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HELLENS GROUP

NEWBOTTLE STREET, HOUGHTON-LE-SPRING

WASTE RECOVERY PLAN

FEBRUARY 2023

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FEBRUARY 2023

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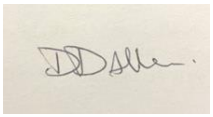
Dominiqua Drakeford-Allen	Principal Waste & Resources Consultant	

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APPENDICES

1 INTRODUCTION

1.1.1 Hellens Group have instructed Wardell Armstrong to assist in the application for a new bespoke environmental permit for the permanent deposit of waste as a recovery operation.

1.1.2 The proposal is for the construction of a suitable development platform for commercial development at Newbottle Street, Houghton-le-Spring, which is within Former Houghton Colliery Site. Further detail on the site setting is provided in section 2.

1.1.3 The intention is to excavate, treat and re-deposit waste on site. Further detail on the former land use is provided in Section 2.

1.1.4 This Waste Recovery Plan has been developed in line with the Environment Agency guidance on Waste Recovery Plans and Deposit for Recovery Permits[1], to describe the proposal and provide evidence that the scheme would be completed using non-waste materials.

1.1.5 The Remediation Strategy for the works has prepared by Shadbolt Environmental and has been approved by the Environment Agency and forms part of this environmental permit application.

2 SITE LOCATION AND DESCRIPTION

2.1.1 The site is located to the south of Newbottle Street (A182), northeast of Houghton-le-Spring town centre. The National Grid Reference (NGR) for this site is NZ 33812 50382.

2.1.2 The site location is shown in drawing NT16098-001.

2.1.3 The site has historically been a colliery and subsequently a landfill site[2]. The landfill was operated by the City of Sunderland Council, and the original waste disposal licence was issued on 7th September 1995 and surrendered on 7th April 1999. It is understood that the historic landfill site is associated with the reclamation of the former colliery and deposit of inert materials. The site was licenced to receive clean hardcore and

[1] Waste recovery plans and deposit for recovery permits - GOV.UK (www.gov.uk)
[2] ArcGIS - My Map

brick and excavation wastes only at no more than 400 tonnes per day, with a maximum capacity of 10,000m³.

2.1.4 The site comprises a large terrace of maintained grassland bound by slopes to the north east and south west. In the north of the site the slope up to Newbottle Street is taken up by a stone-faced retaining wall approximately 4m high along the boundary, with a storage yard to the rear of the adjacent petrol filling station (Jet Fuel Station).

2.1.5 The embankments at the fringes of the site are planted with small trees and the main body of the site comprises of grass with a central ridge of rough grass/vegetation along the line of a former fence of which some components still remain. There are two roughly circular areas which are not grassed, and concrete is visible; these broadly align with given locations of shafts recorded by the Coal Authority which have been capped at the surface.

3 STATUTORY DESIGNATIONS

3.1.1 No statutory designations covering archaeology or ecology have been identified which relate to land within the proposed site boundary.

4 GEOLOGY

4.1.1 The soilscape is slowly permeable seasonally wet acid loamy and clayey soils. Artificial deposits (Made Ground - Undivided) are indicated within the site boundary. These deposits are anticipated to comprise of colliery spoil.

4.1.2 Superficial deposits are recorded on site to comprise Diamicton (cohesive glacial till / boulder clay) comprising predominantly of cohesive materials with varying proportions of granular materials; Glaciolacustrine deposits comprising of interbedded clay and silt; and unclassified superficial strata which may be masked by the recorded artificial ground.

4.1.3 The solid geology beneath the site predominantly comprises Permian age sandstone of the Yellow Sand Formation in the northeast of the site, stratigraphically overlying undifferentiated strata of the Pennine Middle Coal Measures comprising interbedded mudstone, siltstone and sandstone in the south west of the site.

4.1.4 BGS boreholes within the site boundary indicate Made Ground at the site to be ashy material with brick and demolition rubble with weathered limestone or sandstone bedrock encountered at 3-6m bgl through the main body of the site with colliery spoil recorded in excess of 12m thickness at the southwestern edge of the site and former tipping area. No coal seams are indicated to outcrop within the site boundary; however, there are eight recorded within 500m of the site.

4.1.5 There are four faults present within 500m of the site including one which runs through the site close to and parallel with the south eastern boundary on a bearing in the order of 070°. This fault is recorded as inferred with an unknown displacement. The inferred fault is unlikely to impact on the development proposals due to its location on the site boundary.

