reservoirs	Normal compensation release	Drought Permit proposal	Drought Permit proposal 2 (stocks below DCL)
Leeming *above or below* control line (CL) & Leeshaw *above* CL	4.00 Ml/day	2.00 Ml/day	1.33 Ml/day
Leeming *above* CL and Leeshaw *below* CL	5.25 Ml/day	2.63 Ml/day	1.75 Ml/day
Leeming and Leeshaw *below* CL	3.25 Ml/day	1.63 Ml/day	1.08 Ml/day

Table 1: Leeming compensation releases

D. WFD

This application is outside the Abstraction Licensing Strategy process. This is because it relies on drought powers to address exceptional circumstances. However, the proposal still needs to be Water Framework Directive (WFD) compliant. The proposal will be assessed against the WFD statuses, including identifying the risk of any temporary deterioration of status.

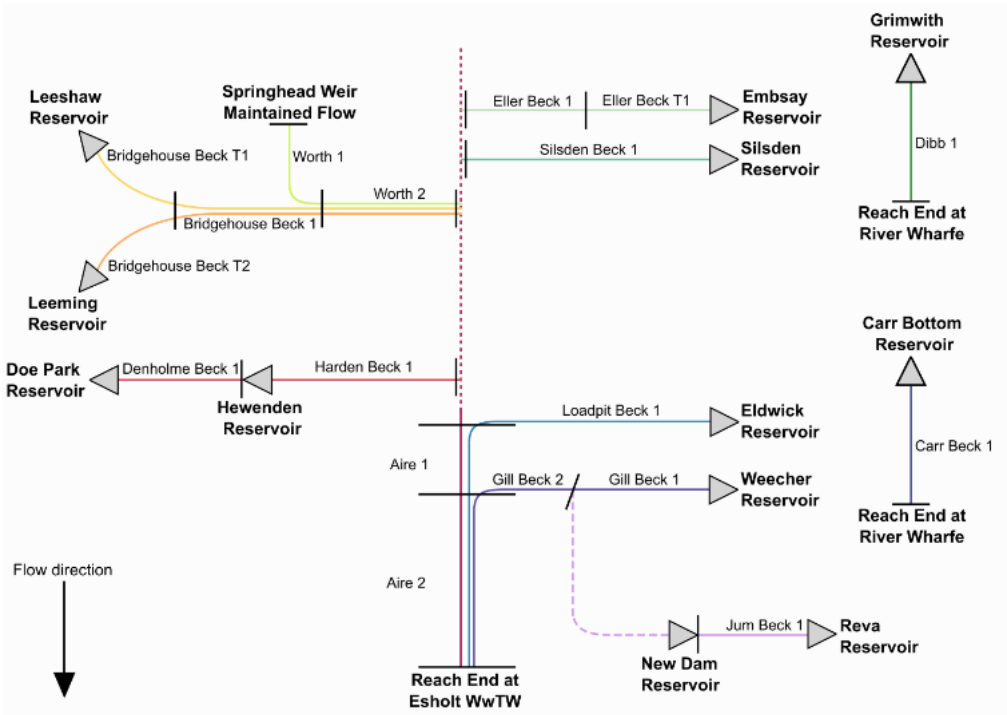

Figure 2: North West Area reservoirs drought permits reach schematic

Leeming Reservoir is hydrologically linked to the following reaches (as shown above in Figure 2):

- Bridgehouse Beck T2 - Bridgehouse Beck from Source to River Worth GB104027064200
- Bridgehouse Beck 1 - Bridgehouse Beck from Source to River Worth GB104027064200
- Worth 2 - Worth from Bridgehouse Beck to River Aire GB104027062891
- Aire 1 - Aire (River Worth to Gill Beck) GB104027063034
- Aire 2 - Aire from Gill Beck (Baildon) to River Calder GB104027063032

The corresponding WFD waterbodies have therefore been assessed in relation to the Leeming Reservoir drought option.

Bridgehouse Beck from Source to River Worth GB104027064200

Bridgehouse Beck from Source to River Worth (GB104027064200) is classed as a heavily modified waterbody. These are water bodies where there is a significant risk of failing to achieve a good ecological status because of modifications to their hydro-morphological characteristics. Therefore, they have a target of achieving Good Ecological Potential (GEP) rather than Good Ecological Status (GES). For heavily modified water bodies, flow is the first element assessed as part of the classification. If flow standards are passed, then potential is based on a combination of mitigation measures and 'non-sensitive' quality elements. For river water bodies, these consist of the physico-chemical, specific pollutants and phytobenthos elements. If flow standards fail, then potential is based on the worst result of either the mitigation measures assessment or any of the quality element assessments.

