

Our Ref CL758.141221.1
Your Ref 67322
Date 14 December 2021
Please ask for Rebecca Jones
Direct Line 0161 253 6392
Direct Fax 0161 253 5562
E-mail rebecca.jones@bury.gov.uk

Donna Ball
Executive Director, Operations

Tom Beirne
Bury Council Planning Department

Dear Tom

22 Cockey Moor Road, Radcliffe. Planning Application 67322 – Contaminated Land

I write regarding the above planning application. The Environment Section has received a copy of the following report:

- Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy for 22 Cockey Moor Road, Bury, LK Consult, Reference: CL-602-LKC 20 1870-01, March 2021.

The Environment Section has reviewed the above information in order to assess the following points:

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.
6. If pre-commencement or pre-occupation planning conditions are required.

The site has historically been in use as a sandstone quarry and the surrounding area has been in use as open fields. The site was developed as a house by the 1950s along with residential developments in the surrounding areas. The site is not situated within 250m of any registered landfill sites, and is situated above the Lower Coal Measures Secondary A Aquifer which is overlain by Glacial Till.

It is understood that the proposed development comprises the construction of one dwelling with a garden and 3 no. off-road parking spaces.

Previous applications have been received for the demolition of an exiting bungalow and construction of a dwelling in 2014 (57756) and 2015 (58590). It is understood that the existing bungalow was demolished in 2017 and Building Act 1984 Section 81 Approval for the demolition was obtained from Bury Council. This approval required that a pre-demolition asbestos survey was undertaken and any asbestos containing materials removed. A copy of the survey and waste transfer documents for any ACM removed is required.

Privacy Policy

Please visit www.bury.gov.uk/privacy to read our recently updated Privacy Policy which explains how Bury Council uses and shares your personal data to give you the best possible experience across our services.

Electronic or fax service of Legal documents is not accepted

Town Hall, Knowsley Street, Bury, BL9 0SW
www.bury.gov.uk

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

A desk study and preliminary risk assessment was previously received and reviewed under the previous applications for the site (57756 and 58590):

- Preliminary Risk Assessment Report, Proposed House 22 Cockey Moor Road, Bury, Worms Eye, Ref. PRA/GC.14, 21 August 2014.

The report included a description of the site including its past historical uses. An appraisal of the site environmental setting was presented including its geology, hydrogeology and hydrological regime, mining activities, waste management issues, and identification of additional environmental sources, pathways and receptors. This information was used to compile a clear site conceptual model, which identifies potential sources, pathways and receptors and likely pollution linkages.

The desk study information provided was considered to be sufficient to assess the potential risks at the site.

The report identified that there is a potential risk from the historical infilled quarry which may be causing subsidence in the north east corner of the existing house. Additionally, potential asbestos containing materials in the former bungalow and garage was also identified as a potential risk and an asbestos survey recommended.

The preliminary risk assessment has been updated in the LK Report.

An intrusive investigation was recommended, which has been undertaken.

2. The adequacy of the site investigation

A site investigation was undertaken on 16 December 2020 and comprised the following:

Technique	No.	Comments
Window sample boreholes	7	Excavated to a depth of between 1.65m and 5.03m bgl (WS101-WS107).
Hand dug trial pit	3	Excavated to a depth of between 1.10m and 1.20m (HD101-HD103).
Dynamic probe tests	4	Dynamic probe holes were undertaken to obtain geotechnical information (DP102, DP103, DP108 and DP109).
Soil sampling	5	Samples analysed for a suite of analysis that included metals, speciated PAHs and asbestos: • WS102 0.0-0.5m (made ground) • WS102 0.5-1.0m (made ground - ash/clinker) • HD101 0.0-0.5m (made ground) • HD102 0.4-0.9m (made ground) • HD103 0.0-0.5m (made ground)
Gas monitoring	6 visits over 3 months	Monitoring wells installed in WS102, WS103 and WS105 where the deepest made ground was encountered (in excess

		of 5.0m deep). The response zones were all in made ground.
--	--	--

Site Ground Conditions: Ground conditions at the site can be split into three distinct areas: the former quarry, the former quarry access road; and outside the former quarry:

- **Former quarry** (WS102, WS103, WS105, HD101 and HD102) - deep made ground was encountered to more than 5.0m bgl. Different made ground strata were encountered comprising approximately 1.0m of clay/silt brick fill; underlain by ash, brick and clinker fill; over possible reworked clay. The made ground in this area appears to lie directly on the sandstone aquifer.
- **Former quarry access road** (HD103) – made ground to 0.8m containing brick, concrete, ash, clinker and plastic over natural clay.
- **Outside the quarry** (WS101, WS104, WS106 & WS107) - relatively shallow made ground to 0.3m bgl comprising reworked clay over natural strata of clay to approximately 1.65m over the sandstone bedrock.

No visual or olfactory evidence of contamination was encountered except for the presence of ash and clinker.

Site Water Conditions: During the site investigation groundwater was recorded in WS102, WS103 and WS105 between 3.10-4.20mbgl. Groundwater monitoring identified perched groundwater in WS102 and WS103 during one visit with WS105 being dry throughout. Insufficient groundwater was encountered to undertake groundwater sampling. No soil leachability soil testing was carried out.

Site Ground Gas Conditions: A total of 6 visits have been carried out over a period of 3 months with atmospheric pressure less than 1000mb on 3 occasions. The response zones in each borehole are within the deeper made ground within the former quarry. The boreholes were generally dry.

No methane was recorded (<0.1%v/v). Carbon dioxide levels ranged from 0.3 to 4.3%v/v (maximum recorded in WS102). Carbon monoxide (maximum 6ppm) was found in each borehole during the initial visits. No significantly depleted levels of oxygen were found. Flow rates were low (<0.1 to 0.2 l/h).

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 for residential with homegrown produce land use. The following elevated levels of contaminants were identified:

- Arsenic – 72mg/kg in HD101 0.0-0.5m compared to a C4SL of 32mg/kg.
- Lead - 430mg/kg in HD101 0.0-0.5m compared to a C4SL of 200mg/kg.
- Benzo(a)pyrene (PAH surrogate marker) - 13mg/kg in HD103 0.0-0.5m compared to a C4SL of 5mg/kg.

No asbestos was identified in any of the five samples. The consultant considers that there is a potential risk to future site users from the contamination identified in the made ground. Therefore, remedial action has been recommended.

This assessment appears reasonable.

Controlled Waters Assessment: The risks to controlled waters are considered low as no evidence of mobile contaminants such as hydrocarbons were identified during the site investigation. The elevated arsenic, lead and benzo(a)pyrene are considered to be associated with the ash and clinker in the made ground and are considered unlikely to be mobile due to the crystalline nature of the matrix. Therefore, no remedial actions are proposed.

This assessment appears reasonable, however, please note that the Environment Agency is the regulator of controlled waters.

Ground Gas Assessment: The consultant has used the methodology set out in CIRIA 665 and BS8485:2015 to assess the gas regime at the site. A worst-case Gas Screening Value was calculated for each borehole. The maximum calculated GSV was 0.0086l/h in WS102 (4.3%v/v carbon dioxide and 0.2l/h flow). Consequently, given the GSVs calculated and the ground conditions encountered, the consultant considers that the gas regime at the site is representative of Characteristic Situation 1. No special gas protection measures are recommended.

The risk from vapours is also considered low, due to the lack of volatile contaminants identified in the soil testing and low PID readings. Additionally, the potential risks from low levels of carbon monoxide identified are also considered low.

This assessment appears reasonable.

4. The acceptability of the proposed remediation strategy

The following measures are proposed so that the contamination identified on site no longer presents a risk:

- **Watching brief** – In order to identify and deal with any previous unforeseen contamination at the site, a watching brief will be kept during the development. If any visual or olfactory evidence of contamination is encountered, further investigation and assessment will be required. Details of any contamination encountered will be included in the validation report.
- **Clean Cover System** - Clean cover will be placed in all garden and landscaped areas. The following depths are currently proposed:
 - 600mm within private rear gardens to comprise:
 - **Either** 100mm physical break layer under at least 500mm of clean imported topsoil/subsoil.
 - **Or** geotextile separation layer under at least 600mm of clean imported topsoil/subsoil.
 - 300mm within private front gardens and shared soft landscaped areas to comprise:
 - **Either** 100mm physical break layer under at least 200mm of clean imported topsoil/subsoil.
 - **Or** geotextile separation layer under at least 300mm of clean imported topsoil/subsoil.