5 MINING

5.1 Coal Mining

5.1.1 Shadbolt Environmental have previously assessed the mining history of the site, and the following section summarises their findings. The site is located within an area where the effects of potential coal mining should be assessed, as stated in the Groundsure report and verified by The Coal Authority's Gazetteer. A Coal Authority Report for the site has been obtained and reviewed by Shadbolt Environmental, as part of a Preliminary Coal Mining Risk Assessment which has been issued under separate cover. In brief the Coal Authority report states the following.

- The site is within the zone of influence of workings of seven seams recorded at depths of 122m to 313m bgl.
- No probable shallow mine workings are recorded on site.
- No records of spine roadways at shallow depth are recorded on site.
- Three shafts are recorded on site.
- There have been no damage claims within 50m of the site since 1994.

5.1.2 The Coal Authority report confirms that workings have been undertaken at depth beneath the site. Although coal reserves are known to exist in the area the property is not considered to be in an area where the Coal Authority believe there is coal at or close to the surface, therefore shallow unrecorded mine workings undertaken for the extraction of coal are unlikely to be a risk factor at the site. The presence of the three

mine entries coincide with three circular areas within the site which have been identified as Development High Risk areas are likely the reason for their designation. Two shafts are recorded at the site were originally capped in 1982 before being backfilled with washery wastes up to 1986 and then hardcore in 1987 and recapped in 1988; the third shaft was filled to an unknown specification. Accordingly, the risk to developments at the site as a result of underground mine workings for the extraction of coal is considered to be low but the backfilling of the shafts will need to be verified if development is to proceed within the zone of influence.

5.2 Non-coal Mining and Natural Cavities

5.2.1 There is no record of any non-coal mining activity on the site.

5.2.2 The Groundsure Geo-Insight report indicates the site is not within 1,000m of an area of Brine Extraction, Gypsum Extraction, Tin Mining or Clay Mining.

5.2.3 There is one record of natural cavities within 1,000m. This record relates to a Solution Widened Joint or Fissure 534m east of the site.

6 HYRDOGEOLOGY AND HYDROLOGY

6.1.1 The site is located upon a Secondary (A) Aquifer and a Principal Aquifer (The Yellow Sand Formation). The superficial strata located beneath the site are designated as Secondary (A), Secondary (Undifferentiated) and Unproductive aquifers. Formerly classified as minor aquifers, Secondary (A) Aquifers comprise of permeable layers capable of supporting water supplies at a local rather than strategic scale.

6.1.2 An assessment of the hydrogeology and hydrology including flood risk is provided in the Revised Desktop Study Assessment Version 2 dated July 2022 prepared by Shadbolt Group.

7 WASTE RECOVERY

7.1 Introduction

7.1.1 The proposed development works require cut and fill earthworks operations to provide a suitable development platform. Cut materials are to be processed to an engineered fill specification, prior to placement at the site. The commercial development will comprise of two retail units and associated car parking area.

Planning permission (reference:20/01591/FU4) for the erection of retail units (within use class E) and petrol filling station (Sui Generis), with new vehicular access, parking, servicing areas and landscaping was granted on 16th December 2021. The planning consent is shown in Appendix 1.

7.1.2 The Environmental Permitting Guidance on the Waste Framework Directive states that, the key features of a recovery operation is that its principal objective is to ensure that the waste serves a useful purpose by replacing other substances which would have had to be used for that purpose (thereby conserving natural resources)[3].

7.1.3 The Environment Agency guidance on Waste Recovery[4] states that evidence may be provided to demonstrate that if non-waste material would be used there would still be a worthwhile benefit, such as net financial gain or other worthwhile benefit. Meaningful financial gain means the profit and payback period would make it worthwhile to incur the full cost of using non-waste material.

7.2 Benefit from the activity

7.2.1 In order to demonstrate that the deposit of waste is a genuine recovery activity, the financial viability of the project using non-waste is required to be demonstrated. The following section sets out the financial benefit of the scheme and demonstrates how the scheme would be commercially worthwhile to complete using non-waste materials, generating a meaningful financial gain for Hellens Land Ltd.

7.2.2 The land currently does not have commercial use. The enabling works scheme will develop the platform to enable a Tesco and Home Bargains to be built, along with associated car parking, service area and landscaping. Tesco and Home Bargains are popular retailers, and with the residential areas nearby the footfall for consumers will be high, bringing the benefit of additional retail services for the local population. The development will also bring other benefits such as ample employment opportunities for the local population.

