



3836-01/AJ

12th May 2023

Kirklees Council Environmental Health,
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LAND ADJACENT 2 HOYLE ING, LINTHWAITE, HUDDERSFIELD, HD7 5RX, – CONTAMINATED LAND (PLANNING REF: 2022/94124)

This letter has been submitted in response to the Environmental Health Officers response dated 4th April 2023 (Responding ref: WK/202307673)In the response it was stated that;

The proposed development includes the erection of 2 dwellings (Use Class C3) and associated landscaping and car parking.

‘We generally consider the Phase 1 Report by IGE dated March 2023 (ref: 3836-01A) to be satisfactory. However, given the historical land use, the sensitive end use proposed and the lack of information concerning the contamination status and ground gas regime at the site, there is still insufficient information to confirm to a high degree of confidence, whether the site is suitable for the proposed development. As contamination is suspected to an extent which may adversely affect the development, a Phase 2 investigation (and possibly a Phase 3 report where necessary) may be required to support the application.

In the first instance, we encourage a written scope of works to be submitted to, and agreed by, the Local Planning Authority before the commencement of site investigation works.’

This letter has been written in order to determine the agreed scope of works before the site investigation is commenced.

Background

The site history has been summarised in the below table:

Date	Site Feature
1892 - 1968	On the earliest reviewed historical map (1892) a suspected small reservoir associated with the adjacent Brick Works lies in the centre of the site. This is recorded on site until 1968 when it was suspected to have been infilled.
1968 - 1993	By 1968, a track runs through the centre of the site from a former Quarry to the south west, which is now recorded as Royd House Tip. Slope features are recorded along the eastern and western boundaries indicating that the quarry / tip may have extended onto site.
1993 – 2022	By 1993 the site is recorded as a car park, no significant change has occurred since.

Due to the history of the site and the potential contamination sources and ground gas sources, particularly due to the possible presence of landfill deposits associated with Royd House Tip, being present on-site or adjacent to the site, the risk to human health was deemed moderate to high and the ground gas risk was deemed to be



high. Therefore, a Phase 2 Geo-Environmental Investigation including ground gas monitoring was recommended in order to determine the risk.

Proposed Scope of Works

The scope of works is to include a day of dynamic sample boreholes (c. 5 No. holes) which will be undertaken to a depth of 5m bgl in order to;

- to establish the thickness, extent and characteristics of any possible Made Ground and underlying natural superficial deposits;
- to undertake in-situ geotechnical testing within these deposits;
- to obtain samples from these deposits for classification and laboratory testing;
- to allow for the installation of ground gas and groundwater monitoring wells.

This will allow determination if any landfill deposits or deep Made Ground associated with the possible infilled quarry (possible landfill deposits) and infilled reservoir are present on-site.

Samples of the Made Ground and underlying natural deposits (and groundwater if present) will be obtained for chemical laboratory testing to determine the risk to human health and controlled waters. The samples will be tested for the following determinands:

- Metal suite comprising of arsenic (As), barium (Ba), beryllium (Be), water soluble boron (B), cadmium (Cd), chromium total & hexavalent (Cr & CrVI), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), vanadium (V) & zinc (Zn); Cyanide (total);
- Asbestos screen / ID and quantification, if positive screen identified;
- Organic Matter and Total Organic Carbon;
- Speciated Polycyclic Aromatic Hydrocarbons (PAH);
- Total Petroleum Hydrocarbon (TPH), with speciation (TPHCWG) if elevated concentrations are recorded (>5000mg/kg).
- Total volatiles will be measured on site using a PID to determine if VOC testing is required. VOC testing will be undertaken if PID results of >25ppm are recorded.

3 No. ground gas monitoring wells will be installed in order for the ground gas regime to be determined. 12 No. ground gas monitoring visits are recommended at this stage given the high risk associated with the adjacent / on-site infilled quarry. However, following 6 No. visits, it is recommended that an initial ground gas risk assessment is undertaken and consultation with the Environmental Health Officer is commenced to determine if all 12 No. visits are required.

The response zones of the ground gas monitoring wells will be placed within a single, unsaturated stratum (either Made Ground or natural deposits depending on the ground conditions). The response zone will target any strata which may act as a preferential pathway for ground gas migration (i.e. granular bands). The ground gas monitoring wells will also be placed targeting the southern site section nearer the off-site Tip as well as any deep Made Ground and / or landfill deposits on-site.

A Phase 2 Geo-Environmental Site Investigation Report will be produced which will include the factual information on the site investigation works along with:

- *A Tier 2 (generic quantitative) risk assessment.*
- *Recommendations for **outline remedial strategy options** including waste disposal and re-use strategies.*
- *Outline foundation and slab solution recommendations for the proposed structures.*
- ***Ground gas risk assessment** including requirements for any necessary ground gas protection measures.*

Is the above scope of works agreeable with the Environmental Health Officer?

If you have queries, please do not hesitate to contact me.

Yours sincerely,

Angharad Jones
Senior Geo-Environmental Engineer