

CONTAMINATION ASSESSMENT STATEMENT FOR PROPOSED DEVELOPMENT AT FOREST FARM, CHIPPENHAM

INTRODUCTION

BRD Environmental Ltd (BRD) has been appointed to provide independent geotechnical and environmental professional advice in connection with any such contamination issues at the site.

As part of this appointment, BRD has produced the following reports:

- 'Phase 1 Geo-Environmental Desk Study - Forest Farm, Chippenham', BRD Environmental Ltd, report ref. BRD2483-OR1-B, dated November 2023.
- 'Geo-Environmental Site Investigation - Forest Farm, Chippenham', BRD Environmental Ltd, report ref. BRD2483-OR2-B, dated September 2024.

Reference should be made to these reports for the full details of the works undertaken by BRD, however, a summary of the information pertinent to the contamination assessment is presented below.

SITE SETTING

The site currently comprises agricultural fields used for cattle grazing and the production of hay or silage. Forest Farm and the immediate surrounding farmyard and grounds is located centrally in the southern half of the site but is excluded from the site boundary.

It is proposed that the site will be redeveloped as a residential housing estate with areas of public open space / amenity land.

HISTORY

The site has generally remained undeveloped and in use for as agricultural fields throughout its history. The former "Wilts & Berks Canal" historically passed through the southern area of the site, although this canal was abandoned in 1914 and subsequently infilled in 1971. Whilst not on site, there are also former clay pits, now infilled, in the surrounding area, both to the south west and north east of the site, with some of the clay pits to the north east being infilled by 1981.

Both a live and redundant underground fuel pipeline are known to run across the north eastern section of the site.

DESK STUDY

A desk-based study was undertaken to assess the potential contamination sources and pathways that might be present on the site that could present a contamination risk.

Based on the desk study, the majority of the site is unlikely to be contaminated given its agricultural use, but localised contamination risks have been identified from both the on-site section of infilled canal, the fuel pipelines and the off-site former clay pits. These areas may present potential risks to future residents of the site, any new building materials and services, as well as the surface water ditches which pass through the site.

It was recommended that some further investigation would be needed to confirm the significance of these potential sources. This was undertaken and is summarised in the following section.

SITE INVESTIGATION

BRD conducted a site-wide ground investigation at the site, comprising trial pits, boreholes and a programme of landfill gas monitoring.

The investigation proved a thin cover of Topsoil overlying soils of both the Kellaways Sand Member (present across most of the site typically in the topographically elevated areas) and the Kellaways Clay Member (present in the lower lying areas). The Kellaways Sand was typically a silty fine sand or clayey silt. The Kellaways Clay was typically recorded as a clay with a variable sand fraction.

The Oxford Clay Formation, which is shown on the published geology maps to be present, was not encountered anywhere on site.

Some Made Ground was encountered within the infilled former canal in the south of the site. This material was found to be a reworked clay containing some occasional brick, limestone and ceramic fragments.

CONTAMINATION ASSESSMENT

Soil samples were taken and tested for a general contamination suite to reflect the previous uses on the site. No contamination was identified by the soil testing that was considered to offer a contamination risk to either the human health of the future residents, the wider environment or to future building materials.

The landfill gas monitoring undertaken at the site has recorded elevated concentrations of Carbon Dioxide. As a consequence, some gas protection measures will be required to be installed into all the new plots / buildings at the site. These will likely comprise a ventilated suspended slab with a gas membrane fitted. However, further investigation and monitoring may enable the site to be zoned whereby some areas might not need gas protection measures. It should be noted that the site is not within an area requiring radon gas protection.

Given the largely clayey nature of the soils on site, the potential contamination risk from the underground fuel pipelines is greatly reduced. However, the pipeline operator has a 30m exclusion zone around the pipes and therefore it was not possible to undertake any intrusive work and sampling close to these pipes.

REMEDIATION

On the basis of the investigation works to date, the site offers a low contamination risk and the only remediation requirement is the incorporation of gas protection measures into the new dwellings/buildings.

However, some further investigation is still needed to confirm that there is no contamination arising from the fuel pipelines and also to potentially zone the site and limit the number of new plots requiring gas protection measures.

Once the layout is confirmed and planning permission has been approved, then a formal remediation strategy should be developed setting out the proposed gas protection measures and the verification plan, in addition to any other remediation requirements arising from the further investigation described above.

Ref: BRD2483-OR3-A

21st January 2025