7.2.3 The engineering and enabling works are anticipated to be undertaken over a period of approximately 16 weeks for the enabling works to be completed, and a total of one year for the final works (including construction of the buildings and infrastructure) to be completed. Construction of the development platform will require approximately

[3] Environmental Permitting Guidance The Waste Framework Directive (publishing.service.gov.uk)
[4] Waste recovery plans and deposit for recovery permits - GOV.UK (www.gov.uk)

38,018m³ of waste to be excavated and disposed of offsite. It is expected that a total of 32,955m³ of material would be required to be imported prior to compaction to construct the platform.

7.2.4 Based on the labour and materials required, a financial model has been developed to demonstrate that the use of waste materials presents genuine substitution. A summary of the financial model for construction of the development platform is provided in Table 7.1. below, with supporting evidence provided as an Appraisal Summary in Appendix 2 and detailed breakdown costings of the works in Appendix 3.

Table 7.1: Financial Model Summary

Cost item	Cost
Acquisition costs	£1,908,000[1]
Construction costs	£7,456,284
Enabling works	£3,861,958[2]
Externals	£3,989,910[3]
Other associated fees	£2,234,349
Total cost of works	**£19,450,500**
Value of land upon completion of works	£20,915,000[4]
Profit	**£1,464,500**

Notes:
[1] Acquisition cost of the purchase of land (8.31 acres) at £150,421.12 per acre, and other acquisition costs (agent and council fees)
[2] Including costs of excavation and importation and placement of materials (price confirmation provided as Appendix 3)
[3] External works meaning the construction of associated infrastructure including roads, roundabout, car parks, retaining walls, drainage etc.
[4] As detailed in the Off-Site Appraisal Summary, an agreed figure on completion of build, provided as Appendix 2

7.2.5 With a profit of £1,464,500, the development would still be undertaken using virgin materials to remediate the land post excavation if necessary and would still be financially viable. This clearly demonstrates that the use of waste would be a genuine substitution for non-waste materials.

7.3 Quantity of Waste

7.3.1 Final fill levels are presented in the Proposed Site Sections plan prepared by Hellens Land, as shown in Appendices 6 and 7. Through processing of the material and disposal of surplus vegetation soil, it is expected that 31,655m³ of material will be used for the filling and compaction of the final processed made ground materials to the sub formation levels. The volume of waste required for the re-deposit is some 1,300m³ less than that in the financial modelling due to there not being a requirement to import suitable topsoil material.

7.3.2 Financial modelling calculations for the scheme have been based on the quantities of material required to complete the enabling scheme.

7.4 Material Suitability

7.4.1 The following sections outline the suitability of materials following excavation of the in-situ wastes on site (colliery spoil and inert wastes), characterisation and classification of wastes and the Waste Acceptance Criteria (WAC).

7.4.2 A Waste Classification Report has been carried out by Shadbolt Environmental Ltd, using HazWasteOnline, which is included as part of this application. The report classifies the waste material on site as non-hazardous waste falling under EWC code 17 05 04 – Soils and stones (other than those mentioned in 17 05 03).

7.4.3 In addition to 17 05 04, other waste codes which may also comprise of the made ground described in section 4.1 of the Remediation Strategy (Version 3, October 2022) which would fall under the waste codes as described in Table 7.2 below. The waste types listed are suitable for deposit for recovery and are typically accepted by the Environment Agency for deposit of waste for recovery[5].

Table 7.2: Permitted Wastes

EWC Code	Description
01 01 02	Wastes from mineral non-metalliferous excavation
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics

[5] Check if your waste is suitable for deposit for recovery - GOV.UK (www.gov.uk)

Table 7.2: Permitted Wastes	
EWC Code	**Description**
17 01 07	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 (metal from reinforced concrete must have been removed)
17 05 04	Soils and stones

7.4.4 Shadbolt Environmental have also carried out ground investigations and soil sampling on site, as outlined in the agreed Remediation Strategy.

7.4.5 The Remediation Strategy (Appendix 4) has been assessed and approved by the Environment Agency on 31 October 2022 (Appendix 5). The agreed Remediation Strategy uses the CLEA MODE LQM/CIEH 2015 Derivation Tool for the commercial screening values for fill material, as presented in Annex C of the Remediation Strategy.

7.4.6 A total of 70 soil samples were taken and submitted for analysis, testing for a suite of common contaminants during the phases of the ground investigations. The laboratory chemical results have reported concentrations of potential contaminants to be within or below the SE TSV for commercial end use (human health criteria). Soil analysis undertaken which reported concentrations above laboratory detection limit but beneath the human health criteria for a commercial end use included heavy metals, cyanide, sulphate, TPH, polyaromatic hydrocarbons, occasional VOCs and SVOCs.

