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Department for Operations

Helen Leach
Planning Department

Dear Helen

East Lancs Paper site, land between Cockclod Street/Cunliffe Street/Howard Street/Pollitt Street, Radcliffe Manchester, M26 9PG, Planning Application: 67965 – Contaminated Land

The Environment Section has received a copies of the following reports:

- Phase 1 & Phase 2 Geoenvironmental Desk Study & Ground Stability Risk Assessment for East Lancashire Paper Mill Island Site, Rectory Lane, Radcliffe, M26 2QU, Next Generation Engineering Consultancy Services, Reference: NX418, 16 June 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.

The site has formerly been in use as a Brewery in the north east of the site and terraced housing in the south. A surface watercourse ran through the western area of the site which was culverted by 1930 when the area was in use as allotment gardens. Surrounding historical uses have included East Lancashire Paper Mill and reservoirs, a cotton mill, infilled ground and residential properties. The site is currently in use as car parks, landscaped areas with a disused public house in the south and an electricity sub-station in the north east.

The site is situated above the Middle Coal Measures Secondary Aquifer which is overlain by River Terrace Deposits of Sand and Gravel. There are no registered landfill sites within 250m of the site. A watercourse is culverted below the site. The site is within an area of previous coal mining activity.

It is understood that the proposed development comprises 27 houses and apartments.

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.

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

2. The adequacy of the site investigation

The site investigation was carried out on 26 April and 28 April 2021 and comprised the following:

Technique	No.	Comments
Windowless Boreholes	7	WS1 to WS7 Excavated to a maximum depth of 5.0mbgl. Groundwater monitoring wells installed in WS1, WS3, WS4 and WS7.
Trial Pits	4	TP1 to TP4 to a maximum depth of 2.0mbgl.
Rotary Open Boreholes	2	RBH1 and RBH2 to a maximum depth of 40.0mbgl.
Soil sampling	13	Samples analysed for a suite of analysis that included heavy metals, speciated PAHs, TPH and asbestos screen.

Site Ground Conditions: Ground conditions at the site comprise of made ground to 2.4m bgl. Variable made ground was found across the site and included brick, coal, clinker, shale, and plastic.

The made ground is underlain by firm to stiff Glacial Clay with coal, slate and sandstone secondary constituents, Glacial clay was recorded between 1.3mbgl and 5.0mbgl. In WS5 and WS6 fine to coarse sand with fine gravel of coal, slate and sandstone was recorded as depths between 0.5mbgl and 2.3mbgl overlying glacial till.

Bedrock, comprising mudstone, siltstone, sandstone and coal seams was tentatively proven in WS6 and WS7 between depths of 3.5mbgl and 5.0mbgl and at 8.70m bgl and 5.80m bgl to proven depths of 40.00m bgl, in RB01 & RBH02 respectively.

No visual or olfactory evidence of hydrocarbon and/or solvent contamination was identified during works.

Site Water Conditions: Groundwater was recorded in WS4, WS5, WS6 & WS7 between 1.94mbgl (WS5) and 3.97mbgl (WS4). Groundwater was found to be absent in WS1, WS2, WS3, TP1, TP2, TP3, & TP4.

No significant risk to controlled water receptors was found. Total soils, leachate analysis carried out in WAC testing did not establish concentrations which are likely to impact controlled water receptors. As such, leachate and groundwater analysis in this instance was considered to be unnecessary.

Site Ground Gas Conditions: A total of 9 visits have been carried out over a period of 2 and a half months with atmospheric pressure less than 1000mb on 2 occasions.

Maximum methane was found at 0.1 %v/v and maximum carbon dioxide was found at 9.0 %v/v in WS7. Maximum flow rates were recorded at 0.20 l/hr.

The site investigations appears to be acceptable.