Consideration	**Status**		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Overall WB status	Moderate (Quite Certain)	Moderate (Quite Certain)	Moderate by 2015
Ecological potential	Moderate (Quite Certain)	Moderate (Quite Certain)	Moderate by 2015
Fish	Good	Good	Good by 2015
Invertebrates	Good	Good	Good by 2015
Macrophytes and Phytobenthos Combined	Moderate (Quite Certain)	Moderate (Quite Certain)	Good by 2027
Phytobenthos	Moderate (Quite Certain)	Moderate (Quite Certain)	-
Hydrological regime	No data	Not assessed	Not set

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Mitigation measures	Moderate/Less	Moderate/Less (Uncertain)	Good by 2027
Physico-chemical	Moderate (Uncertain)	Moderate (Quite Certain)	Moderate by 2015
Chemical	Good	Fail (Uncertain)	Good by 2015

Table 2: Bridgehouse Beck from Source to River Worth, GB104027064200

Reasons For Not Achieving Good:

Ecological Potential – The ecological potential is at Moderate status and does not meet Good WFD status due to several contributing factors explained below.

Macrophytes and Phytobenthos – The Macrophytes/Phytobenthos status is currently at 'Moderate' (quite certain)' due to nutrients/phosphates which can mostly likely be attributed to continuous discharge from the water industry. Poor nutrient management in agriculture and rural land management is also suspected to impact on the Macrophytes/Phytobenthos by increasing levels of nutrients and phosphates.

Hydrological regime – The hydrological regime element is not assessed for this surface water body, and therefore classification follows the pathway of flow conditions fail. Certain heavily modified waterbodies are no longer classified for hydrological regime where the hydrological regime test is not sufficient due to the nature of the waterbody. In this instance, ecological potential is based on the worst result of either the mitigation measures assessment or any of the quality elements.

Mitigation measures – Mitigation measures are at Moderate/Less due to physical modification for water regulation by the water industry and urbanisation.

Physico-chemical quality elements – The physico-chemical classification status is Moderate (quite certain). This is attributed to suspected diffuse source phosphate pollution from agriculture and rural land management.

Chemical – The chemical status for this water body is currently Fail. The is due to pressures relating to nutrients and phosphates impacting upon Mercury and Compounds. The Fail status is also down to Polybrominated diphenyl ethers (PBDE), with measures delivered to address the reason for this.

WFD objectives assessment:

- The objective for hydrology regime has not been set as the waterbody has not been assessed for flow.

- The objectives of Good by 2027 indicates the long-term ambition for the waterbodies as it is technically feasible to fix the issues, but these were not funded in the Cycle 2 plan. In the Cycle 3 plan these objectives will be revised

and if the required fixes are still not funded the deadline could be extended again.

- Where we have a baseline (2015) status of 'Good' then our objective has been set as Good by 2015. This is because the waterbody is already meeting its default objectives, and nothing less than good can be predicted as this would go against the directive.

- Where we have an objective of 'Moderate by 2015' this particular waterbody cannot reach good status, only moderate. As the objective is already at moderate for physico-chemical it has an objective of 'Moderate by 2015'. This means the Ecological Potential and Overall Waterbody objectives are 'Moderate by 2015' as, because of the physico-chemical status, they cannot achieve higher than moderate.

Risk of deterioration of elements:

Bridgehouse Beck T2 - Bridgehouse Beck from Source to River Worth GB104027064200

Fish – There are multiple risks to the fish status due to this drought option. Reduced flow and wetted width in the reach could damage or destroy important habitats used for spawning, nurseries and resting. Reduced flows could also impact the migration of species, particularly to spawning and nursery areas. Increased stress and competition could result in decreased growth, morphological change and/or alteration to feeding and migration. There is also the risk of stranding events due to potential decreases in longitudinal connectivity. Increased predation due to lower flows could increase mortality of fish species. The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a major risk to the fish component of this reach. The duration of impacts could be up to 6 months. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be major.

Invertebrates – The classification status for invertebrates is currently at Good. YW's EAR explains that there are multiple ways this drought permit could impact upon invertebrates within this waterbody. Reductions in river flow will cause a reduction in wetted width and depth, reducing habitat availability for the invertebrates. Some species are sensitive to changes in velocity and a loss of flow velocity could reduce habitats within the waterbody that require high flow velocities. Furthermore, invertebrates are sensitive to water quality pressures, however YW state that however the water quality changes as a result of the implementation of the drought option are predicted to present a minor risk. YW's EAR has concluded that hydrological and associated water quality changes as a result of the Leeming Reservoir drought permit are predicted to present a major risk to the invertebrate WFD status and the duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be moderate.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option

implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – Not assessed.
Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical quality elements –There are no water quality monitoring sites in Bridgehouse Beck T2 so a monitoring point in the downstream reach of Bridgehouse Beck 1 (Bridgehouse Beck Above Oxenhope Sw Final, NE-49400075) has been used. YW's EAR states that the risk of water quality deterioration as a result of the drought permit is considered minor for dissolved oxygen, total ammonia and phosphates. There are no continuous water quality pressures identified as presenting increased risk with drought options implemented and no significant intermittent pressures presenting risk.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a minor risk to physico-chemical parameters it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Bridgehouse Beck 1 - Bridgehouse Beck from Source to River Worth GB104027064200

Fish – There are multiple risks to the fish status due to this drought option. Reduced flow and wetted width in the reach could damage or destroy important habitats used for spawning, nurseries and resting. Reduced flows could also impact the migration of species, particularly to spawning and nursery areas. Increased stress and competition could result in decreased growth, morphological change and/or alteration to feeding and migration. There is also the risk of stranding events due to potential decreases in longitudinal connectivity. Increased predation due to lower flows could increase mortality of fish species. The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option is predicted to present a moderate risk to the fish component of the WFD GB104027064200 Bridgehouse Beck from Source to River Worth (associated with Bridgehouse Beck 1).

