

[REDACTED]
Ribble Valley Borough Council

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Date: 30th April 2026

LKC Reference: LKC261288-A1-LR-Pendle Drive, Whalley Review

RE: PENDLE DRIVE, WHALLEY – REMEDIATION STRATEGY REVIEW

1. Introduction

LK Consult Ltd (LKC) has been commissioned to undertake a review of available information regarding the housing development off Pendle Drive, Whalley.

The scope was to provide our *“professional views on whether the remediation strategy as approved does not require validation on all the plots as suggested by NX or whether the remediation strategy required validation for all the plots”*.

LKC will review the reports and put forward any recommended further work, if required.

The following reports have been reviewed:

- Remediation Strategy Report, Phase 3 Calderstones Hospital, Whalley, undertaken by NX Consulting (report referenced NX131, dated 17th July 2012).
- Plot 1, 2, 8, 9, 10, 11 & 12 Validation Report, undertaken by NX Consulting (dated 9th May 2013).
- Plot 20 Validation Report undertaken by NX Consulting (dated 24th July 2013).
- Plot 14 Validation Report undertaken by NX Consulting (dated 12th August 2013).
- Plot 15 Validation Report undertaken by NX Consulting (dated 12th September 2013).
- Plot 3, 4, 5 & 6 Validation Report, undertaken by NX Consulting (dated 11th October 2013).
- Consultant Technical Summary, undertaken by NX Consulting (referenced NX131, dated 24th 2026).
- Letter regarding the Discharge of Condition Application Ref. 3/2025/0628, undertaken by Turley (referenced 03875, dated 31st March 2026).

A summary of the above reports is provided in the Section 2.

2. Review

2.1. Remediation Strategy Report

The Remediation Strategy report reviews the works that have been undertaken on the site between June 2010 and April 2012 in order to pull together appropriate remedial requirements.

Key points from Section 3 of the Remediation Strategy include:

- Historically, the site was a brick works which included a railway and clay pit from the 1910s to 1930s, when part of the mental hospital was constructed at the site. From 2006 the site was derelict.
- Two phases of ground investigation have been undertaken by RSK and then NX Consulting comprising shallow and deep boreholes, trial pits, soakaways, monitoring wells and soil laboratory testing.
- Only a basic suite of testing was carried out during the second phase of investigation due to no visual or olfactory evidence of hydrocarbon or solvent contamination.

- Ground conditions comprised made ground to varying depth of between 0.50m to 3.60mbgl and comprised either an organic sand (topsoil) with anthropogenic material such as brick, coal, concrete, ash and clinker, or re-worked clay. Made ground comprising demolition rubbles was encountered in areas of former structures.
- Natural glacial till was encountered across the majority of the site underlying the made ground from depths ranging from 0.50m to 11.00mbgl.
- Elevated lead was identified in one location (TP10, 0.1mbgl) when compared to the soil guideline value (SGV) of 450mg/kg (correct at time of the report).
- Elevated PAHs were encountered in several of the samples taken from the made ground or topsoil strata across the site.
- Asbestos was also detected in one location on site (NXTP1.1, 0.05mbgl).
- Gas monitoring did not identify a requirement for gas protection measures.

Based on the above key points from the previous PRA and SI reports, the following proposed scope of works summary was provided as an overview in Section 5.2 of the report:

- Re-profiling to raise site levels by circa, 2.50m in the north and circa 300mm in the south.
- Placement of clean soil cover in private garden and landscaped areas.
- Supervision of works by a suitably qualified consultant to include detailed records, testing requirements etc.
- Validation of the remediated site in the form of a detailed Completion Statement confirming that the works set out in the remediation strategy and agreed were completed and that the site is suitable for its intended use.

Section 5.5 of the Remediation Strategy details the responsibility of supervising engineer and what records should be kept. Key points in this section are:

- All area of reduced excavation should be recorded by the use of digital photography of the excavation with a suitable scale indicator (such as a survey staff) prior to backfilling.
- On satisfactory completion of the works the Engineer will provide a verification report outlining a summary of all the works undertaken.

Section 6.2 of the Remediation Strategy details the placement of soil cover (the environmental capping layer). It recommends:

- A soil cover system (minimum 600mm thick layer) is required over deposits of made ground, in all garden and landscaped areas.
- However, due to site preparation works, site levels will raise by as much as 2.50m in the north of the site, reducing to circa 200mm within the vicinity of Plots 1 to 7.
- Imported and site won material used for the upfilling and capping in garden areas will require chemical validation to demonstrate that they are suitable for a residential end use.
- The upper 600mm should contain a minimum of 150mm 'clean' topsoil and also be capable to support root growth.
- Where plots do not have sufficient cover as a result of the upfilling works, levels should be reduced and replaced to ensure a 600mm cover system is provided.
- Imported materials will require chemical and visual validation to demonstrate that they are suitable for a residential end use.
- The majority of topsoil is considered suitable for re-use in gardens and landscaped areas.
- Stockpiling and screening of unacceptable topsoil should be conducted onsite and further validation sampling taken to confirm it is suitable for re-use prior to placement in gardens and landscaping.

