



Planning Statement

Millfields Farm, Rusper

November 2025

Stonebond.

1. Introduction

- 1.1 This Planning Statement has been prepared by Stonebond Properties (Guildford) Limited ("the Applicant") in support of an application under s.73 of the Town and Country Planning Act to vary / remove condition 18 at Millfields Farm, Horsham Road, Rusper, RH12 4PR ("the Site") to Horsham District Council ("the LPA").
- 1.2 Stonebond is a partnerships-focussed housebuilder, delivering high quality, mixed-tenure developments. Being a partnerships business, Stonebond works closely with affordable housing providers.
- 1.3 The proposed description is as follows:

"Variation / Removal of condition 18 (water neutrality) following Natural England's Withdrawal Statement dated 31 October 2025 confirming that its Water Neutrality Position Statement of September 2021 has been withdrawn."

- 1.4 Full planning permission was granted on 7 May 2025 for "Demolition of existing structures and erection of 43no. dwellings (Use Class C3), creation of a new access and provision of public open space, alongside associated landscaping and other works."
- 1.5 Development commenced in October 2025. Enabling works and infrastructure are now underway.
- 1.6 The site is now owned by Aster Communities and all 43 dwellings are being provided as affordable housing, including affordable rented and shared ownership dwellings (see application ref: S106/25/0012).

2. Background

- 2.1 Following the issue of Natural England's (NE's) Position Statement on Water Neutrality within the Sussex North Water Supply Zone (SNWSZ), Horsham District Council (HDC) required all new planning applications to demonstrate water neutrality and/or that they did not result in a significant effect. NE's Position Statement can be found within Appendix A.
- 2.2 The existing farm had an average water usage of 5,365.46 litres per day, as set out in the Water Neutrality Statement (Motion, ref: 1sbrus/2310060, June 2024) provided at Appendix B.
- 2.3 The strategy for the proposed development at Millfields Farm was to incorporate water efficient fixtures and fittings and rainwater harvesting systems to the proposed dwellings to minimise the mains water demand of the proposed development.
- 2.4 Following the incorporation of the measures above and as identified within the Water Neutrality Statement, the remaining surplus in water demand was due to be offset against two existing dwellings adjacent to the development - Millfield Farm Cottage and the Coach House ("the Offsetting Site").
- 2.5 This strategy meant the proposal was water neutral therefore satisfying Natural England's requirements.
- 2.6 The decision notice for the application (ref: DC/24/0699) includes a pre-occupation condition (condition 18) as follows:

The development hereby permitted shall be undertaken in full accordance with the approved Water Neutrality Statement (Motion, ref: 1sbrus/2310060, June 2024). No dwelling hereby permitted shall be first occupied until evidence has been submitted to and been approved in writing by the Local Planning Authority that the approved

water neutrality strategy for that dwelling has been implemented in full, and with regard to measures specified at section 5 of the Water Neutrality Statement. Evidence shall include the specification of fittings and appliances used, evidence of their installation, evidence they meet the required water consumption flow rates, as detailed within the Water Neutrality Statement, and evidence of the installation and connection of the rainwater harvesting system and appropriate storage tanks to provide a minimum 35 days storage capacity. The installed measures shall be retained and operated as such at all times thereafter.

Reason: To ensure the development is water neutral to avoid an adverse impact on the Arun Valley SACSPA and Ramsar sites in accordance with Policy 31 of the Horsham District Planning Framework (2015), Paragraph 186 of the National Planning Policy Framework (2023), its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), and s40 of the NERC Act 2006 (Priority habitats & species).

- 2.7 On 31 October 2025, Natural England issued a Withdrawal Statement confirming that its Water Neutrality Position Statement of September 2021 has been withdrawn. The Withdrawal Statement can be found within Appendix C. This follows agreement between Natural England, Southern Water and the Environment Agency that a reduction in the licence cap on water abstraction will ensure with sufficient certainty that development will not adversely impact the protected Arun Valley habitats.
- 2.8 Natural England has advised that local authorities are not required to consider offsetting measures when determining planning applications. This means that no water neutrality statement is required and no bespoke conditions or s106 obligations are needed to demonstrate water neutrality.
- 2.9 Given the southeast remains at significant water stress, Horsham District Council has advised all applications for new housing will be required to comply with the Building Regulations Part G Optional Technical Standard (currently 110 l/p/d) as required by Policy 37 of the Horsham District Planning Framework.

3. Proposal

Rainwater Harvesting

- 3.1 All rainwater harvesting systems require regular maintenance to keep them working at optimum efficiency and capacity. Removal of the rainwater harvesting systems would reduce ongoing operation and management costs to affordable housing tenants and occupiers. This is particularly relevant to the Site as all units are now being delivered as affordable housing as set out above.
- 3.2 It is therefore proposed to remove the rainwater harvesting systems, which were due to be utilised for flushing toilets and washing machines. The system was due to save 27.99 l/p/d.

Existing Dwellings

- 3.3 To offset the remaining water consumption, it was proposed to incorporate water efficient fixtures and fittings into the two existing dwellings within the blue line (see Location Plan enclosed).
- 3.4 Meter readings for both properties showed that the water usage for both properties is 730.11 litres per day, which equates to around 121.69 litres per person per day with a total population of six.

- 3.5 Given the usage from these dwellings currently meets Building Regulations and the complexities around retrofitting existing stock, it is proposed that these dwellings remain as they are.

New dwellings

- 3.6 It is proposed to continue to install efficient fixtures and fittings within all new dwellings up to a maximum consumption of 110 l/p/d.

4. Conclusion

- 4.1 This application seeks to either remove or vary condition 18 of DC/24/0699 as the development is no longer required to demonstrate water neutrality. Should the condition be varied, this should require the development to achieve 110 litres per person per day, as per the Building Regulations Part G Optional Technical Standard.
- 4.2 The s106 Agreement should also be varied to reflect this position. This would involve:
- Removal of Schedule 1 which provides the Water Neutrality Statement;
 - Removal of Schedule 2 which sets out the Owner's covenants to the District Council in relation to the Application Site and water neutrality;
 - Removal of Schedule 3 which sets out the Owner's covenants to the District Council in relation to the Offsetting Site and water neutrality;
 - Replacement of Appendix 1 containing the Application Site / Offsetting Site Plan with a plan containing solely the Application Site.
- 4.3 The existing farm and its associated water use will be removed; therefore, the redevelopment will reduce the existing sites water use by 5,365.46 litres per day in mains water consumption within the SNWSZ. The stated reduction can be offset against the future water demand of the proposed development.
- 4.4 Using the Building Regulations water consumption figure of 110 litres per person per day and population size of 95.88 it is estimated that the total water demand per day for the development would be 10,546.8 litres per day.
- 4.5 Therefore, after redevelopment of the site, there would be an increased mains water demand of 5,181.34 litres per day.
- 4.6 The revised strategy still acknowledges the water stress faced in the southeast and is compliant with Policy 37 of the Horsham District Planning Framework.

Appendix A: Natural England Position Statement



Natural England's Position Statement for Applications within the Sussex North Water Supply Zone

September 2021 – Interim Approach

Please take the following as Natural England's substantive advice for all applications which fall within Sussex North's Water Supply Zone.

Sussex North Water Supply Zone

Arun Valley SPA, SAC and Ramsar Site- Sussex North Water Supply Zone

The Sussex North Water Supply Zone includes supplies from a groundwater abstraction which cannot, with certainty, conclude no adverse effect on the integrity of;

- Arun Valley Special Area Conservation (SAC)
- Arun Valley Special Protection Area (SPA)
- Arun Valley Ramsar Site.

As it cannot be concluded that the existing abstraction within Sussex North Water Supply Zone is not having an impact on the Arun Valley site, we advise that developments within this zone must not add to this impact. This is required by recent caselaw, [Case C-323/17 People over wind and Sweetman. Ruling of CJEU](#) (often referred to as sweetman II) and Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu Case C-293/17 (often referred to as the Dutch Nitrogen cases).

Between them these cases require Plans and Projects affecting sites where an existing adverse effect is known (i.e. the site is failing its conservation objectives), to demonstrate certainty that they will not contribute further to the existing adverse effect or go through to the latter stages of the Regulations (no alternatives IROPI etc).

Developments within Sussex North must therefore must not add to this impact and one way of achieving this is to demonstrate water neutrality.

In addition, the Gatwick Sub regional Water Cycle Study concluded that water neutrality is required for Sussex North to enable sufficient water to be available to the region.

The definition of water neutrality is the use of water in the supply area before the development is the same or lower after the development is in place.

Strategic approach

Natural England has advised that this matter should be resolved in partnership through Local Plans across the affected authorities, where policy and assessment can be agreed and secured to ensure water use is offset for all new developments within Sussex North. To achieve this Natural England is working in partnership with all the relevant authorities to secure water neutrality collectively through a water neutrality strategy.

Whilst the strategy is evolving, Natural England advises that decisions on planning applications should await its completion. However, if there are applications which a planning authority deems critical to proceed in the absence of the strategy, then Natural England advises that any application needs to demonstrate water neutrality. We have provided the following agreed interim approach for demonstrating water neutrality;

Minimising water use of new builds.

- Complete a water budget (based on occupancy)
- All new builds to demonstrate that they can achieve strict water targets (e.g., 85L/pp/day*)

This can be achieved by measures such as:

- Grey water recycling (advantage of being reliable in hot dry weather);
- Rainwater harvesting;
- Water efficient fixings (such as shower aerators) to demonstrably reduce demand-this would need to be suitably certain.

In addition, water offsetting is required

- One way to achieve this is retrofitting of council owned properties/commercial buildings-located within Sussex North. Examples include:
 - Grey water recycling- (for example there are clear opportunities for commercial properties).
 - Rainwater harvesting of commercial settings;
 - Installation of water reduction fittings in Council-owned buildings.

These measures need to be implemented until such time as a more sustainable water supply has been secured.

It will also need to be ensured that measures are not already proposed (for example in Southern Water's Management Plan) to avoid double-counting.

Any mitigation must be suitably certain in order to comply with the Habitats Regulations and Caselaw.

If the application cannot demonstrate, through an appropriate assessment, the required water neutrality, we advise that it is either revised to achieve this in line with the above or awaits completion of the strategic approach.

The securing of water neutrality is a matter which needs to be resolved at a strategic level and Natural England is working with the relevant authorities and the water company to achieve this. In light of this, Natural England will not be engaging with individual planning applications whilst the strategy is evolving.

***This this is the reasonably achievable figure with the above measures based on the early data from the strategic solution and may be subject to change as the strategic solution evolves.**

Appendix B: Water Neutrality Statement

Technical Note 1: Water Neutrality Statement

Site: Millfields Farm, Rusper
Prepared by: Laura Jagiela
Approved by: Neil Jaques
Date: 7th June 2024

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1.0 Introduction

- 1.1 This Water Neutrality Statement (WNS) has been prepared on behalf of Stonebond Properties (Guildford) Limited to demonstrate how the proposed development at Millfields Farm, Rusper will achieve water neutrality.
- 1.2 Following the issue of Natural England's (NE's) Position Statement on Water Neutrality within the Sussex North Water Supply Zone (SNWSZ), Horsham District Council (HDC) require all new planning applications to demonstrate that the development is water neutral and/or that they do not result in a significant effect. NE's Position Statement can be found in full within **Appendix A**.
- 1.3 The SNWSZ covers part of the Horsham District, as well as parts of the neighbouring Chichester, Arun and Crawley Districts. A plan showing the SNWSZ area, and the location of the farm can be found in **Appendix B**.
- 1.4 This statement sets out the following:
 - ▶ Baseline calculations for the existing development;
 - ▶ Additional demand as a result of the proposed development;
 - ▶ Water reduction measures, such as water efficient fixtures and fittings and rainwater harvesting; and
 - ▶ Measures to offset any remaining deficit following the above.

2.0 Background

- 2.1 The proposed development is located at Millfields Farm in Rusper.
- 2.2 The existing site consists of multiple agricultural buildings and barns along with open fields.
- 2.3 The proposal is for the demolition of the existing structures and erection of 43 dwellings (Use Class C3), creation of a new access and provision of public open space, alongside associated landscaping and other works. The dwellings will consist of four one-bedroom homes, 15 two-bedroom homes, 16 three-bedroom homes and eight four-bedroom homes. A copy of the proposed site layout can be seen in **Appendix C**.
- 2.4 Stonebond gained an interest in the site in August 2023. Stonebond were provided with water bills by the vendor at this time and further correspondence in August 2023 (see email chain at **Appendix D**). The serial number for the meter reading on the bills did not correspond with that in the photo sent by email, contained at **Appendix D**.
- 2.5 The water bills received from the vendor (**Appendix E**) corresponded to the meter reference number 9134641. Following the email in August 2023, and through further due diligence on site, it was discovered that the meter reference number 9134641 served the existing dwellings (Millfields Farm Cottage and the Coach House, within the blue line boundary) and the meter reference number 02M224449 served the farm buildings (within the red line boundary), for which there were no bills.
- 2.6 Given no data was available for meter number 02M224449, Stonebond explored potential offsetting options which are set out within this report whilst data was collected by the vendor for the meter. The vendor provided Stonebond with photographic evidence of the usage of this meter from August 2023 to April 2024 prior to submission (**Appendix F**).

- 2.7 The site is currently an active farm. It has been used as a dog training centre and also supports private equine livery. An area of the farm is also used for vehicle maintenance for vehicles associated with the farm.

3.0 Baseline Usage

- 3.1 The existing site consists of multiple agricultural buildings and barns along with open fields, and therefore has an existing water usage. This will be taken as the baseline water usage through the water neutrality calculations.
- 3.2 Adjacent to the site are two dwellings under the applicant's control which are available to contribute to the offsetting, if required, as set out in section 6. Water bills have been provided by the existing landowner for those dwellings.
- 3.3 Meter readings are available for the existing development (Meter No. 02M224449) and can be found in **Appendix F**. The meter readings show that the average water usage of the existing farm is 5,365.46 litres per day, see **Appendix G**.
- 3.4 The existing farm and its associated water use will be removed; therefore the redevelopment will reduce the existing sites water use by 5,365.46 litres per day in mains water consumption within the SNWSZ. The stated reduction can be offset against the future water demand of the proposed development.

4.0 Additional Demand

- 4.1 The proposal for the site is for 43 homes, consisting of four one-bedroom homes, 15 two-bedroom homes, 16 three-bedroom homes and eight four-bedroom homes.
- 4.2 The occupancy levels for the development have been drawn from 2011 local census data (as recommended by HDC in their water neutrality methodology guidance) and this is summarised in Table 4.1 below.

One-bedroom	Two-bedroom	Three-bedroom	Four-bedroom
1.32	1.88	2.47	2.86

Table 4.1 – Average district occupancy levels per dwelling size

- 4.3 Using the above census data and the stated housing mix, the population of the proposed development is estimated to be 95.88 persons.
- 4.4 Building Regulations Part G sets out that '*Reasonable provision must be made by the installation of fittings and fixed appliances that use water efficiently for the prevention of undue consumption of water*'. Part G of the current Building Regulations recommends that all developments achieve a 'water efficient' consumption of 125 litres per person per day. However, where necessary, there is an optional requirement that water efficiency should not exceed 110 litres per person per day.
- 4.5 Using the Building Regulations water consumption figure of 110 litres per person per day and population size of 95.88 it is estimated that the total water demand per day for the proposed development would be 10,546.8 litres per day.
- 4.6 Therefore, after redevelopment of the site, there would be an increased mains water demand of 5,181.34 litres per day.