Invertebrates – The classification status for invertebrates is currently at Good. YW's EAR explains that there are multiple ways this drought permit could impact upon invertebrates within this waterbody. Reductions in river flow will cause a reduction in wetted width and depth, reducing habitat availability for the invertebrates. Some species are sensitive to changes in velocity and a loss of flow velocity could reduce habitats within the waterbody that require high flow velocities. Furthermore, invertebrates are sensitive to water quality pressures, however YW state that however the water quality changes as a result of the implementation of the drought option are predicted to present a minor risk. YW's EAR has concluded that hydrological and associated water quality changes as a result of the Leeming Reservoir drought permit are predicted to present a major risk to the invertebrate WFD status and the duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be moderate.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Hydrological Regime – Not assessed.

Physico-chemical quality elements – The water quality monitoring site used for this reach is Bridgehouse Beck Above Conf With R.Worth (NE- 49400074).YW's EAR states that the risk of water quality deterioration as a result of the drought permit is considered moderate for dissolved oxygen, total ammonia and phosphates. There is a risk of medium-term chronic, regular, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) downstream of Oxenhope WwTW. There are no intermittent water quality pressures identified as presenting increased risk with drought options implemented. Reported ammonia and DO % water quality is predominantly consistent with 'Good' status and with only weak flow sensitivity. SRP is predominantly attaining 'Moderate' status or lower with a strong flow sensitivity.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a moderate risk to physico-chemical parameters associated with a change in dilution it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Worth from Bridgehouse Beck to River Aire GB104027062891

Worth from Bridgehouse Beck to River Aire (GB104027062891) is classed as a heavily modified waterbody. The implications of this in relation to the waterbody's ecological status are explained above in 'Bridgehouse Beck from Source to River Worth GB104027064200'.

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Overall WB status	Moderate (Very Certain)	Moderate (Uncertain)	Moderate by 2015
Ecological potential	Moderate (Very Certain)	Moderate (Uncertain)	Moderate by 2015
Fish	Good	Good	Good by 2015

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Invertebrates	Good	Good	Good by 2015
Macrophytes	Good	Good	Good by 2027 (Combined)
Phytobenthos	Moderate (Uncertain)	Moderate (Uncertain)	Good by 2027 (Combined)
Hydrological regime	Supports Good	Supports Good	Supports Good by 2015
Mitigation measures	Moderate/Less	Moderate/Less (Uncertain)	Good by 2027
Physico-chemical	Moderate (Very Certain)	Good	Moderate by 2015
Chemical	Good	Fail (Uncertain)	Good by 2015

Table 3: Worth from Bridgehouse Beck to River Aire, GB104027062891 (Heavily Modified)

Reasons For Not Achieving Good:

Ecological Potential – The ecological potential is at Moderate status and does not meet Good WFD status due to several contributing factors explained below.

Macrophytes and Phytobenthos combined – Work has been completed on the Oxenhope Wastewater Treatment Works phosphate scheme. Therefore, measures have been delivered for the recovery of this element and for not achieving good status.

Mitigation measures – Mitigation measures are at Moderate/Less due to physical modification in relation to urban and transport reasons as well as flood defence.

Chemical – The chemical status for this water body is Fail. The following hazardous substances have been identified as contributing to the 'fail' status of this element: Benzo(g-h-i)perylene, mercury and it's compounds, Perfluorooctane sulphonate (PFOS) and Polybrominated diphenyl ethers (PBDE).

WFD objectives assessment:

- The objectives of Good by 2027 indicates the long-term ambition for the waterbodies as it is technically feasible to fix the issues, but these were not funded in the Cycle 2 plan. In the Cycle 3 plan these objectives will be revised and if the required fixes are still not funded the deadline could be extended again.

- Where we have a baseline (2015) status of 'Good' then our objective has been set as Good by 2015. This is because the waterbody is already meeting its default objectives, and nothing less than good can be predicted as this would go against the directive.

- Where we have an objective of 'Moderate by 2015' this particular waterbody cannot reach good status, only moderate. As the objective is already at moderate for physico-chemical it has an objective of 'Moderate by 2015'. This means the Ecological Potential and Overall Waterbody objectives are 'Moderate by 2015' as, because of the physico-chemical status, they cannot achieve higher than moderate.

