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HELLENS LAND LIMITED

NEWBOTTLE STREET, HOUGHTON-LE-SPRING

ENVIRONMENTAL RISK ASSESSMENT

MARCH 2023

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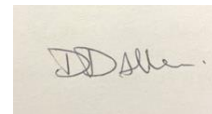
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APPENDICES

Appendix 1 - Ground Investigation Interpretive Report and Groundwater Risk Assessment - Issue V3 September 2022 prepared by Shadbolt Environmental

1 INTRODUCTION

- 1.1.1 Hellens Land Limited 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 the Former Houghton Colliery Site. The material will be excavated, suitable waste will be treated and then deposited to construct the development platform. Treatment will be physical treatment of the wastes including screening, crushing and sorting of materials.
- 1.1.3 This Environmental Risk Assessment (ERA) forms part of the site's Environmental Management System.
- 1.1.4 The site is surrounded by a mix of residential, commercial and industrial areas. In conducting this ERA, the proximity to local human populations has been considered. Receptors identified nearest to the site are listed in Table 1.1.
- 1.1.5 A receptor close to the site boundary is an area of deciduous woodland which is designated as a priority habitat. A separate Habitats Risk Assessment to consider the potential impact on the deciduous woodland (and other statutory designations over 1.6km away from the site) has been provided.

2 SENSITIVE RECEPTORS

- 2.1.1 An assessment of the sensitive receptors which have potential to be impacted from the onsite activities are outlined in Table 1.1, along with distance from the proposed site boundary and direction from the site. The receptors are categorised by residential and recreational (including schools), industrial and commercial, infrastructure (e.g. roads) and environmental.

Table 1.1: List of Receptors		
Receptor	Distance from Site	Direction
Residential/recreational (including schools)		
Grasswell residential area	50m	North
Sunniside residential area	80m	North west
Burnside Primary School	250m	South west
Newbottle Primary School	335m	North
Houses off Brickburn Crescent	100m	South west
Allotments	<10m	South/south west
Houghton Sports Complex	205m	South
Public Park	165m	South west
Industrial/Commercial		
Jet fuel station	50m	North east
Area of shops	20m	South
Houghton Comrades Club, Tyre Spot, D & J Cars and Commercial, Tan Queen UK	25m	East
Houghton Quarry Landfill Site (managed by Biffa Waste Services)	20m (to site entrance)	East
Infrastructure		
Newbottle Street (A182) Road	<10m	East
Houghton Cut (A690)	330m	East
Environmental		
Deciduous woodland (Priority habitat)	Adjacent to sit boundary (<5m)	South/south west
Moors Burn River	760m	West

3 ENVIRONMENTAL RISK ASSESSMENT

3.1.1 Table 3.1 contains the Environmental Risk Assessment (ERA), which has been assessed using the source – pathway – receptor model. Environmental consideration has been given with regard to the on-site activities, and how environmental risk from the site will be mitigated and managed.

3.1.2 There are no surface waters on site. Ground investigations have been undertaken and a Ground Water Risk Assessment has been prepared by Shadbolt Environmental, and should be referred to as part of the ERA.

3.1.3 The works will be completed in line with the approved Remediation Strategy.

Table 3.1 Environmental Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Severity	Magnitude of risk with no mitigation	Risk management	Residual risk
Human population	Odour from previously deposited wastes	Nuisance	Through the air	Low	Low	Low	<p>Wastes to be excavated and treated are not predominantly malodorous.</p> <p>Regular inspections of the site perimeter to check for the presence of any malodour emanating from the site.</p> <p>Ground investigations have been carried out and there was no evidence of malodour.</p>	Low
Groundwater	Contamination through leaching from previously deposited wastes	Contamination of groundwater	Downward flow of surface waters	Medium	Medium	Medium	<p>Adherence to the procedures for handling the previously deposited wastes, in accordance with the approved remediation strategy.</p> <p>Waste sampling and analysis carried out by a suitably qualified person.</p> <p>Background groundwater quality determined from on-site monitoring prior to commencement of site operations.</p>	Low
Local human population	Dust arising from vehicle movements within the site and generated from waste treatment (e.g. crushing, screening) tipped infill materials	Aggravation of existing respiratory complaints, respiratory conditions, Nuisance	Airborne	Medium	Medium	Medium	<p>Adherence to the Dust Management Plan.</p> <p>Strict enforcement of on-site speed limits to minimise dust generated by traffic movement on haul roads.</p> <p>Any dust complaints to be recorded and investigated, and the Environment Agency informed. All</p>	Low