7.4.7 Leachate analysis has also been undertaken for 17 samples from site, and the results reported low concentrations of contaminants below the laboratory detection limits and compared to the Threshold Values for Groundwater. The elevated leachable hydrocarbons in the soils and elevated selenium and hydrocarbons were recorded within the groundwaters. As such, it appears that the deep groundwaters have been slightly impacted with dissolved phase PAH hydrocarbons, but this appears to be isolated to an individual borehole as opposed to the whole site.

7.4.8 In summary, as detailed in Section 4.8 of the approved Remediation Strategy, the ground investigations carried out by Shadbolt Environmental concluded that when the site is developed, most of the site will be covered with hardstanding, buildings with formal drainage and therefore the potential for rainwater to percolate through the site and for contaminants to leach into solution and migrate towards the Principal Aquifer and/or local watercourses will be further significantly reduced.

7.4.9 Further material sampling of 15 samples has been undertaken at the site to carry out a WAC analysis of the existing waste deposits. Four of the samples were well below the inert threshold limits for all inert waste criteria parameters. All samples were inert with regard to heavy metals. Some parameters of the samples indicated the wastes more likely to be classified as non-hazardous materials rather than inert, for example a marginal exceedance for the inert waste criteria of fluoride, sulphate and mineral oil. One sample had a total PAH level higher than the other samples.

7.4.10 Furthermore, there were some samples where Total Organic Carbons (TOCs), were ranging from 3.1 – 11.3 (% w/w). There were also two elevated results for Loss on Ignition at 11.4 and 13.6 (% w/w). There was one sample where PAH (total) was elevated at 206 (mg/kg) in comparison to the other samples. It is highly likely given the site's former use that these levels are resulting from previous deposits of top soils or the presence of coal. Through Shadbolt Environmental's site investigation work, there was no evidence found of hydrocarbon contamination.

7.4.11 Although it is considered that the existing ground conditions at the site do not pose a significant risk to future site users and the environment, the approved Remediation Strategy and Foundation Work Risk Assessment will provide a greater level of assurance for the site development.

7.4.12 Wastes excavated as part of the 'cut and fill' operation on site will be treated and remediated prior to their re-deposit, in line with the approved Remediation Strategy.

7.4.13 Earthworks will undergo appropriate in-situ geotechnical analysis and chemical laboratory analysis where appropriate.

7.4.14 Should excavated waste give rise to any unidentified odour, composition or visual characteristics which indicate that the material may be contaminated it will be removed and analysed externally to ensure it is suitable for deposit or disposed of to an appropriately permitted facility.

7.4.15 A suitably qualified person will confirm that the chemical and engineering properties of the waste are suitable for the intended use and will not cause pollution.

7.4.16 Wastes will be subject to a characterisation prior to re-depositing to provide:

- a description of the waste treatment – or a statement explaining why treatment is not needed;

- testing data on the composition of the waste and its leaching behaviour, where relevant;
- a description of the appearance of the waste – including smell, colour and physical form;
- the European Waste Catalogue (EWC) code.

7.4.17 A suitably qualified person will confirm that the chemical and engineering properties of the waste are suitable for the intended use and will not cause pollution.

7.4.18 Waste will be treated on site, which will comprise of physical treatment only (sorting, screening), to treat the waste prior to redeposit to ensure that the material is suitable to be redeposited.

7.5 Recovery activity completed to an appropriate standard

7.5.1 The planning permission (Ref: 20/01591/FU4) for the erection of retail units (within Use Class E) and petrol filling station (Sui Generis), with new vehicular access, parking, servicing areas and landscaping, was granted on granted on 16 December 2021 by Sunderland City Council. Prior to development a Remediation Scheme which ensures that as a minimum the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990. A Remediation Scheme (also referred to as a Remediation Strategy) has been approved by the Environment Agency on 31 October 2022.

7.5.2 The recovery activities will be supervised by technically competent persons who hold the relevant Certificate of Technical Competency (CoTC) under the Waste Management Industry Training and Advisory Board (WAMITAB).

7.5.3 The activities carried out on site will be managed and operated in accordance with Hellens Environmental Management System (EMS). Operational procedures for the management of the site will ensure that all appropriate pollution prevention and control measures are in place.

APPENDICIES

APPENDIX 1

20_01591_FU4 Planning Permission

APPENDIX 2

Hellens Off Site Appraisal Summary

APPENDIX 3

Schedule of works (Financial Model)

APPENDIX 4

Newbottle St – Remediation Strategy, Oct 2022 V3

APPENDIX 5

Houghton Colliery – Document review comments

APPENDIX 6

Site Sections

APPENDIX 7

Bulk Earthworks Sheet

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