



Flood Risk Assessment & Surface Water Strategy

**Proposed Solar Farm
Chicklade, Wiltshire
AMA1008 Revision 0
January 2026**

Prepared for: Enviromena Project Management UK Ltd

amazi 

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Revision 0 28 January 2026

1 Introduction

- 1.1 Amazi Consulting Ltd has been instructed by Enviromena Project Management UK Limited to prepare this Flood Risk Assessment (FRA) associated with the proposed 3MW solar farm at Chicklade, Wiltshire.
- 1.2 This FRA has been prepared in accordance with National Planning Policy Framework (NPPF), February 2025, and its accompanying gov.uk Planning Practice Guidance (PPG): *Flood Risk and Coastal Change* (2022). This report has been prepared to accompany a pre planning application. It is intended to provide an initial overview of flood risks to the site and enable discussions with the flood authorities. This FRA focusses upon flood risks to the site. The site drainage has been assessed separately by Infrastructure Design Ltd.
- 1.3 This FRA report has been prepared for the sole use of Enviromena Project Management UK Limited and its contents cannot be copied or relied upon by others except as noted above, without the written authority of Amazi Consulting Ltd.
- 1.4 This Assessment has been undertaken following a visit to site (29 December 2025) and it also relies upon data supplied by Government agencies. This flood data is currently the best available for assessing flood risks at the site. It does not attempt to comment upon insurance or for flood events other than as stipulated by planning policy. There is always the risk, however small, that flooding could be different to that assessed.

2 Site Description

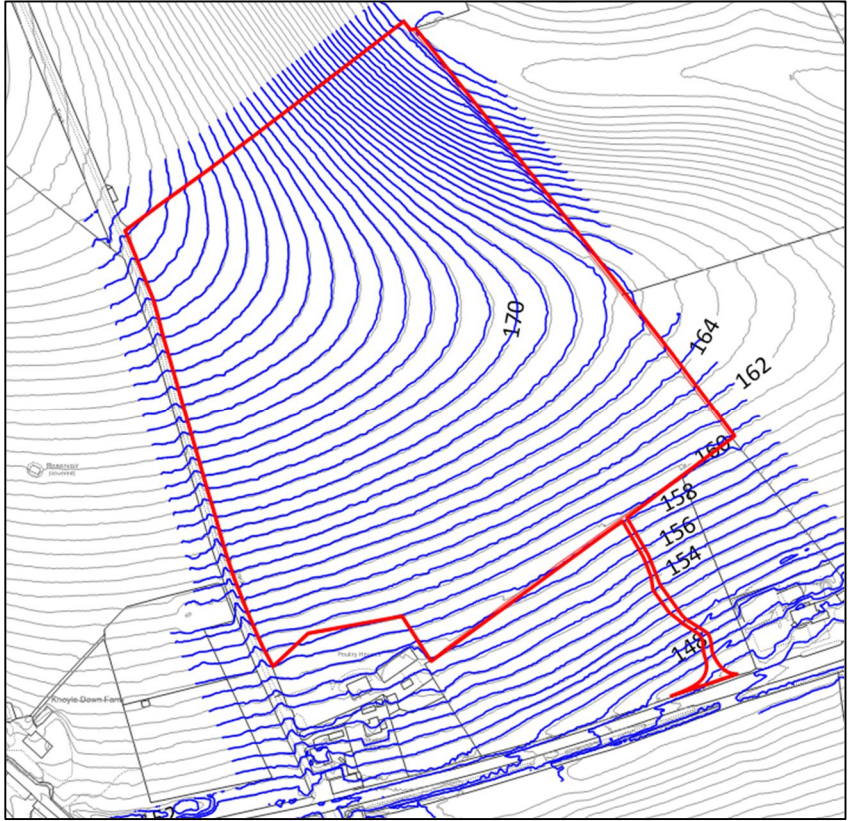
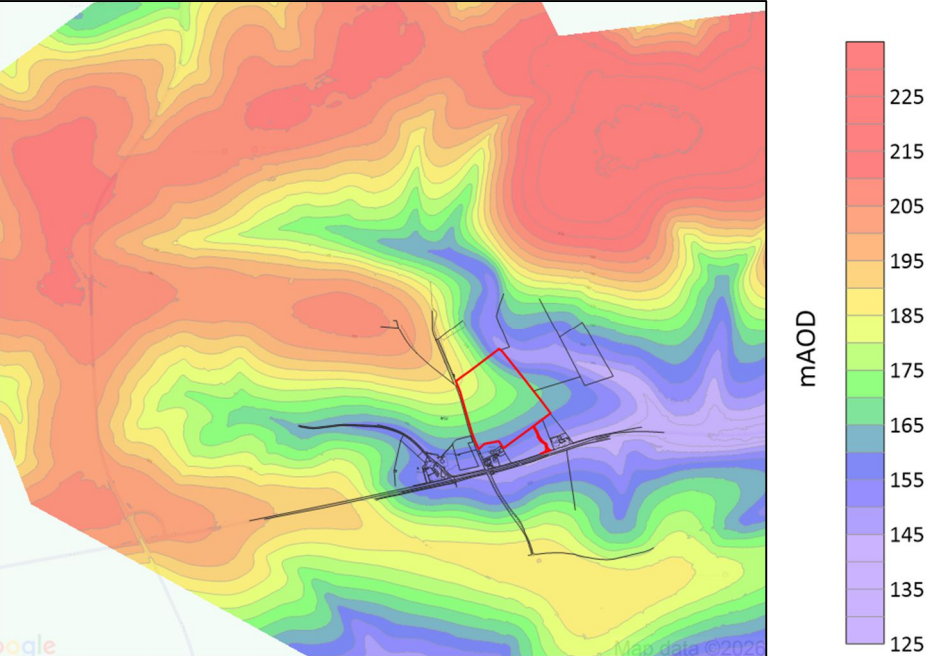
2.1 Existing

2.1.1 Table 2.1 summarises the key site information.

Table 2.1 – Existing site overview

Address	Land north of the A303, Chicklade, Wiltshire
Post code	Near SP3 5SS
NGR	390250 mE, 134550 mN
Site area	12.13 ha (plus site access)
Current land use	Arable farmland
Adjacent land use	North: Farmland East: Farmland South: Farmland, fuel station and dwellings West: Farmland
Location plan	 © Crown copyright. All rights reserved. Amazi Consulting Ltd Ordnance Survey licence: 100058381. Not to scale. Imagery ©2025 Airbus. Maxar Technologies Map data ©2025 Figure 2.1 – Site location

	 Photograph 01 - View eastwards across development area
Site topography	Refer to survey in Appendix B. This survey relates to: OSGB36, British National Grid Map Projection (EPSG: 27700). Elevations relative to sea level as height in meters above Ordnance Datum Newlyn (ODN) (EPSG: 5701). Geoid model, OSGM15. Levels will be referred to as mAOD. This survey has been undertaken using drone and therefore only provides surface data. It is not a topographical survey. Nor does it provide spot level detail of topographical features, such as watercourse invert, banks, manholes, pipework outfalls, invert levels, kerbs, road channels etc. The site generally falls from north to south as shown in Figure 2.2. Site levels vary from approximately 186 mAOD at the north of the site, to a minimum of 156 mAOD at the south boundary (not including the site h).

