

## DECISION STATEMENT

### Kings Mere Lake – abstraction licences

**Application number:**

NPS/WR/015547 and  
NPS/WR/016527

**Licence number:**

TH/039/0024/023 – Transfer for the purpose of maintaining the level in the lake  
TH/039/0024/024 – Spray Irrigation

**EA Region:**

South East – Thames West

**Date of Application:**

25 March 2014

**Applicant details:**

Flurin Holdings Limited, Craigmuir Chambers, PO Box 71, Road Town, Tortola,  
British Virgin Islands

**Summary of the proposal:**

The application is to abstract water from two boreholes adjacent to King's Mere Lake in Finchampstead, for the purpose of transferring water for maintaining the water level of the lake and spray irrigation of garden features.

It is thought the lake was created in the 1890's on the Bearwood Estate for use as a skating lake. It was created by damming a small tributary of the Emm Brook. The water level was maintained by way of an abstraction from the nearby Queens Mere Lake. Following the break-up of the Bearwood Estate and changes to legislation relating to water abstraction, this option has not been available to the applicant since 2002. Concerns were raised in 2005 by local residents via local papers about the drying up of the lake. The applicant intends to create reed beds and restock the lake with native fish species and the top up from the abstraction is required to counter the natural loss from the lake through evaporation and seepage through the lake bed.

**Source of Supply:**

Two boreholes located at SU 81257 64919 and SU 81268 64957 drilled into the Lambeth Group and Chalk.

**Points of abstraction and quantities:**

1) Transfer Licence (Borehole 2)

15 m<sup>3</sup>/hr

210 m<sup>3</sup>/d

29,000 m<sup>3</sup>/y

Instantaneous rate 4.17 l/s

2) Spray Irrigation Licence (Borehole 1)

1 m<sup>3</sup>/hr

24 m<sup>3</sup>/d

3,085 m<sup>3</sup>/y

Instantaneous rate 0.28 l/s

**Means of abstraction:**

Submersible pumps

**Purpose of abstraction:**

Transfer of water for the purpose of topping up Kings Mere Lake to maintain water level, and spray irrigation of garden features.

**Abstraction period:**

Transfer licence - All year

Spray irrigation licence – March to September inclusive

**Case history:**

An application to undertake a Section 32 Groundwater Investigation was received from Flurin Holdings Limited in August 2011. This was for the drilling of two boreholes at a location adjacent to Kings Mere Lake, Finchampstead. Consent was granted and pumping tests were undertaken. The initial tests were only from 1 borehole and the applicant was requested to carry out pumping from both boreholes to show that they could both be operated simultaneously. The results of the pumping test have been assessed by the Groundwater and Contaminated Land team and they confirm that water is available for the proposed activities at the quantities applied for.

Water abstracted from Borehole 1 will be used for spray irrigation and has been determined under licence No. TH/039/0024/024.

Water abstracted from Borehole 2 will be used for the purpose of maintaining the water level in the lake as noted above and has been determined under licence No. TH/039/024/023.

**Justification of quantities:**

Calculations for King's Mere Lake have been carried out for an average year and a drought year and the quantity applied for is equivalent to the requirement for a drought year. The lake has a surface area of approximately 43,000 square metres and the applicant has assessed the total water loss from the lake in summer, due to evaporation and possible infiltration through the clay liner, to be about 194m<sup>3</sup> per day, representing a daily fall in the water level of about 5mm assuming no input from the upstream catchment. The report by the Groundwater Team of their assessment of the pumping test result, indicated that calculations by EA staff gave evaporation losses alone ranging from 26,409m<sup>3</sup>/year to 31,364 m<sup>3</sup>/year.

Calculations for spray irrigation have been assessed as requiring 15.151m<sup>3</sup>/day for an area of lawn approximately 0.61 hectares and 0.746 m<sup>3</sup>/day for 0.10 hectares of shrubs and flowers. Water for this purpose will be pumped into two holding tanks of approximately 10m<sup>3</sup> capacity, from where it will be used for irrigating the garden features.

**Resource assessment:**

The applicant has assessed their requirements as 29,000 cubic metres per year for maintaining the level of the lake and 3,085 cubic metres for spray irrigation. A pumping test was carried out under a Section 32 Groundwater Investigation Consent and this confirmed that water was available for these activities at the quantities applied for.

**Impact assessment of proposal:**

We do not consider that this abstraction will impact on other abstractors. Impact on other abstractors was considered as part of the application. The nearest groundwater abstraction lies approximately 1.7 km to the north west, and will not be affected by the abstraction at Kings Mere lake. There is a surface water abstraction a similar distance from Kings Mere Lake and we do not consider that this will be affected either. A Flood Risk Assessment was undertaken by the applicant at our request to establish whether there was any risk of flooding from the proposed activity. It concluded that there was not.

## **Statutory Consultation:**

The only statutory consultee was Thames Water who confirmed they had no objections to the application.

## **External Representations:**

A total of 12 representations were received raising a number of concerns. These are summarised below.