5.0 Water Reduction Measures

- 5.1 The HDC Local Plan Regulation 19 lists the emerging plans and policies concerning new developments. Within this it states that sites within the SNWSZ should adopt a water efficiency target of 85 litres of mains supplied water per person per day.
- 5.2 Therefore, to further minimise the demand on the mains water, it is proposed that the new dwellings will achieve a water efficiency of less than 85 litres per person per day of water, which will be in accordance with

the emerging policies contained within the HDC Local Plan Regulation 19. This will be achieved through the use of water efficient fixtures and fittings.

- 5.3 A water calculation in accordance with Buildings Regulations Part G has been carried out and confirms that the proposed development will achieve a water consumption of 84.45 litres per person per day, which includes an allowance of five litres per person per day for external water usage. A copy of the Part G calculation can be found in **Appendix H** and is summarised in Table 5.1, below:

	Capacity/ Flow Rate	Units	Total Water Usage (l/p/day)
WC (full flush)	4	litres	5.84
WC (part flush)	2	litres	5.92
Taps (Excluding Kitchen)	2.7	litres/second	5.85
Bath	130	litres	14.30
Shower	6	litres/second	26.22
Kitchen Taps	4	litres/second	12.12
Washing Machine	6.43	litres/kg	13.50
Dishwasher	0.99	litres/place setting	3.56
Total			87.31
Normalisation Factor			0.91
Total			79.45
External Water Use			5
Total			84.45

Table 5.1 – Proposed Water Usage

- 5.4 Using the Part G water consumption figure of 84.45 litres per person per day and a population size of 95.88 it is estimated that the water usage per day for the proposed development can be reduced to 8,097.53 litres per day.
- 5.5 Therefore, following the construction of the proposed development the additional water demand will be reduced to 2,732.07 litres per day.

Rainwater Harvesting Systems

- 5.6 To help mitigate the increase in water demand it is proposed to incorporate rainwater harvesting into the proposed development.
- 5.7 The water collected by the rainwater harvesting system will be utilised for flushing toilets and the washing machine, while all other uses will be mains water fed.
- 5.8 The table on the next page sets out the water uses, as detailed in the Part G calculation and shows the split between the mains water usage and water supplied by the rainwater harvesting system:

	Total Water Usage (l/p/day)	Mains Water Usage (l/p/day)	RWH System Usage (l/p/day)
WC (full flush)	5.84		5.84
WC (part flush)	5.92		5.92
Taps (Excluding Kitchen)	5.85	5.85	
Shower	26.22	26.22	
Bath	14.30	14.30	
Kitchen Taps	12.12	12.12	
Washing Machine	13.50		13.50
Dishwasher	3.56	3.56	
Total	87.31	62.99	25.26
Normalisation Factor	0.91	0.91	0.91
Total	79.45	57.32	22.99
External Water Use	5		5
Total	84.45	56.47	27.99

Table 5.2: Water Usage

- 5.9 The above table confirms that 27.99 litres per person per day will be supplied by rainwater harvesting systems, which equates to 2,683.62 litres per day, based on a population of 95.88.
- 5.10 The rainwater harvesting tank for the proposed dwelling has been sized using the calculation set out in BS EN 16941-1:2018 and will be large enough to store 9.6% of the Annual Water Demand. This will ensure that the tanks will provide at least 35 days of storage for periods of drought, as required by HDC.
- 5.11 The proposed buildings will have a clay tile roof and therefore a yield coefficient of 0.8 has been used in the calculations.
- 5.12 The calculations confirm that the yield is sufficient to meet the demand. Calculations use the annual rainfall data from the nearest MET Office climate station to the proposed site, which is Charlwood. The calculation is summarised in Table 5.3 below and can be found in full in [Appendix I](#).

Unit	Number of persons	Roof Area	9.6% Annual Rainwater Yield (litres)	9.6% Annual Water Demand (litres)	Tank Size (litres)
A1.2	1.32	37.00	2,132.11	1,294.62	1,800
P2.2	1.88	47.00	2,708.36	1,843.85	2,600
P3.1	2.47	57.53	3,315.15	2,422.50	2,600
P3.12	2.47	55.50	3,198.17	2,422.50	2,600
P4.1.2	2.86	52.41	3,020.11	2,805.00	3,400
P4.13	2.86	75.47	4,348.93	2,805.00	3,400

Table 5.3 – Rainwater Harvesting Sizing Calculation

- 5.13 A typical layout and specification for a rainwater harvesting system is shown in [Appendix J](#). The illustration shows how the rainwater will be collected, filtered and then returned to the property for re-use.
- 5.14 The rainwater harvesting systems will be managed and maintained in accordance with the attached Management and Maintenance Plan, included in [Appendix K](#).
- 5.15 Following the incorporation of the rainwater harvesting system, the mains water usage for the proposed dwellings will be reduced to 5,413.91 litres per day.

- 5.16 Therefore, after redevelopment 48.45 litres per day requires offsetting for the proposed development to be considered having achieved water neutrality.

6.0 Offsetting Measures

- 6.1 To ensure the development can demonstrate water neutrality in accordance with the NE Position Statement 48.45 litres per day will need to be offset. This will be offset against two adjacent dwellings within the applicant's control (Millfields Farm Cottage and the Coach House), within the blue boundary of the site and therefore in the applicant's control.

Onsite Offsetting

- 6.2 The client is proposing to offset the water deficit by incorporating water efficient fixtures and fittings into the two existing dwellings. Millfield Farm Cottage is a five-bedroom dwelling with a current population of three and the Coach House is a two-bedroom dwelling with a current population of three. This gives a total population of six.
- 6.3 Meter readings are available for both properties, and these can be seen in [Appendix F](#). The meter readings cover the period from 19th December 2018 to 11th September 2023. The meter readings show that the water usage for both properties is 730.11 litres per day, which equates to around 121.69 litres per person per day with a total population of six. A copy of the calculations can be seen in [Appendix L](#).
- 6.4 Both properties will be remaining, and it is proposed to retrofit water efficient fixtures and fittings to them.
- 6.5 A water calculation in accordance with Building Regulation Part G has been carried out and this confirms that the water use can be reduced to 84.45 litres per person per day, which includes an allowance of 5 litres per person per day for external water usage. A copy of the Part G calculations can be found in [Appendix M](#) and is summarised in Table 6.1, below.

	Capacity/ Flow Rate	Units	Total Water Usage (l/p/day)
WC (full flush)	4	litres	5.84
WC (part flush)	2	litres	5.92
Taps (Excluding Kitchen)	2.7	litres/second	5.85
Bath	130	litres	14.30
Shower	6	litres/second	26.22
Kitchen Taps	4	litres/second	12.12
Washing Machine	6.43	litres/kg	13.50
Dishwasher	0.99	litres/place setting	3.56
Total			87.31
Normalisation Factor			0.91
Total			79.45
External Water Use			5
Total			84.45

Table 6.1 – Proposed Water Usage

- 6.6 Using the Part G water consumption figure of 84.45 litres per person per day and a total population of six, it is estimated that the total water usage will reduce to 506.73 litres per day.

- 6.7 The properties baseline water usage was 730.11 litres per day, following the incorporation of the above measures the water usage will reduce to 506.73 litres per day. This will provide 223.38 litres per day spare capacity for the proposed development.
- 6.8 Following the incorporation of water efficient fixtures and fittings to Millfield Farm Cottage and the Coach House, there will be 223.38 litres per day spare capacity for the proposed development. Since 48.45 litres per day is needed, this will make the development achieve water neutrality and provide a buffer of 174.93 litres per day.

Alternative Offsetting Measures Considered

- 6.9 Due to the lack of available data on meter number 02M224449, further due diligence was undertaken by Stonebond between August 2023 and April 2024 on alternative options to provide an offsetting solution, if required. Two options were explored including:
- ▶ Onsite boreholes; and
 - ▶ Offsetting against Registered Provider housing stock, whereby properties would be retrofitted with a Cenergist Control Flow HL2024 device.

Borehole Solution

- 6.10 Stonebond has explored the feasibility of onsite boreholes. A borehole prognosis report was commissioned and provided by Nicholls Boreholes (**Appendix N**) and concludes that:
- ▶ A borehole, drilled into the productive (water bearing) limestone and sandstone units within the Weald Clay Formation to a depth of approximately 80mbgl should be sufficient to provide a water supply of up to 30m³/d (30,000 l/d).
 - ▶ The available data suggests a rest water level might (RWL) be observed at a depth of 80 – 70mAOD or 33 – 43mbgl.
 - ▶ The water quality is expected to be suitable for a potable water supply.
- 6.11 Further correspondence with Nicholls confirmed Stonebond could proceed with an under 20m³ / 20,000 litre licence, on the basis of 124L per person, per day, at full occupancy (see correspondence at **Appendix O**). Two boreholes could be provided for a duty/standby approach to allow there to be a backup in place should a pump or other instrument in one of the boreholes fail. Therefore, this solution would be able to demonstrate water neutrality given 20,000 l/d well exceeds the 5,413.91l/d required to offset the proposed development.

Housing Stock Offsetting

- 6.12 The Cenergist Control Flow device is a pressure independent flow controller that can be set at a particular flow rate to reduce the household water consumption.
- 6.13 The trial scheme ran by Crawley Borough Council (CBC) comprised of 100 council owned residential properties, which were retrofitted with the Cenergist flow control device. Meter readings were taken at the start and end of the pilot scheme, which covered a four-month period from the 24th of May 2022 to the 22nd August 2022. The occupancy levels of each household were also recorded to enable an average per capita consumption to be calculated. A report produced by CBC and Cenergist, 'Water Off-set Retrofit Strategy Monitoring Report' found that although the district average is considered to be 135 litres per person per day, the study found that the water use for the tenants was closer to 130 litres per person per day. The report found that on average 75 litres per day were saved for every property fitted with the flow-regulator, or 30 litres per person per day. The report also recommends including a precautionary buffer of 10% and therefore the adjusted water savings per property is 67 litres per day, or per person it is 27 litres per day.
- 6.14 Therefore, for this development, at least 81 properties would be required to offset the proposed development. Stonebond has engaged with several Registered Providers to discuss this option and have identified two different providers, one of whom has 400+ units in Horsham in addition to 400+ units in Crawley, both within

the Sussex North Water Resource Zone. Therefore, this solution would be able to demonstrate water neutrality.

7.0 Summary and Conclusions

- 7.1 This Technical Note sets out the water usage strategy for the proposed development at Millfields Farm, Rusper.
- 7.2 The proposal is to incorporate water efficient fixtures and fittings and rainwater harvesting systems to the proposed dwellings to minimise the mains water demand of the proposed development.
- 7.3 Following the incorporation of the measures identified above, the increase in water demand will be offset against two existing dwellings, Millfield Farm Cottage and the Coach House, adjacent to the site.
- 7.4 This strategy will minimise the impact of the new development on the Sussex North Supply Zone. The Water Usage Strategy confirms the proposal will be water neutral once complete and therefore satisfying Natural England's requirements.
- 7.5 Although two alternative offsetting measures have also been investigated and both options would be sufficient to fully offset the proposed development, with the adoption of water efficient fixtures and fittings and rainwater harvesting systems, these are not required.

Appendix A

Natural England's Position Statement



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This can be achieved by measures such as:

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- One way to achieve this is retrofitting of council owned properties/commercial buildings-located within Sussex North. Examples include:
 - Grey water recycling- (for example there are clear opportunities for commercial properties).
 - Rainwater harvesting of commercial settings;
 - Installation of water reduction fittings in Council-owned buildings.

These measures need to be implemented until such time as a more sustainable water supply has been secured.

It will also need to be ensured that measures are not already proposed (for example in Southern Water's Management Plan) to avoid double-counting.

Any mitigation must be suitably certain in order to comply with the Habitats Regulations and Caselaw.

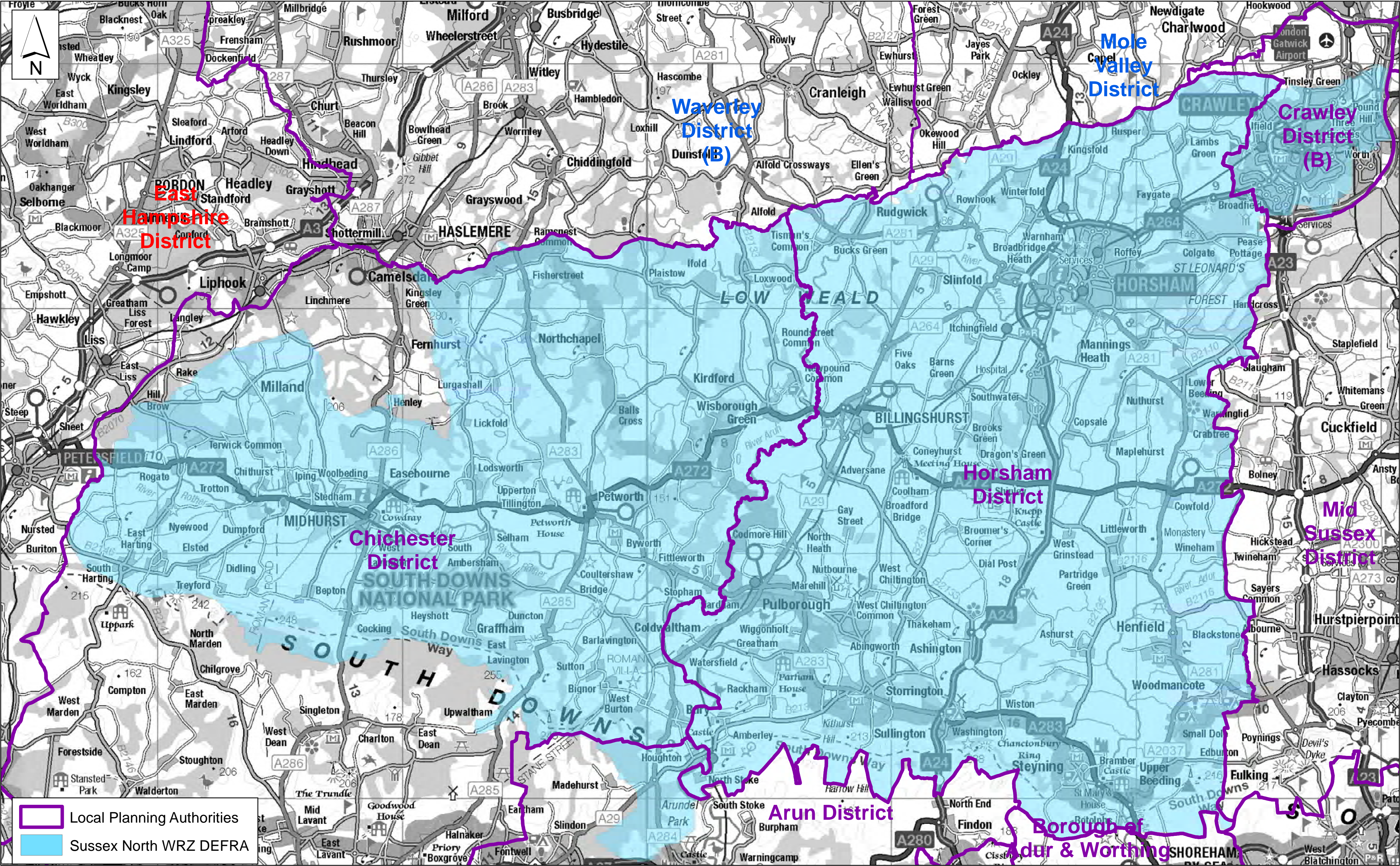
If the application cannot demonstrate, through an appropriate assessment, the required water neutrality, we advise that it is either revised to achieve this in line with the above or awaits completion of the strategic approach.