	 Figure 2.2 – Site contours – surveyed (blue) and lidar contours (grey) (Source: lidar DTM: ST83ne_DTM_1m.tif, ST83se_DTM_1m.tif, ST93nw_DTM_1m.tif, ST83sw_DTM_1m.tif, downloaded 25 November 2025 & ChickladeEV_DTM_27700.tif)
Local topography	 Figure 2.3 – Contours in wider area (Source: lidar DTM composite: ST83ne_DTM_1m.tif, ST83se_DTM_1m.tif, ST93nw_DTM_1m.tif, ST83sw_DTM_1m.tif, downloaded 25 November 2025 TL29nw_DTM_1m.tif)
Local planning authority	Wiltshire Council

Lead Local Flood Authority	Wiltshire Council
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2.1.3 The existing land use is classified as *less vulnerable* in accordance with Annex 3 of the NPPF.

2.2 Proposed

2.2.1 The proposed development is shown on the drawings in Appendix C and comprises the Construction of a temporary solar farm, to include the installation of solar photovoltaic panels to generate electricity for the Chicklade EV charging hub, with ancillary substations, inverters, perimeter stock fencing, landscaping and other associated works.

2.2.2 Proposed ground levels will be similar to existing.

2.2.3 The design life of this development is 40 years. The year 2066 is therefore considered appropriate in assessing the possible impacts of climate change upon flood risk.

2.2.4 The proposed development use is classified as *essential infrastructure*, in accordance with Annex 3 of the NPPF. Table 2 of the Planning Practice Guidance (Paragraph: 079 Reference ID: 7-079-20220825) given below indicates in red the appropriate nature of the development's vulnerability classification.

(For flood zone information, refer to section 3.1.)

Table 2: Flood risk vulnerability and flood zone 'incompatibility'					
Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	X *
Key:					
✓ Exception test is not required					
X Development should not be permitted					

3 River Flooding

3.1 Flood Zones

3.1 As shown within Figure 3.1, the site is within flood zone 1*. Flood zones relate to the extent of land at present day risk of flooding from rivers and the sea, ignoring the benefits of defences. The Flood Zones are published by the Environment Agency and composite dataset including national and local modelled data, and information from past floods. Smaller watercourses are not represented in this dataset.

*Refer to Appendix D for further explanation of flood zones.



Figure 3.1 - Flood Zones/flood map for planning

(Source: <https://flood-map-for-planning.service.gov.uk/map?cz=392596.8,135643.5,13.281329>, 11 December 2025)

4 Surface Water

4.1 Local Watercourses

- 4.1.1 The only open watercourse near the site that was evident when visiting site (29 December 2025) was 100 m south of the site, in the south verge of the A303. As shown in Figure 4.1, this watercourse flows west to east and directly takes road runoff.



Figure 4.1 - Watercourse

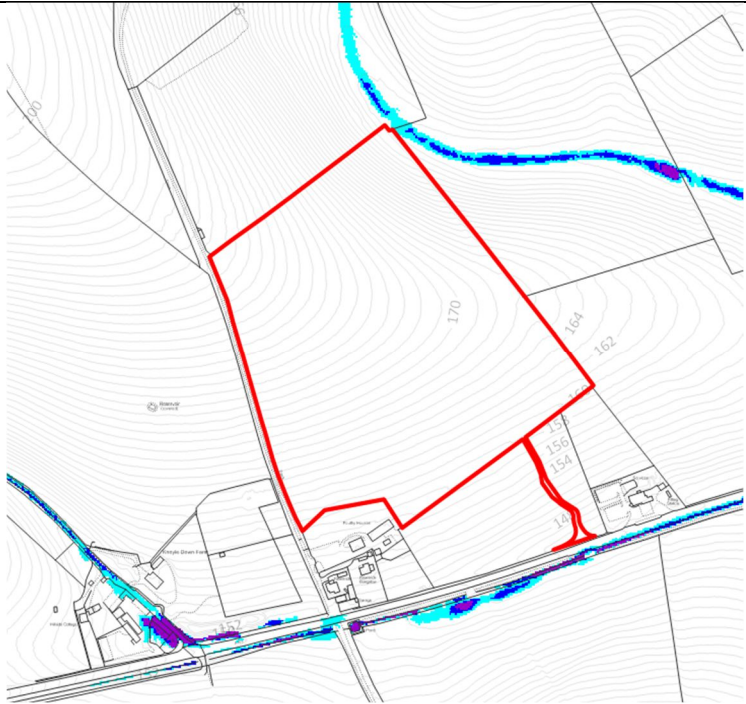
- 4.1.2 There is no (open) watercourse along the valley to the east of the site, which just clips the north corner (refer to Figure 4.6). The dashed line on Photograph 02 is the route of the valley. There are also no watercourses along the site boundaries, and between the site and the A303.

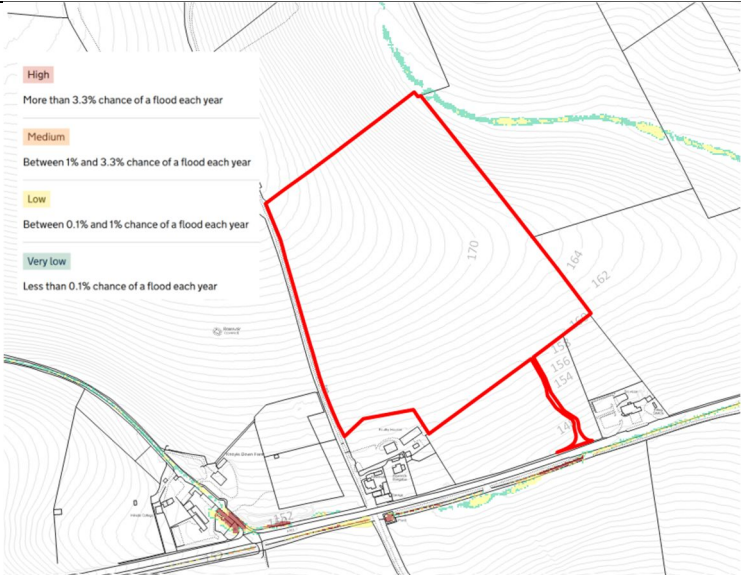
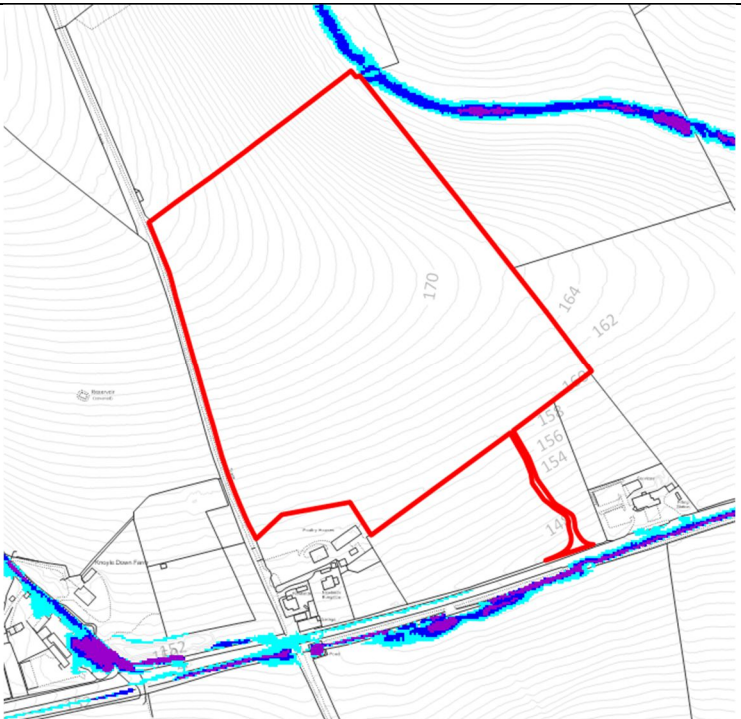