3. The adequacy of the final risk assessment

Ground Assessment: The soil analysis results have been compared to the Defra C4SLs, for residential with homegrown produce land use. Thresholds have been exceeded for Lead (max 6000mg/kg), Arsenic (max. 710mg/kg), Naphthalene (max 4.6mg/kg), Benzo(a)anthracene (max 25mg/kg), Chrysene (max 22mg/kg) Benzo(a)pyrene (23mg/kg), Benzo(a)fluoranthene (23mg/kg), Dibenzo(ah)anthracene (max. 3.8 mg/kg). The elevated contaminants were found in six locations in the upper 1.10m of made ground. No visual or olfactory evidence of hydrocarbon or solvent contamination was encountered.

No asbestos was recorded. However please note that asbestos fibres were recorded in the White Young Green investigation in 2017, therefore asbestos precautions will be required during works.

Controlled Waters Assessment: No significant risk to controlled water receptors was found. Total soils, leachate analysis carried out in WAC testing did not establish concentrations which are likely to impact controlled water receptors. As such, leachate and groundwater analysis in this instance was considered to be unnecessary. No visual or olfactory evidence of hydrocarbon/solvent contamination was recorded during the ground investigation. Selected samples of made ground and natural drift deposits were tested for a number of general screening tests including pH and metals, cyanide, phenols, asbestos, sulphide, sulphur, TPHWCG and speciated PAH were undertaken during the intrusive investigation to confirm, or otherwise, the site's anticipated risk status.

Based upon the total soils concentrations, lack of groundwater within the interbedded sand and gravel/clay deposits and predominantly low permeability clay and mudstone deposits we consider there to be a negligible risk to controlled water receptors. The nearby unnamed surface water course crossing through the site is culverted and unlikely to be in hydraulic connectivity with groundwater and site soils. As such no further groundwater or leachate testing was undertaken. The risks presented to controlled water receptors are deemed to be low post construction.

Please note that the Environment Agency is the regulator of controlled waters and as such need to be consulted and forwarded copies of all the relevant information for this

site. This Section will require confirmation that the Environment Agency has approved the risk assessment and recommendations.

Ground Gas Assessment: The consultant has used the methodology set out in CIRIA 665 to assess the gas regime at the site. A worst-case Gas Screening Value has been calculated which is below 0.05 l/hr.

Consequently as the maximum concentration of carbon dioxide exceed 5%v/v, the consultant considers that the gas regime at the site is representative of Characteristic Situation 2. Therefore, gas protection measures are recommended.

The final risk assessment appears to be acceptable.

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:

- 600mm clean cover layer in gardens with removal of made ground.
- 600mm clean cover layer in soft landscaped areas with removal of made ground.
- 450mm clean cover in areas of public open space to be grassed with removal of made ground.
- Any areas of proposed landscaping will require imported subsoil/topsoil materials which will require chemical validation to demonstrate that they are suitable for a residential end use and taken to depths sufficient to provide a sufficient cover system for all proposed materials used which are capable to support root growth.
- For any imported materials required to complete the cover soils, the frequency of testing to be undertaken shall be as given in the YALPAG document Verification Requirements for Cover Systems, Version 3.4 dated November 2017.
- Characteristic Situation 2 gas protection measures to include low permeability membrane and ventilated sub-floor void. Gas service entries should be sealed appropriately. Independent validation of the gas protection measures is required.
- A water supply risk assessment is recommended at the depth of the proposed water supply.
- Any soils exported shall be allocated an appropriate waste code and a Waste Transfer Note created for each load of waste that leaves the site.

The proposed outline remediation strategy is acceptable to this Section, however, a detailed remediation strategy and validation plan is required. Please also include asbestos precautions which will be required during works.

Additionally, if the CL:aire Definition of Waste Protocol is to be used, a copy of the Materials Management Plan will be required.

It is also recommended that a watching brief be undertaken during the development to identify and deal with any previously unforeseen contamination.

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) Detailed Remediation Strategy and Validation Plan.
- (ii) Pre-demolition asbestos survey report and confirmation asbestos containing materials have been removed.
- (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:
 - 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.

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 'J Scott', written in a cursive style.

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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