MASON EVANS

Geo-Environmental Consultants

LONGBAR, GLENGARNOCK

REPORT ON

SITE INVESTIGATIONS

DATE

February 2018

CLIENT

The JR Group Limited

The JR Group Limited

LONGBAR,

GLENGARNOCK

REPORT ON SITE INVESTIGATIONS

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Project Reference:	P17-517
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EXECUTIVE SUMMARY

Client	**The JR Group Limited**
Site	Longbar, Glengarnock
Project Objectives	▪ To investigate the possible presence of ground contamination associated with the historical uses of the site and any potential associated risks. ▪ To investigate the ground conditions and provide recommendations on foundation and infrastructure design. ▪ To undertake researches on the mining conditions beneath the site and provide recommendations on potential mining instability constraints. ▪ To provide recommendations (if any) for additional works/remediation required.
Assessment of Risks to Human Health & the Water Environment	Elevated levels of toxic nickel and lead and phytotoxic nickel contamination were identified localised to one location each. However, given the absence of any significant made ground or other source for the contamination and the restricted distribution, this was not considered to be representative of the site conditions. Consequently, remedial measures are not considered necessary. Following detailed assessment, the risk to the Water Environment was considered to be low and mitigation measures in this regard are not considered necessary.
Assessment of the Built Environment	As the water supply pipeline route and levels was not known at the time of reporting, a UKWIR assessment was not undertaken. Once the water supply route has been finalised a 'Greenfield' letter could be submitted to Scottish Water which may be accepted in lieu of a UKWIR assessment. Given the generally greenfield history of the site and lack of any significant contamination source, PE (plastic) water supply pipework is considered likely. For buried concrete, (ACEC) Classification is AC-1s with a Design Sulphate Class of DS-1 which is considered to be sufficient in this instance.
Assessment of Ground Gas	The ground gas regime was classified as Characteristic Situation 1, where gas preclusion measures are not considered necessary. However, monitoring was ongoing at the time of reporting and this will be reassessed following its completion, although the recommendations are unlikely to change.
Foundation Construction	No significant made ground deposits were recorded within the site. The natural soils consisted of topsoil underlain by glacial till deposits, with shallow rock recorded over parts of the site. The site should be suitable for a combination of shallow strip and deepened strip foundations designed to an allowable bearing capacity of 75kPa and placed on the 'firm' or stronger glacial till, or rock, at depths of between 0.3m and 2.2m.
Mining	The site was located in a Coal Authority reporting area, but outwith a Development High Risk Area. Researches indicated that there were no coal seams underlying the site however, ironstone was recorded in the vicinity and limestones outcropped within the site. Although the limestone quarries were recorded close to the site, we found no evidence that they extended into the site. The recorded ironstone seams were not conjectured to underly the site due to faulting in the vicinity. Consequently, the risk to the development from surface subsidence due to shallow mining was considered to be low.
Radon	The site was located in a intermediate probability radon area, where basic radon protection measures are considered necessary.

EXECUTIVE SUMMARY (CONTINUED)

Invasive Plants	The invasive weed survey did not record any evidence of invasive or problematic plants species.

1.0 INTRODUCTION

1.1 Commission

1.1.1 Mason Evans Partnership were commissioned by Prime Structural Solutions Limited on behalf of The JR Group Limited (the Client), to investigate the ground conditions at a site known as Longbar, Glengarnock and located to the north of Longbar Avenue, Glengarnock (Drawing No's P17/517/SI/R/F/01 and 02). Only preliminary development proposals were available for the site which indicated that the proposal was for a residential development with gardens and road infrastructure (Drawing No's P17/517/SI/R/F/03).

1.2 Investigation Proposals

1.2.1 The investigation proposals were outlined in our correspondence to the Client, dated 28 November 2017. The intention of the investigation was to provide further information on the following:

- Soil profile beneath proposed development areas of the site.
- Chemical Contamination Conditions.
- Gas Emissions.
- Geotechnical characteristics of the materials.
- Foundation bearing characteristics.
- Potential foundation solutions.
- Potential mining or quarrying constraints.
- Potential of invasive plants.

1.3 Limitations

1.3.1 Our interpretations of the ground conditions are based primarily on the information retrieved from the exploratory boreholes and trial pits sunk at the site during the investigations. While we have carried out some interpretation of the ground conditions between the exploratory locations, it should be recognised that soil and groundwater conditions can vary from point to point. As such, ground conditions at variance with those indicated by the exploratory bores may exist in areas not investigated.

1.3.2 It should be recognised that this report is prepared in accordance with current recommended practice and existing legislation. It is written in the context of the proposed residential development, as described. Should there be an alternative end-use, it would be prudent to consult us further to ensure the continued pertinence of the recommendations advised.

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project title:	drawing title:
LONGBAR GLENGARNOCK	SITE LOCATION PLAN

project no:	drawing no:	revision:	date:	drawn by:	approved by:	scale:
P17/517	P17/517/SI/R/F/01		12.01.18	AC	NDL	1:50,000