Risk of deterioration of elements:

Worth 2 - Worth from Bridgehouse Beck to River Aire GB104027062891

Fish – There are multiple risks to the fish status due to this drought option. Reductions in wetted width, depth and flow velocity may lead to stranding of individuals. Spawning and juvenile nursery habitat is considered likely to be present, the integrity of these important habitats identified as potentially present may become compromised (e.g. siltation of spawning gravels), the significance of barriers may become more significant and higher densities of fish will attract increased predation. The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a major risk to the fish component of the WFD GB104027062891 Worth from Bridgehouse Beck to River Aire (associated with Worth 2) is considered to be major.

Invertebrates –YW's EAR explains that there are multiple ways this drought permit could impact upon invertebrates within this waterbody. Reductions in river flow will cause a reduction in wetted width and depth, reducing habitat availability for the invertebrates. Some species are sensitive to changes in velocity and a loss of flow velocity could reduce habitats within the waterbody that require high flow velocities. Furthermore, invertebrates are sensitive to water quality pressures, however YW state that however the water quality changes as a result of the implementation of the drought option are predicted to present a minor risk. YW's EAR has concluded that hydrological and associated water quality changes as a result of the Leeming Reservoir drought permit are predicted to present a major risk to the invertebrate WFD status and the duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be moderate.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – The maximum combined flow reduction on the River Worth downstream of the Bridgehouse Beck 1 confluence, with all three drought permits in place, is therefore 9.35 Ml/d. Based on the estimated flow statistics for this reach, this represents a reduction of 51% and 58% in the summer Q95 and Q99 flow statistics, which is assessed as a major hydrological impact on this reach in summer and autumn months. The reduction in year-round Q95 and Q50 is 48% and 27% respectively, which is assessed as a major hydrological impact during winter months associated with winter refill periods.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical quality elements – There is one water quality monitoring site in Worth 2. As such the location, River Worth Below Keighley (NE-49400828) has been used. YW's EAR states that the risk of water quality deterioration as a result of the drought permit is considered moderate for dissolved oxygen, total ammonia and phosphates. Water quality modelling identifies one continuous discharge, YWSL Oxenhope WwTW, presenting a significant risk to both dissolved oxygen and total ammonia downstream from the WwTW for the remainder of the reach and the downstream reach Worth 2. There is one frequently spilling CSO potential presenting an environmental risk in the reach.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a moderate risk to physico-chemical parameters associated with a reduction in dilution then it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Aire (River Worth to Gill Beck) GB104027063034

Aire (River Worth to Gill Beck) GB104027063034 is classed as a heavily modified waterbody. The implications of this in relation to the waterbody's ecological status are explained above in 'Bridgehouse Beck from Source to River Worth GB104027064200'.

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Overall WB status	Moderate (Very Certain)	Moderate	Moderate by 2015
Ecological potential	Moderate (Very Certain)	Moderate (Very Certain)	Moderate by 2015
Fish	Moderate (Very Certain)	Moderate (Very Certain)	Good by 2027
Invertebrates	Moderate (Quite Certain)	Good	Good by 2027
Macrophytes	No data	No data	Not set
Phytobenthos	No data	No data	Not set
Hydrological regime	No data	Not assessed	Not set
Mitigation measures	Moderate/Less	Moderate/Less (Uncertain)	Good by 2027

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Physico-chemical	Moderate (Very Certain)	Moderate (Very Certain)	Moderate by 2015
Chemical	Good	Fail (Uncertain)	Good by 2015

Table 4: Aire (R Worth to Gill Beck), GB104027063034 (Heavily modified)

Reasons For Not Achieving Good:

Ecological Potential – The ecological potential is at Moderate status and does not meet Good WFD status due to several contributing factors explained below.

Fish – The fish status is currently at 'Moderate' (very certain)' due to morphology changes from urban development, sediment issues due to poor soil management from agriculture and organic point source pollution (sewage discharge) from the water industry. Nutrients/phosphates which can mostly likely be attributed to continuous discharge from the water industry.

Macrophytes and Phytobenthos – The Macrophytes/Phytobenthos statuses currently have no data. This is due to them not being suitable parameters for this waterbody to assess ecological potential.

Hydrological regime – The hydrological regime element is not assessed for this surface water body, and therefore classification follows the pathway of flow conditions fail. Certain heavily modified waterbodies are no longer classified for hydrological regime where the hydrological regime test is not sufficient due to the nature of the waterbody. In this instance, ecological potential is based on the worst result of either the mitigation measures assessment or any of the quality elements.

Mitigation Measures Assessment – Mitigation measures are Moderate/Less due to physical modification for public water supply and water regulation by the water industry and due to urbanisation by the urban and transport industry.

Physico-chemical –The physico-chemical status is Moderate (very certain) due to phosphate pollution. This is attributed to point source pollution from the water industry (sewage discharge) and diffuse pollution from poor soil management in the agriculture sector.

