

Date 12 April 2022
Reference CL1003.120422.1
Website www.bury.gov.uk

Department for Operations

Dean Clapworthy
Bury Council Planning Department

Dear Dean

2 Arley Drive, Bury, BL9 5HD. Planning Application: 67294 – Contaminated Land

I write in response to your email regarding discharge of condition 4 of the above planning application. The Environment Section has previously received copies of the following reports:

- Phase 1 Desk Study, Land at 3 Arley Avenue, Bury, BL9 5HD, Demeter Environmental, Reference:20-01-08, February 2020.
- Phase II Site Investigation Report for Land at 2 Arley Avenue, Bury, BL9 5HD, Demeter Environmental Limited, Reference: 21-08-03, December 2021.
- Phase III Implementation Plan for Land at 2 Arley Avenue, Bury, BL9 5HD, Demeter Environmental Limited, Reference: 22-03-04, March 2022.

1. The adequacy of the desk study information available for this site.
2. The adequacy of the site investigation.
3. The adequacy of the final risk assessment.
4. The acceptability of the proposed remediation strategy.
5. Whether the information submitted is sufficient to determine that the site presents a low risk to human health and the environment.

The site has historically been in use as gardens followed by unspecified works type buildings. Surrounding historical uses have included allotment gardens, engineering works, and residential.

The site is not within 250m of a registered landfill site and is situated above the Lower Coal Measures Secondary A Aquifer which is overlain by Glacial Till.

The proposal is to demolish the existing mobile office / works buildings and develop 1 no. dwelling with associated landscaping.

1. The adequacy of the desk study information available for this site

The report includes a description of the site including its past historical uses. An appraisal of the site environmental setting is presented including its geology, hydrogeology and hydrological regime, mining activities, waste management issues,

and identification of additional environmental sources, pathways and receptors. This information has been used to compile a clear site conceptual model, which identifies potential sources, pathways and receptors and likely pollution linkages.

A site walkover was carried out on 31 January 2020, at the time of the walkover there was a mobile office and a single storey garage on site. No visible or olfactory evidence of contamination was detected. However, since then the site buildings have been demolished. A copy of the pre-demolition asbestos survey should be provided.

Due to the potential for made ground at the site an intrusive investigation was proposed.

2. The adequacy of the site investigation

The initial site investigation was carried out in October 2021:

Technique	No.	Comments
Hand dug pits	2	TP102 – TP103 to depth of 1.20mbgl
Rotary borehole	1	RB101 to depth of 31mbgl
Soil sampling	3	Samples analysed for a suite of analysis that included basic suite; Metals / metalloids, pH, water soluble sulphate, speciated PAHs, SOM and asbestos screen.

Further site investigation was carried out in November 2021:

Technique	No.	Comments
Trial trenches across the site	2	TP201 to TP215 Excavated to 1.00mbgl
Soil sampling	15	Samples analysed for Arsenic, Barium, Beryllium, Mercury, Lead and PAH's (to determine if the soils were impacted by elevated levels of contamination).

Site Ground Conditions: Angular limestone Gravel (made ground) to 0.02mbgl over brown black sandy gravel with topsoil and brick (made ground) overlying silty, sandy, gravelly, clay. This was overlying Mudstone.

Made ground as found to 0.48mbgl in RBH101 and gravel of coal was found within the mudstone in RBH101. No evidence of pure coal seams or worked coal seams were encountered.

No visual / olfactory evidence of contamination was encountered.

Site Water Conditions: Groundwater was not encountered. The sensitivity of the underlying groundwater is regarded as low and has not been assessed further. This is not acceptable as high levels of contaminants have been identified in the soil samples.

Site Ground Gas Conditions: Gas monitoring has not been carried out.

3. The adequacy of the final risk assessment

Ground Assessment: The soil analysis results have been compared to the Defra C4SLs, CIEH/LQM S4ULs and GACs where available and ATRISK SSVs / CLAIRE GACs / CIEH/LQM GACs for residential with homegrown produce land use.

Both the made ground and natural soils on the site are impacted by a range of contaminants; lead (max. 2500mg/kg RBH101), mercury (max. 115mg/kg RBH101), barium (max. 1480mg/kg RBH101), beryllium (max. 1.8mg/kg TP103), arsenic (max. 75mg/kg TP201), PAHs including Naphthalene (max. 37.8mg/kg TP102), Benzo(a)pyrene (max. 90mg/kg TP102) and Aromatic EC16-EC21 fraction (max. 394mg/kg TP102).

