GEO Environmental Engineering

GEO2024-6320: Ivy Mills, Hensingham, Whitehaven, Phases 1 and 2 – Remediation Plan

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Basic Radon protection Measures:

The Phase 1 Area will require Basic Radon protection Measures.

CS2 Gas Protection Measure & Full Radon protection Measures:

The Phase 2 Area will require Gas Protection Measure in line with Characteristic Situation 2 and Full Radon protection Measures.

Clean Cover System (100mm to 300mm):

The GIR by Sirius recommended a Clean Cover System within areas of soft landscaping and gardens due to high pH concentrations. This included:

- 100mm with geotextile in front gardens and soft landscaping.
- 300mm with geotextile in rear and side gardens.

Clean Cover System (300mm to 600mm):

The GIR by GEO recommended a Clean Cover System within private gardens and soft landscaped areas due to elevated contamination. This included:

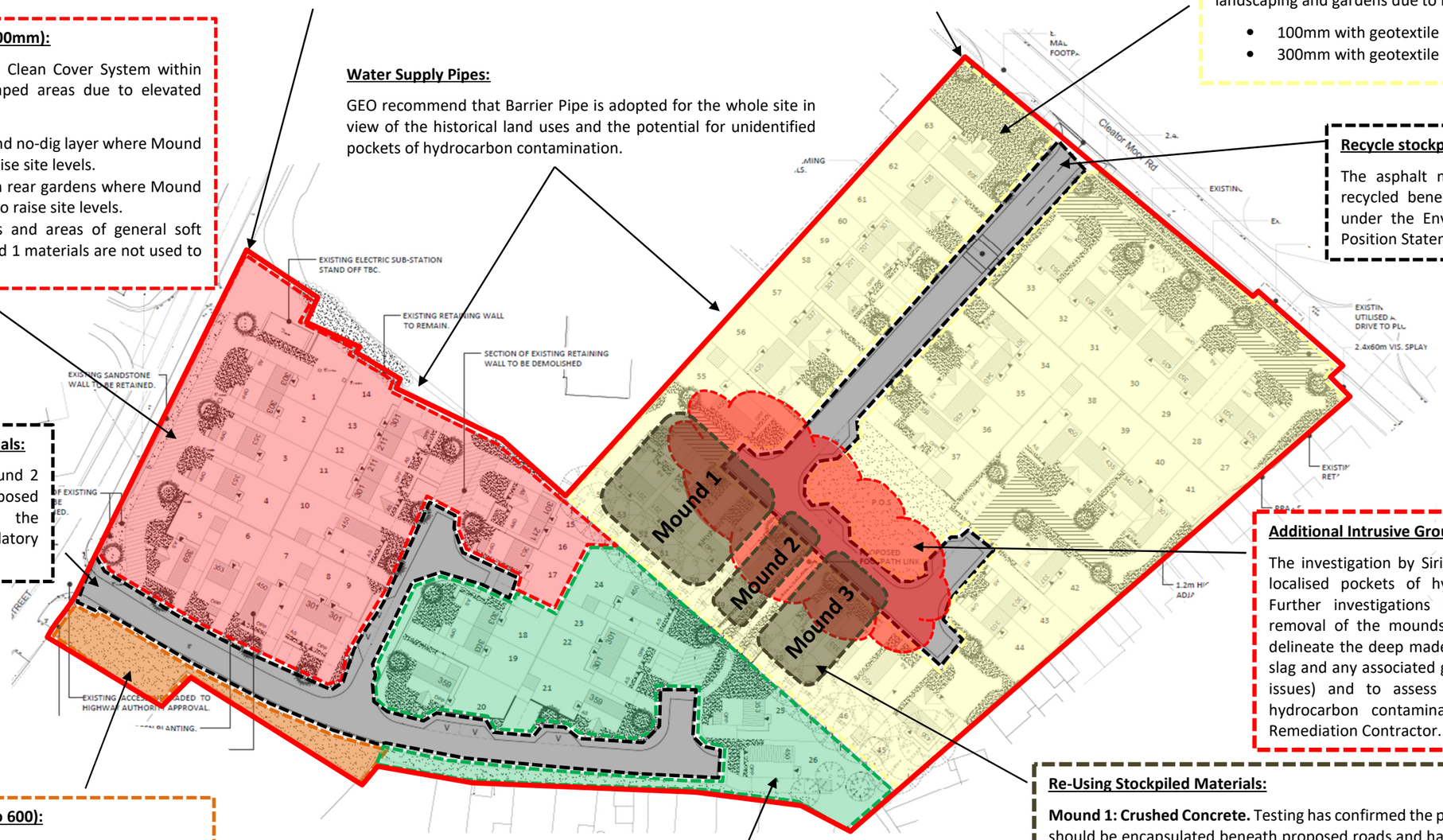
- 600mm with geotextile and no-dig layer where Mound 1 Materials are used to raise site levels.
- 600mm with geotextile in rear gardens where Mound 1 materials are not used to raise site levels.
- 300mm in front gardens and areas of general soft landscaping where Mound 1 materials are not used to raise site levels.

Water Supply Pipes:

GEO recommend that Barrier Pipe is adopted for the whole site in view of the historical land uses and the potential for unidentified pockets of hydrocarbon contamination.

Recycle stockpiled Asphalt Materials:

The asphalt materials within Mound 2 could be recycled beneath proposed roads and pavements under the Environment Agency's (EA) 'Regulatory Position Statement 075'.



Recycle stockpiled Asphalt Materials:

The asphalt materials within Mound 2 could be recycled beneath proposed roads and pavements under the Environment Agency's (EA) 'Regulatory Position Statement 075'.

Additional Intrusive Ground Investigations Required:

The investigation by Sirius identified deep made ground with localised pockets of hydrocarbon contamination and slag. Further investigations are considered necessary following removal of the mounds, to further investigate and possibly delineate the deep made ground, determine the extent of the slag and any associated geotechnical risks (potential expansion issues) and to assess any risks associated with possible hydrocarbon contamination. Could be completed by the Remediation Contractor.

Clean Cover System (300mm to 600):

The GIR by GEO recommended a Clean Cover System within areas of soft landscaping gardens due to elevated contamination. This included:

- 300mm with general soft landscaped areas.
- 600mm with geotextile and no-dig layer where Mound 1 Materials are used to raise site levels.

No Specific Remediation Required:

The GIR by GEO did not identify any significant made ground or elevated contaminants, therefore no specific remediation is required. However, a minimum c.100mm of topsoil is advised in the proposed gardens and soft landscaped areas.

Re-Using Stockpiled Materials:

Mound 1: Crushed Concrete. Testing has confirmed the presence of trace asbestos. The material should be encapsulated beneath proposed roads and hardstand. Consideration can be given to use beneath soft landscaping and gardens; however, it will need to be capped by a robust 600mm Clean Cover System in these areas.
Mound 2: Asphalt. Testing has confirmed the presence of coal tar and trace asbestos. The material could be recycled beneath proposed roads and pavements under the Environment Agency's (EA) 'Regulatory Position Statement 075'.
Mound 3: Topsoil. Testing has confirmed that the topsoil in Mound 3 is suitable for re-use within proposed gardens and areas of soft landscaping.

Website: www.geoenvironmentalengineering.com
Email: info@geoenvironmentalengineering.com
Telephone: 07883 440 186