The securing of water neutrality is a matter which needs to be resolved at a strategic level and Natural England is working with the relevant authorities and the water company to achieve this. In light of this, Natural England will not be engaging with individual planning applications whilst the strategy is evolving.

***This this is the reasonably achievable figure with the above measures based on the early data from the strategic solution and may be subject to change as the strategic solution evolves.**

Appendix B

Sussex North Water Supply Zone Map



Horsham District Council

Parkside, Chart Way, Horsham
West Sussex RH12 1RL
Barbara Childs : Director of Place

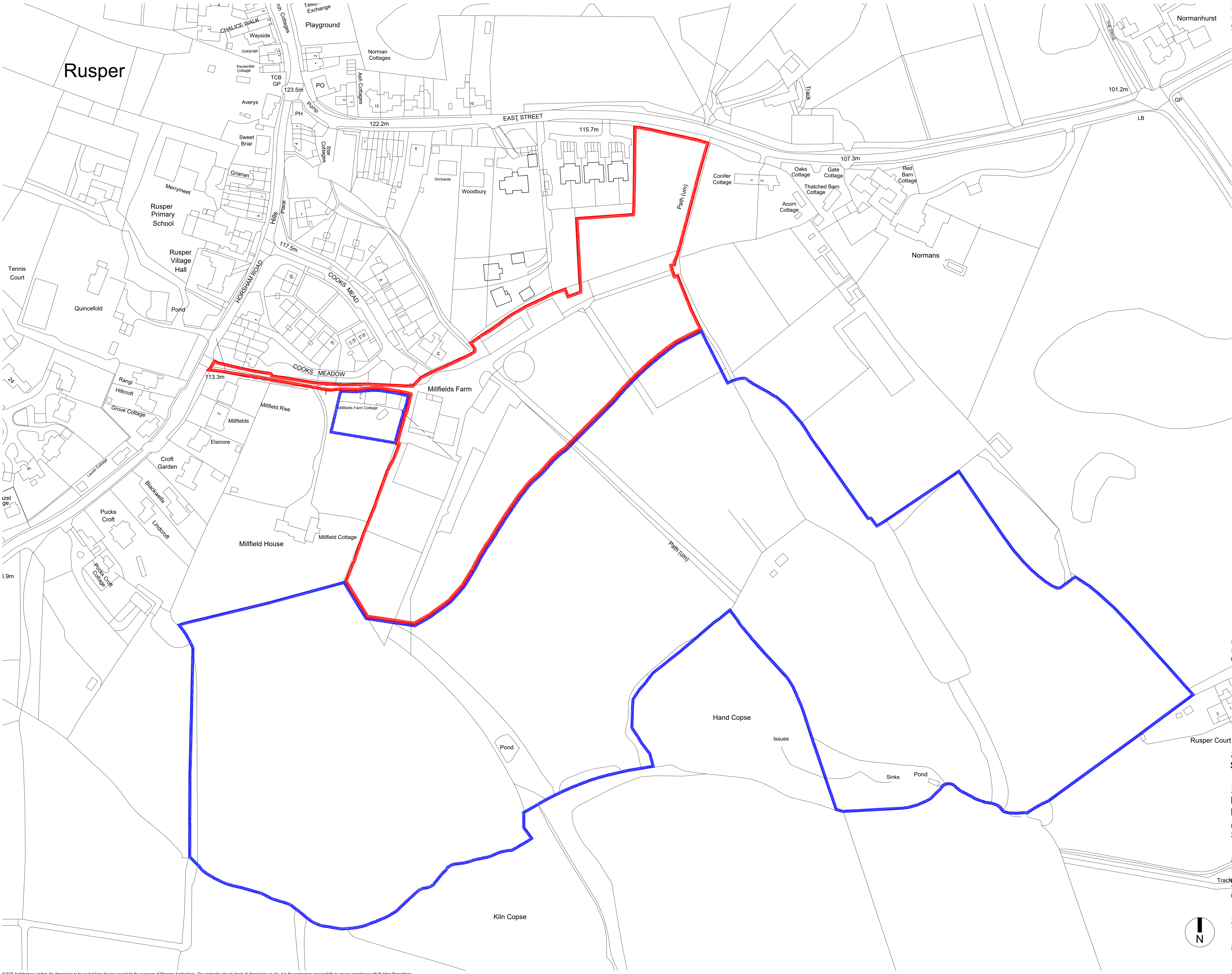
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Sussex North Water Resource Zone

Reference No :		Date : 23 November 2021		Scale : 1:3,000 at A2	
Drawing No :		Checked :		Revisions :	
Drawn :					

Appendix C

Proposed Site Plans



B	08.12.23	Boundary altered to solicitor advice	SLG	AK
A	12.10.23	Detail added to adjoining consented schemes	SLG	AK
Rev	Date	Revision Details	Dr	Ch



ECE Architecture
www.ecearchitecture.com

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London, SE1 0BL
T 0207 928 2773 E london@ecearchitecture.com

Sussex: 64 - 68 Brighton Road, Worthing
West Sussex, BN11 2EN
T 01903 248777 E sussex@ecearchitecture.com

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Colston Street, Bristol, BS1 4XE
T 0117 214 1101 E bristol@ecewestworks.com

Client's Name
Stonebond

Job Title
**Land at Millfields Farm,
Rusper, West Sussex**

Drawing Title
Site Location Plan

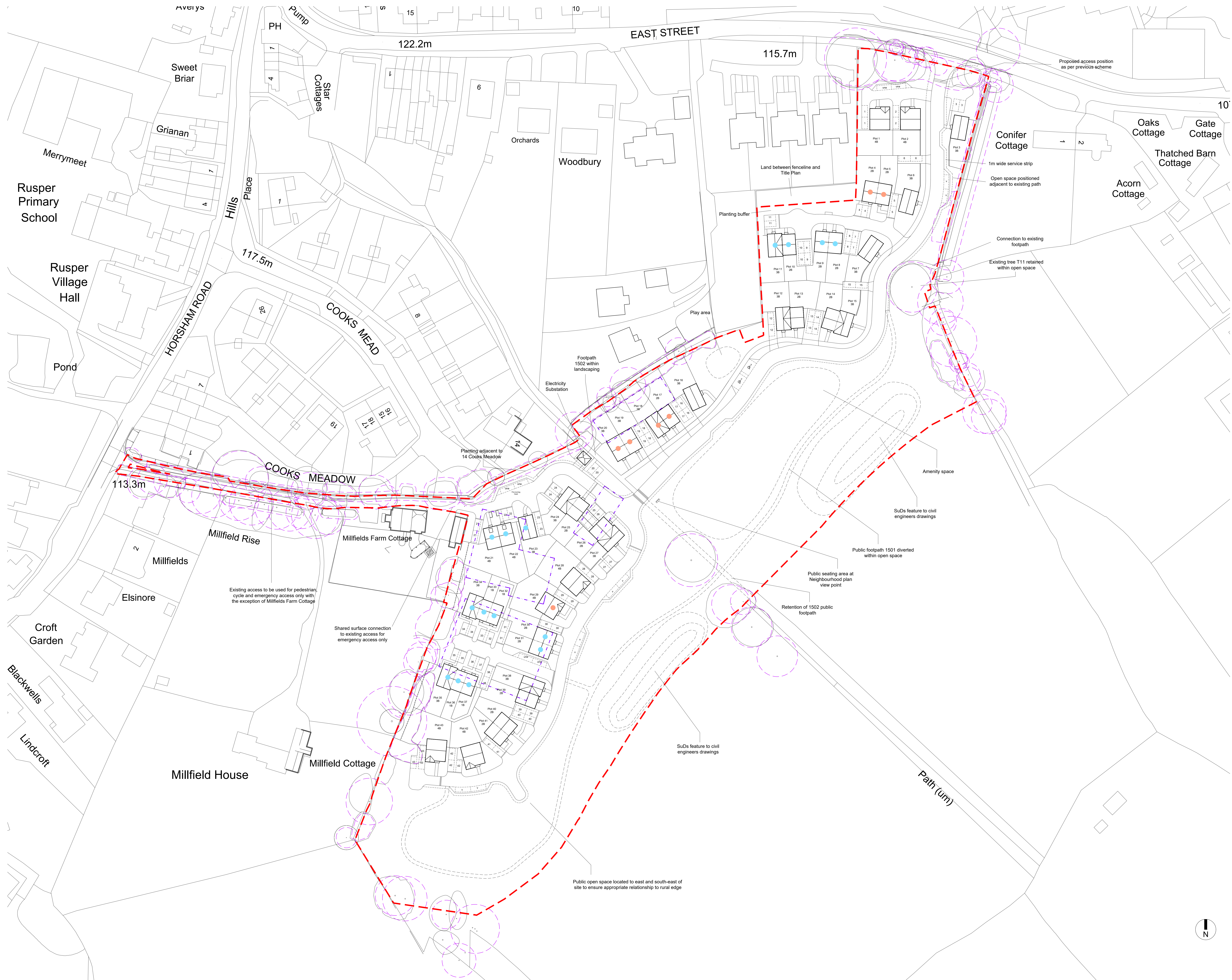
Scale
1:1250 @ A1 / 1:2500 @ A3

Track
metres 20 40 60 80 100 120

Drawn HW	Checked SLG	Date 05.10.23
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Job No 7288	Drawing No SK13	Rev B
----------------	--------------------	----------

Status
PRELIMINARY



Appendix D

Correspondence with Vendor

Emma [REDACTED]

Subject: FW: Rusper - Water Meters

From: Joe [REDACTED]
Sent: Thursday, August 17, 2023 12:52 PM
To: Emma [REDACTED]
Subject: Fw: Rusper - Water Meters

See below Emma.

Joe.



[REDACTED]
T: [REDACTED] | www.stonebondproperties.com

Stonebond Properties (Guildford) Limited
1 Bishops Wharf, Walnut Tree Close, Guildford, Surrey, GU1 4UP

This email is sent for and on behalf of Stonebond Properties (Guildford) Limited registered in England and Wales (registered number 13544912) whose registered office is at Stonebond House, 132 – 136 New London Road, Chelmsford, Essex CM2 0RG.
This email (and any attachments) may contain confidential, proprietary or legally privileged information. No confidentiality or privilege is waived or lost by any mistransmission. If it is not addressed to you or you are not the intended recipient, please do not read, disclose, copy or forward it on, but notify the sender immediately and delete it. We have tried to ensure this email does not contain any viruses, but please check this before opening any attachments, as we cannot accept any responsibility for damage caused by a virus. Please note that we may intercept, monitor and store emails for the purposes of ensuring compliance with law, our policies and for audit purposes.

From: James [REDACTED]
Sent: 17 August 2023 12:49
To: Joe [REDACTED]
Cc: Jamie [REDACTED]
Subject: FW: Rusper - Water Meters

*** [EXTERNAL] This message comes from an external source. Exercise caution when opening attachments, clicking links, or following request instructions especially from unknown senders. ***

Hi Joe,

Anna has sent me the below.

Thanks

James

James [REDACTED]
Associate
Development

Savills, 244 - 246, High Street, Guildford, GU1 3JF
Tel : [REDACTED]
 Mobile : [REDACTED]
Email : [REDACTED]

Website : www.savills.co.uk



5

From: Anna [REDACTED]
Sent: Wednesday, August 16, 2023 5:11 PM

To: James [REDACTED]
Subject: Fwd: Rusper - Water Meters

EXTERNAL EMAIL: Be cautious when opening attachments or clicking links

Dear James,
Please find attached a water meter reading of Millfields Farm as of last week:

02M2

Cert No.
2050

16 bar
Pulse/Litre

03614209

1.5 bar



Best,
Anna

Anna [redacted]
[redacted]

Appendix E

Meter Readings
(Millfields Farm Cottage and the Coach House)

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Your customer number

[REDACTED]

Invoice number

[REDACTED]

Payment reference

[REDACTED]

Date 24 Sep 2019

Your final metered bill for 06 April 2019 to 20 September 2019

This is a summary of your bill for water supplied to:
HOUSE RUSPER RH12 4PR

What you've been charged for
From 06 April 2019 to 20 September 2019

[REDACTED]

VAT at 20.0%

[REDACTED]

Total for this invoice

[REDACTED]

Amount to pay now

[REDACTED]

Please see your account summary for a full account breakdown

Your prompt payment is
appreciated

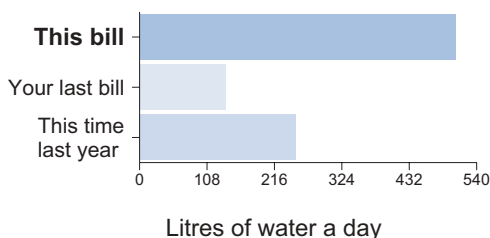
Please let us know if you will be
paying our bills at another property.

**Payment due by 09
October 2019**

Your water use

Over the last six months your business

used on average **506** litres a day



Why is my bill higher than usual?

There can be a number of reasons why you may have used more water than usual, including the following:

- Are more people living in your home?
- Have you had visitors staying with you?
- Have you had problems such as a dripping tap or leaking washing machine?
- Have you carried out building work, repairs or home improvements?
- Have you used your washing machine more than usual?
- Have you regularly used a hosepipe or sprinkler?
- Have you regularly filled up a paddling pool?
- Have you installed appliances or equipment that uses a lot of water?

If these situations do not apply to you, please phone us on **0330 303 0277** so we can help you find out why your bill is higher than usual.

Your meter reading

Meter number 9134641

Latest reading

1 1 8 0 0

Read on
20 Sep 2019

Want to give us a reading?

Please call 0330 303 0277 or go to
southernwater.co.uk/myaccount
You'll need your customer number.

Previous reading

3 3 0 0

Read on
5 Apr 2019

Cubic metres of water used

8 5 . 0 0

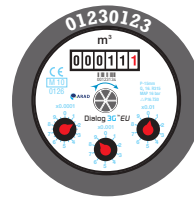
How to read your meter

Taking a meter reading is generally easy to do.

How to read your meter

1. Lift the plastic or metal lid to your meter. You may need to use something like a screwdriver to lift the lid. Please take care when doing this.
2. If there is a polystyrene plug under the lid, remove this.
3. Your meter has a row of numbers and three dials. You only need to write down the row of black numbers.
4. Replace the polystyrene plug and close the lid. This is important so people do not trip over it.

Example



In this example, the meter reading is 11 cubic metres.

What to do if you live in a flat

If you live in a flat, please do not try and read your outside meter yourself. Instead you should phone us and we will arrange a time to read your meter.

Your meter is currently scheduled to be next read by 31.10.2019

How we worked out your bill



Metered water charges

Period	Cubic metres of water used	Cost for one cubic metre	Cost of water	Standing charge	Total
06 April 2019 to 20 September 2019	85.00	137.20p	£116.62	£10.19	

Total charges for 06 April 2019 to 20 September 2019

Your questions answered

We supply your water

What is a cubic metre?

One cubic metre is 1,000 litres (220 gallons) this is equivalent to approximately 500 kettles, 12 baths or 30 standard showers.