Chemical – The chemical status is Fail. This is due to levels of PFOS, Perfluorooctane sulphonate (PFOS) Polybrominated diphenyl ethers (PBDE), Mercury. No pressure has been defined for this in Cycle 2.

WFD objectives assessment:

- The objective for hydrology regime has not been set as the waterbody has not been assessed for flow.
- The objective for macrophytes and phytobenthos has not been set.

- The objectives of Good by 2027 indicates the long-term ambition for the waterbodies as it is technically feasible to fix the issues but these were not funded in the Cycle 2 plan. In the Cycle 3 plan these objectives will be revised and if the required fixes are still not funded the deadline could be extended again.

- Where we have a baseline (2015) status of 'Good' then our objective has been set as Good by 2015. This is because the waterbody is already meeting its default objectives, and nothing less than good can be predicted as this would go against the directive.

- Where we have an objective of 'Moderate by 2015' this particular waterbody cannot reach good status, only moderate. As the objective is already at moderate for physico-chemical it has an objective of 'Moderate by 2015'. This means the Ecological Potential and Overall Waterbody objectives are 'Moderate by 2015' as, because of the physico-chemical status, they cannot achieve higher than moderate.

Risk of deterioration of elements:

Aire 1 - Aire (River Worth to Gill Beck) GB104027063034

This WFD waterbody is downstream of several waterbodies that will be impacted by the reduction in compensation flow due to the drought permits in the North West area. The EAR produced by YW has assessed the impact on this waterbody in terms of all these drought permits being in place and utilised together. Thus, the assessment in this annex is for the combined flow reduction on the River Aire with all drought permits in place. This would represent the worst-case scenario for WFD.

The maximum combined flow reduction on the River Aire at this WFD waterbody downstream of the Loadpit Beck 1 confluence, with all seven drought permits in place, is 16.64Ml/d.

Fish – The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a moderate risk in summer/autumn and a minor risk in winter to the WFD status in waterbody WFD GB104027063034 Aire (River Worth to Gill Beck) (associated with Aire 1). The duration of impacts could be up to 6 months. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be minor.

Invertebrates – The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a moderate risk in summer/autumn and a minor risk in winter to the macroinvertebrate component of the GB104027063034 Aire (River Worth to Gill Beck) waterbody (associated with Aire 1). The duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be minor.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option

implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – Not assessed.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical – Risk of short term acute, infrequent, temporary water quality pressures locally downstream of three listed CSOs during rainfall events. There are no continuous water quality pressures identified as presenting increased risk with drought options implemented. There is a moderate risk from drought options associated with change in dilution of diffuse pollution pressures and the CSO discharges.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a moderate risk to physico-chemical parameters associated with a reduction in dilution then it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Aire from Gill Beck (Baildon) to River Calder GB104027063032

Aire from Gill Beck (Baildon) to River Calder GB104027063032 is classed as a heavily modified waterbody. The implications of this in relation to the waterbody's ecological status are explained above in 'Bridgehouse Beck from Source to River Worth GB104027064200'.

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Overall WB status	Moderate (Very Certain)	Moderate	Moderate by 2015
Ecological potential	Moderate (Very Certain)	Moderate (Very Certain)	Moderate by 2015
Fish	No Data	No Data	Not set
Invertebrates	Moderate (Very Certain)	Moderate (Very Certain)	Good by 2027
Macrophytes & Phytobenthos Combined	Poor (Very Certain)	Poor (Very Certain)	Not assessed
Hydrological regime	Supports Good	Supports Good	Supports Good by 2015

Consideration	Status		
	Baseline status (2015)	**Cycle 2 current status (2019)**	**Cycle 2 Objective**
Mitigation measures	Moderate/Less	Moderate/Less (Uncertain)	Good by 2027
Physico-chemical	Moderate (Very Certain)	Moderate (Very Certain)	Moderate by 2015
Chemical	Good	Fail (Certain)	Good by 2015

Table 5: Aire from Gill Beck (Baildon) to River Calder, GB104027063032 (Heavily Modified)

Reasons For Not Achieving Good:

Ecological Potential – The ecological potential is at moderate status and does not meet Good WFD status due to several contributing factors explained below.

Fish – The fish status has no data. This is due to uncertainties relating to the fish community within the waterbody as limited survey data is available.

Invertebrates – The invertebrate status is Moderate (very certain). This is due to point source pollution (ammonia) from sewage discharge from the water industry. It is also due to changes in morphology as a result of urban development.

Macrophytes and Phytobenthos –The Macrophytes/Phytobenthos status is Poor (very certain). No pressure has been identified in Cycle 2 for this status.

Mitigation Measures Assessment – Mitigation measures are Moderate/Less due to physical modification for public water supply and water regulation by the water industry and due to urbanisation by the urban and transport industry.

Physico-chemical – The physico-chemical status is Moderate (very certain) due to phosphate pollution. This is attributed to point source pollution from the water industry (sewage discharge) and diffuse pollution from poor soil management in the agriculture sector.