With regards to mercury, out of the additional 21 samples analysed, four results were above the limit of detection, although all were below the residential GAC (assuming 100% methyl mercury), the 95th UCL for mercury was 1.0mg/kg, below the GAC of 11mg/kg. Based on this mercury in site soils do not pose a risk to human health. Any residual risk will be further reduced by the remediation required for other contaminants.

With regards to naphthalene, a number of results above the limit of detection were noted as well as one exceedance of the residential GAC for 1% SOM, however the 95th UCL is 2.0mg/kg, below the respective GAC, based on this naphthalene in site soils does not pose a risk to human health. Any residual risk will be further reduced by the remediation required for other contaminants.

No asbestos was detected.

Controlled Waters Assessment: An assessment of the controlled waters receptors found the underlying aquifer to be of low sensitivity and therefore it was not considered further. This is not an acceptable assessment as high levels of contaminants are present in the site soils. However, as the contamination is to be removed then no further assessment is required.

Ground Gas Assessment: The probability of hazardous ground gas affecting site users and buildings is unlikely, giving a low risk. Also, a significant depth of made ground has not been found.

4. The acceptability of the proposed remediation strategy

The following remedial measures have been proposed in the Phase III report:

- General site clearance and re-profiling of ground levels.
- Suitable materials derived from grubbing-up shall be stored in a location on site, to be agreed with the Engineer, prior to crushing. Any unsuitable materials shall be removed to a suitably licensed landfill site.
- 600mm clean cover underlain by geotextile barrier in gardens and landscapes areas.

- Depth of cover validation and chemical analysis validation sampling of the cover system to be undertaken.
- Analysis certificates to be provided by the supplier of the imported material.
- Installation of Barrier Pipe water supply pipes.
- Should contamination be identified or suspected during the site clearance or ground works, it will be dealt with accordingly.
- Options for removal of material from site include removal from site and disposal to a suitably licensed tip – the material would need to be classified; or, short-term storage of the suspected material while undertaking verification testing for potential contamination. The storage area should be a contained area to ensure that contamination does not migrate and affect other areas of the site. Depending upon the amounts of material under consideration, this could be either a skip or a lined area; or, having a suitably experienced environmental engineer either on-call or with a watching brief for the visual and olfactory assessment of the material, and sampling for verification purposes.
- Submission of a Phase IIIb completion report.

The above remedial measures are acceptable to this Section.

All parties involved with waste and soil movement at the site should be aware that materials illegally deposited or deposited at inappropriate sites may be subject to relevant landfill taxes, payable by all parties. Only robust due diligence is a defence against joint liability. Illegal deposits can include moving waste soil material on sites, or between sites, without the appropriate permits, exemptions or duty of care.

5. Whether the information submitted is sufficient to determine that the site presents a low risk to human health and the environment

In order for this Section to be satisfied that this development does not pose a risk to human health or the environment, the following information needs to be submitted to the Council for approval:

- (i) Pre-demolition asbestos survey report and confirmation asbestos containing materials have been removed.
- (ii) After completion of site works, a verification report is required to validate that the work undertaken conforms to the remediation proposals received and agreed by this Section. The report would be expected to include the following:
 - Summary of desk study, site investigation report and remediation strategy.
 - Details of who carried out the work.
 - Details and justification of any changes from original remediation strategy.
 - Substantiating validation data that should include where appropriate:
 - Laboratory and *in-situ* test results.
 - Monitoring results for groundwater and gases.
 - Summary data plots and tables relating to clean-up criteria.
 - Plans showing treatment areas and details of any differences from the original remediation strategy.
 - Photographic and other media records.
 - Waste management details and records.

- Confirmation that remediation objectives have been met.

This Section can recommend discharge of Condition 6. Prior to this Section recommending discharge of Condition 7 submission of points (i) and (ii) is required.

Please do not hesitate to contact me if you require any clarification of the above.

Yours sincerely



Judith Scott
Environmental Protection Officer

Please Note:

The Environment Section has used all reasonable endeavours to determine the risk from contaminated land and ground gas based upon the information available to it. However, the comments made above should not be taken to imply that the land is safe or otherwise suitable for this or any other development. The responsibility for safe development rests with the developer.

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