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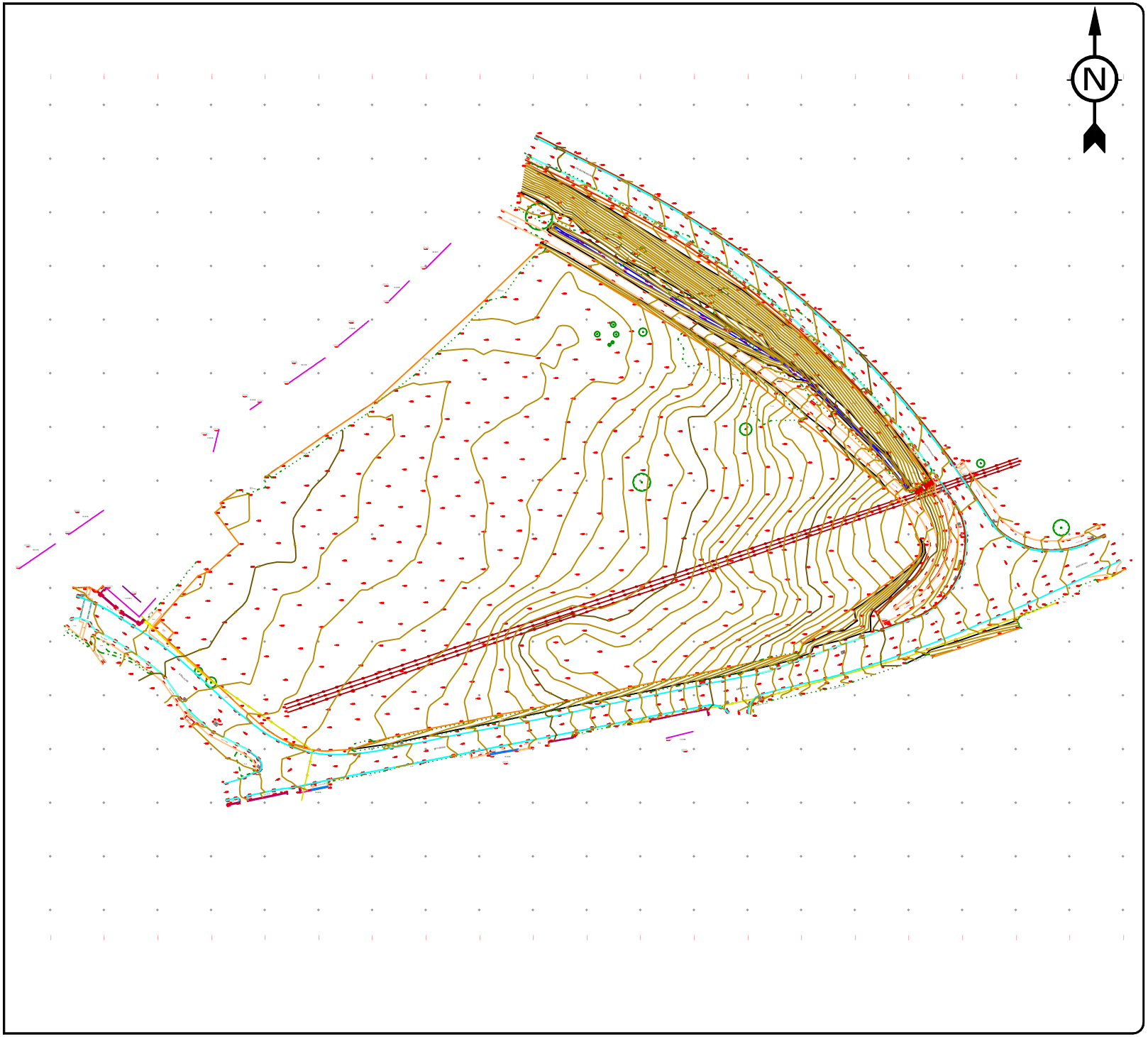
A4 border: 277 x 190



NOTES

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

STUDY AREA

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	1:2000 @ A4

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/02	

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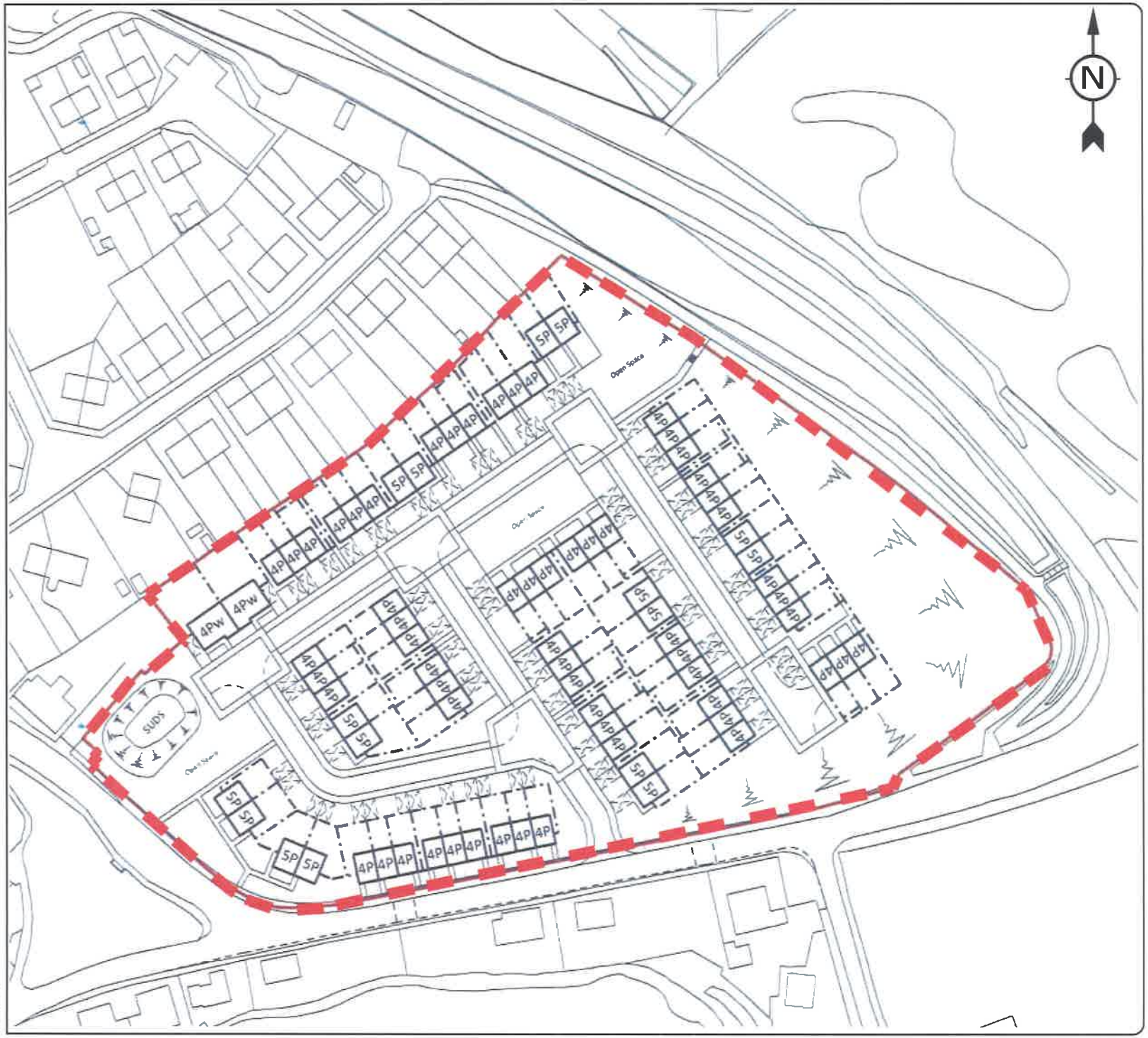