Appendix A contains a table which summarised which plots require level reduction to create a capping layer. These are Plots 1-6, 8-9, 12, 14-15 and 20.

Review Opinion

Based on reviewing the remediation strategy report I would expect to see the following reports:

- Soil Cover Validation Report for Plots 1-6, 8-9, 12, 14-15 & 20 which details provenance of topsoil and subsoil with chemical testing data which has been interpreted against the relevant generic assessment criteria. Evidence of verification of the capping layer depth and composition / thickness in the form of photographs (as per Appendix B of the Remediation Strategy).
- A final overall completion statement confirming all the works set out in the Remediation Strategy have been completed and site is suitable for its intended use.

2.2. Validation Reports Discussion

The Plot validation reports are very basic. They do cover what plots were validated when, and what the capping layer depth and composition was. Validation photos have been provided and there is some discussion on topsoil sources. The volume of topsoil material imported is absent to adequately assess whether enough testing has been completed and other than mentioning site won subsoil, there is no discussion to back up this material being suitable and no testing provided.

For the report for Plots 3-6, it appears that topsoil was tested at source by Coopers 10 months before the gardens were validated and no confirmatory onsite testing has taken place to demonstrate the soil is as tested onsite and suitable.

2.3. Consultant Technical Summary

The summary details that only Plots 1-6, 8-9, 12, 14-15 and 20 required validation due to the lack of upfilling required in these areas as per the Remediation Strategy.

The previous site investigation found a lot of the site won topsoil and clay soil was suitable for re-use. Unacceptable site won topsoil and subsoil should be stockpiled and further validation sampling carried out to confirm suitability.

Topsoil was imported to site for use in the capping layers from several sources, further details are given below:

- Topsoil from Harbour Lane, Warton was used in the gardens of Plots 1, 2, 8 to 12, 15 and 20. The topsoil was sampled at source by WSP on a volume of 2,000m³ and sampled 8 samples at a rate of 1 per 250m³. Further testing was undertaken by NX onsite, where 2no. samples were collected from Plots 1 and 8.
- Imported topsoil was also sourced from Drapers, Stopgate Lane, Bickerstaffe and used within Plots 3 to 6. The topsoil was sampled at source by Coopers for use solely on Taylor Wimpey residential developments. A stockpile with a volume of 1,250m³ was sampled and 13no. samples collected giving a sampling rate of 1 per 100m³. It is unknown the volume imported to site. No onsite testing of this source of topsoil was undertaken by NX.
- Topsoil from Clive Hurst Plant Hire was used in the gardens of Plot 14. 4no. samples were collected and tested. No volume of material or sampling rate has been supplied.

It is reported that no subsoil was imported to site, and capping layer subsoil was sourced from 'Stockpile 1' only.

Approximately 3,950m³ of spoil was exported from site to landfill. No waste tickets were provided.

Approximately 1,620m³ of Class 2a to 2c material (clay) was imported from Cotton Mills, Hyde. Due to asbestos in 3no. samples this was ear marked for below roads, paving and hardstanding only.

Approximately 900m³ of natural 6F5 limestone was imported, due to natural nature, no testing was required of this material.

Around Plots 1-23 the land was raised between 0.11 and 1.74m. Soil has been imported from Cotton Mills and it is also reported that site won soil from 'Stockpile 1' which had been screened of deleterious material, was used in gardens and landscaped areas.

The remainder of the Plots on site (Plots 30-46) had been reduced in level to expose natural ground and upfilling material was imported natural 6F5 limestone.

The photos used as evidence of upfilling are of granular 6F5 material around the Plots, paths and roadway, and does not show the composition of the remaining Plot gardens onsite.

3. LKC Overall Professional Opinion

Based on a review of the Remediation Strategy, Plot reports were only required for Plots 1-6, 8-9, 12, 14-15 and 20. The Remediation Strategy did lean towards the requirement for an overall completion statement, which I think the supplementary Consultant Technical Summary by NX Consulting has tried to provide.

In hindsight, photographic evidence showing the upfill being carried out across the site would have been nice to have, and some confirmatory photographs showing the site won subsoil and imported topsoil placement in the remaining gardens. No waste tickets have been provided for the material removed offsite.

It is of some comfort that topsoil sampling has been undertaken at source and some onsite (although no clear volumes of topsoil were always provided). In addition, there was removal of unsuitable topsoil laid within some gardens, which shows some due diligence was being applied.

Given the time elapsed since the validation works undertaken in 2013 is it unlikely that any further information is available. It might be prudent to get NX Consulting to confirm that site won subsoil and imported topsoil has been placed in the remaining plots onsite (where a nominal cover was required) as the Consultant Technical Summary doesn't explicitly make this clear.

We trust the above and enclosed is of use. Should you have any queries or clarifications please do not hesitate to contact.

For and on behalf of LK Consult Ltd

Rachel Peart
Principal Geo-Environmental Consultant