IN THE MATTER OF THE WATER RESOURCES ACT 1991 (AS AMENDED BY THE WATER ACT 2003) AND THE WATER ABSTRACTION (TRANSITIONAL PROVISIONS) REGULATIONS 2017

APPEAL BY:

RADNOR HILLS MINERAL WATER COMPANY LTD

SITE AT:

RADNOR HILLS, HEARTSEASE

Planning And Environment Decisions Wales (PEDW) References:

CAS-02488-V7M8Q2 & CAS-02489-V6P4R9

NRW'S RESPONSE TO THE ADDITIONAL INFORMATION PROVIDED WITH THE APPELLANT'S RESPONSE TO NRW'S STATEMENT OF CASE

INTRODUCTION

1. Following written correspondence between NRW, the Appellant and PEDW between 2 and 24 May 2024, this document provides Natural Resources Wales' ("NRW") response to the additional information submitted on 5 September 2023 by the Appellant in support of their Response to NRW's Statement of Case (SoC) in relation to the appeals identified on the previous page.

2. NRW outlined their reasons for not initially giving full consideration to the Appellant's additional information in their Further Comments on the Appellant's Response, submitted to PEDW on 16 October 2023. On 7 May 2024, PEDW indicated that the Appellant's additional information, namely the "*shadow HRA*" and Envireau Water's Modelling Analysis, are considered "*material to the determination of the appeal*" and would be "*matters for discussion at the Hearing*".

3. NRW remain concerned regarding the consideration of this additional information at this late stage in the appeals process. Nevertheless, this response is provided in this case in view of PEDW's email dated 23 May 2024 conveying the Inspector's request for a detailed response from NRW "*in order to properly test the evidence and reach a fully informed and legally robust decision*".

4. NRW invite the Inspector to consider this submission together with NRW's SoC (submitted 14 July 2023), NRW's Response to the Appellant's SoC (submitted 29 August 2023) and NRW's Further Comments on the Appellant's Response (submitted 16 October 2023).

5. NRW also invite the Inspector to consider additional consultation responses received from its internal "appropriate nature conservation body" ("ANCB") function and Natural England (NE), which are provided as annexes 20.1 and 20.2 respectively. This ANCB consultation regarding the Appellant's additional information was considered necessary under the Conservation of Habitats and Species Regulations 2017 and the need for the Inspector to reach a "*legally robust decision*" regarding the Appellant's additional information.

6. NRW also invite the Inspector to consider the consultation response received from the Environment Agency (EA), provided as annex 20.3. The EA were consulted regarding the Appellant's additional information because the decision to apply a shorter time limit was agreed in consultation with them as they manage the Teme cross-border catchment in which the abstractions are located. It should also be noted that the 2031 expiry date is consistent with the time limit applied to the EA-issued licence authorising abstraction from the English boreholes, but the Appellant has not submitted an appeal against the EA decision.

<u>Impact of extending the expiry date on the licence to 31 March 2037 on the integrity of the nearby SSSI and SAC designations</u>

7. NRW note from PEDW's email dated 7 May 2024 that the main issue for consideration at the Hearing is the impact of extending the expiry date on the

licences to 31 March 2037 on the integrity of the nearby SSSI and SAC designations.

8. NRW wish to reiterate that **the decision to apply the shorter time limit is *not* considered mitigation to prevent adverse effects on the relevant SSSI and SAC designations**. NRW are satisfied that the impact of the abstractions on the SSSI and SAC designations was satisfactorily assessed through the determination process (specifically the HRA and SSSI Assessment as provided in annexes 13.1 and 14.1 of NRW's appeal bundle respectively). However, it was recognised that these assessments were based on best available information at the time, which was limited, and that further information would become available in the future. Therefore, a shorter time limit is considered necessary and justified to allow a review of the licences to better understand any future potential impacts and determine whether the licences can be renewed upon their expiry or should be amended.

9. NRW refer to section 6.5 of its SoC for a detailed reasoning as to why the 2031 date was selected. In summary, it is considered a suitable date by which point further data will be available to support further assessments to be conducted.

10. **NRW are satisfied that the 2031 expiry date allows a reasonable period to gather further data to reliably inform a review of the licences whilst allowing the Appellant to continue abstracting for their business needs.**

Ecology Solutions Report: "*shadow Habitats Regulations Assessment"* (sHRA)

11. The Appellant's Response introduces a new piece of evidence in the form of a "*shadow Habitats Regulations Assessment* (sHRA) *and Annexes*" carried out by Ecology Solutions and included as document 14 of the Appellant's Response bundle.

12. The Appellant's sHRA specifically makes the case that the conclusion of no 'adverse effect on site integrity' (AEOSI) can be considered valid until 2037 and so a shorter duration for the licences issued is not necessary or justified. NRW consider this to be an entirely new argument that formed no part of the Appellant's Grounds of Appeal or SoC.