What is the standing charge?

There are certain costs that do not depend on how much water customers use. These costs include, for example, the cost of sending bills, collecting payments and dealing with enquiries. The standing charges covers these costs.

Why is VAT only charged on water?

This is a HM Revenue & Customs requirement and the liability to pay VAT on water supply charges depends on the customer's main business activity. Therefore these charges do not relate to the type of premises that you occupy.



Visit our website for live chat or to log into your account
southernwater.co.uk/help



0330 303 0277
 Weekdays - 8am to 6pm



Your customer number



Your payment reference



Invoice number

Dear

Here's your latest bill based on the meter reading you provided us with, taken on 11 September 2023. You currently pay by cash – see page two for your payment options.

Meter reading

Water used in cubic metres

157 m³

One cubic metre = 1,000 litres
 This is equivalent to: 11 baths, 31 (4 min) showers or 166 toilet flushes

Meter number: 9134641

Latest reading: 11 Sep 2023

		1	2	7	8	9	0
--	--	---	---	---	---	---	---

Previous reading: 25 Nov 2022

		1	1	2	2	0	0
--	--	---	---	---	---	---	---

Your next meter reading is scheduled to take place by 31 Oct 2023

Previous bill's usage
57.00 m³

Charges

£273.82

Bill date
12 Sep 2023

Billing period
From: 25 November 2022
To: 11 September 2023

Bill type
Metered - Cash

Previous bill's charges
£0.00

Future payments

Total payment of

£273.82

Payment due by
28 September 2023

To pay your bill
 See how to pay on p. 2

Struggling to pay? See p. 3



Water

Period: 25 November 2022 to 31 March 2023

Variable Rate £1.550 x 68.40m³ = £106.02

Standing Charge = £6.54

Period: 01 April 2023 to 11 September 2023

Variable Rate £1.716 x 88.50m³ = £151.87

Standing Charge = £9.39

Total Water **£273.82**



Wastewater

Thames Water takes away your wastewater. Its customer service number is **0800 980 8800**. You'll receive a separate bill from Thames Water for your wastewater.

Southern Water supplies your water.

Standing Charge:

This covers essential service costs such as sending bills, collecting payments and dealing with enquiries.

If you would like to know more about how we calculate our charges, please go to www.southernwater.co.uk/account/how-we-calculate-your-bill

Appendix F

Meter Readings
(Millfields Farm)

Emma [REDACTED]

From: Anna [REDACTED] s [REDACTED]
25 April 2024 10:40
To: Emma [REDACTED]
Cc: Jamie [REDACTED]
Subject: Water meter readings at Millfields Farm
Attachments: Water meter readings at Millfields Farm.pdf

*** [EXTERNAL] This message comes from an external source. Exercise caution when opening attachments, clicking links, or following request instructions especially from unknown senders. ***

Dear Emma and Jamie,

Here is the water meter data now that you are looking to submit planning, I hope this is sufficient?
Let me know anything else you need.
Best,
Anna

Attached photos for meter serial number: O2M224449

Date 27/10/23 = reading 4078
Date 15/12/23 = reading 4338
Date 6/2/24 = reading 4621
Date 5/3/24 = reading 4773
Date 12/4/24 = reading 4978

Anna [REDACTED]
[REDACTED]

Photos of meter serial number O2M224449, Millfields Farm



27/10/23



15/12/23



6/2/24



5/3/24



12/4/24

Appendix G

Meter Reading Calculations
(Millfields Farm)

Millfield Farm, Agricultural buildings

Existing

Date	Reading	Days	Difference (m ³)	Difference (litres)	Litres per day
07/08/2023	3,642.00				
27/10/2023	4,078.00	81.00	436.00	436,000.00	5,382.72
15/12/2023	4,338.00	49.00	260.00	260,000.00	5,306.12
06/02/2024	4,621.00	53.00	283.00	283,000.00	5,339.62
05/03/2024	4,773.00	28.00	152.00	152,000.00	5,428.57
12/04/2024	4,978.00	38.00	205.00	205,000.00	5,394.74
	Total	249.00	1,336.00	1,336,000.00	5,365.46 litres per day (average)

Appendix H

Part G Calculation: Proposed

Proposed Water Usage - Part G Calculation

Fixture	Capacity/Flow Rate	Use Factor	Fixed Use	litres/person/day
WC (Single Flush)		4.42		0.00
WC (Dual Flush)	4	1.46		5.84
WC (Dual Flush) Part	2	2.96		5.92
Taps (excluding kitchen)	2.7	1.58	1.58	5.85
Bath (where shower present)	130	0.11		14.30
Shower (where bath present)	6	4.37		26.22
Bath Only		0.5		0.00
Shower Only		5.6		0.00
Kitchen Sink	4	0.44	10.36	12.12
Washing Machine	6.43	2.1		13.50
Dishwasher	0.99	3.6		3.56
Total calculated use (litres/person/day)				87.31
Normalisation Factor				0.91
Total Water Consumption (CSH) (litres/person/day)				79.45
External Water Use				5.00
Total Water Consumption (Part G) (litres/person/day)				84.45

	Number of units	Census	Population	Total Mains Water Usage
Proposed 1-bedroom	4	1.32	5.28	445.92
Proposed 2-bedroom	15	1.88	28.2	2,381.63
Proposed 3-bedroom	16	2.47	39.52	3,337.65
Proposed 4-bedroom	8	2.86	22.88	1,932.33
Totals	43		95.88	8,097.53

Appendix I

Rainwater Harvesting Calculations

Rainwater Harvesting Calculations - Proposed Dwellings (per unit)

Rainwater Harvesting System (BS EN 16941-1:2018 - Intermediate Approach)

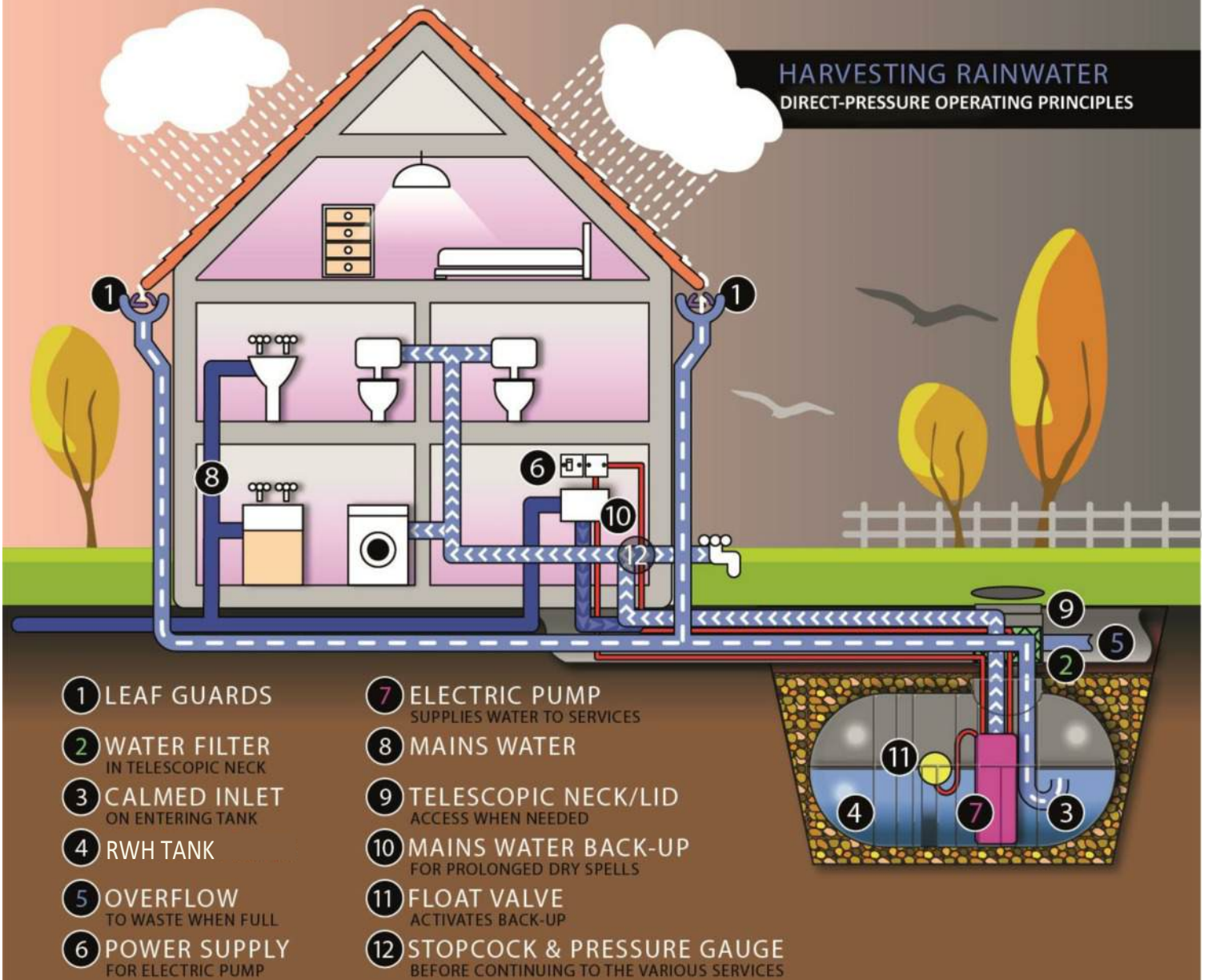
AAR	833.69	Average Annual Rainfall
e	0.8	Yield Coefficient
h	0.9	Hydraulic Filter Efficiency
P _d	27.99	Daily Requirement per Person

Unit	Type	No. Beds	No. Units	Census	Population	Roof Area (m ²)	9.6% Annual Rainwater Yield (litres)	9.6% Annual Water Demand (litres)	Tank Size (litres)
A1.2	Home	1	1	1.32	1.32	37.00	2,132.11	1,294.62	1,800
P2.2	Home	2	1	1.88	1.88	47.00	2,708.36	1,843.85	2,600
P3.1	Home	3	1	2.47	2.47	57.53	3,315.15	2,422.50	2,600
P3.12	Home	3	1	2.47	2.47	55.50	3,198.17	2,422.50	2,600
P4.1.2	Home	4	1	2.86	2.86	52.41	3,020.11	2,805.00	3,400
P4.13	Home	4	1	2.86	2.86	75.47	4,348.93	2,805.00	3,400

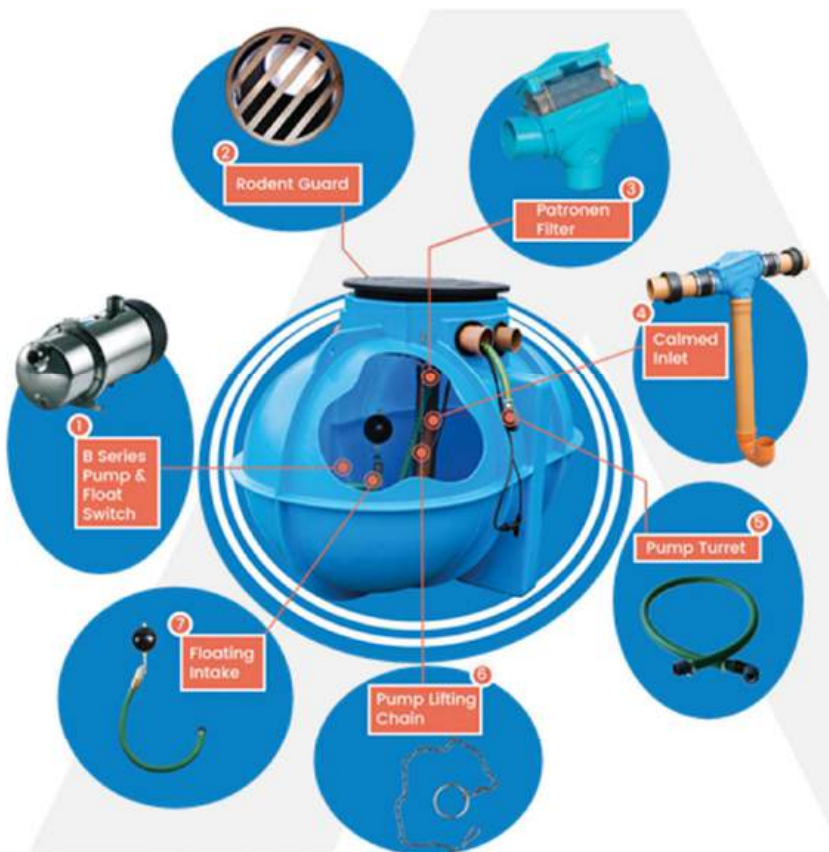
Appendix J

Rainwater Harvesting System

HARVESTING RAINWATER DIRECT-PRESSURE OPERATING PRINCIPLES



DIRECT PRESSURE SYSTEM HOME & GARDEN



Inside the Household

Top Up Controller



Automatic mains water top-up Controller kit for rainwater tanks with pump isolation and alarm. The system detects when the tank contents level is running low and initiates a mains top up procedure to ensure the tank never runs out of water supply.

SYSTEM:

A Direct Pressure System is the most popular, cost effective and risk-free option for rainwater harvesting. It can be used for both garden and household applications, for example, it can be used in buildings with a small block of toilets, and for garden irrigation and machine washdowns. The system sends pressurised water straight from the external tank directly to the application. If the water level in the tank gets too low, the top up controller will activate a mains top up so the tank doesn't empty.

COMPONENTS

P Series pumps are stainless steel pumps with plastic coverings and are suitable for domestic water systems, rainwater harvesting, tanks, surface irrigation and tank transfer.

The rodent guard protects the internal water from rodents and large debris which could contaminate the water entering via the overflow.

The PF filter is designed with a level drop, this along with its very smooth surface structure allows excess dirt to be rinsed straight through to the overflow. The filter cartridge mesh is stainless steel within plastic housing and is self-cleaning, though regular inspection is recommended.

The calmed inlet removes the kinetic energy from the water as it enters the tank. This means that as the water enters it doesn't stir up the contents of the tank.

The turret set provides the connection between the pump and the pipework leading to the various external applications. They are made from a flexible plastic so can easily deal with the pressurised water coming from the pump.

The pump lifting chain aids in servicing the pump as it allows the pump to be easily pulled up towards the top of the tank.

A floating intake ensures that no water from either the bottom or the surface of the tank is taken in. Meaning only clean water passes through the system and is pumped into the household.