The imported cover soils will be tested at a rate of 1 per 50m³ for topsoil and 1 per 150m³ for subsoil with a minimum of 3 samples from each source. Recycled stone for the break later will be tested a rate of 1 per 500m³. Samples will be tested for a suite of analysis that will include metals, speciated PAHs and

asbestos as a minimum. The results will be compared to generic assessment criteria for residential with homegrown produce (C4SL and S4UL).

The depth of cover will be validated using trial holes and photographic evidence. Photographs of the physical break later/geotextile will be provided.

Or Additional Sampling – Undertake further sampling in the garden areas in order to carry out statistical analysis with the aim of reducing the extent of the cover required.

Please note that the option to undertake further soil sampling and statistical analysis is not recommended. Based on the ground conditions encountered there appear to be multiple types of made ground on site which can not be considered part of a single population. Consequently, a significant amount additional testing would be required in order to have a sufficient sample size and to be considered unbiased.

- **Water Supply Pipe Protection Measures** – It is recommended that a United Utilities Risk Assessment is undertaken in order to determine whether barrier pipe is required. If barrier pipe is required, delivery notes and a photographic record of the installation will be included in the validation report.
- **Re-Use and Excess Soil Material** - It is understood that any re-use of soil material will be limited to that required under a U1 and T5 exemption. Therefore, a Materials Management Plan is not currently required as it is not proposed to use the CL:aire Definition of Waste Code of Practice.

Excess soil material will be disposed of at a suitable waste disposal facility. Waste transfer documentation will be included in the validation report.

- **Piling in Contaminated Land** - If piling is used as foundation solution, measures to prevent piling impacting the underlying sandstone aquifer will be put in place.

The remediation strategy is generally acceptable to this Section. However, I have the following comments to make:

- **Clean Cover System** – *This Section usually requires that all private gardens have the full 600mm depth of clean cover. However, given that the majority of the front garden will be given over to hardstanding to accommodate 3 no. car parking places, the soft landscaping will be limited and 300mm clean cover is acceptable on this occasion.*

Additionally, please confirm that the clean cover option will be used and which of the proposed clean cover systems will be used – physical break layer or geotextile?

Please provide this further information.

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 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 including waste transfer documents.
- (ii) Confirmation that the clean cover option will be used and which of the proposed clean cover systems will be used – physical break layer or geotextile?
- (iii) 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:
 - Validation information for all imported soil material, which includes:
 - Details of the source site for the imported material/topsoil i.e. the name and address of the site where the material comes from.
 - Delivery notes for all material.
 - Chemical analysis results for imported material to demonstrate that it is clean and suitable for use. This Section requires a testing rate of 1 per 50m³ for imported topsoil for subsoil, 1 per 500m³ for recycled aggregate with a minimum of three samples per source. The analysis suite should include metals, speciated PAHs and asbestos as a minimum.
 - A photographic record of imported material being placed.
 - Validation information for the depth of clean cover material installed:
 - Photographic record.
 - Trial hole records.
 - Details of the findings of the watching brief confirming that no unforeseen contamination was encountered or information of how contamination was dealt with. This should include a photographic record of the development and should focus particularly on the excavations for the foundations in order to illustrate the ground conditions encountered.
 - Details of any site won material re-used and copies of waste management records to ensure that any material removed from site was disposed of at a suitably licensed waste disposal facility.
 - Confirmation that a water supply pipe risk assessment has been carried out and that barrier pipe is not required in the development. If barrier pipe is used validation information including photographs and delivery notes will be required.
 - A copy of the Material Management Plan, if the CL:aire Definition of Waste Protocol is to be used.
 - Confirmation that remediation objectives have been met.

The above information will be required by planning conditions, if permission is granted.

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

Yours sincerely

A handwritten signature in black ink, appearing to read 'Rebecca Jones', with a stylized, cursive script.

Rebecca Jones
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.