13. The Appellant's sHRA suggests that NRW's decision to apply the shorter time limit was applied as mitigation to prevent adverse effect on site integrity of relevant designated sites. As highlighted in paragraph 8 above, this is not the case. This is supported by the EA's response referred to in paragraph 6 above and provided in annex 20.3, which states that "*decisions regarding time limiting were primarily based on the short amount of years' worth of data that was available to us to be comfortable with a longer term licence. This decision was in line with our time limiting policy*." The EA's response also notes that all parties have "*agreed to continue to collect more longer-term monitoring data to build on and support these assessments especially the key aspects of abstraction influences in the area versus more natural hydrological events and how this all could affect the flows*

within the River Teme." Finally, the EA note that this "*is a more than reasonable approach to take*."

14. It should be noted that **the ANCB advice** (referred to in paragraph 5 above) **does not agree with a conclusion of no adverse effect on site integrity, regardless of the expiry date applied to the licences**. The response from NRW's ANCB function (annex 20.1) notes that a longer licence duration would "*risk the magnitude of adverse effect being greater*." NE's response (annex 20.2) supports the *"shorter renewal period as this provides some mitigation for both the risk and uncertainty*."

15. It should also be noted that section 6 of NRW's ANCB response (annex 20.1) specifically advises that a 'hands off flow' (HoF) condition should be applied to the abstractions during low flows. Having taken advice from its technical hydrology and geoscience teams, NRW does not consider that a HoF condition is appropriate at this time, given the current level of uncertainty regarding the potential impact the abstractions are having on water flow and levels in the River Teme. This supports the decision to apply a shorter time limit to allow further data to be gathered to improve our understanding of the groundwater and surface water response to rainfall and abstraction activity, which is necessary in order to develop an appropriate HoF condition.

16. The remainder of this section provides NRW's specific comments relating to the Appellant's sHRA. References to paragraph numbers and page numbers relate to the Appellant's sHRA document, unless otherwise stated.

17. Para 5.8 (page 260): NRW does not agree that "*at this first stage of assessment, it is possible to scope out the need for further detailed assessment in relation to the Severn Estuary SPA / SAC and Ramsar site*". As stated previously, the River Teme is considered functionally linked to the Severn Estuary designations: Atlantic salmon that hatch and spend the first years of their life within the River Teme will migrate to the ocean and return to their natal waters to spawn via the Severn Estuary. **NRW do not consider that the Appellant's sHRA gives sufficient consideration to the potential for impacts on the flow and habitat in the River Teme in the vicinity of the abstraction to impact on the Atlantic Salmon population of the Severn Estuary**.

18. Paras 5.32 – 5.52 (pages 263 - 266): This section focuses on previous assessments undertaken by NRW (HRA analysis) and Envireau Water (Technical Note). Both assessments were considered as part of the determination of the licence applications and previous written submissions as part of this appeals process. Therefore, in NRW's view, **the sHRA does not provide any additional justification to extend the licence expiry date to 31 March 2037**.

19. Para 5.32 (page 263): NRW agree with the statement that *"an understanding of the baseline flow regime in the catchment is required*" in order to make an assessment of abstraction effects on flows. As noted previously, confidence in the current "*understanding of the baseline flow regime in the catchment"* is limited, due to the absence of long-term flow monitoring data for the River Teme. It is therefore reasonable for NRW to apply a shorter time limit to allow further data to be gathered

and assessed to improve confidence in the "*understanding of the baseline flow regime*" and to inform whether the licences can be renewed upon their expiry in 2031 or should be amended. This is supported by the responses from NRW's ANCB function and NE (annexes 20.1 and 20.2) which both reiterate the concerns raised previously regarding the confidence that could be placed in the data used to inform NRW's HRA and SSSI assessments.

20. Para 5.36 (page 265): The statement that NRW's flow assessment "*is based on flow estimates using data from the nearest gauging station upstream at Knighton*" is incorrect. The gauging station at Knighton is an Environment Agency-owned level-only station (a station that measures flow level as opposed to flow rate) with no flow data. As explained in detail in NRW's HRA (provided as annex 13.1 in NRW's Appeal Bundle / annex 13 to the Appellant's sHRA), the estimates used are from Qube software and were compared to estimates produced using the "catchment losses method". In addition, the estimates from Qube were compared to data from two nearby gauging stations: one is in the neighbouring catchment (River Lugg) and the other is the closest gauging station on the Teme itself, approximately 40km downstream of the site of interest. This comparison was made to assess how well estimates from Qube were performing in that area. Estimates do not take into account if the water is above ground or within the gravels.

21. Para 5.38 (page 265): It is stated that "*NRW's assessment calculates the total abstraction to account for 9.3% … of the Q95 flow locally*". It should be noted that NRW's HRA (included as annex 13.1 in NRW's Appeal Bundle / annex 13 to the Appellant's sHRA) estimated that the impact of the abstraction ***ranges*** between 0.8 to 9.3% of Q95 flow locally. This ***range*** reflects **the uncertainty in the estimated flow statistics**. The potential for the abstraction to be up to 9.3% of the local Q95 flow is of concern to NRW's ANCB and fisheries functions, especially given the acknowledged uncertainty, and that at lower flows (i.e. Q96, Q97 etc.) the abstraction will represent a larger percentage of the flow. This is considered especially significant given the specific hydromorphological nature of the Teme catchment and the frequency of low flow and drying events in the river.

