



CASE STUDY

CONTAMINATED LAND RISK ASSESSMENT AT FORMER GASWORKS

CLIENT: CONFIDENTIAL

LOCATION: UK

HIGHLIGHTS

- Detailed site investigation
- Contaminated land risk assessment
- Regulatory engagement



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THE CHALLENGE

Arthian assessed a former gasworks to identify whether any significant risks existed to human health or the water environment. Following the closure of the gasworks in the 1890s and a phase of partial demolition, the remaining site buildings had been converted for residential use. Our client approached Arthian intending to prepare an initial strategy document to assist with consultations with homeowners on the site.

As the first stage in assessing risks, Arthian recommended that a Phase I desk study and site visit be undertaken to understand the layout of the former gasworks site, the ground conditions, and the scope for future intrusive ground investigation works. During the site visit, several potential concerns were identified, including evidence of tar contamination in the area of suspected gas production and storage.

Demolition material and evidence of ash were also noted within garden areas. This culminated in a Phase II intrusive investigation, followed by a period of vapour monitoring and a quantitative risk assessment.

THE SOLUTION

The Phase 1 desk study included a review of historical and geological maps, a site walkover, and the preparation of a preliminary Conceptual Site Model (CSM). This was followed by a five-stage investigation designed to progressively refine the understanding of site conditions and risks.

Stage 1 – Planning and Initial Investigation

Stage 1 comprised the development of the site investigation scope and the preparation of the contract and specification for the proposed works.

An initial phase of hand-excavated trial pits and a programme of laboratory testing for soil and leachate samples was undertaken, targeting a suite of determinants typically associated with former gasworks sites.

Stage 2 – Boreholes and Monitoring

Stage 2 involved the installation of several shallow boreholes, additional laboratory testing, and one round of soil gas, vapour, and groundwater monitoring.

Stage 3 – Vapour Monitoring

Based on the initial results, indoor and outdoor vapour monitoring was completed in Stage 3 using a combination of VapourPins and passive diffusion tubes.

Stage 4 – Supplementary Investigation

The scope was extended in Stage 4 to include supplementary indoor vapour monitoring, soil gas monitoring, and groundwater sampling to further inform the risk assessment process.

Stage 5 – Reporting and Risk Assessment

Stage 5 comprised the preparation of an interpretive report detailing the site investigation works, generic and detailed quantitative risk assessments, findings, the revised CSM, and recommendations.



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APPROACH AND CLIENT INVOLVEMENT

Arthian adopted a pragmatic, staged approach to the contaminated land assessment process, ensuring the Client was engaged and consulted at each stage.

The scope of each stage was informed by the findings of the previous stage(s), providing a measured and cost-effective methodology. This collaborative approach acknowledged the sensitive nature of the site and the emotive issues surrounding contaminated land.



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