

Response for Gladman Developments Limited prepared by BLBB Consulting to Policy C6 Cordon Sanitaire as detailed in the Pre-Submission Gloucester City Plan 2011 - 2031 Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012

September 2019

Policy C6:

Cordon sanitaire Development likely to be adversely affected by smell from Netheridge Sewage Works, within the Cordon Sanitaire defined on the policies map, will not be permitted.

3.3.31 “Severn Trent Water PLC (Severn Trent) is responsible for sewerage and sewage disposal. They operate Netheridge Sewage Treatment Works (NSTW) south of Hempsted, a facility that processes a significant amount of waste from Gloucester City and beyond. The fields adjoining Netheridge are used for sludge disposal that, in addition to the works itself, create unavoidable smell problems within the area. In order to reasonably prevent development that would be adversely affected by smell, a cordon sanitaire area is shown on the proposals map within which development will not be permitted.”

Notes relating to 3.3.31 Above:

We believe that the comments made above stating that “the fields adjoining Netheridge are used for sludge disposal” are out of date and relate to an approach that may have been in operation many years ago. We believe that Severn Trent Water no longer uses the adjacent fields for sludge disposal and certainly not for liquid sludge disposal as it may have done in the past. The processes used on site currently include a dewatering facility where liquid digested sludge is processed to create a sludge cake that is stored on concrete storage pads prior to it being removed for recycling on to third party farmland well away from the works.

Our understanding is that liquid sludge has not and would not be disposed of onto the adjoining land as described above. Stringent controls and limits are imposed by the Environment Agency. Our understanding is that STW complies fully with these requirements. Recycling sludge back to land is highly regulated and the adjoining land could not be used for sludge recycling on a regular basis.

The Cordon Sanitaire proposed appears to be disproportionately large for a works like Netheridge. Most water companies use a risk-based methodology based on works size and complexity. However, the maximum expected size is up to around 500 meters from the works boundary. The area being described by this cordon sanitaire is up to 1000 meters from the works boundary and is unusually large. We believe that the data being used to calculate the Cordon Sanitaire boundary is based on a very old data set from 2008 and does not represent the current position at the works.

We are surprised that the LPA are simply prepared to accept what appears to be a very high level of odour emissions from the Netheridge. More discussion is required with STW to establish why the level of odour produced at the works is much greater than current best practice guidelines would deem acceptable for a works of this size and complexity. It seems odd that the LPA appear to accept that the works will create “unavoidable smell problems” but have not discussed what Odour Management Plans are in place at the works to minimise the odour and level of nuisance created by the works and thus minimise the amount of land required to be included within the Cordon Sanitaire.

3.3.32 “To support this policy, an assessment of odour nuisance arising from NSTW has been undertaken and has informed the boundary on the policies map. The study is informed by a review of odour complains, odour surveys, a detailed dispersion model assessment and a review of a previous model assessment. Severn Trent were engaged in the review process in order to understand currently and future operations, including plans for any proposed future infrastructure improvements to accommodate additional waste and/or to reduce the impact of odour on the surrounding area. It categorises likely odour nuisance on the basis of odour contours from the sewage works.”

We have some significant concerns about the report that has been produced for the LPA by Phlorum. Most notably the use of a data set from 2008. The data being used is not representative of the current situation at Netheridge and there have been significant changes in the process plant used at the works since 2008, which means that the odour levels currently produced at the works are likely to be very different to the situation prevailing in 2008.

The Phlorum report in paragraph 4.78 states that there have been no major changes to the works in the past 10 years and concludes that the reports and their results should be comparable. We understand that a major improvement scheme took place in 2016 which refurbished the sludge handling and storage equipment. Since 2008 the operation of the primary sedimentation tanks desludging has been improved considerably and these tanks are regularly desludged and fresh thin sludge is thickened using mechanical sludge thickening equipment. Liquid digested sludge is now dewatered using centrifuges and is stored on concrete sludge storage pads. Since the changes that have taken place involve the PST’s and the sludge route it is inevitable that the nature and level of odours produced at the works will be significantly different than those produced in 2008 when the previous data set was produced.

3.3.33 “The extent of the cordon sanitaire has been drawn on the basis the area most likely to be affected by odour nuisance, within the 3 – 5 odour contour area. This boundary does not represent the absolute limit of the area where smells can be detected but is drawn so as not unreasonably to constrain development in the existing built-up area.”

The way the boundary is drawn does indeed constrain a large area of land due to the very large distance that the Cordon Sanitaire runs to the north of the works. The data used indicates a very high concentration of odour at the boundary of the works and we believe that there should be further discussion with STW at this stage to better understand why such a high emission rate is coming from the works.

We are concerned that the odour emissions if the data is actually found to be reliable are out of step with currently accepted best practice target levels and cannot understand why the LPA is not challenging STW on why they are apparently producing such high odour levels from their activities at the works.

The Phlorum report does not address the issues of odour fully. The report states at paragraph 4.75 that “the contour fits the complaints record particularly well in Hempsted where all 4 residential complaints fit within the 1.5 Odour unit threshold for potential nuisance advocated in the EA H4 Guidance”. This is a true statement but misses the point

that to the south there are 5 complaints that all fall outside the 1.5 Odour unit contour and are not addressed by Phlorum. This suggests that either the odour contour is not an accurate representation of the actual odour nuisance caused by the works or as we believe that the data set being used is not representative of the current situation.

At paragraph 4.77 Phlorum conclude that “As complaints can provide the most compelling evidence as to the reasonableness of any offensive odours, this suggests that the model might be under predicting odour concentrations to the south and south-east. It should be noted that there are four residential complaints just outside (within 200m) of the 1.5 Odour units’ contour.”

