

SMALLFORD WORKS

PINS Ref: APP/B/1930/W/20/3260479

Appeal under section 78 of the Town and Country Planning Act 1990

WRITTEN STATEMENT ON PUBLIC WATER SUPPLY MATTERS

on behalf of the Appellant, Stackbourne Ltd

February 2021

Introduction

1. This written statement has been prepared by Dr Rob Murdock of RMA Environmental Limited to address comments made by Affinity Water on the potential impacts of the proposed development on public water supply. Affinity Water are a water-only supply company supplying drinking water to parts of south-east England including the Colne catchment within which the appeal site is located.
2. RMA Environmental Ltd is an environmental consultancy specialising in environmental planning, hydrology and water quality. Rob Murdock is a Director of RMA Environmental and a Hydrologist with a BSc (Hons) in Environmental Science (Hydrology) and a PhD in Aquatic Environmental Chemistry. Rob has more than 25 years of experience in water quality monitoring and assessment.

Background

3. An objection to the outline planning application was made by Affinity Water in their letter dated 31st January 2020 (refer to Appendix A) alleging that the proposed development would adversely impact their public water supplies at Roestock and Tyttenhanger.
4. The appeal site is located within the groundwater Source Protection Zones (SPZs) which surround the two public water supplies at Roestock and Tyttenhanger. The appeal site postcode area is shown in light blue on the plan included as Appendix B; the green shading shows the location of Zone II (the outer protection zone) of the SPZ and the blue shading shows the location of Zone III (the total catchment) of the SPZ. The Roestock and Tyttenhanger drinking water boreholes are located within the red shaded areas which lie to the south-west and south of the appeal site, respectively.
5. Groundwater SPZs are designated by the Environment Agency to protect groundwater sources used to supply drinking water from pollution. Sources of drinking water include wells, boreholes and springs. SPZs show the level of risk to the source from contamination.
6. Affinity Water have, alongside the Environment Agency, been investigating ongoing contamination issues at both the Tyttenhanger and Roestock drinking water boreholes for the past 10 years. They have evidence which indicates that the source of this contamination is the Smallford landfill site which is adjacent to the appeal site.
7. This Written Statement responds specifically to the five comments made in Affinity Water's letter of 31st January 2020, which can be summarised as follows:

1. *General:* The construction works and operation of the proposed development site should be done in accordance with the relevant British Standards and Best Management Practices, thereby significantly reducing the groundwater pollution risk.
 2. *Ground investigation:* Any works involving excavations below the chalk groundwater table should be avoided. If these are necessary, a ground investigation should first be carried out to identify appropriate techniques to avoid displacing any shallow groundwater to a greater depth.
 3. *Turbidity:* Deep excavations are also likely to generate turbidity in the chalk aquifer which could travel to the public water supply.
 4. *Contaminated land:* Construction works may exacerbate any known or previously unidentified pollution. If any pollution is found at the site, then works should cease and appropriate monitoring and remediation methods will need to be undertaken to avoid impacting the chalk aquifer.
 5. *Infiltration:* Surface water should not be disposed of via direct infiltration into the ground via a soakaway. This is due to the known presence of contaminated land and the risk for contaminants to remobilise and cause groundwater contamination.
8. A Phase 1 Geo-environmental Assessment was carried out by EAME in July 2019 and their report formed part of the outline planning application. EAME is a multi-disciplinary environmental consultancy with expertise in the assessment of contaminated land. Their Phase 1 Geo-environmental Assessment found the following:
- *"The assessment has identified that the site remained in agricultural use until the mid-1930s when it was developed as a brick works. There is evidence the site operated as a brick works until the late 1950s subsequent to which pre-cast concrete products were produced and stored at the site. The site was developed into its current form (multiple light industrial users) in the 1980s.*
 - *To the north, south and west is an extensive landfilled area (Smallford Pit). The landfill was operated by Hertfordshire County Council between the 1950s and 1970s. Although all consulted sources describe the waste as 'Inert', it is reported to have included household and commercial waste which is likely to have contained putrescible material.*
 - *Although extensive site investigations have been undertaken (in relation to the landfill) there are still significant information gaps regarding the Smallford Works i.e. there is a high risk that landfill gas migration is occurring across the site boundary and beneath Smallford Works. The*

risks to the site and any future redevelopment have yet to be adequately assessed”.