NOTES

Site boundary

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

PROPOSED DEVELOPMENT
LAYOUT

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	Not to Scale

PROJECT No	DRAWING No	REVISION
P17/517	P17/517/SI/R/F/03	

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2.0 SUMMARY OF DESK STUDY INFORMATION

2.1 The Site

2.1.1 A summary of the current site conditions as understood from the supplied survey information and site reconnaissance is included in Table 1. A site walkover survey was undertaken in December 2017 (included in Appendix 1) and an up-to-date Envirocheck report was procured (Appendix 2). A review of publicly available database information provided by the Scottish Environmental Protection Agency (SEPA) was also undertaken (Appendix 3). A summary of the findings of these researches are included in the table below:

TABLE 1 -Site Details and Review of Public Records

Site Name	Longbar, Glengarnock.
National Grid Ref	232956, 652658.
Site Area	3.2 Ha (Approximately).
Topography	Gently sloping to the north west and west.
Current Usage	The site is currently vacant agricultural land laid to grass.
Proposed Use	The proposed development was indicated to be residential.
Surface Water Bodies	The nearest surface water feature, the Powgree Burn, was located approximately 24m to the south of the site. The SEPA database highlights this water body to be part of the River Garnock catchment and having an overall status of 'moderate' and water quality of 'moderate' in 2014.
Groundwater	SEPA's CCCF (published in December 2014) datasheet indicated that the groundwater beneath the site belonged to the Beith Groundwater. SEPA have classified this water body as having an overall status of Good and groundwater quality of 'Good' in 2014. The site was not indicated as a Nitrate Vulnerable Zone.
Flooding	The SEPA Flood Map indicated the site to be outwith the area of flood risk for river and surface water flooding. The Envirocheck report highlighted a Limited Potential for groundwater flooding to occur at the surface. Specialist flood advice should be sought to provide a detailed assessment of these risks.
Public Register Information	Three Discharge Consents exist within the site, all were for unknown discharge to a freshwater stream (Powgree Burn). No other discharge consents were indicated within 250m of the site. There was one Local Authority Recorded Landfill Site recorded within 250m of the site (Longbar Amenity Site at 57m) Potentially infilled land (unknown filled ground i.e. quarry, pit etc) exists 48m, 108m, 162, and 180m from the site. Recorded mineral sites, opencast for limestone at 54m, 114m, 172m and 173m and a bing 188m from the site, all operations now ceased. Conclusive metalliferous mining was indicated beneath the site. One active trade entry was recorded within 250m of the site for hydraulic system and equipment manufacturers (72m).
Mineral Sites	The Coal Authority report stated that the property is not within a surface area that could be affected by past or present underground coal mining. There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

TABLE 1 *cont.* -Site Details and Review of Public Records

Radon	The Envirocheck report indicated that the site is located in an intermediate probability radon area.
Ground Stability	The site was considered to be at very low to no hazard for potential for collapsible ground stability hazards. The site was considered to be at moderate risk for potential for compressible ground stability hazards and a low risk for landslide ground stability hazards. The potential for shrinking or swelling clay ground stability and running sand stability hazards were indicated to be low to no hazard.

2.2 Site History

2.2.1 Information on the site's historical use was obtained through an inspection of available Ordnance Survey maps (included in Appendix 4) dating from 1858 to the present day. A summary of the information is presented below.

TABLE 2: Review of Historical Maps

OS Map	Description
1858 - 1899	The site was indicated as undeveloped agricultural land, bounded to the south and west by a road. A drainage ditch bound the north of the site. Longbar Cottages were indicated to the south, with Barkip Railway approximately 15m to the north east. Old quarries and Limekilns were indicated approximately 50m to the north east in the 1858 edition, by 1897, the quarries and limekilns appear to have become active and had expanded significantly. A sawmill was indicated 75m to the south. Glengarnock Ironworks were active 500m to the north of the site, while several collieries were indicated in the wider vicinity. Auchengree Foundry and Engine Works were indicated approximately 190m to the south west.
1910 - 1916	No significant changes indicated within the site. By 1911 Glengarnock Ironworks had expanded. Several of the former collieries were no longer indicated.
1946 Aerial Photograph	No significant changes indicated within the site. A residential development was indicated to the immediate north west.
1958	The site remained essentially unchanged from the previous edition. Glengarnock Ironworks to the north west continued to expand. Longbar Cottages to the south were no longer indicated.
1966 - 1970	The site remained essentially unchanged from the previous edition. By the 1966 Ordnance Survey edition the railway to the immediate north was indicated as dismantled.
1977 - 1992	The site remained essentially unchanged from the previous edition. An additional residential dwelling was indicated to the south of the site. Many of the buildings associated with Glengarnock Steel Works were no longer indicated, with warehouses and an industrial estate 350m to the north.

2001	No significant changes were indicated within the site. Glengarnock ironworks were no longer indicated. A road bound the north of the site along the route of the former railway.
2006	No significant changes were indicated within the site. The industrial estate to the north had expanded.
2017	No significant changes were indicated within the site. The industrial estate to the north had expanded to within 100m of the site.

2.3 Published Geological Information

Superficial Deposits

2.3.1 The British Geological Survey indicated that the site is underlain by glacial till with alluvial deposits in the south west and central areas. Significant made ground deposits were considered unlikely given the undeveloped history of the site, although unrecorded deposition associated with the adjacent former railway and housing developments were considered possible. There were no historical borehole records available for the site or the immediate surrounding area, with the closes being approximately 250m to the south west (Appendix 5).

Solid Geology and Mining

2.3.2 The underlying solid strata were indicated by the BGS to belong to the Lower Limestone Formation of the Clackmannan Group, consisting of sedimentary rock cycles (Drawing No. P17/517/SI/R/F/04). The Dalry Blackband Ironstone was indicated to outcrop to the south of the site, dipping to the south west, with several limestones including the Blackhall and Hosie Limestones outcropping within the site.