Chemical – The chemical status is Fail. This is due to levels of Diazinon due to the water industry and mercury, PFOS, PBDE with no pressure defined in Cycle 2.

WFD objectives assessment:

- The objective for fish was not set.
- The objective for macrophytes and phytobenthos was not assessed.
- The objectives of Good by 2027 indicates the long-term ambition for the waterbodies as it is technically feasible to fix the issues but these were not funded in the Cycle 2 plan. In the Cycle 3 plan these objectives will be revised and if the required fixes are still not funded the deadline could be extended again.

- Where we have a baseline (2015) status of 'Good' then our objective has been set as Good by 2015. This is because the waterbody is already meeting its default objectives, and nothing less than good can be predicted as this would go against the directive.

- Where we have an objective of 'Moderate by 2015' this particular waterbody cannot reach good status, only moderate. As the objective is already at moderate for physico-chemical it has an objective of 'Moderate by 2015'. This means the Ecological Potential and Overall Waterbody objectives are 'Moderate by 2015' as, because of the physico-chemical status, they cannot achieve higher than moderate.

Risk of deterioration of elements:

Aire 2 - Aire from Gill Beck (Baildon) to River Calder, GB104027063032

Fish – The fish community element of GB104027063032 Aire from Gill Beck (Baildon) to River Calder (associated with Aire 2) is not classified, the risk to deterioration of the WFD status of the waterbody is considered to be minor.

Invertebrates – The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a minor risk to the macroinvertebrate component of the GB104027063032 Aire from Gill Beck (Baildon) to River Calder waterbody (associated with Aire 2). The duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be minor.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – The maximum combined flow reduction on the River Aire downstream of the Gill Beck 1 confluence, with all eight drought permits in place, is therefore 16.64 Ml/d. Based on the estimated flow statistics for this reach, this represents a reduction of 12% and 17% in the summer Q95 and Q99 flow statistics, which is assessed as a moderate hydrological impact on this reach in summer and autumn months. The reduction in year-round Q95 and Q50 is 11% and 2.8% respectively, which is assessed as a minor hydrological impact during winter months associated with winter refill periods.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical – There are no sampling locations in Aire 2, the next sample downstream of this reach, Aire at Apperley (NE-49400676), has been used. There are no significant continuous or intermittent discharges into Aire 2. The EAR reports minor risk from drought options to total ammonia, oxygen and phosphates.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a risk to physico-chemical parameters then it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Risk of Deterioration: A summary for all Reaches

Although YW EAR identifies that there is a possible moderate or major risk to certain WFD elements as a result of this drought option (Fish, Invertebrates, Physico-chemical, Chemical), we are satisfied that the monitoring and mitigation conditions included within the drought permit mitigates any possible risk of deterioration in the status of WFD elements (Fish, Invertebrates, Physico-chemical, Chemical). If the monitoring schedule identifies any impacts to the WFD elements as a result of this drought permit, then reactive mitigation will be carried out, dependent on the problems identified. Additionally, should any environmental problems be identified, YW will increase their compensation flows as laid out in the relevant permit.

E. Impact on ecology and conservation sites

Conservation sites

The sites, species and habitats listed in the table below are within the 5km reach from the point of the compensation release at Leeming Reservoir to the cumulative reach of the River Worth, which subsequently flows downstream to the River Aire.

The River Worth downstream of that confluence has potential to be cumulatively affected by reservoirs in YW's North West area reservoir group. Please refer to the main determination report for this group of reservoirs for further details.

Nearest conservation sites (distance searched – 5 km downstream)			
Designation types	**Name of site**	**Distance and direction**	**Potential Impact**
Special Areas of Conservation (SACs)	None	N/A	N/A
Ramsar sites	None	N/A	N/A
Special Protection Areas (SPAs)	None	N/A	N/A
Sites of Special Scientific Interest (SSSIs)	None	N/A	N/A
Groundwater Dependent Terrestrial Ecosystems (GWDTEs) that are not	None	N/A	N/A

designated as SSSIs			
National Nature Reserves (NNRs)	None	N/A	N/A
Local Nature Reserves (LNRs)	None	N/A	N/A
Ancient Woodland	None	N/A	N/A
Scheduled Ancient Monuments (SAMs)	None	N/A	N/A
Local Wildlife Sites (LWSs)	Airedale Spring Mill Pond, Haworth	3.7 km	Environmental Assessment Report (EAR) Table B2.31 states '*likely to be in connectivity with impacted reach and support aquatic receptors. A rich species diversity for wet woodland and swamp. Low sensitivity and further assessment required'.* However, there is no further assessment in the relevant EAR section B4.6.1 "feature assessment" and it is not in Appendix A.2 Mitigation. The LWS appears to be an online pond on Bridgehouse Beck. The monitoring or surveillance walkover reach does not encompass this LWS. Monitoring and mitigation should be included for this LWS.
National Parks	None	N/A	N/A
Areas of Outstanding Natural Beauty (AONBs)	None	N/A	N/A
Heritage Coast	None	N/A	N/A
Restoring Sustainable Abstraction	None	N/A	N/A

