



Award-winning treatment of complex Chlorinated Solvent contamination

Old Trafford, Manchester

Client: Miller Homes

Site area: 3.03ha

Timeframe: 12 months

End use: Residential

Challenge

Unlocking the site of the former Itron gas meter factory ready for over 260 new homes.

Despite sitting on a main arterial route into Manchester City Centre, the site had been derelict since 2016. This was due to a complex set of contamination and ground issues, including:

- 4,300m³ of TCE-impacted soils
- >1acre TCE-impacted groundwater plume
- Extensive site cover of derelict buildings and subsurface structures
- Asbestos onsite in buildings and as debris on ground surface

Access issues meant initial site investigation data was limited. Because of this, onerous planning conditions were imposed which could have significantly delayed development.

Solution

Additional site investigation

Our team conducted additional targeted ground investigations. This included in-situ hydraulic conductivity testing to understand distribution of contamination in groundwater in more detail.

We sent samples to our American partners for project-specific treatability studies to determine the site-specific half-

lives of TCE and 1,1,1 TCA. The resulting data demonstrated proof of concept to regulators, giving them confidence in our remediation strategy.

The EA allowed us to revise the existing groundwater Risk Assessment (DQRA), and agree remediation target values aligned to our proposed technology.

Soil and groundwater remediation

We took a dual-action approach to treating TCE-impacted soils and groundwater.

For soil remediation, we advised Miller that using Stabilisation/Solidification and Modification would chemically fix contamination while simultaneously achieving 130kPa soil bearing capacity to support the piling rig.

This solution hadn't been considered before, but diverted 10,000 tonnes of material from landfill.

We agreed a combined programme of ISCR and anaerobic bioremediation for groundwater, injecting our UK-exclusive substrate, Anaerobic BioChem Plus (ABC®+) into 280 direct push injection points.

This was the first UK use of ABC®+, which is distributed by Carus Corporation. The substrate provides a more rapid reduction in chlorinated solvents versus other slow release methods, allowing for a reduced monitoring period post treatment.

Materials management

Demolition and earthworks ran concurrent to remediation, ensuring phased release of the site.



We worked with a licensed asbestos contractor to carry out a large-scale decontamination operation, removing asbestos from buildings.

Every materials movement was carried out under a detailed MMP using our in-house 3D GPS-enabled construction equipment, so we could precisely track each movement in real time.

This left a full audit trail and a precise set of data to support site validation.

Client feedback

David Brackley, technical director at Miller Homes, said:

"We were impressed with the level of McAuliffe's expertise, particularly when it came to liaising with the regulator."

"We selected McAuliffe on the basis they could do all the works in house, using their knowledge to make significant cost and time savings, while ensuring full regulatory compliance and a high level of sustainability."

RESULTS

- Saved 20 weeks off the original programme
- Reused 99.7% of material onsite
- Diverted 10,000 tonnes of material from landfill
- Gave the client cost and programme certainty
- First UK use of innovative ABC+® substrate
- Zero reportable incidents
- Won 'Best Use of Remediation Technologies' at the Brownfield Awards 2020