Photograph 02 - View across valley

4.2 Risk of flooding

4.2.1 Table 4.2 summaries the various Government published risk of flooding from surface water mapping near to the site.

Climate change?	Data Type	Figure	Mapping
No	Extents	4.2	 Source: rofswPolygon.shp High ⇒ greater than or equal to 3.3% chance in any given year (1:30) Medium ⇒ less than 3.3% (1:30) but greater than or equal to 1% (1:100) chance in any given year Low ⇒ less than 1% (1:1,000) chance in any given year

Climate change?	Data Type	Figure	Mapping
	Chance of flood depth up to 0.2m deep	4.3	 Source: rofsw_0_2m_depthPolygon.shp
Yes	Extents	4.4	 Source: rofsw_cc01Polygon.shp High ⇒ greater than or equal to 3.3% chance in any given year (1:30) Medium ⇒ less than 3.3% (1:30) but greater than or equal to 1% (1:100) chance in any given year Low ⇒ less than 1% (1:1,000) chance in any given year

Climate change?	Data Type	Figure	Mapping
	Chance of flood hazard [^] 0.75	4.5	 Source: RoFSW_CC01_0_75_HazardPolygon.shp

*All data downloaded between 25 November & 11 December 2025

[^]Flood hazards are a measure of how dangerous a flood might be. They are calculated using a combination of flood depth and speed – higher depths and speed mean more dangerous flooding and a higher flood hazard rating. The FD2320 hazard index equation has been used, with a debris factor of 0.5 or, if the depth is greater than or equal to 0.25m, 1.

- 4.2.2 The mapping in Table 4.1 shows that there is no anticipated risk of surface water flooding on site. We have further verified this by producing Figure 4.6. There is no land that falls towards the site boundary, and only and within the site itself falls towards the development area.
- 4.2.3 A drainage cut off to the north of development area is not considered necessary, partially due to the high permeability of the soil – see section 5 - and because there is limited land uphill of the development.
- 4.2.4 The risk of flooding from surface water (RoFSW) data in this report is published by the Government and is accompanied by a high level description that confirms '*RoFSW is created using a combination of local flood model information and national flood modelling. These are used to generate the probabilities of flood risk for each 2m grid square of land, with the aim of using the best available flood risk information in any one location..... flood estimation is not an exact science, and any flood risk assessment needs to be understood and used in that context....RoFSW outputs are generally not suitable for property level assessment; instead they estimate flood risk to an area of land. The method used does not provide information relating to when the floodwater may be deep enough to start causing damage or disruption to homes, roads or other infrastructure.*'

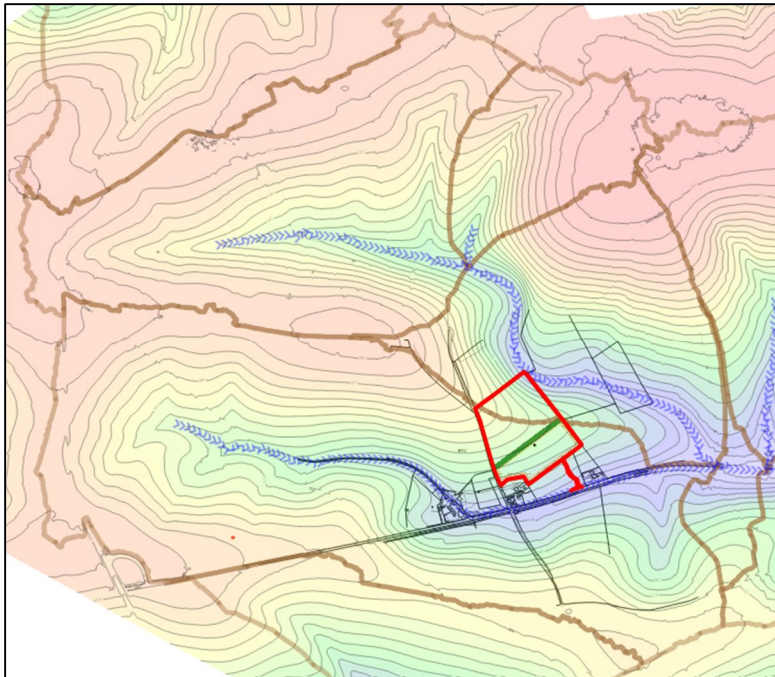


Figure 4.6 – Watersheds

(Source: data.gov.uk lidar composite: ST92sw_1m.tif, downloaded 25 November 2025.)

The approximate topographical watersheds are outlined in brown. These are theoretical only and do not include the effects of drainage systems or localised topographical features (kerbs, buildings, pipes, ponds, walls, small watercourses etc.), and localised depressions have been filled. Theoretical valley/flow lines are shown by blue chevrons.