ADDITIONAL SPECIFICATIONS

- Service duct
- Delivery hose (Options available)
- Top up controller
- Tanks sold separately
- Extra overflow on tanks 5600 – 10000

POPULAR USE:

- Garden irrigation
- Cleaning the car
- Washing windows
- Power washing drive/patio
- Outside tap and hosepipe
- Flushing toilets
- Drinking water (if tank is potable)
- Washing machine



Appendix K

Rainwater Harvesting Management and Maintenance Plan



Millfields Farm
Rusper

**Rainwater Harvesting Management and
Maintenance Plan**

For

Stonebond Properties (Guildford)

Document Control Sheet

Millfields Farm

Rusper

Stonebond Properties (Guildford)

This document has been issued and amended as follows:

Date	Issue	Prepared by	Approved by
6 th June 2024	FINAL	Laura Jagiela	Neil Jaques



Motion
 84 North Street
 Guildford
 GU1 4AU
T 01483 531300
F 01483 531333
E info@motion.co.uk
W www.motion.co.uk

Contents

1.0 Introduction 1

2.0 Treatment..... 2

3.0 Water Quality Control 3

4.0 Continuity of Supply 4

5.0 Maintenance Categories 5

6.0 The Rainwater Harvesting System 6

7.0 General Maintenance Principles..... 7

8.0 Inspection and Maintenance Frequency of Components..... 8

1.0 Introduction

- 1.1 The report sets out the principles for the long-term management and maintenance of the rainwater harvesting systems at the proposed development.
- 1.2 The purpose of this report is to ensure that the client has a robust inspection and maintenance plan for the lifetime of the development. This will ensure the optimum operation of the rainwater harvesting systems and that they will be continually maintained. This will ensure that the proposed development will remain water neutral.
- 1.3 All those responsible for maintenance should follow relevant health and safety legislation for all activities listed within this report (including lone working, if relevant). Method statements and risk assessments should always be undertaken and made available, if requested.
- 1.4 This report has been produced by Motion to describe the typical management and maintenance tasks that are known at the design stage (such as maintenance frequencies and typical tasks). These have been drawn from industry guidance such as BS EN 16941-1:2018, The SuDS Manual (CIRIA 753) and the manufacturer's own guidance.
- 1.5 Maintenance is considered as a construction activity under the CDM Regulations 2015. Under the CDM Regulations, it is a requirement that a competent person be appointed to carry out a required role. CDM defines a competent person as an individual with sufficient knowledge of the specific tasks to be undertaken, as well as sufficient experience and ability to carry out their duties in relation to the task in a way that secures health and safety on site.
- 1.6 In recognition of the requirements of the CDM Regulations 2015, this rainwater harvesting management and maintenance plan expects that the maintenance work will be carried out by a competent person who must have prior knowledge of the rainwater harvesting systems onsite.

2.0 Treatment

- 2.1 The rainwater harvesting system shall incorporate suitable treatment in accordance with BS EN 16941-1:2018, to ensure that the water quality is suitable for its intended end use.
- 2.2 The treatment will cover the following:
 - ▶ Removal of coarse particles, upstream of the storage;
 - ▶ Retention of fine particles by sedimentation and flotation in the storage tank; and
 - ▶ Filtration following the storage device, depending on the intended use.
- 2.3 Preliminary treatment will be provided in the form of filters and separators prior to the storage tank. This will include leaf guards on gutters and a leaf filter. A first flush diverter will be included to divert particles contained in rainwater away from the tank and to a suitable drain. These measures will prevent coarse solids and organic matter from entering the storage tank.
- 2.4 Any fine particles will then be separated either by sedimentation by settling out to the bottom of the tank, or flotation to the water surface.
- 2.5 A calmed inlet will be incorporated in the tank to prevent turbation of the sediment at the bottom of the tank by the inflow of water. Removal of the sediment will be carried out in accordance with Table 5.1 below.
- 2.6 Removal of floating particles will occur when the tank overflows, or when it is cleaned out in accordance with Table 5.1 below.
- 2.7 Water will be extracted from the tank via a floating pump, which will extract water from level that is above any sediment collected at the bottom of the tank and below any floating particles. This will help maintain the quality of harvested rainwater that is to be used in the property.
- 2.8 Where the water is being used for laundry, it is understood that the Council require an additional level of treatment. Therefore, it is proposed that a UV filter will be incorporated in advance of the washing machine and this will kill any microorganisms, prior to it being used in the washing machine.
- 2.9 A schematic showing the layout of the equipment used in a rainwater harvesting system is shown in Figure B.2 of BS EN 16941-1:2018.

3.0 Water Quality Control

- 3.1 It is understood that the system will be considered as a private water supply and, therefore, will be governed by the Private Water Supply Regulations 2016. These are regulated by the local council's Environmental Health Officer or Pollution Control Officer. However, the regulations in England and Wales do not require monitoring to be undertaken where the water supply is to a single domestic dwelling, unless the local authority is requested to do so by the owner or occupier of the dwelling, or if they are concerned that the supply presents a potential danger to human health.
- 3.2 NA.1 in BS EN 16941-1:2018 states that frequent testing should not normally be required for rainwater harvesting systems to ensure the water quality. It states that observations for water quality should be made during maintenance visits and testing should be carried out where the system is not operating satisfactorily. When sampling is required a sample should be taken and carried out in accordance with the guidance set out in NA.1 and Table NA.1 sets out the guideline values for bacteriological monitoring and Table NA.2 for non-bacteriological monitoring.
- 3.3 The water quality will need to be maintained at a suitable level commensurate with the end use and the treated water quality will have to meet those set out in the Private Water Supply Regulations.

4.0 Continuity of Supply

- 4.1 To ensure that sufficient water is available for re-use, the storage tank will be sized so that it can provide 35 days of storage, which will provide sufficient supply during periods of drought.
- 4.2 Where drought periods extend beyond 35 days, the rainwater harvesting system will include an automatic mains backup. This will ensure that water is available at all times, even during extended periods of drought.

5.0 Maintenance Categories

5.1 There are three categories of maintenance activities referred to in this report. These are:

Inspection and Monitoring

- ▶ Inspection and monitoring tasks should be carried out frequently, nominally once a month, and should include a visual inspection of all components including all inlets and outlets.

Regular Maintenance (Monthly)

- ▶ Regular maintenance consists of basic tasks done on a frequent and predictable schedule.

Seasonal Maintenance (Quarterly)

- ▶ Seasonal maintenance comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks.

Remedial Maintenance

- ▶ Remedial maintenance comprises of intermittent tasks that may be required to rectify faults associated with the system that have been identified through visual inspections. The likelihood of faults can be minimised by correct installation, regular inspection and timely maintenance.

6.0 The Rainwater Harvesting System

- 6.1 The proposed rainwater harvesting system will receive rainwater passing through and over several structures and will store rainwater within several items of infrastructure. These include:
- ▶ Roofs
 - ▶ Gutters
 - ▶ Filters;
 - ▶ Pumps;
 - ▶ Overflows; and
 - ▶ Storage tanks.
- 6.2 All components should be installed in accordance with the manufacturer's instructions and to the levels/arrangements as defined on the designer's drawings.
- 6.3 This report should be read in conjunction with the rainwater harvesting design, so that the location and type of each item of infrastructure can be recognised and understood.
- 6.4 Manufacturer's instructions are to be added to this document once specific products have been selected and installed as part of the detailed design. This document will subsequently form the basis for a maintenance regime for the rainwater harvesting system.

7.0 General Maintenance Principles

- 7.1 All rainwater harvesting systems require regular maintenance to keep them working at optimum efficiency and capacity. The maintenance of the rainwater harvesting systems should be carried out alongside other regular maintenance tasks within the property.
- 7.2 Timely and adequate maintenance will increase the lifespan of the rainwater harvesting system. Inadequate maintenance will do the reverse.
- 7.3 The property owners are responsible for the monitoring and maintenance of the rainwater harvesting system for the lifetime of the development.

8.0 Inspection and Maintenance Frequency of Components

- 8.1 Table 5.1 below lists each of the components used within the development's rainwater harvesting systems. It suggests an indicative maintenance frequency for each component and ascribes typical maintenance tasks to them.
- 8.2 In accordance with the Drinking Water Inspectorate's Private Water Supply regulations, it is the responsibility of the homeowner to ensure that all necessary maintenance activities are carried out in a timely manner and that the design performance of each drainage component is preserved. The homeowner may appoint a competent contractor to assist with the maintenance of their rainwater harvesting system. Additionally, the Council has a role to ensure the regulations are upheld by the homeowner.
- 8.3 If there is any uncertainty regarding the correct and safe methods of cleaning, or what equipment should be used, the manufacturer should be consulted.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Inspection of the tank for debris and sediment build-up	Annually
	Inspection of inlets/outlets and withdrawal devices	Annually
	Inspection of filters	Annually
	Inspection of Pumps	Annually
	Inspection of overflow areas	Annually
	Inspection of gutters	Annually
	Cleaning of tank	Annually
	Cleaning of inlets and outlets and withdrawal devices	Annually
	Cleaning of gutters and roof drain filters	Annually
	Check pump operation	Annually
Occasional Maintenance	Cleaning and/or replacement of any filters	Quarterly
Remedial Actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

Table 5.1 – Maintenance tasks and frequencies

- 8.4 Upon completion of maintenance activities, a record should be kept of the work carried out. This should be retained and an annual maintenance report should be compiled, which should include the following:
- ▶ Observations resulting from inspections;
 - ▶ Maintenance and operation activities undertaken during the year; and

- ▶ Recommendations for inspections and maintenance programmes for the following year.

8.5 On the next page is a table with suggested information that should be recorded and included with the maintenance plan. As mentioned in the introduction to this document, this should be a living document and regularly updated, as required and should be kept for the lifetime of the development.

Date	Component requiring maintenance	Issues prompting maintenance	Scheduled maintenance (Y/N)	Maintenance carried out	Additional works required (Y/N). If yes, please detail	Next scheduled date of inspection and maintenance

Appendix L

Meter Readings Calculations
(Millfields Farm Cottage and the Coach House)

Water Bill - Calculations

Meter Number: 9134641

Millfield Farm Cottage, Horsham Road, Horsham, RH12 4PR

Millfield Farm Cottage 5-bedroom (3) + Coach House 2-bed (3)

Existing

Date	Reading	Days	Difference (m3)	Difference (litres)	Litres per day
19/12/2018	18				
05/04/2019	33	107	15	15000	140.19
20/09/2019	118	168	85	85000	505.95
25/11/2022	1122	1162	1004	1004000	864.03
11/09/2023	1278.9	290	156.9	156900	541.03
	Total	1727	1260.9	1260900	730.11

litres per day (average)

Appendix M

Part G Calculation: Onsite Offsetting

Part G Calculation - Offsetting Water Usage

Fixture	Capacity/Flow Rate	Use Factor	Fixed Use	litres/person/day
WC (Single Flush)		4.42		0.00
WC (Dual Flush)	4	1.46		5.84
WC (Dual Flush) Part	2	2.96		5.92
Taps (excluding kitchen)	2.7	1.58	1.58	5.85
Bath (where shower present)	130	0.11		14.30
Shower (where bath present)	6	4.37		26.22
Bath Only		0.5		0.00
Shower Only		5.6		0.00
Kitchen Sink	4	0.44	10.36	12.12
Washing Machine	6.43	2.1		13.50
Dishwasher	0.99	3.6		3.56
	Total calculated use (litres/person/day)			87.31
Normalisation Factor				0.91
Total Water Consumption (CSH) (litres/person/day)				79.45
External Water Use				5.00
Total Water Consumption (Part G) (litres/person/day)				84.45

	Population	Total Water Usage
Millfield Farm Cottage (5-bed)	3	253.36
Coach House (2-bed)	3	253.36
Totals	6	506.73

Appendix N

Borehole Prognosis Report



BOREHOLE PROGNOSIS REPORT

MILLFIELDS FARM,
HORSHAM ROAD,
RUSPER, RH12 4PU

BOREHOLE FEASIBILITY ASSESSMENT

FEBRUARY 2024



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DOCUMENT CONTROL SHEET

Project Title: Borehole Prognosis Report

Report Title: Millfields Farm, Horsham Road, Rusper, RH12 4PU

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VERSION	STATUS	AUTHOR & DATE	CHECKED & DATE	AUTHORISED & DATE
A	FINAL	Bruce Long 05/02/2024	Zachary Krips 06/02/2024	Mark Durham 07/02/2024

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ORGANISATION	CONTACT	FORMAT	COPIES
Nicholls Licensing and Consulting	Jamie Laker	PDF (e)	1

LIMITATIONS

This report is presented to Nicholls Licensing and Consulting with respect to the Borehole Feasibility Assessment for Millfields Farm, Horsham Road, Rusper, RH12 4PU and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this Report.

Notwithstanding anything to the contrary contained in the report, WSP UK (WSP) is obliged to exercise reasonable skill, care and diligence in the performance of the services required by Nicholls Licensing and Consulting, and WSP shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

This report has been prepared by WSP. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

WSP has used reasonable skill, care and diligence in the design and interpretation of the ground investigation, however, the inherent variability of ground conditions allows only definition of the actual conditions at the location and depths of exploratory holes and samples/tests therefrom, while at intermediate locations conditions can only be inferred.

New information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

SUMMARY

A borehole prognosis has been completed, for a site located at Millfields Farm, Horsham Road, Rusper, RH12 4PU. The prognosis has concluded that:

- A borehole, drilled into the productive (water bearing) limestone and sandstone units within the Weald Clay Formation to a depth of approximately 80 mbgl should be sufficient to provide a water supply of up to 30 m³/d.
- The available data suggests a rest water level might (RWL) be observed at a depth of 80 – 70 mAOD or 33 - 43 mbgl. However, due to the complex nature of the ground conditions, RWL will be dependent on where the productive layers are intercepted at the location of the proposed borehole.
- The water quality is expected to be suitable for potable supply, however, WSP recommends the water quality be tested before use.

PROJECT RISKS

WSP expect the water bearing layers within the Weald Clay Formation to be confined and though artesian conditions are feasible, these are not expected at the intended site.

The client should be aware that any groundwater flows within the Weald Clay Formation would primarily come from the higher permeability productive strata (limestone and sandstone lenses), as well as any fractures within weathered mudstone (if present). Due to limited storage and recharge to productive sandstone and limestone lenses within the Weald Clay Formation yields may decline over time. The intergranular flow rate of the Weald Clay Formation is expected to be minimal. Siltation issues are also prevalent in literature (Jones et al, 2000); a suitably designed sand/gravel pack will mitigate some of these siltation impacts.

The aquifers which underly the Hardham protected area (SPA, SSSI and SCA) are stratigraphically and hydrogeologically separated from the target aquifer (Weald Clay Formation) at the intended site.

Prior to drilling the following potential risks should be addressed:

- Underground services and tunnels, overhead cables;
- Avoid potential contaminant sources;
- Access and other (ecology) constraints.