However even though Phlorum have correctly concluded that the model is not reliable at predicting a representative odour contour they ignore this fact when making conclusions and recommend a Cordon Sanitaire that is possibly too large to the north of the works and too small on the south side of the works.

We believe that the Phlorum report has missed the point that the current operation of the works is such that the sludge treatment and storage is now mostly taking place on the south and western side of the works and as such it is not surprising that the level of complaint is far higher on the southern side of the works. This is further endorsed when we consider the results of the Odour (sniff) Survey undertaken by Phlorum where in paragraph 4.69 they state that “the strongest odours emanating from the STW (5 on the VDI odour Intensity scale) were detected at the Fishing Lake roughly 120m to the south-east of the STW boundary and at the end of Rea Lane, within 50 m of the western boundary of the site. The odours detected at these locations were at times considered to be very strong with reference to the VDI intensity scale”. Paragraph 4.70 states “During the third survey and 470m to the south-east of the STW a weak odour associated with the STW could be detected. This is the furthest that ANY odour associated with STW could be detected.” We believe it is no surprise that odours could be detected on the south and western side of the works as this is where all the sludge treatment and storage activities now take place.

Further to this when we look at the complaints data we can see that since 2016 there have been no odour complaints reported on the north side of the works. In 2018 there are 6 reported complaints, and all of these are from residents on the south side of the works. This seems to indicate that odour from the works is far stronger on the southern side and would suggest a requirement for a Cordon Sanitaire that is smaller on the northern side of the works but larger on the southern side.

Phlorum state in paragraph 4.4 that “2012 and 2018 were the worst years for odour complaints made against the STW”.

However, in 2012 only 2 of the 10 complaints came from the north (Hempsted) area all the others were from the southern side of the works.

As stated above in 2018 there were no complaints documented from the northern side of the works all 6 were from the south side. We believe this is all strong evidence to suggest that the recommended Cordon Sanitaire is not reflective of the current situation of the works.

We are also concerned that although the Phlorum report refers to the Institute of air Quality management (IAQM) guidance on the assessment of odour for planning dated 2014 it does not appear to be referring to the latest version of the IAQM report dated 2018 which gives useful guidance on the “weight of evidence approach” that should be used when using several assessment tools.

The Phlorum conclusions appear to be based solely on the use of the odour modelling data which as we have stated above makes use of an out of date set of data from 2008. The latest IAQM guidance advocates the use of several odour assessment tools and a 'weight of evidence'

approach. So, where there is an existing odour source, empirical observations will normally be possible of what is happening on the ground. The IAQM report states that “Considerable weight” should normally be given to the observational findings of community-based tools and sensory assessments (such as sniff tests). These may be supported by the findings of any dispersion modelling if these add tangible value to the study.’ It seems that the Phlorum report does not attach considerable weight to the sniff tests but appears to ignore them.

We believe that there is an obvious mismatch in the Phlorum report between the recommendation to retain a similar size and shape of Cordon Sanitaire as previously in place when the sniff tests together with the complaint history clearly indicate a higher incidence of odour being identified on the south side of the works. All of the 2018 complaints are on the south side of the works and there are 5 complaints that fall outside of the modelled 1.5 Odour unit contour on the south side of the works. This is all clear evidence that the model outputs are not representative of the prevailing situation at the works and that the Phlorum report is not using the latest guidance to make best use of their own observational findings in the conclusions reported within their report.

We feel that the current Cordon Sanitaire being recommended within the Phlorum report will needlessly prevent development of certain areas to the north of the works where nuisance is less likely but will allow development of other areas to the south where nuisance is already being suffered by existing residents and if further development is allowed to proceed will provide unacceptable air quality and amenity for future residents.

This further underlines the requirement for a new data set to be produced that would then take account of the current operation and processes employed at the works.

## **Conclusion**

1. It is very unlikely that the fields adjacent to Netheridge are used for 'sludge disposal'. As we have explained the biosolids are recycled under strict regulations and in any case is of anaerobically digested, dewatered sludge cake - not 'sludge' which implies liquid. The dewatered sludge cake after anaerobic digestion has relatively little odour.

2. The Phlorum report is a poor summary of the odour position at Netheridge. Primarily it re-uses data from the 2008 Odournet report. This report is certainly out of date as significant plant modifications have occurred since that date including new reception facilities for imported sludges with odour treatment provision. In addition, the model inputs e.g. emission rates have been selected to reflect the 'worst-case' (see para 3.27) situation.

As a general point, these odour surveys tend to be carried out by air quality experts who have no knowledge of sewage treatment and therefore pick published odour emission rates on the basis of 'worst case' rather than on what is most appropriate from a sewage treatment point of view. With a wide range of published data for odour emission rates this can lead to a gross over-estimate of the odour footprint.

3. The Phlorum report cites the IAQM report 'Guidance on the assessment of odour for planning', 2014. It is odd that they haven't used the latest IAQM report, Bull et al., 'IAQM Guidance on the assessment of odour for planning', Institute of Air Quality Management, London, 2018.

In this report at Section 6 (Drawing Conclusions from Assessment Results) it advocates the use of several odour assessment tools and a 'weight of evidence' approach. So, where there is an existing odour source, empirical observations will normally be possible of what is happening on the ground. The IAQM report states that “Considerable weight should normally be given to the observational findings of community-based tools and sensory assessments (such as sniff tests). These may be supported by the findings of any dispersion modelling if they add tangible value to the study.” It seems that the Phlorum report does not attach considerable weight to the sniff tests but appears to ignore them.

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6<sup>th</sup> December 2019