2.3.3 The site was located within a Coal Authority reporting area and an area of known mining of both coal and non-coal, including Ironstone and limestone. As previously describe the Dalry Blackband Ironstone outcrops to the south of the site, but due to the south west dip of the strata, was not conjectured to underlie the site. However, several limestones were indicated to underlie the site and were recorded to have been quarried close to the site, although there was no evidence that workings extended into the site itself.

2.3.4 Interpretation of the site hydrogeology required consideration of the general geological conditions. In this instance, the available information indicated the site to be potentially comprised of up to four geological units: made ground, alluvium, glacial till and sedimentary rock strata. The typical permeabilities of each of these strata are recorded in Table 3.

TABLE 3 –Typical Material Permeability

Material	Typical Permeability Range (m/sec)
Made Ground	Variable
Alluvium	10^{2}– 10^{-8}
Glacial till	10^{-4}– 10^{-8}
Sedimentary Rock	10^{0}– 10^{-8}

2.3.5 The superficial deposits were indicated to be of low overall permeability and would be expected to form a barrier to significant downward water infiltration, although lateral migration of groundwater may occur in the interphase between any made ground and the natural soils, or within any granular alluvial deposits. The Envirocheck Report indicated the underlying bedrock to be a minor, or moderately permeable aquifer.

2.3.6 Surface run-off from the site at present would be relatively low as most of the site is surfaced by topsoil. Infiltration of surface water was considered to potentially be low across the site due to the relatively impermeable glacial and alluvial soils.

2.3.7 It was considered unlikely that significant shallow groundwater exists within the natural soils, however, perched groundwater is possible in the horizon between any made ground or granular alluvial deposits and the underlying cohesive soils. The Scottish Environmental Protection Agency (SEPA) provides guidance in document WAT-PS-10-01 'Assigning Groundwater Assessment Criteria for Pollutant Inputs' (August 2014) for assessing contamination risks to groundwater and the Water Environment. It was, also considered unlikely that groundwater within the superficial soils beneath the site could meet the minimum criteria to be classified as a water body i.e. an abstraction could achieve 10 m^3 per day. Nevertheless, it was considered prudent to regard groundwater as a sensitive receptor at this stage.

2.4 Preliminary Conceptual Site Model

2.4.1 In order to fully evaluate the potential presence and impact of contamination at the site, the area must be considered in an environmental context taking account of its geology, topography and past and present land-use. Science Report SC050021/SR3, published by the Environment Agency in January 2009, supersedes the previous Contaminated Land Reports (CLR7 to CLR10 and briefing notes) series and provides standard guidance for the assessment of sites that may be contaminated. This essentially highlights the importance of developing a robust *Conceptual Site Model.* The model then forms an integral part of the contamination assessment for the proposed development site, looking at conventional source-pathway-receptor linkages.

2.4.2 Statutory guidance sets the definition of contaminated land within the context of the "suitable for use" approach. It is based on the principles of risk assessment, including the concept of a **pollutant linkage** between a **source** contaminant and a **receptor**, by means of a **pathway.** The presence of all three elements identifies a plausible pollutant linkage. An assessment of the potential sources, pathways and receptors constitutes a conceptual model for the site. This concept is considered further below. We would highlight that the approach, while perhaps rendering the site suitable for its current use, may be inappropriate to a change in site designation or specific land use, arising from the existing site conditions.

2.5 Receptor Characterisation

2.5.1 Potential receptors at the site are defined on the basis of the site proposal which includes residential properties with domestic gardens. The following receptors are considered relevant to his project:

- Humans – site end users and construction works (outdoor),
- Humans – site end users (indoor),
- Buildings and services (including water supply pipes),

- Vegetation (plants in gardens/landscaped areas),
- Water Environment (groundwater and surface water).

2.6 Source Characterisation

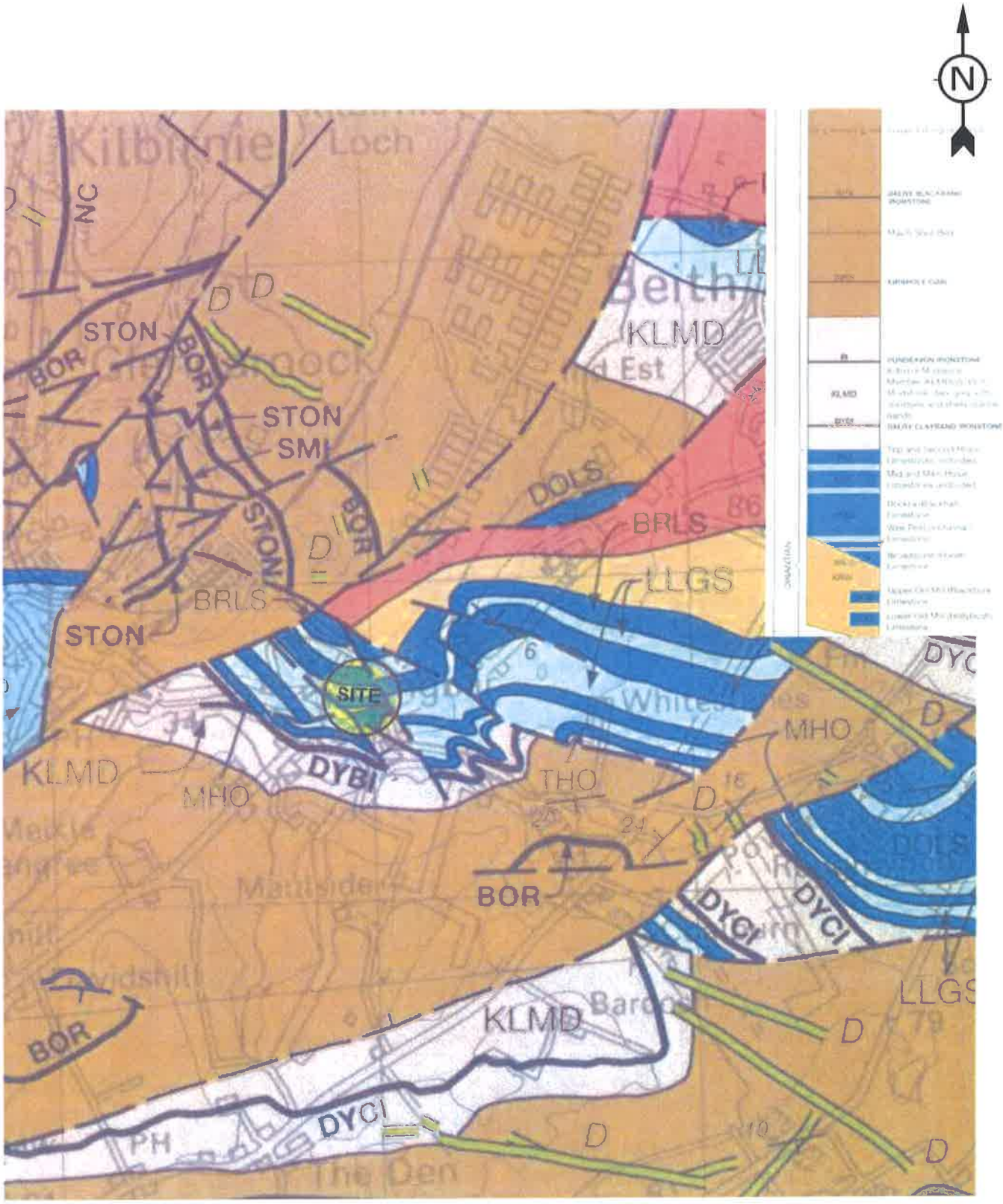
2.6.1 The potential on-site sources of contamination identified by this desk study are indicated below, although it should be recognised that the risk of a significant source being present was considered to be low:

- Possible deposition of contaminated made ground associated with the former adjacent railway line.
- Possible importation of made ground deposits associated with adjacent developments.
- Possible contamination associated with the electrical sub-station on the western site boundary.
- Possible contamination associated with the site's current use as agricultural land.

2.6.2 The typical processes involved and associated Contaminants of Concern (COC) are discussed and summarised in Table 4 below.

TABLE 4 - Contaminants of Concern

THE SITE	Industrial Activity/ Site Use	Potential Pathways	Associated Potential Contaminants
CURRENT AND PREVIOUS	• Possible deposition of contaminated fill materials associated with the construction of the adjacent former railway. • Possible deposition of contaminated fill associated with adjacent developments. • Possible contamination associated with an electrical sub-station on the western site boundary. • Possible contamination associated with agricultural usage.	• Deposition of waste materials • Generation and accumulation of ground gasses • Leaching of contaminants to groundwater • Migration of gases and vapours • Leakage/spillage of hydrocarbon product • Leakage or spillage of oil and/or fuel	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Miscellaneous: Asbestos, Cyanide, Ground Gasses: CO2, CH4 PCB's Herbicides and Pesticides
IMMEDIATE SURROUNDING AREA	**Industrial Activity/ Site Use**	• **Potential Pathways**	**Associated Potential Contaminants**
CURRENT AND PREVIOUS	• Deposition of contaminated fill materials associated with adjacent developments.	• Deposition of waste materials • Generation and accumulation of ground gasses • Leaching of contaminants to groundwater • Migration of gases and vapours. • Leakage/spillage of hydrocarbon products	Leachates (metals, semi-metals and non-metals) Ground Gasses: CO_2, CH_4 Fuel oils, PAH, phenol.



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client details:	THE JR GROUP LTD 5 SANDYFORD ROAD PAISLEY, PA3 4HP
project title:	LONGBAR GLENGARNOCK
drawing title:	EXTRACT FROM PUBLISHED GEOLOGICAL SURVEY MAP (SOLID)

project no:	drawing no:	revision:	date:	drawn by:	approved by:	scale:
P17/517	P17/517/SI/R/F/04		12.01.18	AC	NDL	1:10,560

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2.7 Pathway Characterisation (Pollutant Linkages)

2.7.1 The pathways by which sensitive receptors may be exposed to potential sources of contamination, as determined by the proposed end use for the site are as follows:

1. Humans – site end users and construction workers (outdoor)
- Dermal (skin) contact with contaminated soil, fugitive dust and the absorption of any contaminants through the skin into the body.
- Inhalation of fugitive soil dust or vapour.
- Ingestion of soil by hand to mouth activity.
- Ingestion of vegetables grown in contaminated soil.

2. Humans – site end users (indoor)
- Inhalation of any ground gas migrating into the buildings.
- Inhalation of soil derived dust.

3. Buildings
- Potential soil gas generated in the ground vertically migrating and pooling within the structure.
- Contact with aggressive or acidic soils will affect the concrete design of the foundations.

4. Services including the domestic water supply
- Direct contact with contaminated soil or groundwater.
- Leaching of contaminants through the soil.
- Service trenches acting as preferential migration pathways for contamination.
- Permeation of plastic water supply pipes.

5. Vegetation (plants in landscaped areas)
- Direct contact with contaminated soils and groundwater.
- Uptake of contaminants from the soil or groundwater into the plant.

6. Water Environment (groundwater and coastal water)
- Leaching of contaminants from the soil to groundwater.
- Contaminant migration offsite in the groundwater.
- Contaminant uptake as base flow within surface watercourse.
- Direct entry of contaminants (e.g. spillage or via outfall pipes) into surface water.