Table 3.1 Environmental Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Severity	Magnitude of risk with no mitigation	Risk management	Residual risk
							corrective action to be documented.	
Local human population	Noise from site plant treating material on site (crushing, screening, sorting) and incoming waste vehicles (tipping of materials, vehicle noises)	Nuisance	Airborne	Medium	Medium	Medium	<p>Use of modern plant for operations with appropriate noise suppression features (e.g. silencers white noise reversing beepers etc.).</p> <p>Regular maintenance of all plant used for operations with particular attention to silencers and acoustic panels.</p> <p>Establishment and strict enforcement of on-site speed limits as well as enforcing rules regarding the securing of tailgates.</p> <p>Regular maintenance of site roads with particular attention to the prompt infilling of any potholes.</p> <p>Strict compliance with working days and times.</p> <p>Any noise complaints to be recorded and investigated, and the Environment Agency informed. All corrective action to be documented.</p>	Low
Nearby public road	Mud on roads	Nuisance	Tracking from site vehicles as they enter/exit the site	Low	Low	Low	<p>Road vehicles accessing the site will be kept on hardcore haul roads.</p> <p>Regular inspections of the primary site road and the public highway outside the site entrance will take place to ensure that the management procedures are protecting the public</p>	Low

Table 3.1 Environmental Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Severity	Magnitude of risk with no mitigation	Risk management	Residual risk
							highway from fugitive emissions of dirt and mud as intended. However, in the unlikely event that mud or other debris is identified on the highway, a mechanical road sweeper will be employed to remedy the situation as soon as is practically possible.	
Surrounding area, local amenity	Litter arising from site operations	Nuisance	Windblown	Low	Low	Low	Regular inspections of the site perimeters to check for the presence of any litter emanating from the site. All wastes produced by site operatives will be stored in secure, enclosed receptacles, pending off-site disposal. Wastes to be handled on site are colliery spoil and inert waste materials and do not present a risk of litter which could give rise to pollution. There is no importation of wastes to the site.	Very low
Surround area, local amenity	Pests and vermin	Nuisance, transmission of vermin carried infection/disease	Airborne, ground	Low	Low	Medium	The site operation does not involve the acceptance of waste that may attract pests and vermin i.e. organic or putrescible material. All wastes produced by site operatives will be stored in secure, enclosed receptacles, pending off site disposal. Continuous visual monitoring during	Very low

Table 3.1 Environmental Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Severity	Magnitude of risk with no mitigation	Risk management	Residual risk
							operations to ensure that the site is not being colonised by pests or vermin. Should any pests be discovered they will be eliminated by an external pest control contractor as soon as possible.	
Local human population and environment	Fire	Respiratory irritation, illness, nuisance, pollution of land or water, harm to staff	Airborne, firewater run-off	Low	Medium	Low	Strict adherence to waste acceptance criteria. Risk very low due to the low combustibility of materials being handled on site. Adherence to the EMS, including the secure storage of potentially combustible fuels and oils of which quantities will typically be very low. Regular maintenance of site machinery and vehicles.	Very low
Local human population and environment	Build up and emissions of gas from previously deposited wastes	Respiratory irritation, illness and nuisance to local population. Risk of explosion and injury to staff and local population.	Gas migrating laterally through waste deposit and building up in particular areas.	Low	High	Medium	Licence for historical landfill fully surrendered in 1999. Remediation will be carried out in accordance with the approved Remediation Strategy. Gas monitoring completed to date indicates that gas protection measures (achieved by a cast in-slab ground bearing floor slab) are necessary with respect to Carbon Dioxide, as detailed in the Ground investigation report prepared by Shadbolt Environmental.	

Table 3.1 Environmental Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Severity	Magnitude of risk with no mitigation	Risk management	Residual risk
							Monitoring will be carried out during the works and contact made with the Coal Authority should gas emissions be identified.	

4 CONCLUSION

- 4.1.1 Groundwater investigations and groundwater risk assessment were carried out to determine whether the existing ground conditions could possibly indicate geotechnical and contamination related issues arising from the past uses of the site which could give rise to environmental pollution. These investigation works informed the Remediation Strategy.
- 4.1.2 The site will operate in accordance with the approved Remediation Strategy and the Waste Recovery Plan and supporting documentation.
- 4.1.3 With regard to fugitive dust emissions, a Dust Management Plan has been prepared as part of the bespoke waste permit application, and the site will operate in accordance with this plan.
- 4.1.4 Overall, the environmental risks from the works is considered to be low, through the implementation of the mitigation and management measures in place as detailed in this Environmental Risk Assessment.

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