Water movement from the proposed Bylchgwyn traveller site towards the River Dee SAC

The proposed small family traveller site is just off an unadopted stone-surfaced road between Bylchgwyn village and the Glascoed road. The site is mostly in OS grid square SJ267536, a nearby postcode is LL11 5UB. The whole site ('the wider site') is as a long rectangle aligned roughly south east to north west. The layout and local habitats are shown on a plan, overleaf. Waste water management proposals for the site are as a measured dosing and precipitate trapping system that has exceptional phosphate and nitrate capture, combined with committed contractor management (Clenviro Topas Plus system). Discharge from this system would be into a drainage mound, between the residential site and a wetland area.

In summary, any surface water escaping from the site would flow into a level area of wetland, then under heavy rainfall into an area of wet woodland. There is no readily visible link from the woodland to a small stream arising about 130m NE from the site. This stream flows north east through areas of old mining waste for about 2.6km to the Afon Cedigon, which then enters the Afon Alun a further 4km downstream. The Alun then flows for 12.5km to the River Dee SAC near Farndon, in total about 19km of stream corridor from the site to the Dee. The tidal part of the Dee is about 24km downstream of Farndon. The lower 4.5km of the Alun is slow flowing through a level agricultural landscape, as are the lower reaches of the Dee. Neither the Cedigon nor the Alun have any statutory designation for nature conservation. Distances given are from river corridors traced on large scale OS Mapping (MAGIC) with some smoothing, which is described here as 'corridor length'. Further information has been taken from historic maps and Google Earth images.

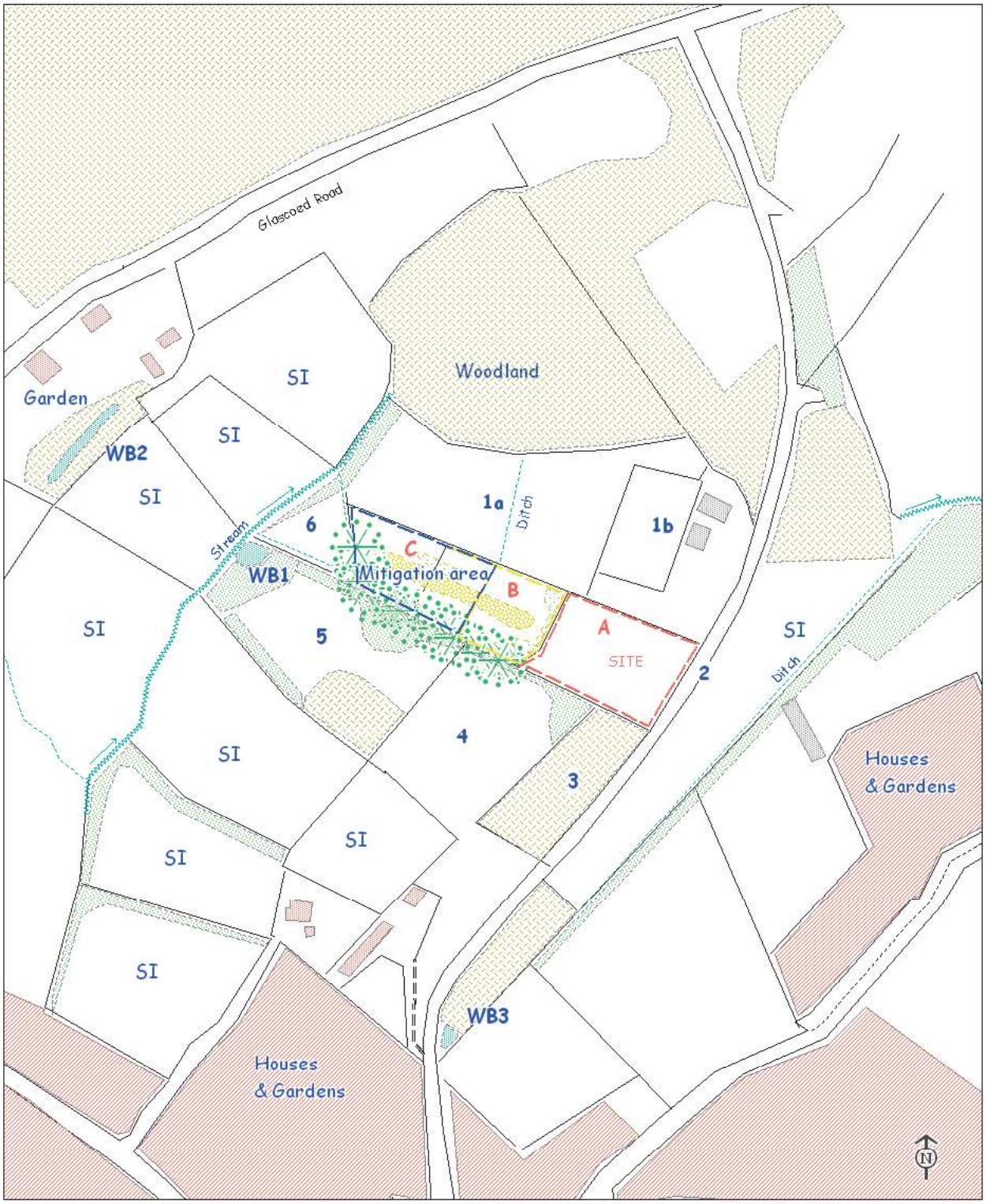
Any plant nutrient in waste water or storm water that escaped the proposed very efficient treatment on site would be likely to be absorbed in vegetated wetland within 100m of the site. Deposition in silt would then occur in slow flowing sections of streams and rivers, through a 19km channel before the water reached the River Dee SAC in its lower reaches. It is very unlikely that any nutrient from the site, especially phosphate, would reach the River Dee SAC.