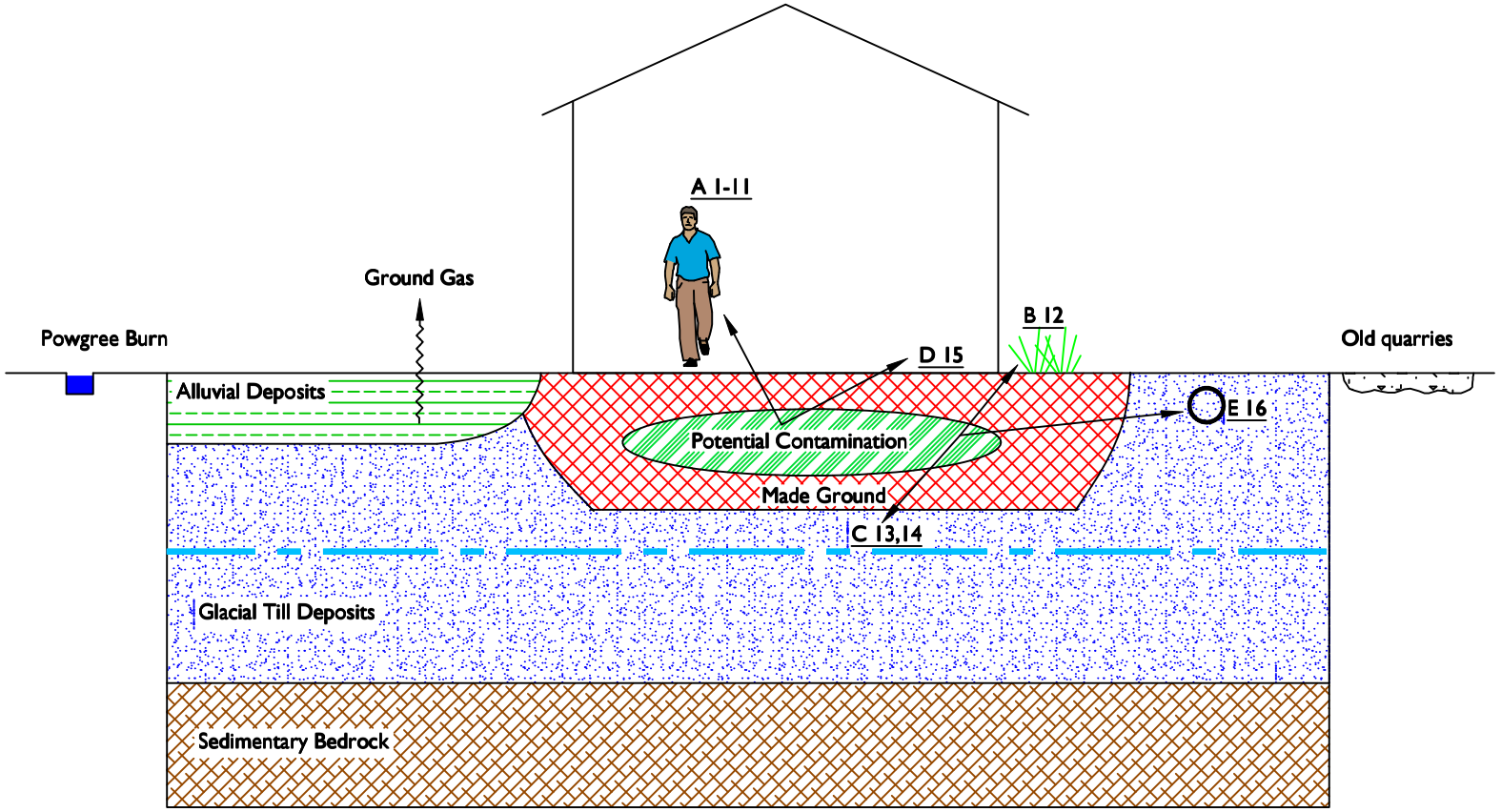
2.7.2 The potential source-receptor-pathway linkages identified for the site are illustrated within our Preliminary Conceptual Site Model (Drawing P17/517/SI/R/F/05) and on Tables 5A and 5B. As such, intrusive investigations were required to confirm or otherwise the existence of such linkages in addition to providing further confirmation of the geological and geotechnical conditions.

TABLE 5A - Preliminary Qualitative Risk Assessment – On Site

Source	COCs	Pathway	Receptors (s)	Assessment	Further Investigation Required
1. Possible deposition of contaminated fill materials associated with former adjacent railway and farming practices. 2. Possible contamination associated with the adjacent electrical sub-station. 3. Possible deposition of waste material associated with adjacent developments	Metals, semi-metals and non-metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Hydrocarbons, PAH Anions: Cyanide, Sulphate PCB's Herbicides and Pesticides Ground gasses: CO_2, CH_4 Asbestos	Dermal contact, ingestion, inhalation	Human – site workers Humans – end users (outdoor)	Spillage/leakage of contaminants impacting near surface soils. Contaminated materials may have been deposited within the site.	Yes
		Leaching through soil or direct migration	The water environment - groundwater	Contaminants may be leached and potentially mobilised from the soil by percolation and/or shallow groundwater movement.	Yes
		Direct contact, leaching through soil, groundwater migration	Buildings and services	Potential for aggressive chemical environments for concrete due to sulphate and acidic conditions. Presence of contaminants in soil that may permeate water supply pipes.	Yes
		Gas/vapour inhalation, vertical/lateral migration	Buildings and services Humans – end users (indoor)	Contamination may include gas/vapour producing materials or compounds that could vertically migrate into overlying buildings producing a potentially asphyxiating or explosive environment.	Yes
		Direct contact, uptake	Plants	Direct contact or uptake of contamination from the soil or groundwater could adversely affect any plants grown.	Yes
		Migration in the groundwater	Groundwater	Contaminants could impact the groundwater and migrate offsite.	Yes
		Point source discharge	Surface water	Direct entry of contaminants into surface water via accidental spillage/leakage or from discharge pipework.	Yes
		Diffuse source	Surface Water	Contaminants could migrate in the groundwater and act as base flow for surface water recharge.	Yes

TABLE 5B - Preliminary Qualitative Risk Assessment – Off-Site

Source	COCs	Pathway	Receptors (s)	Assessment	Further Investigation Required
1. Deposition of contaminated made ground associated with adjacent residential developments to the north west and former railway to the north east.	Metals, non-metals and semi-metals: (Leachates) As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Anions: Cyanide, Sulphate Ground gasses: CO_2, CH_4	Dermal contact, ingestion, inhalation	Human – site workers Humans – end users (outdoor)	Contaminants likely to migrate into the site via groundwater or via pore spaces in granular soils and therefore unlikely to be exposed to site users via direct contact, ingestion of inhalation pathways.	No
		Leaching through soil or direct migration	The water environment - groundwater	Contaminants may be leached and potentially mobilised by shallow groundwater movement.	Yes
		Direct contact, leaching through soil, groundwater migration	Buildings and services	Potential for aggressive chemical environments for concrete due to sulphate and acidic conditions. Presence of contaminants in soil that may permeate water supply pipes.	Yes
		Gas/vapour inhalation, vertical/lateral migration	Buildings and services Humans – end users (indoor)	Contamination may include gas/vapour producing materials or compounds that could vertically migrate into overlying buildings producing a potentially asphyxiating or explosive environment.	Yes
		Direct contact, uptake	Plants	Uptake of contamination from the soil or groundwater could adversely affect plant growth.	No
		Migration in the groundwater	Groundwater	Leachates may migrate either into the site (from the offsite source) or offsite (via an onsite source).	Yes
			Surface water	Contaminants may migrate in the groundwater and act as base flow for surface water recharge, allowing contaminants to migrate significant distance in the surface watercourse.	Yes



Potential Source

. Contaminated made ground.
. Ground gases.