Contours at 4m c-c

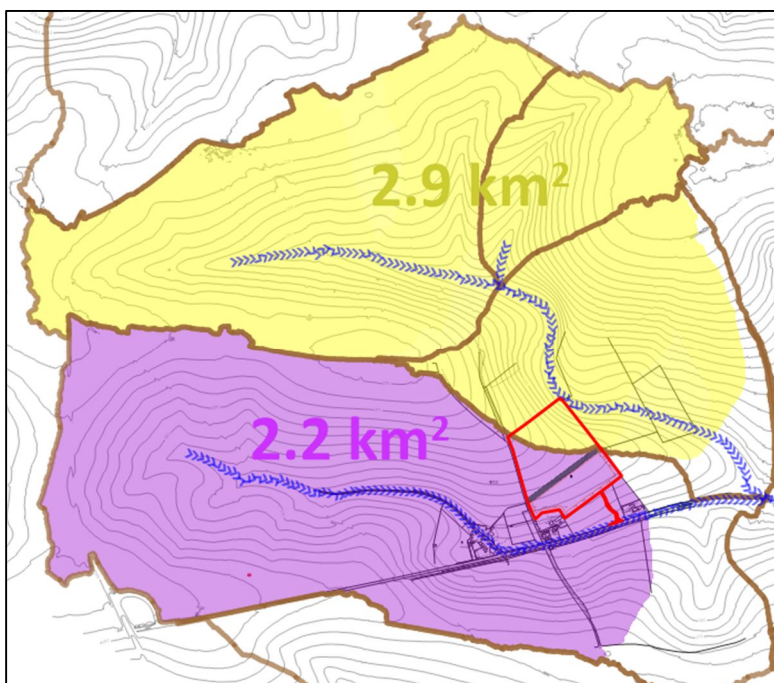


Figure 4.7 – Valley catchments

(Source: data.gov.uk lidar composite: ST92sw_1m.tif, downloaded 25 November 2025)

5 Other Flood Risks

5.1 Groundwater

5.1.1 The British Geological Survey records show the site soil conditions:

Superficial deposits → None given, but small areas of Head-Clay, silt, and gravel in adjacent areas.

Bedrock → Seaford Chalk Formation

5.1.2 British Geological Survey records include a borehole immediately south of the site, at Knoyle Down Farm (ST83SE1, 1991) records rest water level at 27 m below ground and soil strata as chalk:

NATURE OF STRATA <i>If measurements start below ground surface, state how far.</i>	THICKNESS			DEPTH		
	Feet	Inches	Metres	Feet	Inches	Metres
MADE UP GROUND	5		1.52	5		1.52
SOFT CHALK - OCC. FLINTS	40		12.19	45		13.71
HARD CHALK - NUM. FLINTS.	15		4.57	60		18.28
SOFT CHALK - OCC. FLINTS	20		6.10	80		24.38
HARD CHALK.	18		5.49	98		29.87
SOFT CHALK	41		12.49	139		42.36
HARD CHALK.	2		0.61	141		42.97
GREY MARL	1		0.31	142		43.28
SOFT CHALK.	12		3.65	154		46.93
MARLY CHALK.	2		0.61	156		47.54
SEAFOUR CHALK	7		2.14	163		49.68

5.1.3 The associated EV charging site to the south of this solar site is currently being developed. The latest soil information relating to the EV site is Ground and Water Phase II Site Investigation Report, GWPR6751/SIR/November 2025 v2.01. This confirms:

- Chalk was encountered on the EV site between 1.4 m and > 3.3 m below ground level (this is expected to be different on the solar site that is further uphill).
- Insitu testing was undertaken to up to 10 m below ground level, which relates to a level of c 136 mAOD, and no groundwater was encountered. The report also states '*groundwater anticipated to be encountered at depth within the Seaford Chalk Formation.*'
- 5 of the 8 BRE365 infiltration test locations resulted in rates of 10^{-4} to 10^{-5} m/s (the base of all these test pits were within the upper soil layers, above the chalk – which we expect would be even more permeable)

5.1.4 Figure 5.1 shows the area has very low runoff potential.

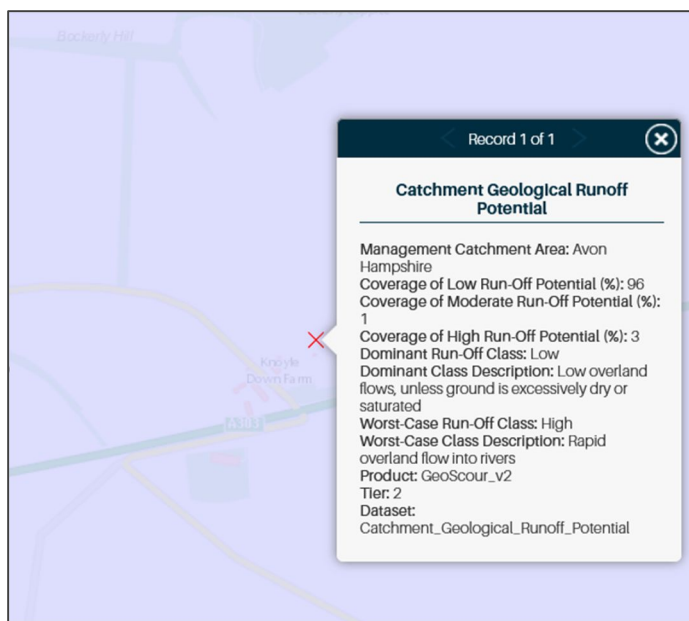


Figure 5.1 – Runoff potential

(Source: BGS onshore database)

- 5.1.5 Figure 5.2 shows the Standard Percentage Runoff (SPR) data for near the site. All areas are predominantly HOST class 1. There is 1.969 ha at the north of the wider site in the brown shaded area, and 90% of the site development area is HOST class 1. This data suggests that 5% of rainfall is likely to run off the surface rather than infiltrate into the ground, implying that the soil is very permeable.

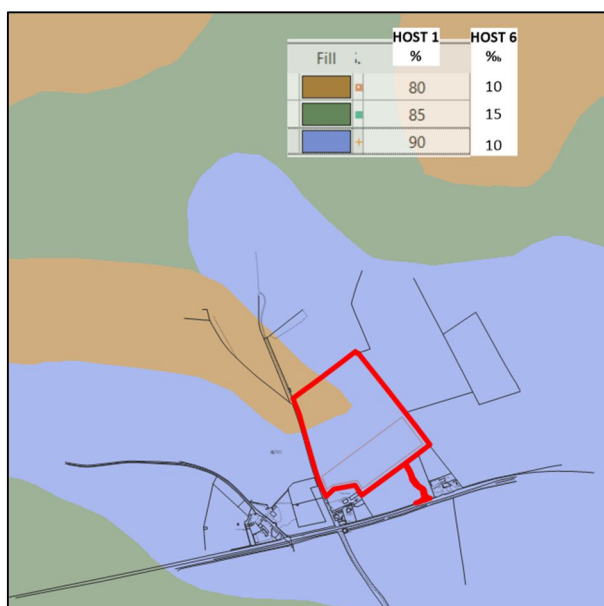


Figure 5.2 – HOST class

(Source: 156060-1_HOST_PC_Areas.shp)

Table 5.1 - Hydrology of Soil Types (HOST) data

HOST class	HOST description	BFI	SPR	Development area HOST class %	Adjusted BFI	Adjusted SPR
1	Free draining permeable soils on chalk and chalky substrates with relatively high permeability and moderate storage capacity.	0.98	2	90	1.8	1.8
6	Free draining permeable soils in unconsolidated loams or clays with low permeability and storage capacity.	0.64	34	10	0.064	3.4
					0.946	5.2

