

Our Ref: 19-2099.04

Date: 27th August 2021

Mrs Sophie Brown
Sustainable Places Planning Advisor
Environment Agency
Guildbourne House
Chatsworth Road
Worthing
West Sussex
BN11 1LD

Dear Sophie Brown,

Thank you for your response regarding the planning application for Brockhampton West, Harts Farm Way, Havant Site (reference: APP/21/00189 dated 17 August 2021). For ease of reference, we have included the Agency's comments in red italics, with our specific response to the issues raised following:

We have reviewed the submitted Geo-environmental Assessment report (Former Brockhampton West Landfill, North of Harts Farm Way, Havant, DeltaSimons, July 2021, 19-2099.04) and provide comments relevant to the review of this document below. Please note that these comments are in addition to and an enhancement of our comments provided in our previous letter dated 22 June 2021 (our ref: HA/2021/123019/02). In particular, we would still recommend the inclusion of the conditions specified in our previous response in any planning permission granted.

Of the requested conditions (referred to in Environment Agency letter HA/2021/123019/02-L01 dated 22 June 2021), Condition 1 which requires a Preliminary Risk Assessment, Site Investigation, Remediation & Verification Strategy has been fulfilled with the provision of the following:

- 'Geo-environmental Assessment' dated August 2021 (this has been subject to very minor amendments and clarifications and re-issued on 27 August 2021 in response to the Environment Agency's 17 August letter).
- 'Remediation & Verification Strategy' dated August 2021 (this has also been subject to minor amendments / edits to take into account the Agency's 17 August comments prior to issue for the first time).

Based on the comprehensive contents of the aforementioned two reports, we consider Condition 1 requested by the Agency is no longer required when planning permission is formally granted. As this will typically be a pre-start condition, the Client would not countenance a condition being applied when all requirements have been fulfilled. We agree, however, that Conditions 2 to 4 inclusive by the Agency are appropriate to be incorporated into the permission.

"With regards to the assessment of 2 separate groundwater levels in the waste mass and chalk aquifer, we would agree that some of the water levels observed may be perched water in the landfill mass. However, it is not clear if these perched water observations represent anything cohesive, or if they are multiple localised areas of perched water. As such it may be more accurate to say there may be multiple localised areas of perched groundwater in areas of the landfill mass."

The Geo-Environmental Assessment (GEA) report (reference: 19-2099.04) has been updated to reflect this – please see Section 4.4.3.

“With regards to the monitoring of groundwater and surface water, we would raise the following points: Given the location, the results of monitoring should also be compared against saline EQS.”

Delta-Simons have screened the groundwater and surface water data against the saline EQS values, the results did not present any additional significant EQS exceedances to those already identified within the report (i.e. when adopting freshwater EQS values). Additionally, the same data trends still apply i.e. the groundwater and surface water data demonstrates sufficient downward and lateral migration with specific consideration given to the lack of elevated concentrations identified within the surface water data.

As such, it is considered that, when compared with the saline EQS values, the groundwater and surface water data obtained to date does not highlight any additional plausible risk to the Hermitage Stream or the Langstone Harbour (considered to be the critical controlled waters receptors in the Site’s environs).

The GEA has been updated to provide commentary following the screening of the water chemical data against the saline EQS values – please see Section 6.3.3.

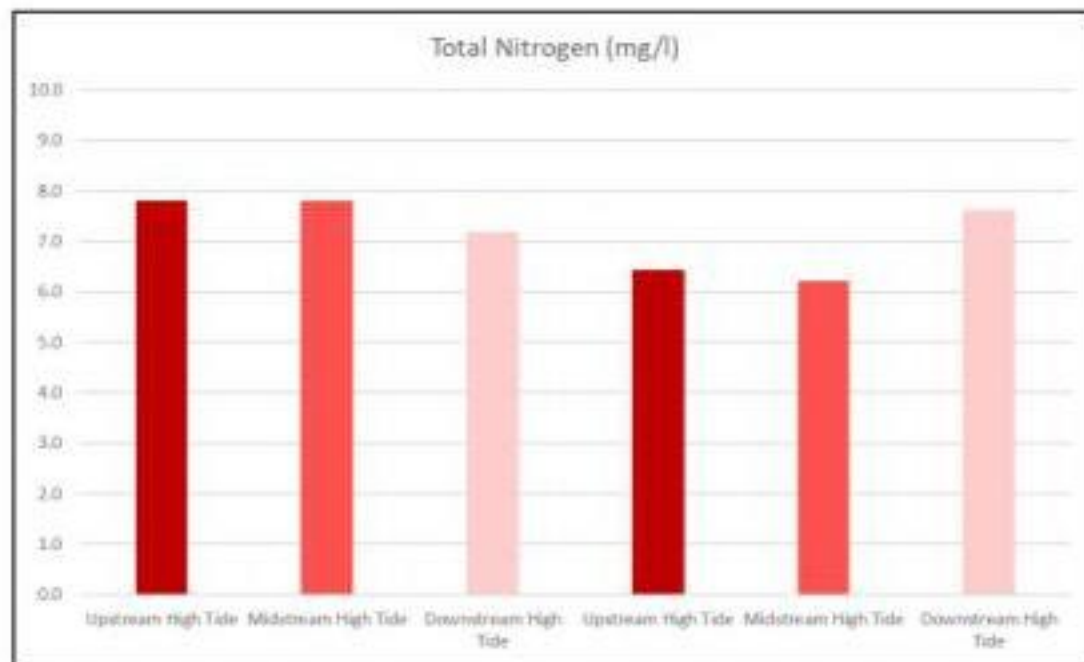
“Elevated hydrocarbon levels in a few locations in the chalk are a little concerning. We accept though that there is no evidence of widespread impact within the chalk, and no evidence of impact in the surface water. We also note that there is no clear point source that could be addressed. As such, we do not feel this warrants any further action. However, if during development a clear point source of hydrocarbons was encountered (for example, distinct oil drums) then potential further action should be discussed with ourselves. We have recommended a condition relating to unidentified contamination and trust this will be included in any planning permission granted.”