GENERAL CONSIDERATIONS

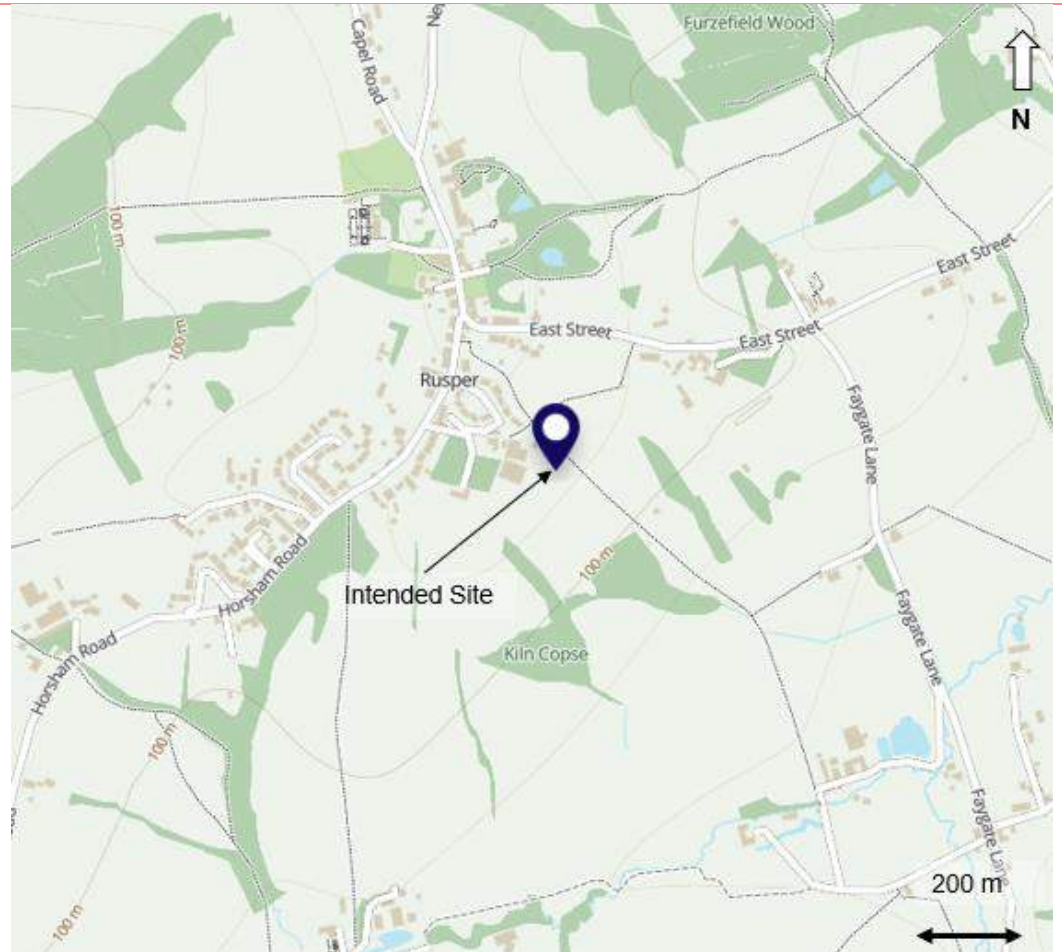
The following should be considered for all borehole installations:

- If the water is to be used as a potable resource, there may be a requirement for some basic form of treatment which will need to be addressed prior to consumption. The local Environmental Health Department will be able to advise further on appropriate sampling regimes;
- It is recommended that the borehole is located as close to the intended supply as possible;
- Where possible boreholes should always be sited away from any potential source of contamination such as septic tanks (e.g. a minimum of 50 m away, in accordance with Environment Agency guidelines).
- A licence is required for abstraction rates >20 m³/d;
- As per Section 198 of the *Water Resources Act 1991*, all abstraction boreholes drilled greater than 15mbgl must report operations and drillers' logs to the British Geological Survey.

SITE DESCRIPTION

Location	Millfields Farm, Horsham Road, Rusper, RH12 4PU
Grid Reference	TQ 20734 36994
Easting / Northing	520734,136994
Latitude / Longitude	51.119522, -0.276336
Approx. Elevation	113 mAOD (extracted from 1:10000 OS map)

FIGURE 1:
Location of the Site
(marked by arrow)



(map derived from <https://explore.osmaps.com/location?lat=51.119886&lon=-0.284464>, accessed February 2024)

PURPOSE OF ABSTRACTION

The client has stated that the purpose of the abstraction is for it to be used primarily for potable supply. The client has confirmed that a yield of up to 30 m³/d is required.

SUPERFICIAL DEPOSITS – based on the British Geological Survey (BGS) England and Wales Map Sheet 302 (solid and drift) and local borehole records

Superficial Deposits	Lithological Description	Expected Thickness (m)
None	N/A	N/A

BEDROCK GEOLOGY – based on the BGS England and Wales Map Sheet 302 (solid and drift) and local borehole records

Group	Formation	Lithological Description	Expected Thickness (m)
Wealden Group	Weald Clay Formation	Dark grey thinly bedded mudstone (shales) and mudstones with subordinate siltstones, fine to medium grained sandstones, including calcareous, shelly limestone and clay ironstones.	Up to 335
	Upper Tunbridge Wells Sands Formation	Predominantly fine to medium grained sandstone, siltstone and silty sand rhythms with finely bedded mudstones and thin limestones.	60 - 107

Table notes: The Weald Clay Formation has been intercepted to 76.2 m (TQ23NW4); this is not the full vertical section hence the BGS Map sheet 302 is referenced.

NEARBY FAULTING

Type	Location
Unnamed normal fault in a west – east orientation	Approx. 600 m south of intended site

HYDROGEOLOGY AND AQUIFER DESIGNATION

Formation	Description
Weald Clay Formation	<i>Unproductive Strata</i> where mudstones predominate and <i>Secondary A Aquifer</i> where sandstone and/or limestone bands are present. The hydrogeology of the Weald Clay Formation is complex and not well understood due to its heterogeneity. The formation is divided into a layered sequence composed of sandstone, limestone and clay deposits leading to some potential for unconfined/leaky aquifers in the discontinuous layers. The Weald Clay Formation is essentially an impermeable, confining clay formation, although it contains thin silty sandstones and limestones which may yield small local supplies (Jones et al, 2000). Yields are expected to decrease rapidly due to the slow rate of replenishment from a lack of sufficient recharge zones.
Upper Tunbridge Wells Sands Formation	<i>Secondary A Aquifer.</i> The formation contains permeable layers capable of supporting water at a local scale. Transmissivity values range from 6.1 - 39.5 m ² /d, with a geometric mean of 19.0 m ² /d and an interquartile range of 13.8 to 35.4 m ² /d (Jones et al, 2000). Yields vary considerably and are generally less than 400 m ³ /d, and often less than 100 m ³ /d, although significantly higher yields have been obtained on occasion (Jones et al, 2000). It has been suggested that larger yields are generally obtained from the Lower Tunbridge Wells Sand Formation, especially the Ardingly Sandstone, rather than the Upper Tunbridge Wells Sand Formation (Dines et al, 1969). Lithology and degree of cementation have been found to show considerable variability, therefore predictions of aquifer properties are difficult. Groundwater flow within the Tunbridge Wells Sand Formation is both intergranular and through joints, well yields tend to be variable (Jones et al, 2000).

NEARBY SURFACE WATER FEATURES

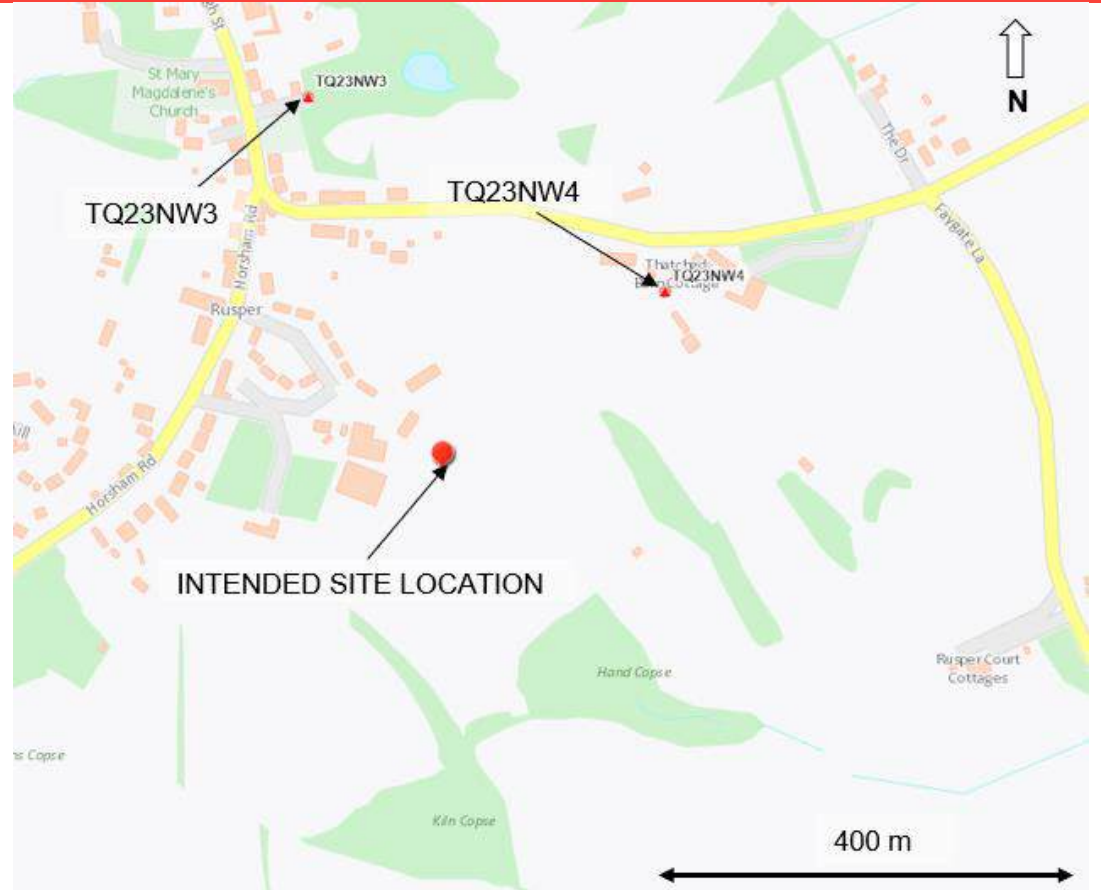
Type	Location
Pond	Approx. 350 m north of intended site
Spring	Approx. 270 m south-east of intended site
Pond	Approx. 300 m south of intended site
Stream	Approx. 700 m south of intended site

LOCAL BOREHOLE RECORDS DRILLED WITHIN ca 5000m (BGS GeoIndex) (Appendix A)		
Well NGR:	TQ 2061 3734	GR 2094 3716
Easting/Northing	520610, 137340	520940, 137160
Distance from Site	Approx. 0.4 km north-northwest of intended site	Approx. 0.3 km northeast of intended site
Location	TQ23NW3 - Rasper	TQ23NW4 - Normans, Rusper
Completion Date	1927	1928
Completion Depth	70.4 m	76.2 m
Site Elevation	121.9 mAOD	107.6 mAOD
Aquifer	Weald Clay Formation	Weald Clay Formation
Rest Water Level (RWL)	77.4 mAOD in 1927 (44.5 mbgl)	73.2 mAOD in 1928 (34.4 mbgl)
Pumping Test/ Groundwater Yield	58.9 m ³ /d (540.0 g.p.h. test recorded on log)	54.6 m ³ /d (500.0 g.p.h. recorded on log)
Comments	Suction at 65.5 mAOD (55.6 mbgl)	Suction at 58.8 mAOD (48.8 mbgl). Hardness total 1210. Water struck at 85.0 mAOD (22.6 mbgl), 88.7 mAOD (18.9 mbgl), 52.7 mAOD (54.9 mbgl), 46.6 mAOD (61.0 mbgl).

LOCAL BOREHOLE RECORDS DRILLED WITHIN ca 5000m (BGS GeoIndex) (Appendix A)

Figure 2:
Location of nearby boreholes

●	Confidential
●	0-10m
●	10-30m
●	30+m



WATER QUALITY

The intended site is not within a Nitrate Vulnerable Zone (NVZ) as specified by the Environment Agency (2017). The intended site is in an area designated as a 'unproductive groundwater vulnerability' zone; this zone is attributed to the Weald Clay Formation as inferred from geological Map Sheet 302.

Groundwater quality was sampled from the Weald Clay Formation at historic borehole TQ23NW4 located 0.3 km north of the intended site. Results found 1496.6 mg/l of total solids, 0.49 mg/l of ammonia and 246.6 mg/l of chlorine; additionally, no traces of lead, nitrogen as nitrates and albuminoid ammonia were recorded. The samples of water were also recorded to be strongly alkaline and the degree of hardness being 'very low' and quite suitable for drinking purposes. These water quality results were conducted in 1928; therefore, the results may not be representative of current conditions.

Where groundwater is to be used for potable supply, the regulations maintained by the Local Health Authority (The Private Water Supplies (England) (Amendment) Regulations 2018) will need to be met to ensure that no risk to public health is caused by the supply i.e. the water will have to be sampled and tested to ensure that it is fit for human consumption. The Nicholls Licensing and Consultancy Team will be able to advise further on appropriate sampling regimes if the abstracted groundwater is to be used for potable supply.

SOURCE PROTECTION ZONE (SPZ)

The intended site (Millfields Farm, Horsham Road, Rusper, RH12 4PU) is not located within a Groundwater SPZ. There are no Groundwater SPZs within an 8 km radius of the intended site.

CONCLUSIONS AND RECOMMENDATIONS

Based on the local borehole records, the British Geological Survey Geological Map (Map Sheet 302) and literature review, WSP would recommend drilling into the productive limestone and sandstone units of the Weald Clay Formation as a primary target for potable supply.

A rest water level (RWL) is expected at approximately 33 - 43 mbgl (80 - 70 mAOD) for the Weald Clay Formation. However, due to the complex nature of the ground conditions, RWL will be dependent on where the productive layers are intercepted at the location of the proposed borehole.

Local borehole logs indicated that a borehole which targets these strata in this location should be capable of providing a yield of up to 30 m³/d. The table below provides a feasibility design for the proposed borehole targeting the Weald Clay Formation, based upon the findings and recommendations in this report.

Drilling should be carried out by a competent driller, who understands the nature of the work and can provide the client with a cost for drilling that includes an assessment of any associated risks that may be encountered (e.g. infrastructure, services etc.).

Borehole Construction – Feasibility Design*

Target Formation Strata & Slotted Screen Section Depths	Weald Clay Formation 10 mbgl – 80 mbgl (103 mAOD to 33 mAOD)
Borehole Completion Details	In an ideal scenario the borehole construction should include plain casing and grout to approximately 10 mbgl. Below this depth there would be slotted screen casing targeting the productive limestone and sandstone units, with a suitable sand/gravel pack through to a depth of approximately 80 mbgl. These depths are dependent on the strata encountered as drilling progresses. The driller should be aware there is a higher chance of siltation of the well/ filter pack due to the siltier and finer units within the Weald Clay Formation. Borehole headworks should be completed in such a way that any future risk of contamination of the borehole is minimised as far as practicable. A schematic illustrating these construction details is presented in Appendix B.

* The client should be aware that the feasibility borehole design is not a substitute for a formal borehole design, which should be proposed prior to commencement of the drilling, and finalised during the construction of the borehole. WSP are happy to assist in offering the client a formal borehole design if required.

HYDRAULIC CONNECTIVITY TO PROTECTED AREAS

Protected Area	Designation	Distance from intended site
Hardham	Several designated sites in the local area of Hardham; including but not limited to Pulborough Brooks and Waltham Brooks which are designated as a Special Protected Area (SPA), Site of Specific Scientific Interest (SSSI) and Special Conservation Area (SCA).	25 km south-west

The proposed borehole will target limestone and sandstone units within the Weald Clay Formation aquifer. Groundwater for the intended site is expected to flow from east to west (calculated from historic borehole logs).

The area of Hardham features several protected areas which are recorded as a Ground Water Dependent Terrestrial Ecosystem by the Environment Agency (2020). Geological maps indicate the designated site is underlain by the Folkestone Formation, Gault Formation and superficial deposits of alluvium, river terrace and head. The aquifers which underly Hardham are stratigraphically and hydrogeologically separated from the target aquifer (Weald Clay Formation) at the intended site.

LICENCE

The drilling and pump testing of a borehole for quantities $<20 \text{ m}^3/\text{d}$ do not require a licence. A licence is required for abstraction rates $>20 \text{ m}^3/\text{d}$ and a '*Groundwater Investigation Consent*' needs to be obtained from the Environment Agency before drilling and test pumping of such a borehole.