- 5.1.6 As stated in the Wiltshire Council Level 1 Strategic Flood risk assessment (SFRA), Jba 2024, ‘*groundwater Flood risk mapping is not available for the county*’ and ‘*in general, less is known about groundwater flooding than other sources and availability of data is limited*’. The SFRA includes mapping is based upon Jba groundwater emergence mapping which it states ‘*is suitable for general broad-scale assessment of the groundwater emergence in an area but is not explicitly designed for assessment at the scale of a single property*’. In Figure 5.3 we have overlaid the SFRA mapping onto the site location. This shows that the entire site, and land within the topographical catchment uphill of the site, is not likely to be at risk from groundwater flooding. This concurs with all the other data. As stated in the SFRA, ‘*the dataset also shows the risk of emergence of groundwater rather than the actual flood risk from groundwater flooding*’ and the Wiltshire Council Groundwater Management Strategy (2016) further confirms *our understanding of the mechanisms of groundwater flood risk is in its infancy and to date prediction of future events is unsophisticated when compared to the modelling of fluvial or surface water flood events. This is primarily because of the lack of data and complexity of groundwater flow behaviour and emergence.....Currently there is no standard method to predict the future risk of groundwater flooding*’.

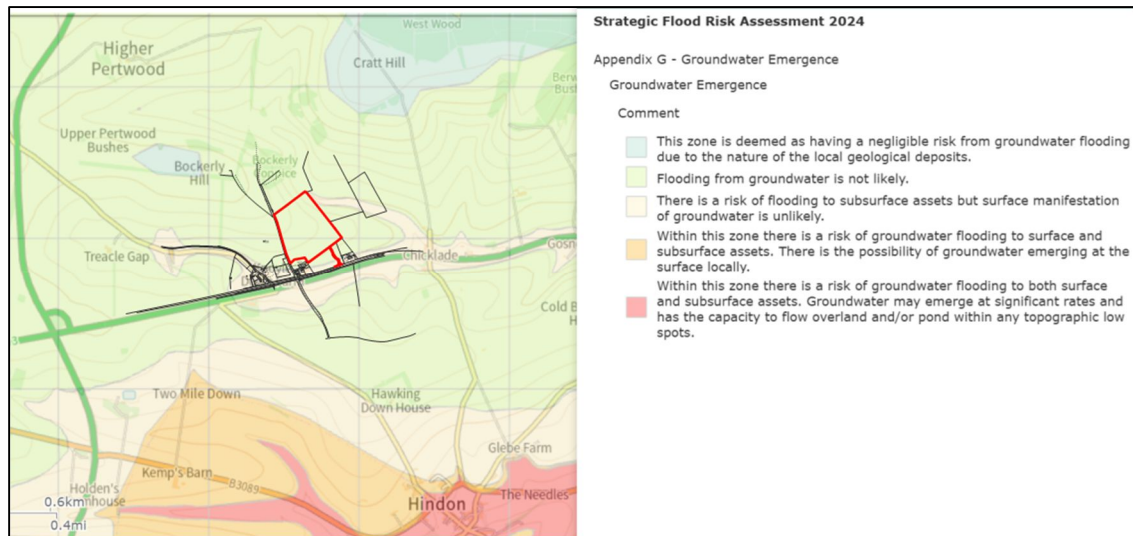


Figure 5.3 - Groundwater emergence

(Source: Wiltshire Council SFRA Appendix G)

- 5.1.7 The highly permeable strata is also evidence when visiting site due to the distinct lack of watercourses serving the rural areas, and exposed chalk, indicating permeable soils.

5.2 Sewers

- 5.2.1 As confirmed from our site walkover observations, and anecdotal evidence from the landowner, there are no known piped systems in the development area, or the wider site. The development is therefore not considered to be at risk from sewer systems. We also did not observe and standpipes, so we assume that irrigation uphill is manually installed on moveable hoses.

6 Site Rainfall Management

6.1 Background

- 6.1.1 The development is >1 hectare so therefore under planning policy requires a surface water drainage strategy.
- 6.1.2 We have worked on many large solar developments over the past 16 years. In this time there have been varying responses from the drainage authorities to site rainfall management. Some authorities have expressed desire to see formal drainage systems, although our position has consistently been that intercepting and conveying runoff in piped or other drainage system (even if attenuated with restricted outflow rate) is needlessly changing the existing site drainage regime to such an extent that it could actually increase the runoff volume or decrease response time to rainfall etc, hence have negative effects downstream. It is best, therefore, to mimic the existing site conditions as far as possible.
- 6.1.3 Firstly, the structure and use of soil at the surface can have a significant effect upon runoff rates. The Institute of Grasslands and Environmental Research, as a quote in a presentation by Tony Burch, Prof Adrian Armstrong & Jba consulting, 2014, have established that *'runoff from compacted stubble may be around 20%, but as low as 0.5% from chisel ploughed stubble'* and *'grass with good soil structure'* has only c 2% runoff.
- 6.1.4 Secondly, the orientation of panels against the ground contours/slope can affect runoff regime. If there are concentrated areas of rainfall in linear rows between the panels these can cause the formation of rivulets in the soil beneath (especially if the grass is not well managed or established). These quicken and concentrate conveyance of rainfall runoff and lead to an increase site runoff and cause soil erosion. When the panels are orientated more parallel to ground contours, the runoff is least likely to result in this undesirable effect. The greater the angle of the panel low edges from the contour lines, the more likely it is that the same runoff will fall in a narrower area and hence the increased risk of small channels forming. The slope of the ground may also have a significant effect upon the likelihood of rivulets forming, due to the increase in speed of runoff with increased slope.
- 6.1.5 Other research confirms that if the post panel ground conditions are sustained *'the installation of solar panels over a grassy field does not have much of an effect on the volume of runoff, the peak discharge, nor the time to peak and.....does not require storm-water management facilities'*¹. This is because *'solar farms do not behave like impervious surfaces, but rather as disconnected impervious surfaces with substantial infiltration of runoff in the vegetated areas between and beneath solar arrays'*².

- 6.1.6 It is only 'if the ground cover under the panels is gravel or bare ground, owing to design decisions or lack of maintenance, the peak discharge may increase significantly with storm-water management needed.....Thus, it is recommended that the grass beneath the panels be well maintained or that a buffer strip be placed after the most downgradient row of panels'¹. 'If maintenance vehicles used the spacer section regularly and the grass cover was not adequately maintained, the soil in the spacer section would be compacted and potentially the runoff volumes and rates would increase. Grass that is not maintained has the potential to become patchy and turn to bare ground'¹.
- 6.1.7 So 'management practices that pre-vent soil compaction and promote low soil bulk density during and after construction of solar facilities can result in significant reductions in solar farm runoff. These practices to reduce soil bulk density could include
- avoiding heavy machinery traffic during construction when soils are wet,
 - ripping soils after construction ends (if soils have become compacted),
 - planting deep-rooted vegetation after solar panels have been installed.²
 - buffer strip downgradient end of solar farm'^{3&2}.