This has been addressed within the Delta-Simons Remediation & Verification Strategy (reference: 19-2099.07) however, specific commentary on unexpected organic contamination (e.g. discarded drums of hydrocarbon fuels/lubricants, organic solvents etc) has been added – please see Section 5.6.

“There are comments indicating that elevated Nitrites were observed in the stream, but it has been assumed to be from offsite sources due to a lack of Nitrite being observed on site. Nitrites often occur as a transformation product from Ammonium in aerobic environments. There is as such a clear significant source of any observed Nitrites associated with this site. Therefore, any elevated Nitrites should be subject to further assessment.

We remain concerned regarding the impact of Nitrogen species on the wider environment. We agree that the observation from the Hermitage Stream does indicate that there is significant attenuation of Ammonium. This may be both from dilution and oxidation. These may vary dependent of factors such as flow and temperature. However Nitrites, and the wider environmental loading from Nitrates, remain a concern.”

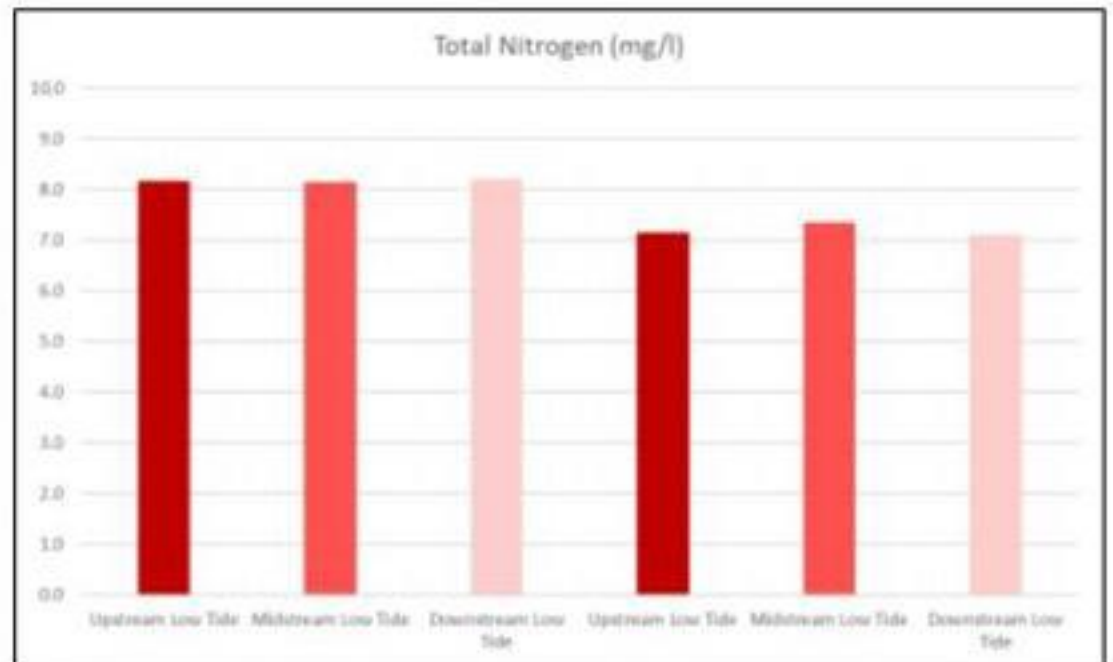
We have assessed the Total Nitrogen in all species (both mineralised and oxidised) for the surface water sampling events. Concentrations for the high-tide sampling events are illustrated on the graph overleaf (note that the graph reflects the data from two separate sampling events):



There is no discernible or statistically significant change in nitrogen concentrations upstream / downstream of the Site. This is with the possible exception of the 'Downstream' high tide concentration in the second visit. This visit was undertaken after a period of heavy rainfall. It is of note that this sampling point is within circa 200m of a Consented stormwater discharge point from Budds Farm Wastewater Treatment Works. It is possible that this discharge was occurring at the time of sampling and, due to the rising tide, resulted in slightly higher nitrogen concentrations.