(RSA) Programmes			
Protected Species	Brown/sea trout *	0.1 km	Impact on this species has been assessed in YW's EAR and appropriate monitoring and mitigation has been included in YW's Environmental Monitoring Plan (EMP) in Appendix A.2 (see details below).
	Bullhead	1.7 km	Impact on this species has been assessed in YW's EAR and appropriate monitoring and mitigation has been included in the EAR in Appendix A.2 (see details below).
	Code 2	3.3 km	The Easimap record is a negative result from eDNA testing of pond. There are unlikely to be impacts on this species.
Protected Habitats	Deciduous woodland *	0.4 km	The woodland is unlikely to be in connectivity with the impacted reach or support aquatic receptors. Not sensitive.
Invasive Non-native Species	Northern river crangonyctid	0.08 km	The implementation of this drought option is not anticipated to increase the spread of Invasive non-native species.
	Japanese knotweed *	1.8 km	
	Himalayan balsam *	1.8 km	

Table 6: Conservation screening results

* There is more than one record of this feature within the screening distance and only the closest has been included for the purpose of this table.

Local Wildlife Sites:
Airedale Spring Mill Pond, Haworth local wildlife site is located approximately 3.7 km downstream of the Leeming Reservoir. The site appears to be an online pond on Bridgehouse Beck. YW's EAR (table B2.31) states that the site is '*likely to be in connectivity with impacted reach and support aquatic receptors. A rich species diversity for wet woodland and swamp. Low sensitivity and further assessment required'.* However, there is no further assessment in the relevant EAR section B4.6.1 "feature assessment" and it is not in the EMP in Appendix A.2 Mitigation. The monitoring or surveillance walkover reach does not encompass this LWS and monitoring and mitigation should be included for this site.

Following consultation with local area teams and agreement with YW, in-drought monitoring requirements will be included for this site (referred to as IDMON_1 below). It was also originally recommended to include on-set of drought monitoring (referred to as ODMON_1) for the site. However, this is carried out before the on-set of drought, which has passed so this will not be included as part of these applications. YW have been informed of the requirement for pre-drought monitoring for any future applications.

Protected fish species:

There is a pathway for the drought permit to impact on fish species (brown/sea trout and bullhead) in the identified impacted reach. Impact on this species has been assessed in YW's EAR and appropriate monitoring and mitigation has been included in Appendix A.2 and this will be included on the drought permit.

Monitoring and mitigation:

YW will be required to carry out the following monitoring and mitigation measures (which will be included in Appendix 1 and 2 of the permit):

Monitoring:

- IDMON_1: Surveillance walk-over surveys of habitat quality and ecological stress, recording signs of environmental problems at these sites:
  - Leeming Beck between SE 03567 34403 and SE 03458 34727
  - Bridgehouse Beck between SE 03620 35976 and SE 03498 35618.
  - 350 m location within Airedale Spring Mill Pond Local Wildlife Site, Haworth between SE 03615 37576 and SE 03493 37239.
  - Worth 2 500m located within SE 051053 8813 to SE 05304 39241
  - Aire 1 between SE1312338376 and SE1367538239
  - Aire 2 between SE1748139782 to SE1802540113
- IDMON_2: Targeted surveillance walkover surveys of water quality and ecological stress local to 'significant' water quality pressures', to include water quality spot sampling in priority areas such as pools and weirs where aquatic species may become isolated during low flows at two sites:
  - Bridgehouse Beck - 10m upstream and at least 100m downstream of the Oxenhope WwTW discharge outfall at SE 03550 35670.
- IDMON_3: The additional monitoring and maintenance activities, specified in the Combined Sewer Overflows (CSO's) Optimisation and Maintenance for Drought Plan 2022, shall be applied by the Water Company to the following combined sewer outfall assets, in accordance with Appendix A of the same plan;
  - i. Buck Mill Lane CSO, discharges to Brackendale Beck at National Grid Reference SE 16893 38881.
    Dock Lane CSO, discharges to Bradford Beck at National Grid Reference SE 15161 37590.
    Coach Road CSO, discharges to River Aire at National Grid Reference SE 14449 38140.
    South Street Keighley CSO, discharges to River Worth at National Grid Reference SE 05920 40223.
    Mytholmes Lane CSO, discharges to River Worth at National Grid Reference SE 03605 38083.
    Ingrow Lane CSO, discharges to River Worth at National Grid Reference SE 05655 39764.
  - ii. as agreed in writing by the Agency, any combined sewer overflow assets not identified in Appendix A, but subsequently deemed by the Water Company or the Agency to risk adverse impact to a watercourse while compensations flows are reduced.