1 Hydrologic Response of Solar Farms, Lauren M. Cook, S.M.ASCE1; and Richard H. McCuen, M.ASCE 2013

2 Measuring and modelling soil moisture and runoff at solar farms using a disconnected impervious surface approach, David Mulla1 Jake Galzki Aaron Hanson Jirka Simunek, 2024

3 Dabney, S. M., Moore, M. T., and Locke, M. A. (2006). "Integrated management of in-field, edge-of-field, and after-field buffers." J. Amer. Water Resource Association.

6.2 Existing Site Drainage

- 6.2.1 As evidenced in section 5.1, the soil at the site is highly permeable and existing site runoff rates are low.
- 6.2.2 ReFH2 greenfield runoff calculations are given in Appendix E and summarised in Table 6.1. The SAAR value has been taken from FEH point data and the SPR from Table 5.1.

Table 6.1 - Existing greenfield runoff (summer)

Return period	Total site 12.131 ha (l/s)	Development area 3.21 ha (l/s)	Development area 3.21 ha 1:100 6 hour Volume (m³)
1:1	12.13	3.2	22.87
1:2	13.34	3.5	
1:30	30.33	8.0	
1:100	41.25	10.9	

- 6.2.3 Our site visit, and anecdotal evidence from the landowner, has established that there appear to be no existing site drainage systems. As noted in section 4.1, there are no watercourses on or immediately adjoining the site.



Photograph 6.1 - Typical view of a solar site ground coverage

6.3 During Construction

- 6.3.1 *'Any activity that disturbs the natural soil and vegetation has the potential to increase erosion, because bare loose soil is easily moved by wind or water. Factors affecting the erosion potential of any site include soil type, geology, vegetative cover, topography, climate and land use. Physical properties of soils, such as particle size, cohesiveness, and density, affect its erodibility. When surface cover and soil structure are disturbed, the soil's erodibility potential increases. Construction activities disrupt the soil structure and its vegetative cover....Vegetation plays an important role in controlling erosion. Roots bind soil particles together, and the leaves or blades of grass reduce raindrop impact forces on the soil. Grass litter and other ground cover traps rain, which allows infiltration and reduces runoff velocity. Once vegetation is removed, erosion can proceed unchecked'* (The SuDS Manual C753, 2015).
- 6.3.2 During construction runoff could be increased, or soil negatively impacted, if mitigation measures are not implemented. The measures for the contractor to implement are given in Table 6.2.

Table 6.2 - Mitigation during construction

Measure	Purpose
Sight construction compound area near to the entrance	To limit vehicular movements across the site and unnecessary soil compaction
Light machinery wherever possible	Not using heavy vehicles where not necessary will prevent unnecessary compaction.
Limit vehicle movements on site	To prevent unnecessary compaction.
Minimum top soil strip	To prevent loss of vegetation and risk of increased erosion.

Planting	Re-seeding with appropriate grass seed mix to be undertaken during a period of suitable weather so it quickly becomes well established. This should be as soon as possible once the main construction is completed to avoid time the site is unvegetated. If there are extended periods of dry weather, irrigation may need to be considered.
Soil reinstatement	Good practice entails chiselling the soil at the end of the construction process to mitigate for any soil compaction that has occurred, or even improve soil structure from its pre-development state. Then establishing the grass quickly will help avoid any damage due to runoff from the panels.

6.3.3 If for some reason there is a risk of excessive runoff or soil erosion, or the construction activities cause such effects, then temporary drainage measures should be installed to manage runoff during construction. For example, an infiltrating stilling pond with strawbales to filter runoff, or other similar measure. Or undertaking construction during the dryer months of the year. The permeable nature of soil at this site may mean that the risk of these effects are relatively limited.

6.3.4 South/downhill of the main development area is the proposed site entrance. This includes a small area of proposed hard surfacing, 20 m long, 90 m². This area joins onto the associated EV charging development that is currently under construction. This proposed tarmac area appears to fall at a very steep gradient, from an existing ground level of c150 mAOD at the north, to the proposed hard surfacing in the EV site of 143.8 mAOD, i.e. a very steep gradient of 1:3.2. We understand that this hard surfacing will discharge directly onto the EV charging site hard standing and be intercepted and attenuated within the adjacent EV site drainage system.

6.4 Post Construction

6.4.1 There is not expected to be a noticeable increase in runoff post development. The most significant risk of changes to runoff would be caused by the development construction activities. The construction process can compact the soil which could increase the risk of increased runoff or erosion. treatment of the soil during construction will have a large effect upon the post construction site runoff. So fundamentally the measures in section 6.3 should prevent changes to site runoff.

6.4.2 The proposed site surface will be managed grass, similar to photograph 6.1. The rainfall runoff response is therefore expected to be similar to the existing site. The existing arable land use will have differing soil structure depending upon the crop or stage of crop cycle, but on average, the proposed grass is expected to be of similar, or greater permeability. Hence similar, or even reduced runoff. The proposed post development mitigation measures are listed in Table 6.3.

Table 6.3 - Mitigation post construction

Measure	Purpose
Buffer strip	As note in section 6.1, buffer strips downhill of the solar arrays will enable infiltration and essentially the research shows they can revert runoff to existing greenfield conditions (if changes have occurred). There is a large area of undisturbed field south/downhill of the site and this will act as a natural buffer stip.
Interception swale	as a precautionary measure, an interception swale is included at the downhill side of the panels. This will be a 0.5 m deep, 1:4 side slope grassed channel that will enable additional storage on site and encourage infiltration of any runoff if it does reach the swale. A typical section of the swale is shown on Figure 6.1. This is not intended to convey flows, but to increase the site potential for infiltration only.
Undertake maintenance with light vehicles	To avoid soil compaction and damage to vegetation
Six monthly drainage 'Living' surface water management	A 'living' surface water drainage management plan should be considered, whereby post-construction, the operation of the site should include occasional reviews of the runoff regime from the area, especially during heavy rainfall. Every site is very different in terms of how it will respond to a change in land use (due to soil conditions, topography, construction practices and future weather conditions), so this reflective approach will assist as a way of ensuring that the soil is managed. During the first few years it is important to hold frequent inspections to: a) ensure that vegetation suitably establishes b) ensure vegetation is growing properly, and to c) check the soil is not bare or compacted. Any remedial work should occur as soon as possible. For the first few years, so the site maintenance team should use the check sheet in Appendix G.
Ongoing soil management	Grass cutting

- 6.4.3 If the proposed ancillary structures are included in the site runoff as urban contribution, then the runoff rates could be calculated as shown in Table 6.4. In practice though, the proposed mitigation will suitably manage site rainfall. The effect of the small transformer building will only be theoretical and in practice the land south of the building will act as a buffer stip.

