

22nd October 2019

Our ref: GE17326/LL02/191022



James Neave
Principal Planner, Planning Services
West Sussex County Council
Ground Floor North Leigh
County Hall
Chichester
PO19 1RH

Dear James,

RE: Evergreen Farm, West Hoathly Road, East Grinstead.

Geo-Environmental Services Limited were requested by Fluid Planning to respond to queries raised by West Sussex County Council in response to the planning application consultation WSCC/061/19 for the restoration of the former Standen Landfill site with a woodland and pasture landfill cap system. As such please find our response below.

- 1) *To what extent has the former landfill (and thus the proposed) cap, been accurately established such as to justify the full extent of the tipping proposed (i.e. right up to the boundaries of the application site)?*

Geo-Environmental undertook an investigation across the site between the 5th and 12th July 2018 which was reported within the Geo-Environmental Report reference GE17326/GIRv1.2/JAN19. The aims of the investigation included delineation of the extent of the landfill body on the site and to record the conditions encountered such to show the current level of capping across the site.

It is considered that reasonable coverage of the site was undertaken in this respect within the restrictions on site due to ecology. An ecologist was present during the investigation work undertaken with designated routes for traversing the site agreed and investigation positions cleared for ecology prior to breaking ground. Some isolated areas of the site were noted to be completely off limits due to the presence of badger sets within an area of the woodland and the need to maintain a buffer zone from these areas. In addition to the above, all intrusive positions within the ancient woodland on the east and south east of the site were limited to hand excavation to areas devoid of vegetation at the request of the ecologist. However, the works that were undertaken within the woodlands identified areas of natural ground and as such the maximum potential extent of the landfill was considered to have been determined in relation to the woodland areas on site.

In addition, intrusive works were limited on the very steep part of the site due to safe access or plant, however investigation positions in this area identified that this area of the site was located within the landfill body and as such further detailed investigation of this area is not considered to be a limitation to the assessment completed.

Figure 4 within the ground investigation report (GE17326/GIRv1.2/JAN19) maps the areas where natural soils were recorded on site with the other positions encountering the landfill body. Appendix B includes the logs of the ground conditions encountered which indicated that minimal to no capping was present across areas of the site, with waste materials visually evident at ground level or immediately below vegetation across the majority of the landfill portion of the site. Where soil was noted to be overlaying the landfill material, this was noted to be limited in thickness (generally <0.25m) and comprised sandy silt and often still contained concrete and brick fragments.

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This limited soil was therefore not acting as a formal capping/impermeable layer to prevent infiltration which would be required to minimise the potential for leachate beneath the site.

- 2) *Please clarify what, if any, are the other possible options for remedying the identified gas and leachate issues (e.g. is there an option that does not require the import of waste?).*

It is understood that the current proposal is to import inert materials under an appropriate permit for the site. Other options have been considered for the site as part of the works undertaken to date.

The Environmental Protection Group (EPG) Geotechnical Design Report for Landfill (EPG/AMV/EGF/2019/GDR/V3, dated February 2019) has considered the suitability of installing a gas extraction and flare system on the site to mitigate the risk from landfill gases identified. The report states the following:

'The results indicate that the gas is being generated from degradation of hydrocarbons, oxidation of organic material and possible some slow methanogenic degradation of organic material. This is consistent with the age of the waste. The generation rates will be very low and will be insufficient to cause a large volume of gas emissions. Therefore, a full gas extraction and flare system is not warranted on this site.'

As such this was ruled out and not considered as a viable option for the site, in addition this would only address gas risks and not risk to human health or the environment with respect to contaminant levels and leachate generation.

In order to minimise the leachate production on site it is necessary to minimise the water that infiltrates into the site. Currently much of the water infiltrates directly into the site through the waste mass with a small percentage running overland to the adjacent seasonal ditch. Due to the topography of the site and the presence of the confining Wadhurst Clay underlying the landfill body on the site, where water infiltrates directly through the waste mass this water forms leachate as it passes through the waste mass and this flows along the more permeable horizons and has been visually demonstrated to be leaching out on to the lower slope close to the seasonal ditch/surface water. In order to minimise the infiltration through the site and resulting leachate an impermeable cap would be required, with appropriate gas venting system to prevent any landfill gas becoming trapped beneath the cap, and with a surface water drainage system to prevent water logging and saturation of the cap.

As such in order to mitigate the risks identified, the restoration of the site with a capping system is considered to be the most robust method for addressing the hazards identified with respect to controlled waters, ground gases and risks to human health but would require the import of materials onto site. In terms of bringing materials onto site there are a number of options in this respect:

- Use of virgin materials - This is very expensive and cost prohibitive given the size of the site and the works required and is not considered suitable when other options to use non virgin materials are available;
- Importing of waste material under an appropriate permit – This would allow for the use of suitable inert materials to be used without having to deplete virgin material resources;
- Use of the Definition of Waste Code of Practice (DOWCOP) – subject to agreement from the Local Authority and Environment Agency in line with an agreed Remediation Method Statement and Restoration Plan and Materials Management Plan for the site which would allow for the reuse of suitable materials which under the code of practice are therefore considered to be non-waste materials.



In relation to the above options in some respects the use of the DoWCoP has increasingly become more difficult/restricted in use and using waste allows for a larger scope of materials that are suitable for use to be brought to the site. In addition, if the UK was to go into recession it is predicted that “clean naturally occurring soil and mineral materials” from residential development sites will reduce, which could result in delays in the completion of the scheme in a timely manner. The benefit of getting approval for re-using waste materials is such that there is more likely to be material available in this respect. It is possible that a permit and DOWCOP could both be utilised on the site subject to agreement.

We trust we have provided sufficient information to address your current queries.

Yours sincerely
For and on Behalf of Geo-Environmental



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