9. The Phase 1 Geo-environmental Assessment report made the following recommendations:

- *“a drainage survey is undertaken to review the layout and condition of the drainage systems in-light of on-site observations e.g. direct hydrocarbon run-off into the site drainage system in Unit 2A with localised other areas of hydrocarbon staining of hardstanding and unsurfaced ground; and*
- *a targeted site-wide investigation will be required to risk assess the current on-site conditions. The previous assessment was undertaken 21 years ago and was limited in scope. In order to quantify the risks associated with landfill gas migration, an array of monitoring boreholes will be required across the site. A detailed gas monitoring programme would be required to assess potential risks to the proposed development and the level of gas protection measures needed to be incorporated into the proposed design”.*

Analysis

10. The following subsection responds to the comments made by Affinity Water in their letter dated 31st January 2020.
11. The targeted site-wide investigation recommended in the Phase 1 Geo-environmental Assessment would characterise any soil and/or groundwater contamination on the site to inform a Remediation Strategy that would be implemented during the construction phase. Verification and long-term monitoring and maintenance plans would be produced to ensure that the Remediation Strategy would be implemented effectively and that residual risks would be within the expected range.
12. The results of the site-wide investigation would be used to inform a Construction Environmental Management Plan (CEMP), which would set out specific mitigation measures to minimise the risk of soil or groundwater pollution during construction. This would meet the requirements of Comment 1 in Affinity Water’s letter.
13. Furthermore, the site-wide investigation and associated Remediation Strategy would set out plans for the management of any contamination found on the site to ensure that any residual risks to soils, groundwater and future occupants were acceptable. This would allow any risk of impacts on groundwater quality in the chalk to be minimised (Comment 2) including turbidity (Comment 3).

14. The CEMP would include standard controls which would be implemented in the event that unidentified contamination were identified during construction. In such circumstances, construction works would cease until appropriate contamination assessment and remedial works were completed to ensure that groundwater quality is protected; this meets the requirements of Comment 4.
15. Due to the underlying ground conditions, the preferred surface water drainage strategy is attenuation-based with discharge to the ditch which forms the eastern boundary of the site. Therefore, soakaways and other infiltration devices will not be used to manage drainage. As a result of this and the implementation of the Remediation Strategy, the risk of remobilisation of any soil or groundwater contamination through disposal of surface water runoff would be minimised; this meets the requirements of Comment 5.
16. With further regard to drainage, one of the key principles of the non-statutory technical standards for sustainable drainage is appropriate treatment of runoff quality prior to discharge. The drainage strategy for the proposed development therefore includes the appropriate number of treatment stages for surface water runoff which would give rise to a significant improvement in the water quality of drainage from the site compared to the existing situation.
17. The site-wide investigation, remediation strategy and CEMP would normally be controlled by a standard planning condition. This planning condition would ensure that any risks to groundwater would be eliminated or reduced to an acceptable level and therefore that the five requirements raised by Affinity Water would be met.

Conclusions

18. Redevelopment of the appeal site for residential use would reduce the risk of pollution of the drinking water supply boreholes at Roestock and Tyttenhanger compared to the current site uses. This is because the site-wide contamination investigation would identify any contamination present on the appeal site and this would inform a Remediation Strategy and Construction Environmental Management Plan which would be implemented during the construction phase of the development. Furthermore, the sustainable drainage strategy would include the required water quality treatment stages for all surface water runoff and would exclude the use of any infiltration-based techniques (i.e. soakaways).
19. It is my opinion that the above response fully addresses the five points in Affinity Water's letter of 31st January 2020.

APPENDIX A – LETTER FROM AFFINITY WATER 31 JANUARY 2020

APPENDIX B – GROUNDWATER SOURCE PROTECTION ZONE PLAN

Planning & Building Control
St Albans City & District Council
St Peter's Street
St Albans
AL1 3JE

Reference Number: 5/2019/3022

31st January 2020

Dear Madam/Sir

DESCRIPTION: Outline application (all matters reserved) - Redevelopment of the site including demolition of existing buildings to provide up to 100 residential units

LOCATION: Smallford Works, Smallford Lane, Smallford, St Albans, Hertfordshire AL4 0SA

Thank you for notification of the above planning application. Planning applications are referred to us where a risk assessment of a proposed development may impact on the quality and/or quantity of water for public water supply.