Potential Exposure Pathways

1. Outdoor ingestion of dust.
2. Indoor ingestion of dust.
3. Consumption of homegrown vegetables.
4. Ingestion of soil attached to vegetables.
5. Skin contact with outdoor soil.
6. Skin contact with indoor dust.
7. Outdoor inhalation of dust.
8. Indoor inhalation of dust.
9. Outdoor inhalation of soil vapour.
10. Indoor inhalation of soil vapour.
11. Inhalation of ground gases.
12. Contaminant uptake by vegetation.
13. Leaching of contaminants to the groundwater.
14. Contaminant migration in the groundwater.
15. Detrimental effects on buried concrete.
16. Permeation of plastic water supply pipes.

Potential Receptors

A. Site users / construction personnel.
B. Vegetation / fauna.
C. Groundwater.
D. Buried concrete (Service and foundations)
E. Plastic water supply pipes.

NOTES

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
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PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

PRELIMINARY CONCEPTUAL SITE MODEL

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	Not to Scale

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/05	

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3.0 SITE INVESTIGATIONS

3.1 Objectives

3.1.1 The investigations were designed relative to the preliminary conceptual site model and in recognition of the nature of the proposed development. The objectives of the investigation included the determination of:

a) The conjectured distribution and composition of (of any) made ground and natural soils.
b) The geological context.
c) The groundwater regime.
d) Chemical contamination.
e) Potential foundation solutions.

3.2 Scope and Methods of Investigations

3.2.1 The scope and method of investigation to fulfil objectives (a) to (e) is summarised in Table 6 below.

TABLE 6 - Site Investigations Based on Objectives

Objective		Site Investigation
a)	*The conjectured distribution and composition of (any) made ground and natural soils*	7 No. competitor boreholes (BH01 – BH7) 35 No. trial pits (TP1 – TP35)
b)	*The geological context*	
c)	*The groundwater regime*	7 No. soils boreholes with gas/water monitoring wells (BH01 – BH7)
d)	*Chemical contamination*	Soil Contamination 35 No. trial pits and 25 No. soils boreholes with soil analysis, including 2 No. PCB, 5 No. herbicide/pesticide tests and 1 No. for pathogens ecoli/coliforms.
		Water Contamination Water samples from BH's 2.3.4 and 7.
e)	*Potential foundation solutions*	All exploratory boreholes, including 7 No. soils boreholes carried out by SKF Limited and excavated to a maximum depth 3.0 m (BH01 – BH7), 35 No. trial pits excavated under the supervision of Mason Evans Partnership to a maximum depth of 2.9 m (TP1 – TP35).

3.3 Summary of Ground Investigation Data

3.3.1 The scope and location of the works was determined by Mason Evans, where access permitted. The sampling was generally non-targeted in relation to geo-environmental matters as dictated by the generally low risk of potential site-wide contamination identified in the Preliminary Conceptual Site Model. Site works were implemented generally in accordance with BS10175:2011. Site investigation works were undertaken across the site by Mason Evans in December 2017, these comprise of the following:

TABLE 7 – Site Investigations

Soils Boreholes	7 No. Competitor boreholes (BH01 – BH7) were sunk by SKF Limited to depths of up to 3.0 mbgl. Standpipe installations were installed within each of the boreholes to allow for a period of gas and groundwater monitoring.
Trial Pit Excavations	35 No. trial pits (TP1 – TP35) were sunk by Mason Evans Limited to depths of up to 2.9 m to provide samples for testing.
Mineral Boreholes	-
Chemical Testing	25 no. soil samples were tested for a comprehensive range of potential contaminants (including an asbestos screen).
Geotechnical Testing	In-situ SPT tests were undertaken in all of the soils boreholes. In addition, a range of geotechnical laboratory tests were undertaken, including moisture content, Particle Size Distribution (PSD), compaction tests and triaxial tests.

3.3.2 The trial pits were intended to provide coverage of the proposed development area, in order to define the general nature of the shallow soils and allow selection of representative samples for a comprehensive suite of chemical analyses. Given the proposed end-use of the site, the purpose of the sampling and testing was to identify potential risks to site users and the water environment.

3.3.3 The soils borehole investigations were intended to provide geotechnical and hydrogeological data along with contamination sampling of areas associated with the proposed development.

3.3.4 The total number of sampling points from the investigations were 42 No. investigatory holes for soils investigations, corresponding to an approximate density in excess of one sampling point for every 30 m^2. This was considered suitable given the greenfield nature of the site.

3.3.5 Representative samples of made ground and underlying natural soils were obtained during the investigation and tested for an appropriate suite of testing associated with the potential risks from the previous usages of the site. The results of the analyses were utilised in a site specific risk assessment in accordance with the current UK technical guidance for human health and SEPA guidance for the water environment.

3.3.6 All soil samples recovered for chemical analysis were contained in sealed plastic tubs, labelled and stored on site in cool boxes to maintain natural temperature. Where hydrocarbon or organic contamination was suspected, samples were contained in glass amber jars to prevent chemical breakdown as a result of exposure to light and limit absorption of the contaminant to the sample container. The procedure is designed to maintain sample integrity and ensure that the chemical analysis is as representative of the site conditions as possible.

3.3.7 All soil samples were collected and dispatched to the laboratory for immediate testing. The scope of the chemical testing of soil samples recovered during the various phases of investigation are discussed in detail in section 6.0 of this report.

3.3.8 Properties recorded during logging of the shallow soils included the general composition, strength, material, description, colour, density, state of weathering and any other notable feature. These were generally described in accordance with the guidelines provided by the Code of Practice for Site Investigations BS5930:2015.

3.3.9 The location of the investigative boreholes and trial pits are indicated on Drawing No P17/517/SI/R/F/06 and records of the exploratory holes are included in Appendix 6.

3.4 Investigation Rationale

3.4.1 The findings of our preliminary CSM indicated the potential presence of made ground deposits associated with previous agricultural usage and adjacent railway line and developments, including an electrical sub-station on the western site boundary. Consequently, the sampling strategy for the investigations undertaken was targeted to determine the ground conditions at the site of the proposed new residential development, as well as to provide geotechnical data.