Watercourse details

The proposed development area, A on the plan, is on slightly elevated ground over clay, with the buffer zone B falling on a shallow gradient to the north west, with the mitigation area C being fairly level. Both B and C are mostly under rush meadow and tall herb, with willow carr developing in the centre of the site. Two ditches drain from the site, one beginning at the mid point of the north east boundary and one running along the short north west boundary. Both only have flow in periods of wet weather. Slightly further west there is a small stream draining a few fields to the south of the site, this stream may be spring-fed. All of these watercourses run into an area of wet woodland to the north of the site; this does not have any obviously continuous water courses that link to the stream which appears about 130m to the north east. All of this ground was surveyed on foot by the author, in 2019/20.

The shallow valley around the site and the stream to the north east has been locally impacted by small scale mineral dumping. There are local limestone quarries, and former small colliery and lead mine sites. The local topography is therefore rather irregular. The stream flows on for about 1.44km in an under-formed valley on shallow gradients before disappearing for 65m, either in a culvert or through permeable mineral waste, then for 844m down a steeper valley in woodland, before disappearing again for 98m. A relatively steep valley then carries the stream for 200m to its junction with the Afon Cedigon. The Cedigon is joined by a number of streams and another river in this locality, joining the Afon Alun about 3.97km downstream, near Sydallt. The Alun is fairly quick flowing for about 8.14km, and then runs in a level landscape as a lowland river for 4.45km to the lower Dee; there appear to be at least three weir pools along the Alun.

E J Lomas, Camlad Ecology ltd. 13 September 2024



Scale approx. 1:2,500 at 18cm frame width

Traveller Site, Bwlchgwyn Location & Habitats

Boundaries & features as shown are representative only

1a ... 6 Habitat around site (see ecology text)

SI Semi-improved grassland

Scrub , scattered trees, dense hedgerows

Woodland (mixed & deciduous)

Residential areas (Bwlchgwyn village)

Separate houses, barns, traditional

Widespan buildings, sheet clad