Table 6.4 - Proposed runoff (summer)

Return period	Development area 3.21 ha minus 0.0025 = 3.2075 ha + inverter building (l/s)	Development area 3.21 ha 1:100 6 hour Volume (m ³)
1:1	Change in rates imperceivable and significant reduction in runoff due to proposed swale	23.217
1:2		
1:30		
1:100		

6.4.4 Development area = 32,100 m², transformer building = 25 m², i.e. urban areas is 0.078% of total development area. This is minimal, and given the buffer area research mentioned in §6.1.6/7, we consider that no mitigation measures are required. This is also substantiated by the 0.347 m³ difference in runoff volumes, and in perceivable difference in runoff rates (compare Table 6.2 and md 6.4).

6.4.5 As a precaution, and as a betterment measure, there is proposed to be a cut-off swale around the lower perimeter of the solar panelled area as indicated in Figures 6.1 and 6.2. Figure 6.1 also shows the site contours. This informal feature would aid infiltration into the ground.

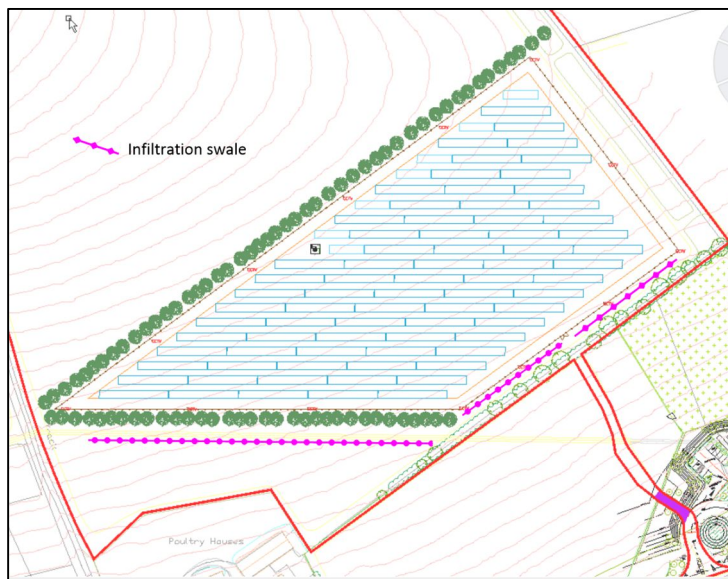


Figure 6.1 - Cut off swale - Location

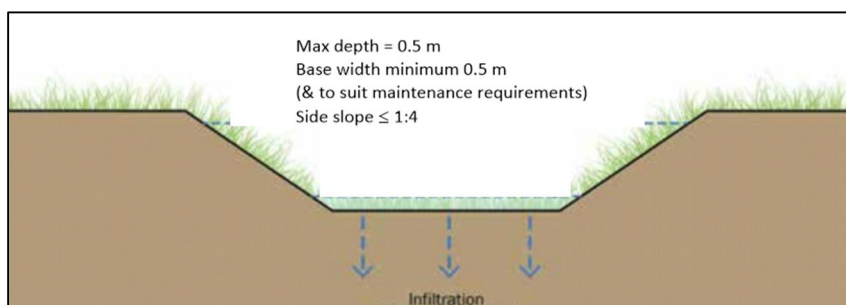


Figure 6.2 - Cut off swale – section

(adapted from Figure 17.1 of C753, The SuDS Manual)

7 Summary

- 7.1 The proposed development comprises the construction of a temporary solar farm, to include the installation of solar photovoltaic panels to generate electricity for the Chicklade EV charging hub, with ancillary substations, inverters, perimeter stock fencing, landscaping and other associated works.
- 7.2 The development is located fully within flood zone 1.
- 7.3 There are no watercourses on or adjacent to the site.
- 7.4 The site is at low risk of surface water flooding.
- 7.5 The site is at low risk of groundwater flooding.
- 7.6 The site soil will be appropriately managed during and post construction to maintain permeability and reduce the risk of increased runoff. As a precaution, a cut-off swale can be installed on the downhill side of the panels.

A
Location

B
Survey

C
Proposed Site

D

NPPF Planning Practice Guidance Flood Risk and Coastal Change, Table 1

National Planning Policy Planning Practice Guidance: *flood risk and coastal change*

Table 1: Flood Zones

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the [Strategic Flood Risk Assessment](#) when considering location and potential future flood risks to developments and land uses.

Paragraph: 078 Reference ID: 7-078-20220825

E
Existing (greenfield) Runoff

AMA1008 - Chicklade:	Date: 23/12/2025			
	Designed by: LSP	Checked by: LSP	Approved By: LSP	
Report Title: UK and Ireland Rural Runoff Calculator	Company Address:			

ReFH2

Details

Site Location	GB 390194 134518 ST 90194 34518
Rainfall Version	2013
Data Type	Point
Season	Summer
Country	England, Wales and Northern Ireland
Area (ha)	1.00
SAAR (mm)	939.0
DPLBAR (m)	120.000
DPSBAR (1:X)	13.30
PROPWET	0.350
BFIHOST	0.946
BFIHOST19	0.927
FARL	0.000
SPRHOST (%)	5.2
URBEXT 1990	0
Return Period (years)	2

Results using ReFH2 model 2.2

	Q 2 (years) (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Rural	1.1	1.0	2.5	3.4
Urban	1.1	1.0	2.5	3.4

AMA1008 - Chicklade:	Date: 23/12/2025			
	Designed by: LSP	Checked by: LSP	Approved By: LSP	
Report Title: UK and Ireland Rural Runoff Calculator	Company Address:			

ReFH2

Details

Site Location	GB 390194 134518 ST 90194 34518
Rainfall Version	2013
Data Type	Point
Season	Winter
Country	England, Wales and Northern Ireland
Area (ha)	1.00
SAAR (mm)	939.0
DPLBAR (m)	120.000
DPSBAR (1:X)	13.30
PROPWET	0.350
BFIHOST	0.946
BFIHOST19	0.927
FARL	0.000
SPRHOST (%)	5.2
URBEXT 1990	0
Return Period (years)	2

Results using ReFH2 model 2.2

	Q 2 (years) (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Rural	0.7	0.6	1.6	2.2
Urban	0.7	0.6	1.6	2.2