WSP understands that up to $30 \text{ m}^3/\text{d}$ is required from this borehole (Millfields Farm, Horsham Road, Rusper, RH12 4PU); therefore, an abstraction licence would be required. An application for an abstraction licence would need to be submitted to and approved by the Environment Agency. Correspondingly, a preceding application to the EA for consent to drill & test will be required.

IMPORTANT

This prognosis is based on a limited range of available data, including the published historic geological map supplied by the British Geological Survey¹. Whilst this map is generally reliable, it provides only indicative geological information based on available borehole information and field mapping.

In the preparation of this report, WSP has used professional experience and skills to provide the best estimates of thickness of the various formations, and the likely success of obtaining a satisfactory yield from the intended borehole site. It is emphasised that the yield and groundwater quality cannot be guaranteed.

The decision to proceed with the borehole rests with those parties that are responsible for the procurement and installation of the intended borehole. This report has been designed to provide those parties with readily available hydrogeologically based facts, and associated interpretations intended to inform any such decision. WSP will not be held responsible for either the decision to proceed or for any subsequent issues arising from any such decision to proceed.

¹ <https://largeimages.bgs.ac.uk/iip/mapsportal.html?id=1003968>, accessed February 2024

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ACRONYMS

BGS	British Geological Survey
EA	Environment Agency
g.p.h.	Gallons per hour
NGR	National Grid Reference
mAOD	Metres above ordnance datum
mBOD	Metres below ordnance datum
mOD	Metres ordnance datum
mbgl	Metres below ground level
m ² /d	Square metres per day
m ³ /d	Cubic metres per day
mg/l	Milligrams per litre

GLOSSARY

Secondary A Aquifer	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.
Source Protection Zone (SPZ)	Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk
Nitrate Vulnerable Zone (NVZ)	Existing NVZ are the zones which apply from 1st January 2013 – 31st December 2016 and relate to surface and ground waters, and also eutrophic waters. With relation to groundwater – water held underground in the soil or in pores and

	crevices in rock that has or could have if action is not taken, a nitrate concentration of >50mg/L
Groundwater Vulnerability	Assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one-kilometre square grid.
Special Area of Conservation (SAC)	Designates a conservation area which protects one or more special habitats and/or species – terrestrial or marine – listed in the Habitats Directive.
Special Protected Area (SPA)	Special Protection Areas are selected to protect one or more rare, threatened or vulnerable bird species listed in Annex I of the Birds Directive, or certain regularly occurring migratory species.
Site of Special Scientific Interest (SSSI)	A formal conservation designation, usually, used to describe an area which is of particular interest to science due to the rare species of fauna or flora it contains - or even important geological or physiological features that may lie in its boundaries.
Groundwater Dependent Terrestrial Ecosystems (GWDTE)	Groundwater Dependent Terrestrial Ecosystems are wetlands which critically depend on groundwater flows or chemistries. They are safeguarded by the Water Framework Directive (WFD) and are sensitive to hydrological and ecological changes caused by developments.



APPENDIX A

HISTORIC BOREHOLE LOGS



TQ23NW3 - Rasper

TQ. 23 NW 3

WELL BORING at

Rusper

County

Geol. map

1 in. map New Series

302

6 in. map

Made by

Duke & Schender.

Date _____

1927

Sunk

feet.

Bored

23

feet

Communicated by Duke & Eckendorn

Height above Ordnance Datum 4.50

Rest level of water 146 ft

Yield tested at 540 gph, with suction at 185 ft

Quality (with copy of analysis on separate sheet)

BR 206

12334

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	Wealden clay Name of rock at 119' and 208'			231	—
Total 14.3. See Serial No. Christ.	Lined 4½" tube to 190 ft. Total 100				
23 ca.					
	At Ghyll Manor for W.A. Argent, Esq.				
	In a small brick building due E of Church ~ SE of Ghyll Manor DD. 400 dated 16.2.70. Visited and cited on Success B SW 1/2 p. 29 & 47. Sohm memorial				
M off modified 1/9/27					

GEOLOGICAL SURVEY AND MUSEUM.

TQ23/12

Surface +400. Lining tubes: 190 x 4½ in from surface. R.W.L. +254. Suction +215. Yield 540 g.p.h. (test). Dando, 1927.

WC

231

231

Contact BGS: ngdc@bgs.ac.uk



WELL BORING at *Rusper* County *Sussex*
Geol. map 1 in. map New Series 302 6 in. map
Made by *Duke & Sckenden* Date 1927
Sunk feet. Bored 231 feet
Communicated by *Duke & Sckenden*
Height above Ordnance Datum 4.00 Rest level of water 146 ft.
Yield tested at 540 gph. with success at 185 ft.
Quality (with copy of analysis on separate sheet)

TQ 23/12
2027
75

GEOLOGICAL FORMATION.	TQ 2061 3733 NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	<i>Wealden clay</i> <i>Veins of rock at 119' and 208'</i> <i>Lined 4½" tube to 190 ft.</i> <i>Total 143</i> <i>Sw. beat</i> <i>B. Hurst...</i> <i>23 ca</i> <i>At Ghyll Manor</i> <i>for W. A. Argent, Esq.</i> <i>In a small brick building due E of Church - SE of Ghyll Manor</i> <i>OD. 400</i> <i>visited 17th Dec</i> <i>16.2.40.</i> <i>Visited and cited on Sussex 3 SW/W. R. 29.5.47.</i> <i>464 Now owned by Sir Geoffrey Kitchen, Chairman, Pearl Assurance.</i> <div>DATA Bank</div> <i>M. of H. notified</i> <i>1/9/27</i>			231	—



TQ23NW4 - Normans, Rusper



TQ 23 NW 4

WELL BORING at Rusper County Wiltshire
Geol. map 1 in. map New Series 302 6 in. map 286/13
Made by Duke & Ockenden Date 1908
Sunk 34 feet. Bored 216 feet. TQ 23/13
Communicated by Mr Evelyn de la Rue
Height above Ordnance Datum 1137 feet. Rest level of water 1137 feet.
Yield 500 gph.
Quality (with copy of analysis on separate sheet) suitable for drinking purposes
CR 2049 3716

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	(Dug well)	34	-		
	Weald clay	250	-	250	
	Rocky shale at base				
	Water cut at 70 ft., unfit for use (84.7° of hardness)				
	" " " 240 ft.				
	Lined 6 in. tubes to 87				
	" " " 170				
	" " " 250 (perforated)				
	Pumps at 160 ft				

Rusper—Maps O.S.G. 8, N.S. 302.

534. NORMANS, $\frac{1}{2}$ mile E.S.E. of church. 1928. Ht. above O.D. about 350 ft. Map S.W.

	Thickness Ft.	Depth Ft.
Dug well ...	34	34
Weald Clay ...	216	250

Rocky shale was encountered at the bottom of the boring, which most probably was the top of the Tunbridge Wells Sand.

1st water cut at 62 ft.-74 ft., with 84.7 degrees of hardness, and unfit for use. 2nd water at 180 ft.-200 ft. R.L.W. 113 ft. down. Yield 500 g. p. hour. Lined 6 in. tubes to 87 ft., 4 in. tubes to 170 ft., and 3 in. tubes to 250 ft. (perforated 170 ft.-218 ft.). Pumps at 160 ft. down. Analyses of water on p. 240. Information from Messrs. Duke and Ockenden, Ltd.

Rusper

NORMANS. Well No. 534.

	Grains per gallon.
Total solids ...	105
Chlorine ...	17.3
Ammonia ...	0.0343
Albuminoid ammonia ...	absent.
Nitrogen as nitrates ...	absent.
Nitrogen as nitrites ...	absent.
Lead ...	6°
Total hardness (Clark)	

This water is free from sewage pollution and may be regarded as quite suitable for drinking purposes. The water is strongly alkaline and the degree of 'hardness' is very low, hence it is well suited for general domestic uses.

By Mr. R. A. Cripps, F.I.C.

Published in
'Wells & Springs
of Sussex'
page 219

Designed
visited P. Buchanan
16.2.40.

visited. Dined twice house on main
Sited on Sussex 3 SW/W 2.
29.5.47.

M. of S.
notified
1/5/58



WELL BORING at *Rusper*

County *Sussex*

Geol. map

1 in. map New Series 302

6 in. map

Made by *Duke & Ockenden*

Date *1928*

Sunk *34* feet.

Bored *216* feet.

Communicated by *Duke & Ockenden*

Height above Ordnance Datum

Rest level of water

Yield *Tested at 500 g.p.h.*

Quality (with copy of analysis on separate sheet)

TQ23NW/4

TQ23/13

302

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	<i>Dug well</i>	<i>34</i>	—	<i>34</i>	—
	<i>Wealden clay</i>	<i>216</i>	—	<i>250</i>	—
	<i>Lined 6" tubes to 84 ft.</i>				
	<i>4 1/2" " " 170 ft.</i>				
	<i>3" " " 250 ft.</i>				
	<i>(3" tubes perforated 170'—218')</i>				
	<i>First water cut at 62'—74'</i>				
	<i>84.7° of hardness</i>				
	<i>Water cut at 180'—200'</i>				
	<i>Alkaline with 6° of hardness</i>				
	<i>Site</i>				
	<i>Normans</i>				
	<i>for Sir Evelyn de la Rue.</i>				

Rusper

At Normans.

Sussex

for Sir Evelyn de la Rue

Dec 1928

Dug well " " 34' 0"

Bored to " " 250' 0"

Lined 6" tubes to 87' 0"

" 4 1/2" " " 170' 0"

" 3" " " 250' 0"

3" tubes perforated

from 170' to 218'

Water level " " 113' 0"

Tested at 500 g.p.h.

Stratum

Wealden Clay

First water cut at 62' 6 7/8"

84.7° degrees of hardness

Water cut at 180 to 200

Water alkaline
with 6° of hardness.

WSB 4/524.

On of H
notified
2/7/28



302/44 Normans, Rusper. (Disused)

TQ23/13

W.S.Sx.III, p. 219. Surface +353. Shaft 34; rest bore. Lining tubes: 87 x 6 in from surface; x 4½ in to 170 down; x 3 in to 250 down (perforated 170 to 218). Water struck at +291 to +279 (Hardness: total 1,210), +173 to +153 (Hardness: total 86) and at +113. R.W.L. +240. Suction +193. Yield 500 g.p.h. (test). Dando, 1928.

WC

...

...

250

250

NO DETAILS KNOWN



WELL BORING at Rusper County Sussex **TQ23/13**
1 in. map New Series 302 6 in. map 289
Made by Duke & Ockenden Date 1928
Sunk 34 feet. Bored 216 feet.
Communicated by Mr Evelyn de la Rue.
Height above Ordnance Datum 353 Rest level of water 113
Yield 500 gph.
Quality (with copy of analysis on separate sheet) Suitable for drinking purposes

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
wc {	(Dug well)	34	-		
	Weald clay	250	-	250	
	Rocky shale at base				
	Water cut at 40 ft., unfit for use (84.4° of hardness)				
	" " 240 ft.				
	Lined 6 in. tubes to 87				
	4 1/2 " " 170				
	3 " " 250 (perforated)				
	Pumps at 160 ft				

Rusper—Maps O.S.G. 8, N.S. 302.

534. NORMANS, 1/2 mile E.S.E. of church. 1928. Ht. above O.D. about 350 ft. Map S.W.

Thickness	Depth
Ft.	Ft.
—	34
216	250

Dug well
Weald Clay
Rocky shale was encountered at the bottom of the boring, which most probably was the top of the Tunbridge Wells Sand.

1st water cut at 62 ft.—74 ft., with 84.7 degrees of hardness, and unfit for use. 2nd water at 180 ft.—200 ft. R.L.W. 113 ft. down. Yield 500 g. p. hour. Lined 6 in. tubes to 87 ft., 4 1/2 in. tubes to 170 ft., and 3 in. tubes to 250 ft. (perforated 170 ft.—218 ft.). Pumps at 160 ft. down. Analyses of water on p. 240. Information from Messrs. Duke and Ockenden, Ltd.

Rusper

NORMANS. Well No. 534.

Grains per gallon.

Total solids	105
Chlorine	17.3
Ammonia	0.0343
Albuminoid ammonia	absent.
Nitrogen as nitrates	absent.
Nitrogen as nitrites	absent.
Lead	6°
Total hardness (Clark)	

This water is free from sewage pollution and may be regarded as quite suitable for drinking purposes. The water is strongly alkaline and the degree of 'hardness' is very low, hence it is well suited for general domestic uses.
By Mr. R. A. Cripps, F.I.C.

Published in
'Wells & Springs
of Sussex. II,
page 219

visited. Dined twice house on main
Sited on Sussex 3 SW/W 2.
29.5.47.

O.D. + 353. Visited 20.11.57. BH.



WELL BORING at Rusper County Sussex
Geol. map 1 in. map New Series 302. 6 in. map TQ23/13
Made by Duke & Ockenden Date 1928
Sunk 34 feet. Bored 216
Communicated by Duke & Ockenden
Height above Ordnance Datum Rest level of water 110.2
Yield Tested at 500 g.p.h.
Quality (with copy of analysis on separate sheet)

302

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	Dug well	34	—	34	—
	Wealden clay	216	—	250	—
	Lined 6" tubes to 84 ft. 4 1/2" " " 170 ft. 3" " " 250 ft. (3" tubes perforated 170'—218')				
	First water cut at 62'—74' 84.7° of hardness				
	Water cut at 180'—200' Alkaline with 6° of hardness				
	<u>Site</u> <u>Normans</u> <u>for Sir Evelyn de la Rue.</u>				
	<u>Rusper</u> <u>At Normans.</u> <u>Seissex</u> <u>for Sir Evelyn de la Rue</u> <u>D50 1928</u>				
	Dug Well .. 34' 0" Bored to .. 250' 0" Lined, 6" tubes to 87' 0" " 4 1/2" " 170' 0" " 3" " 250' 0" 3" tubes perforated from 170' to 218' Water level .. 113' 0" Tested at 500 g.p.h.				
	Shalton Wealden Clay First water cut at 62' to 74' 84.7° degrees of hardness Water cut at 180 to 200 Water Alkaline with 6° of hardness. W53B 4/324.				

M.O.F.H.
notified
2/4/28

GEOLOGICAL SURVEY AND MUSEUM.
JERMYN STREET, LONDON, S.W. 1.

(B10619). Wt. 15824—8123. 2500. 11/25. Gp. 160. O.A.

letter of the 10th inst., addressed to Duke & Ockenden, Ltd., which was referred to our Littlehampton Office as the record came from there.

From what I can gather the report that we sent in to you was the final and correct version. I have had nothing to do with this job, nor have I had access to the records, but I am assured that the statement sent in is reliable for insertion in the Memoirs.

I am writing this in case you have not received a reply direct from Littlehampton.

Yours truly,

1/ . A. A .



TELEPHONE: HOP 1768.

289

TQ23/13

302
126, SOUTHWORK STREET
LONDON S. 1

20th July, 1928.



44

Dear Mr. Edmunds,

Normans, Ruspur, Sussex.

This letter is addressed to you personally in regard to your letter of the 10th inst., addressed to Duke & Ockenden, Ltd., which was referred to our Littlehampton Office as the record came from there.

From what I can gather the report that we sent in to you was the final and correct version. I have had nothing to do with this job, nor have I had access to the records, but I am assured that the statement sent in is reliable for insertion in the Memoirs.