Mitigation:

- If the monitoring identifies signs of environmental distress, the following actions shall be undertaken by the water company:
  - YW shall notify the Agency in writing and by telephone and shall provide details of the signs of distress and the location
  - YW shall undertake a remedial course of action to address the signs of environmental problems, as directed in writing by the Agency.
  - If the Agency gives written notice that there is a disruption to the ecology, YW shall increase compensation flow from Leeming Reservoir to Leeming Water at National Grid Reference SE 03698 34382 to a rate of not less than 4,000 cubic metres per day when both the Leeshaw and Leeming reservoir levels are above the control lines, or 5,250 cubic metres per day when the Leeming Reservoir level is above the control line and Leeshaw Reservoir level is below the control line, or 3,250 cubic metres per day when both the Leeshaw and Leeming reservoir levels are below the control lines. The increase in compensation flow to the Leeming Water shall continue until the Agency serves a subsequent written notice stating that the reduction in compensation flow in accordance with conditions 1.1 and 1.2 of this drought permit may be resumed.
- The changes to the compensation water specified in the drought permit shall be made in a steady and controlled manner at a rate so as not to cause any flooding of land or disturbance to water users downstream or any adverse effects on the quality of water in the inland water or any adverse impacts on the ecology of the inland water or dependent ecosystems.
- Freshet flows condition - the water company shall make a release of compensation water for 24 continuous hours each week if the Agency notifies them in writing that additional flow is needed to support spawning for trout and salmon species. These releases of compensation water are referred to here as “freshet flows” IDMIT_9 in the water company’s “EMP North West Area Appendix”. The freshet flows shall take place between 1 October 2022 and 27 March 2023 inclusive or shorter period if notified in writing by the Agency. The Agency may agree a lesser duration and frequency for each freshet flow. The freshet flow shall be not less than 4,000 cubic metres per day, from Leeming Reservoir to Leeming Water at National Grid Reference SE 03698 34382.

F. Measurement

Reservoir level measurement

The reservoir level is measured by a gauge in Leeming Reservoir to determine what compensation flow needs to be released. There will be no change to the way the level is measured in the drought permit conditions.

Compensation flow

The compensation flow is measured by a meter at the weir at SE 13041 38379.

The existing licence requires the Licence Holder to take daily readings of the meter measuring the Compensation Flow and there will be no changes to this as part of this application.

G. Recommendations

Based on the conclusions of the main determination report (section 14), the Agency has decided to grant a drought permit under section 79A of the Water Resources Act 1991 subject to conditions, as drafted and attached to this report. The drought permit will suspend the provisions of the 2018 impoundment licence during any period in which YW can abstract under the conditions of the drought permit.

A summary of the reduced compensation release quantities are shown in Table 7 below.

The drought permit will be time limited to 31/03/2023 and will include the following conditions along with appendices detailing the monitoring and mitigation requirements.

Condition	**Source of the condition wording**
1.1 Compensation flows	Option 1 compensation flows when above Leeming and Leeshaw control lines as stated in Table 7.
1.2 Compensation flows	Option 1 compensation flows when Leeshaw is below the control line and Leeming is above the control line as stated in Table 7.
1.3 Compensation flows	Option 1 compensation flows when both Leeming and Leeshaw are below the control lines as stated in Table 7.
1.4 Compensation flows	Option 2 compensation flows when above the Leeming and Leeshaw are above the control lines, and below the Regional Control Line as stated in Table 7
1.5 Compensation flows	Option 2 compensation flows when Leeshaw is below the control line and Leeming is above the control line, and below the Regional Control Line as stated in Table 7.
1.6 Compensation flows	Option 2 compensation flows when Leeshaw and Leeming are both below the control lines, and below the Regional Control Line as stated in Table 7.
2.1 Environmental Monitoring	Monitoring requirements set out in Appendices 1 and 2 of the licence.
2.2 – 2.3 Environmental Monitoring	Actions to take if environmental problems identified during monitoring.
2.3 Control of changes	All changes to compensation flow must be made in a steady and controlled manner.
2.4 Freshet flows	Freshet flows condition.
2.5	Combined Sewers Overflow condition.
3.1 TUBs	Drought Permit not relied upon unless Temporary Use Ban is in place.

Table 7: Recommendations of drought permit

	Business as Usual			Option 1 – reduce by 50%			Option 2 – reduce by 2/3rds		
Compensation Site	Leeshaw above CL, Leeming above or below CL	Leeshaw below CL, Leeming above CL	Leeshaw & Leeming below CL	Leeshaw above CL, Leeming above or below CL	Leeshaw below CL, Leeming above CL	Leeshaw & Leeming below CL	Leeshaw above CL, Leeming above or below CL	Leeshaw below CL, Leeming above CL	Leeshaw & Leeming below CL
Leeming	4	5.25	3.25	2	2.63	1.63	1.33	1.75	1.08
Leeshaw	4	2.75	2.75	2	1.38	1.38	1.33	0.92	0.92
Springhead Weir	6	6	8	3	3	4	2	2	2.67
Ponden	Min 0.5			Min 0.5			Min 0.5		
Lower Laithe	Min 0.2			Min 0.2			Min 0.2		

Table 7: Summary of compensation releases