1) *The increase in water levels in the lake affecting nearby properties and the raising of the level of the overflow, leading to erosion and raised water levels in gardens through infiltration from the lake.* We do not have any evidence to suggest that the overflow has been raised in height, nor do we have any evidence to suggest that the lake is affecting the gardens through infiltration or erosion. The predominant soil type in the area is clay which can lead to poor drainage of soils. The majority of the water lost from the lake is lost to evaporation, rather than infiltration.

2) *Concerns over the condition of the liner of the lake, and the materials used in its construction which might allow seepage from the lake.* The Flood Risk Assessment confirmed that the lake was constructed on impermeable clay consisting of several metres thickness. We are unable to comment on issues relating to any other materials used for the construction. Infiltration tests confirmed the natural rate of infiltration to be less than 3mm per day. There was no evidence of leakage through the lake.

3) *Concerns over the ability of local watercourses and culverts to cope with additional water from Kings Mere Lake and heavy rainfall, due to lack of capacity and maintenance, leading to flooding.* One of the responses said the stream had coped well this winter and for all previous ones, though they did not want this situation to change. The applicant was asked to provide a Flood Risk Assessment to demonstrate what effect the level of the lake has on the nearby watercourse.

4) *There are concerns by local residents that the proposed abstraction will have an impact on their properties by increasing the risk of flooding.* The abstraction will only be used to top up the lake during times of low rainfall when the level in the lake drops. The level will be controlled by an automatic sensor which will cut off and stop the abstraction when the water in the lake reaches the required level as conditioned in the licence (condition 9.1). The licence also includes conditions requiring the licence holder to install and maintain the level sensor to ensure it measures the levels accurately at all times.

5) *Impact on Habitat.* Consideration has been given to whether the abstraction will have any impact on the habitats. There are no designated sites within close proximity of the lake and a local wildlife site is at a distance where it is unlikely to have any impact. The activity of topping up the lake is likely to have a beneficial impact on wildlife by maintaining a habitat. It is the owners intention to provide improvements to the habitat of the lake by planting areas of reeds.

6) *They questioned the need for topping up the lake.* The lake has historically been topped up to prevent it drying out. When it was constructed it was provided with a supply from Queensmere Lake. Until 2002 the owners of the lake were able to take water from the nearby Queensmere Lake. However, since then due to changes in ownership following the splitting up of the Bearwood Estate, this option has not been available. We understand that the lake dried up entirely during 2005.

### **External Representations (cont):**

7) *Concerns over the effect on the road which runs alongside the lake.* These matters were discussed with Wokingham Council at a meeting held between us in June 2014. They did not think that the lake was having any impact on the fabric of the road.

8) *No account taken of the Council's own drainage investigation.* Whilst we have a duty to take into consideration matters which might be affected by an application, we do not consider that the proposed abstraction will impact on the work recently undertaken by the Council.

9) *Lack of consultation.* Consultation is undertaken by advertising an application in a suitable local newspaper and by posting details on our website.

### **Protected Rights:**

The nearest licensed abstractions are 1.7 km downstream (surface water abstraction) and 1.7 km to the NW from the Bagshot Beds groundwater source. As the Lambeth Group and Chalk at King's Mere Lake is not in continuity with the surface water or other groundwater sources it is not anticipated that it will have any impact on other surface abstractions or protected rights.

The assessment of the groundwater investigation concluded that the abstractions would be from boreholes at 222m into the Chalk (Borehole 1) and 156m into the Lambeth Group and Chalk (Borehole 2), and no surface water features would be affected. The applicant also carried out a water features survey within 500 metres of the abstraction points and no other boreholes were discovered. There are no licensed abstractions from the confined chalk within 5km of the location.

### **Conservation Issues:**

There are no conservation issues related directly to the lake. The nearest designated site is Heath Lake SSSI which is located approximately 1.5 km to the east. Any impact would not be significant due to the nature of the habitats which do not depend on the water from the Lambeth Group or the Chalk aquifer.

### **Costs/ Benefits:**

The abstraction allows a benefit to the applicant by providing water for their purposes without entailing excessive costs. There is a benefit to the environment by ensuring that the lake does not dry out.

### **Biodiversity and sustainable development:**

The Fisheries and Biodiversity team were consulted on this application and raised no concerns over possible impact to any sites of interest. The nearest SSSI is located approximately 1.5 km to the east. Any adverse impact would not be significant due to the nature of the habitats which do not depend on the water from the Lambeth Group or the Chalk aquifer.

### **Social and Economic welfare of rural communities:**

No adverse effects on the social and economic well being of local communities in the area are perceived as a result of this proposal.

**Conclusion and recommendation:** Following the production of a Flood Risk Assessment to ascertain the likelihood of flooding from the proposed activity, we have concluded that the abstraction will not impact on neighbouring properties or watercourses. The Groundwater Investigation showed that there was water available for the activities and no other abstractors would be affected by it. We, therefore, recommend that the licences can be issued as applied for.

<b>Date completed/updated:</b>	<i>3 November 2014</i>
<b>Date of sign off:</b>	<i>11 November 2014</i>
<b>Team Leader (who authorises determinations) name/signature:</b>	<i>Andrea Ayres, Permitting Team Leader</i> <i>a ayres</i>
<b>Date of final submission:</b>	<i>20 November 2014</i>