

Foundation House
St.Johns Road
Meadowfield Industrial Estate
Durham
DH7 8TZ



Our Ref: D8091

Craig Durkin
Kier Living
Unit 2180 Ground Floor,
Thorpe Park,
Century Way,
Leeds,
LS15 8ZB

Date: 18th April 2018

Dear Craig

**BLACK ROCK MILLS
SOIL CAP VALIDATION FOR PLOTS 50-56 INCLUSIVE**

A site visit was undertaken on 16th April 2018 to confirm the suitability of the topsoil stockpiled on site for use within the rear gardens of plots 50-56. Two representative samples of the material were taken to cover these plots.

All analysis was performed at a UKAS accredited laboratory using MCERTS certified tests where possible. All soil samples were analysed for the following:

The LQM/CIEH Suitable 4 Use Levels for human health risk assessment (015) taken from DEFRA C4SL Database:

- Range of heavy metals and metalloids (including Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel Selenium and Zinc)
- Speciated PAH (Polycyclic Aromatic Hydrocarbons) including: Napthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(123cd)pyrene, Dibenz(ah)anthracene, Benzo(ghi)perylene, Total PAH, Total Aromatic & Aliphatic Hydrocarbons.
- Speciated TPH (Total Petroleum Hydrocarbons) including: Extractable and Volatile Petroleum Hydrocarbons
- Asbestos screen

Risk screening

A soil screening exercise was conducted by comparing maximum observed soil quality results with a set of screening values. These screening values represent threshold soil concentrations above which there may be an unacceptable risk to human health and are based on standard residential land use. None of the substances tested for exceeded the LQM/CIEH Suitable 4 Use Levels for human health risk assessment (015) taken from DEFRA C4SL Database. The sample was also screened for Asbestos - No asbestos fibres were detected in the soil sample. As such, based on the available laboratory data, no potential contaminants of concern have been identified in the soil samples.

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Depth Validation

The soil cap comprised exclusively topsoil. Photographs were provided by Kier Living of trial holes in the rear gardens of plots 50-56 which confirmed the sufficient thickness of as-placed soil.

Conclusions

On the basis of the information and data collected and presented, Dunelm Geotechnical & Environmental Ltd can verify that the samples taken and subsequent chemical analysis and assessment of the soils have not identified any constituents that could be considered to represent a risk to human health within the context of proposed residential use.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Michael Aiston'. The signature is somewhat stylized and includes a horizontal line at the end.

Michael Aiston
For and on behalf of Dunelm Geotechnical & Environmental Ltd

Enclosed: Chemtec Report 71256