I am writing this in case you have not received a reply direct from Littlehampton.

Yours truly,

Wm. D. Ockenden

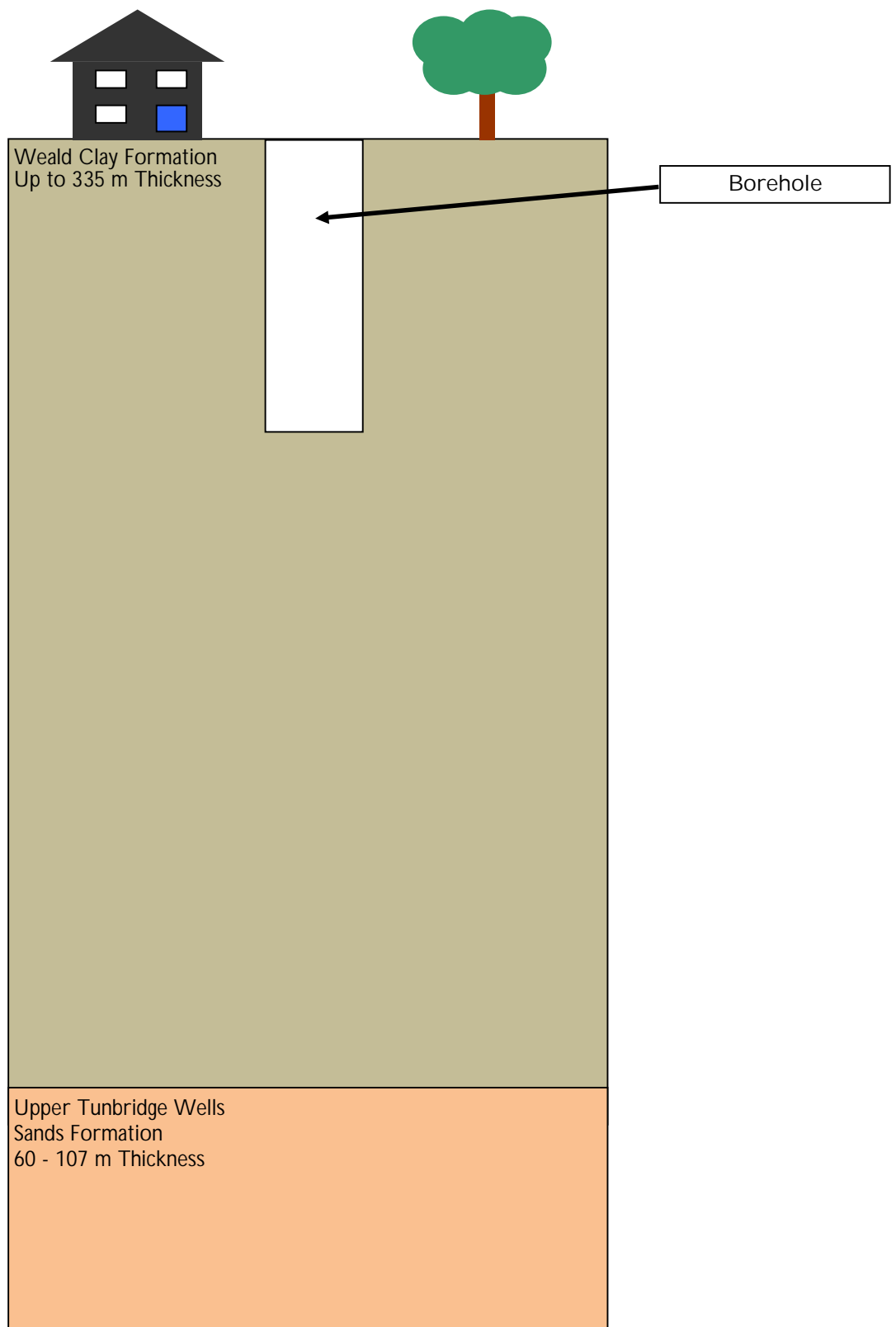
F. H. Edmunds, Esq.,
The Geological Survey & Museum,
Jermyn Street,
S.W.1.

MAO/K.

Page 219

APPENDIX B

BOREHOLE SCHEMATIC



Schematic not to scale - for indicative use only
Formation thickness scale is based upon medium values when ranges are used.

Appendix O

Correspondence with Nicholls

Emma [redacted]

From: Jamie [redacted] >
Sent: 21 February 2024 15:46
To: Emma [redacted]
Cc: Tracie [redacted]; Jeff [redacted]
Subject: Re: AL179 - Millfields Farm - Under 20m3 Estimate

*** [EXTERNAL] This message comes from an external source. Exercise caution when opening attachments, clicking links, or following request instructions especially from unknown senders. ***

Hi Emma,

To follow up on the below, we can proceed with a under 20m³ licence, this will be on the basis of 124L per person, per day, at full occupancy. This will need to be written into your water neutrality report along with any water saving measures the council require, however at 124L we are comfortable you will not exceed the 20,000L per day limit.

Many Thanks



Jamie [redacted]
Licensing Manager
nichollslc.co.uk



Tel: [redacted] | Brownings Barn, Glasshouse Lane, Kirdford, RH14 0LW



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Please consider the environment before printing.

From: Jamie [redacted]
Sent: Wednesday, February 21, 2024 14:24
To: Emma [redacted]
Cc: Tracie [redacted]; Jeff [redacted] >
Subject: Fw: AL179 - Millfields Farm - Under 20m3 Estimate

Hi Emma,

Tracie has provided you with the costs for the licensing work towards your planning application, I have accompanied it with the cost for the physical drilling works for your site.

Thank you for providing the information below on rest water levels found, this is consistent with our design of up to 80m. Can you confirm how many and where these exploratory boreholes have been drilled and any further details on them?

Please let me know if you have any questions and if you would like to proceed with the works to get you booked in.

Many Thanks



Jamie [redacted]
Licensing Manager
nichollslc.co.uk



Tel: [redacted] | Brownings Barn, Glasshouse Lane, Kirdford, RH14 0LW



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Appendix C: Natural England Withdrawal Statement

Date: 31 October 2025

jane.eaton@horsham.gov.uk

BY EMAIL ONLY



Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Ms. Eaton,

As you are aware, in September 2021 Natural England issued a Position Statement to the relevant local planning authorities advising that new development within the Sussex North Water Supply Zone (SNWSZ) should demonstrate water neutrality, in order to protect the Arun Valley habitats from potential impacts linked to Southern Water's groundwater abstraction at Pulborough. I am writing to you today to let you know our advice has changed on the basis of new evidence and consequently we will be withdrawing our position statement.

Following Southern Water's Hardham Basin Environmental Study (HBES), which was scrutinised by the Environment Agency and Natural England, we have worked with partners across the catchment to develop a positive, long-term solution. This approach strengthens ecological resilience at the Arun Valley sites, supports habitat recovery, and enables nature to thrive.

In collaboration with the Environment Agency and Southern Water, Natural England has agreed a package of ecological resilience measures and proposed licence amendments that will, address the risk of further decline of the Arun Valley sites as a result of the existing abstraction. These measures are to be implemented by March 2026. In Natural England's view this provides certainty that development in the SNWSZ will **not** have a likely significant effect on the Arun Valley sites in line with the Habitat Regulations.

The long-term solution set out above and the assessment confirming that development in the SNWSZ will not have a likely significant effect on the Arun Valley Sites means that Natural England has decided to withdraw its September 2021 Position Statement. Limiting the Hardham licence decouples the abstraction from new development, preventing additional pressure on Arun Valley water resources. Additional resilience measures will support the designated features of the sites and give confidence that they can recover towards favourable conservation status over time.

This outcome provides a sustainable way forward for both people and nature across the catchment. Natural England is grateful to your authority for the constructive and collaborative approach taken, which has strengthened relationships across Sussex. While this area remains water-stressed, these partnerships provide a strong foundation for addressing future challenges and delivering sustainable solutions.

Our Withdrawal Statement is provided below, setting out the evidence which has informed our decision. We will continue to work closely with your authorities as this new approach is implemented.

Yours sincerely,

Niall Walkden, Principal Manager | Sussex & Kent

Natural England's Withdrawal Statement for Applications within Sussex North Supply Zone

October 31st 2025

Please take the following as Natural England's substantive advice for all applications which fall within Sussex North's Water Supply Zone from the above date.

Summary

Sussex North Water Supply Zone

Natural England has reviewed Southern Water's environmental study of Hardham Basin* ('HBES', 2025). As a result of the findings of the HBES, together with the measures set out below which have been agreed by Southern Water and the Environment Agency, Natural England advises that new development which is supplied by abstraction from groundwater at Pulborough is not likely to have a significant effect on the following protected sites ('the Sites') -

- Arun Valley Special Area Conservation
- Arun Valley Ramsar Site
- Arun Valley Special Protection Areas

The measures as they relate to growth agreed by Southern Water (and the Environment Agency, in consultation with Natural England), are as follows -

1. Amendment to existing groundwater abstraction licence at Hardham
 - Reduce the annual licence quantity to an annual daily equivalent of 13 ML/d (4,745 ML/annum), from the current 16.44 ML/d (6,000 ML/annum)
 - Reduce the daily peak licence from 30 ML/d to 27 ML/d.

Further measures agreed to sustainably manage the site and prevent deterioration while the existing abstraction is in place include:

2. Ongoing management of water levels on Pulborough Brooks to ensure sufficient water availability for target levels in the supplementary advice to the conservation objectives
3. Monitoring of hydrometric and ecological features in collaboration with partners.
4. A package of conservation measures designed to increase the ecological resilience of designated features within Pulborough Brooks to include:
 - Reproiling of ditches
 - Desilting / sediment removal
 - Control of invasive species

Natural England advises that your authority does not need to undertake an appropriate assessment or consult us on water scarcity issues affecting the Sites.

* Hardham Basin Environmental Studies: Hardham Groundwater Abstraction HRA (2025) Prepared by Atkins Realis on behalf of Southern Water

Detailed Advice

Background

In September 2021, Natural England issued a Position Statement advising that abstraction within the Sussex North Water Supply Zone could not be ruled out as having an adverse effect on the integrity of the Arun Valley designated sites. An interim “water neutrality” approach was taken, requiring new development in Sussex North to demonstrate no net increase in water use while the Hardham Basin Environmental Study (HBES) was completed.

Hardham Basin Environmental Study (HBES)

Southern Water completed the HBES in August 2025 to inform the review of the Hardham abstraction licence based on work undertaken from 2021. Throughout the study’s progress Natural England participated in a project steering group (PSG) to support the methodologies used. The study was reviewed by Natural England’s principal and senior specialists in freshwater systems, hydrogeology, invertebrates, ornithology and vascular plants.

The Environment Agency (EA) consulted Natural England on the Habitats Regulations Assessment of the licence, for which Southern Water had concluded no adverse effect on site integrity from the Hardham abstraction.

The study found limited or no hydrological connection between the abstraction and two of the three Arun Valleys constituent Sites of Special Scientific Interest (SSSIs): Waltham Brooks and Amberley Wild Brooks. However, some connectivity could not be ruled out at Pulborough Brooks SSSI. Proposed mitigation of the company’s licence—improved on-site water level management and monitoring—was welcomed but did not, in Natural England’s view, provide the necessary certainty required of a Habitats Regulations Assessment and did not provide a long-term solution to maintaining the integrity of the sites.

Therefore, Southern Water, Natural England and the EA agreed to a collaborative solution to secure the site’s integrity. The agreed package has four elements, to be delivered through a modification of the EA licence and amendment of an existing [Water Industry National Environment Programme](#) (WINEP) project:

- 1) **No additional abstraction pressure** – Southern Water will volunteer a licence reduction, which in its abstraction licence from 16 → 13 ML/d (average) and 30 → 27 ML/d (peak).
- 2) **On-site water level management** – RSPB will manage sluices to maintain suitable water depths and prevent further deterioration of site features.
- 3) **Monitoring of site features** – Southern Water will continue building a scientific baseline of site conditions, providing assurance that the agreed measures are effective.
- 4) **Ecological resilience measures**– A package of actions (e.g. reprofiling/desilting ditches, removing invasive species) to improve site resilience and ensure the licence complies with the Habitats Regulations.

Modification of Hardham Groundwater Abstraction Licence

The modification of the abstraction limits in the licence caps abstraction to the level which reflects actual recent historical abstraction and removes additional headroom ensuring that new development will not add to existing pressures to water levels on the Sites.

This is the primary element of interest to local authorities in making decisions regarding relevant plans or projects as it removes connection between abstraction and growth.

Southern Water has committed in writing to this modification; the EA expects to complete the licence modification by March 2026. The licence change provides Natural England sufficient certainty that there will be no likely significant effect regarding water scarcity as a result of new development and consequently your authority does not need to consult Natural England regarding these issues. The Position Statement (September 2021) will be withdrawn on 31st October 2025.

In terms of procedural timing Natural England advises that this is reasonable and sufficiently precautionary given the time delay between the licence modification being finalised and the time it will take for significant numbers of planning applications to be approved, buildings constructed, subsequently occupied and using water.

As with all water company abstraction licences, this licence will be amended and regulated by the Environment Agency under the [Water Resources Act 1991](#), as amended by the [Water Act 2003](#) and the [Water Act 2014](#).

Further Measures

While the licence modification addresses issues related to planning, growth, and abstraction, it is essential to also consider the site's features and their capacity to recover in the future with the existing Hardham abstraction in place. This is considered as part of the Habitat Regulations Assessment of the Hardham licence undertaken by the EA as the competent authority. Natural England advises that local authorities are not required to consider these measures when determining relevant plans or projects; this information is provided for context and wider awareness.

Raising sluices, Ecological Resilience Measures and Monitoring

Southern Water has committed in writing to include the raising of sluices, resilience measures and monitoring within its Asset Management Planning (AMP) 8 WINEP programme (to 2030) by the end of October 2025. Embedding them within the established EA framework ensures delivery and accountability.

These measures will enhance ecological resilience at Pulborough Brooks SSSI, focusing on areas with potential groundwater connectivity. Actions will include ditch profiling, sediment removal, and invasive species control. Additional measures will give confidence and address localised impacts from the existing abstraction, robustly preventing the sites features from further deterioration.

The detailed plan will be developed jointly with EA technical specialists and the HBES Project Steering Group which includes Natural England, Southern Water, EA, RSPB and Sussex Wildlife Trust.

Future of Water Scarcity in Sussex North

The measures outlined above provide confidence that new development is not likely to have a significant effect. Accordingly, Natural England advises that your authority does not need to consult us further on water scarcity matters in relation to these sites.

Nevertheless, water resources across Sussex North—and much of England—remain under significant and growing pressure. Addressing this challenge is essential to safeguard both the environment and the resilience of local communities.

Natural England is committed to supporting a long-term, sustainable approach to water management. We will continue to work closely with your authority, Defra, regulators and partners to promote practical and ambitious solutions, including:

- Collaborative local planning that embeds water stewardship and climate resilience at the heart of development decisions; and
- Enhanced water efficiency standards through updates to national policy, building regulations, and mandatory water efficiency labelling; and
- Delivery of Water Resource Management Plans (WRMPs) that prioritise demand management, environmental protection and sustainable abstraction.

Through this shared commitment, we aim to secure a future where nature and growth go hand-in-hand, ensuring that the water environment of Sussex North remains healthy, resilient, and capable of supporting both people and nature for future generations.