Affinity Water Limited ("Affinity Water") is the UK's largest water-only company, supplying a population of more than 3.6 million people with more than 900 million litres of the highest quality water every day of the year. Our supply area covers parts of Bedfordshire, Berkshire, Buckinghamshire, Essex, Hertfordshire, Surrey, the London Boroughs of Harrow and Hillingdon and parts of the London Boroughs of Barnet, Brent, Ealing and Enfield. We also supply water to the Tendring peninsula in Essex and the Folkestone and Dover areas of Kent.

We have a statutory duty to supply wholesome drinking water and are under legal obligations to ensure that the water is of a certain quality. As a result of this, any risk of contamination to a borehole will mean that we must stop using it until the risk has been eliminated and we must find an alternative source of supply in the meantime. Any potential contamination risk to the water supply as a result of development is therefore a significant concern for us.

You should be aware that the proposed development site is located within an Environment Agency defined groundwater Source Protection Zone 2 (SPZ2) corresponding to our Roestock Pumping Station and adjacent to the SPZ2 corresponding to our Tyttenhanger Pumping Station. These are public water supply sources, comprising a number of Chalk abstraction boreholes, operated by Affinity Water Ltd.

We are writing to **object** to this Application because we are concerned, for the reasons set out below, that it has the potential to impact adversely the public water supply which have not been fully accounted for in the investigations to date. We have been investigating ongoing contamination issues at both Tyttenhanger and Roestock pumping stations for past 10 years alongside the Environment Agency and have evidence to support that the contamination source is the Smallford landfill site adjacent to this proposed development. This area is situated over a shallow gravel aquifer and a deeper chalk aquifer, with boulder clay in between

of variable thickness. The water table in the shallow gravel aquifer is also high in this area so any existing, or new contaminants could be mobilised posing a risk to our abstractions.

If you are minded to approve the Application, it is essential that appropriate conditions are imposed to protect the public water supply, which would need to address the following points:

1. General: The construction works and operation of the proposed development site should be done in accordance with the relevant British Standards and Best Management Practices, thereby significantly reducing the groundwater pollution risk.
2. Ground investigation: Any works involving excavations below the chalk groundwater table (for example, piling or the implementation of a geothermal open/closed loop system) should be avoided. If these are necessary, a ground investigation should first be carried out to identify appropriate techniques and to avoid displacing any shallow contamination to a greater depth, below the top of the boulder clay which could impact the chalk aquifer.
3. Turbidity: Deep excavations are also likely to generate turbidity in the chalk aquifer, which could travel to the public water abstraction point and cause disruption to the service. Mitigation measures should be secured by way of condition to minimise this risk. We would also want to receive at least 15 days prior notification from the developer in advance of any such works, in order to intensify our monitoring and plan potential interruption of the service. We would be willing to discuss this with the applicant to ensure that appropriate measures can be put in place.
4. Contaminated land: Construction works may exacerbate any known or previously unidentified pollution. If any pollution is found at the site, then works should cease and appropriate monitoring and remediation methods will need to be undertaken to avoid impacting the chalk aquifer. The construction of the proposed development also has the potential to further mobilise existing contaminants leaching from the Smallford landfill site into shallow gravel and/or deep chalk groundwater and we would request further investigation and extensive monitoring during the construction phase to ensure the public water supply is not adversely impacted.
5. Infiltration: Surface water should not be disposed of via direct infiltration into the ground via a soakaway. This is due to the known presence of contaminated land and the risk for contaminants to remobilise and cause groundwater pollution.

There are potentially water mains running through or near to part of proposed development site. If the development goes ahead as proposed, the developer will need to get in contact with our Developer Services Team to discuss asset protection or diversionary measures. This can be done through the My Developments Portal (<https://affinitywater.custhelp.com/>) or aw_developerservices@custhelp.com.

In this location, Affinity Water will supply drinking water to the development. To apply for a new or upgraded connection, please contact our Developer Services Team by going through their My Developments Portal (<https://affinitywater.custhelp.com/>) or aw_developerservices@custhelp.com. The Team also handle C3 and C4 requests to cost potential water mains diversions. If a water mains plan is required, this can also be obtained by emailing maps@affinitywater.co.uk. Please note that charges may apply.



Being within a water stressed area, we would encourage the developer to consider the wider water environment by incorporating water efficient features such as rainwater harvesting, rainwater storage tanks, water butts and green roofs (as appropriate) within each dwelling/building.

For further information we refer you to CIRIA Publication C532 "Control of water pollution from construction - guidance for consultants and contractors".

Thank you for your consideration.

Yours sincerely

Laurence Chalk
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