The low tide sampling event data is summarised on the chart to the right (*also for two separate sampling events*). No significant data trends / variations are observable at all, and there is no evidence of discharge of nitrogen species into the Hermitage Stream during a falling tide.

We would reiterate that within the substantial groundwater and surface water chemical testing dataset for the subject Site, no exceedances of relevant GAC have been recorded for oxidised nitrogen species. Mineralised nitrogen (i.e. NH_3 & NH_4) has already been discussed in detail in the Geo-environmental Assessment report. With respect to the proposed development and planning application, we consider risks associated with nitrogen and Controlled Waters have been robustly addressed.



On a separate note, we have issued an 'Assessment of Nutrient Impact' dated August 2021 to specifically deal with queries raised by the local authority and with respect to the Habitats Regulations. This considers the nitrogen / nutrient impact on the Langstone Harbour SAC and whether there would be a *likely significant effect*. This report concludes that the proposed development will provide clear and quantifiable betterment by reducing surface rainwater infiltration and therefore providing a partial cap to the existing dilute and disperse landfill. The reduced rainfall infiltration rates are considered to result in a commensurate reduction in contaminant leaching from the waste mass compared to the existing situation.

"We agree that limiting infiltration will result in betterment. However, we do not feel that issues with the impact of Nitrogen species have been resolved satisfactorily. These may be having a significant impact on sensitive controlled water receptors. As such, as it currently stands additional betterment measures would appear to be required. Additional measures such as potentially reducing flow offsite through a sheet pile wall near the boundary with the Hermitage Stream should also be considered."

See comments above, but also note that a sheet pile wall currently exists along the eastern boundary abutting Hermitage Stream. Therefore construction of a second, hugely expensive sheet pile wall would be entirely unnecessary and not provide any additional betterment. This is stated within the PRA and GEA – please see Section 2.1 and 6.3.3 of the GEA.

Delta-Simons consider that the current sheet pile wall will limit lateral leachate migration significantly, and this is borne out by the results of the leachate, groundwater and surface water quality data obtained as part of the recent Delta-Simons investigation. Furthermore, it has been established within the GEA that, based on the groundwater and surface water data, attenuation and/or dilution effects appear to be sufficient as to mitigate adverse effects to the watercourse and aquatic fauna and flora (i.e. that which the designated EQS value is designed to protect).

Whilst the sheet pile wall will act as a suitable barrier to direct leachate migration to the Hermitage Stream, this was constructed circa 1969 and it is not known whether there are one or more land drains that pass through the wall to the stream from the Site. The Remediation & Verification strategy includes a requirement for a careful watching brief during excavations along the eastern boundary. Should any such relict features be identified, these will be decommissioned / removed appropriately to maintain the integrity of the sheet piled wall.

The proposed development has been calculated to substantially reduce infiltration rates (by circa 60% from the current condition) into the underlying ground in the medium to longer term given the construction of buildings, low permeability hardstanding (access roads, service yards and parking areas) and sealed drainage systems, with a commensurate reduction in contaminant leaching from the underlying waste mass. This is considered to represent significant betterment via reduction in the generation/migration rates of landfill leachate and associated increased dilution in groundwater before reaching surface water receptors.

On this basis, and given the likelihood of further attenuation and dilution effects as the watercourse enters Langstone Harbour, Delta-Simons consider the Site is not posing a risk to the quality of the Hermitage Stream and the proposed development as is, will provide significant betterment.

"We would also just highlight again that issues with managing landfill mass, if this requires excavation during groundworks, remains to be resolved. We note also that the eastern retaining wall will be based in landfill mass; as such some excavation here would almost certainly be required."

It is understood that any landfill waste excavated as part of the development will be removed from the Site and disposed of at an appropriately licensed waste management facility. With regard to managing excavated waste on Site, this has been outlined within the Remediation and Verification Strategy by Delta-Simons (reference: 19-2099.07) – please see Section 5.7. The report outlines the requirement for proper management of the landfill waste during the development works.



We hope the above is satisfactory and request written confirmation that the Environment Agency now approves the presented Geo-environmental Assessment and Remediation & Verification Strategy.

Yours sincerely,
Delta-Simons



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