Runoff volume – pre-development

AMA1008 - ReFH2_Software_100yr_3.21ha_adjustedBFI_RURAL
Time series data

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m³/s)	Net Rain (mm)	Runoff (m³/s)	Baseflow (m³/s)	Total Flow (m³/s)	AMAZI		
00:00:00	0.7331	0.0000	0.0284	0.0000	0.000	0.000	mins	V (m3)	22.87034
00:24:00	1.0712	0.0000	0.0423	0.0000	0.000	0.000	0.00	0	Total
00:48:00	1.5616	0.0000	0.0633	0.0001	0.000	0.000	6.00	0.011807	
01:12:00	2.2695	0.0000	0.0955	0.0004	0.000	0.001	12.00	0.053001	
01:36:00	3.2842	0.0000	0.1456	0.0007	0.000	0.001	18.00	0.133419	
02:00:00	4.7212	0.0000	0.2245	0.0011	0.000	0.001	24.00	0.244843	
02:24:00	6.6942	0.0000	0.3494	0.0017	0.000	0.002	30.00	0.399646	
02:48:00	8.3666	0.0000	0.4878	0.0027	0.000	0.003	36.00	0.626948	
03:12:00	6.6942	0.0000	0.4313	0.0041	0.000	0.005	42.00	0.973649	
03:36:00	4.7212	0.0000	0.3261	0.0058	0.001	0.006	48.00	1.486134	
04:00:00	3.2842	0.0000	0.2373	0.0072	0.001	0.008	54.00	2.098787	
04:24:00	2.2695	0.0000	0.1691	0.0077	0.001	0.009	60.00	2.599231	
04:48:00	1.5616	0.0000	0.1188	0.0074	0.001	0.009	66.00	2.780528	
05:12:00	1.0712	0.0000	0.0826	0.0065	0.002	0.008	72.00	2.659192	
05:36:00	0.7331	0.0000	0.0571	0.0055	0.002	0.007	78.00	2.355389	
06:00:00	0.0000	0.0000	0.0000	0.0043	0.002	0.006	84.00	1.969603	
06:24:00	0.0000	0.0000	0.0000	0.0032	0.002	0.005	90.00	1.558663	
06:48:00	0.0000	0.0000	0.0000	0.0022	0.002	0.004	96.00	1.151025	
07:12:00	0.0000	0.0000	0.0000	0.0013	0.002	0.003	102.00	0.778459	
07:36:00	0.0000	0.0000	0.0000	0.0007	0.002	0.003	108.00	0.47402	
08:00:00	0.0000	0.0000	0.0000	0.0004	0.002	0.002	114.00	0.269081	
08:24:00	0.0000	0.0000	0.0000	0.0002	0.002	0.002	120.00	0.143761	
08:48:00	0.0000	0.0000	0.0000	0.0001	0.002	0.002	126.00	0.06995	
09:12:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002	132.00	0.027153	
09:36:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002	138.00	0.006052	
10:00:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002	144.00	0	
							150.00	0	

F
Proposed Runoff

Runoff volume – post-development

AMA1008 - ReFH2_Software_100yr_3.21ha_adjustedBFI_URBAN0.00003

Time series data

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m³/s)	Net Rain (mm)	Runoff (m³/s)	Baseflow (m³/s)	Total Flow (m³/s)
00:00:00	0.7331	0.0000	0.0290	0.0000	0.000	0.000
00:24:00	1.0712	0.0000	0.0432	0.0000	0.000	0.000
00:48:00	1.5616	0.0000	0.0647	0.0002	0.000	0.000
01:12:00	2.2695	0.0000	0.0975	0.0004	0.000	0.001
01:36:00	3.2842	0.0000	0.1485	0.0007	0.000	0.001
02:00:00	4.7212	0.0000	0.2287	0.0011	0.000	0.001
02:24:00	6.6942	0.0000	0.3553	0.0018	0.000	0.002
02:48:00	8.3666	0.0000	0.4952	0.0028	0.000	0.003
03:12:00	6.6942	0.0000	0.4371	0.0042	0.000	0.005
03:36:00	4.7212	0.0000	0.3302	0.0060	0.001	0.007
04:00:00	3.2842	0.0000	0.2401	0.0073	0.001	0.008
04:24:00	2.2695	0.0000	0.1710	0.0078	0.001	0.009
04:48:00	1.5616	0.0000	0.1201	0.0075	0.001	0.009
05:12:00	1.0712	0.0000	0.0835	0.0066	0.002	0.008
05:36:00	0.7331	0.0000	0.0577	0.0055	0.002	0.007
06:00:00	0.0000	0.0000	0.0000	0.0044	0.002	0.006
06:24:00	0.0000	0.0000	0.0000	0.0032	0.002	0.005
06:48:00	0.0000	0.0000	0.0000	0.0022	0.002	0.004
07:12:00	0.0000	0.0000	0.0000	0.0013	0.002	0.003
07:36:00	0.0000	0.0000	0.0000	0.0008	0.002	0.003
08:00:00	0.0000	0.0000	0.0000	0.0004	0.002	0.002
08:24:00	0.0000	0.0000	0.0000	0.0002	0.002	0.002
08:48:00	0.0000	0.0000	0.0000	0.0001	0.002	0.002
09:12:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002
09:36:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002
10:00:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002
10:24:00	0.0000	0.0000	0.0000	0.0000	0.002	0.002

AMAZI

mins	V (m3)	23.21669
0.00	0	Total
6.00	0.012304	
12.00	0.055206	
18.00	0.138121	
24.00	0.2526	
30.00	0.411478	
36.00	0.644376	
42.00	0.998745	
48.00	1.521127	
54.00	2.142672	
60.00	2.645573	
66.00	2.822639	
72.00	2.693832	
78.00	2.38176	
84.00	1.988373	
90.00	1.571564	
96.00	1.159498	
102.00	0.783257	
108.00	0.476317	
114.00	0.270056	
120.00	0.144061	
126.00	0.069957	
132.00	0.027127	
138.00	0.006046	
144.00	0	
150.00	0	

G
Check sheet



Solar Farm, Chicklade, Wiltshire

Drainage Check Sheet

Background Information

The development of this site from agricultural farmland to a solar park should have minimal implications upon how the site drains.

This check sheet enables review and recording of the performance of the site runoff regime to monitor that rainfall management remains as expected.

Further information on surface water is given in Amazi Flood Risk Assessment & Drainage Strategy report AMA1008, January 2026.

How to use this check sheet

- Staff who are familiar with the site should undertake this drainage review approximately every 6 months as part of undertaking other operation checks. Or if there are notable rainfall/runoff events.
- Some of the notes you provide are for information only and some will require action.
- This check sheet should be filed along with other site operation information and may need to be made available in future use by a drainage specialist.

Please complete:

Yes/No

1. Have there been any reports from elsewhere of excessive runoff or flooding near to the site?

Y	N
---	---

.....

2. Is there any evidence of rivulets (small channels) forming due to rainwater?

Y	N
---	---

.....

3. Are there areas where the vegetation has gone and the ground is bare?
Has vegetation been eroded by rainwater runoff, or is it missing due to other effects (e.g. drought, vehicle movements etc.)

Y	N
---	---

.....

4. Has there been any feedback regarding surface water from adjoining land owners?

Y	N
---	---

.....

Y	N
---	---

If you have answered yes to any of these questions, or have any concerns about the management of rainwater at this site then contact the appropriate manager who will consult with a drainage engineer

Further comments/action taken:

.....
.....
.....

Check undertaken by:

Date:

Signature:

Is further action required?

Y	N
---	---



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