22. Paras 5.40 – 5.52 (pages 265 – 266): NRW acknowledge that the spot gauging data will have higher confidence than the estimated flow data. However, it should be noted that there is still uncertainty given that flows will only have been measured above the gravels. In addition, the Appellant's abstraction is from groundwater and not from surface water. Interactions between the groundwater and surface water, storage, gravels, drying events of the river and the timings of any impacts are more complicated and uncertain than if water were being taken directly out of a river. **NRW consider that the Appellant's sHRA should have given further consideration to the uncertainty and limitations in the modelling and calculations**.

23. Para 5.51 (page 266): NRW acknowledge that any impact of abstraction on flows is likely to be highest locally to the abstraction boreholes; however, the overall focus of the Appellant's sHRA is on flow impacts downstream of the Clun confluence. **Given the role of the River Teme in providing a migratory route and supporting habitat to the designated features of the River Clun and**

Severn Estuary designations, the Appellant's sHRA should have given further consideration to potential impacts on flow in the River Teme in the vicinity of the abstraction.

Envireau Water's Modelling Analysis

24. The Appellant's Response introduces an additional piece of evidence in the form of an analysis which models the effects of the Appellant's abstractions on the River Teme against the effects of climate change. This analysis is included as documents 12 and 13 of the Appellant's Response bundle.

25. As stated previously, this is an entirely new piece of evidence that formed no part of the Appellant's Grounds of Appeal or SoC.

26. NRW has previously highlighted that the potential impact of the Appellant's abstraction on surface water flows is less certain in the context of changing weather patterns. Therefore, modelling the effects of the Appellant's abstractions against the effects of climate change could, in principle, be considered a useful exercise in relation to these appeals. However, given the simplistic nature of the assessment, and the assumptions and uncertainty regarding the data used (outlined further below), NRW do not consider that it provides any additional justification to extend the licence expiry date to 31 March 2037.

27. The CPUK18 values used by the Appellant are consistent with those published on the Met Office UKCP18 website. However, it should be noted that there are limitations regarding the data used, as acknowledged in the *UKCP18 Guidance: Caveats and limitations* available online. The document goes into further detail regarding the limitations of the data available but below is a brief extract:

> As with all climate modelling, the estimated ranges for future climate are conditioned on a set of modelling, statistical, and dataset choice assumptions with expert judgement playing a role in the various methodological and data choices. As the science evolves some of these preferred choices will also change, which will lead to new estimates of uncertainty. At this time, the UKCP18 project team believe the UKCP18 ranges best capture our understanding of potential future outcomes.

28. The Appellant's Analysis is correct that using the 5th percentile of the RCP8.5 emissions scenario gives the worst-case scenario. However, simply applying the same percentage change in rainfall to Qmean and Q95 flows is extremely simplistic and unlikely to represent the response to climate change correctly. To properly model the impact, a new flow timeseries would need to be produced using a rainfall runoff model with a range of monthly projections. A flow duration curve could then be produced using this data.

29. To assume that the percentage change in a rainfall statistic will lead to the same change in a river flow statistic ignores potential other impacts, including:
    - changes in rainfall patterns (e.g. heavier shorter events rather than prolonged rainfall);
    - changes to soil moisture deficit patterns throughout the year;

- increased evaporation due to increased temperature;
- changes in the way the groundwater interacts with the rest of the water cycle (e.g. would more rainfall in winter lead to greater recharge? Or would the impact of a hotter drier summer outweigh that?);
- differences in the duration and timing of the connectivity between the groundwater and surface water.

It is more likely that the shape of the whole flow duration curve will change. For example, Q95 may get lower due to hotter drier summers, flood flows may get higher and Qmean may not change much at all. It is unlikely to be as simple as a percentage change in rainfall equating to a percentage change in flow across the whole flow duration curve.

30. The Severn is a large catchment with significant variation in geography across it. In this UKCP18 dataset the percentage changes in rainfall have been averaged over the whole catchment. It should be noted that what may be appropriate in the Severn Estuary may not be appropriate for the Teme catchment.

31. NRW acknowledge that the Appellant's Analysis does use the worst-case scenario and so have accounted for some of the above uncertainty. However, given the simplistic assessment and assumptions and uncertainty regarding the data used, NRW consider that the conclusions should be treated with caution and **do not provide sufficient justification to extend the licence expiry date to 31 March 2037**.

NRW'S CONCLUSIONS

32. This concludes NRW's response to the additional information provided with the Appellant's Response to NRW's SoC.

33. NRW respectfully renews its invitation to the inspector to dismiss the appeals and uphold the decisions to grant the Appellant's licences subject to the expiry date of 31 March 2031.

ANNEXES

Reference	File Name	Date
Annex 20.1	NRW ANCB response to Appellant's additional information	14-6-2024
Annex 20.2	NE ANCB response to Appellant's additional information	29-7-2024
Annex 20.3	EA response to Appellant's additional information	11-7-2024