3.4.2 The scope and location of exploratory holes was determined by ourselves, where access permitted. The chemical analysis involved the sampling of any made ground and natural soils at regular depth intervals, to allow for an assessment of the risk to human health as well as to evaluate the risk to potential receptors including site users, groundwater, concrete structures/foundations and/or buried services (i.e. water supply pipes). The analytic schedule was then based on the interpreted origin of the soils and their description, which is consistent with best practice under current contaminated land guidance BS:10175:2011 *'Code of Practice for the Investigation of Contaminated Land'.* As such, we have implemented the following site practices:

- The soils boreholes have been undertaken by a suitably accredited sub-contractor;
- The geological succession at each exploratory hole location has been logged by an experienced field specialist and samples taken for laboratory analysis. A visual assessment was made of the geological character and potential contamination, if present. Soil samples have predominantly been taken at approximately 0.25 m, 0.50 m and 1.00 m intervals, or at a change in lithology, or where evidence of potential contamination impact was observed.
- In selecting the appropriate samples for testing, we have taken cognisance of a number of factors, including the proposed site use. Sampling rationale has been determined in accordance with R&D Technical Report P5-066/TR Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination, as indicated in the table below.

3.4.3 The scope of the testing implemented considered the interpreted origin of the materials in association with their description. This is consistent with best practice under current contaminated land guidance. The chemical composition of these materials was assessed for a wide spectrum of potential contaminants, comprising a broad range of common organic and inorganic substances primarily of a toxic or phytotoxic nature, and appropriate to the past usage of the site.

- During sample collection, relevant information such as notes of field observations has been logged before transferring the samples to laboratory-prepared sample bottles of appropriate type. Care was also taken to minimise the aeration of samples during transfer to the bottles.

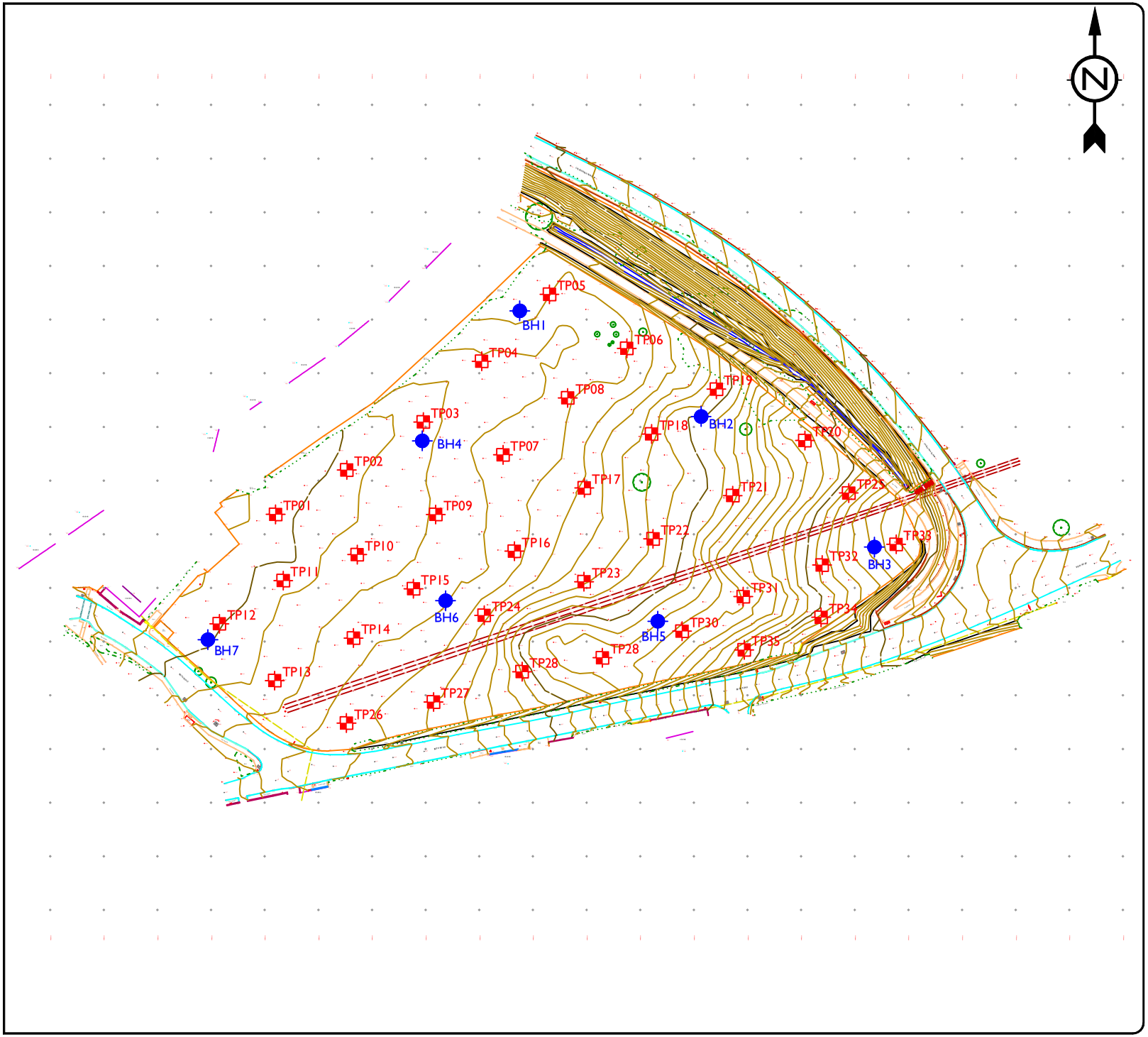
TABLE 8 – Rational for Sampling at Different Depths

Depth Range	Rationale
Ground Level – 0.60 mbgl	To assess: • Human/ animal intake arising from ingestion and dermal contact. • Potential for wind entrainment leading to inhalation (of contaminated soils and dusts) or deposition onto neighbouring land. • Surface water run-off (e.g. due to flash flooding). • Uptake by shallow rooting plants (e.g. crops, ornamental and wild species). • Surface leaching to groundwater.
>0.60 mbgl in made or natural ground	To assess: • Intake via ingestion/ inhalation/ dermal contact arising from 'abnormal' (or unpredicted) excavation (e.g. children digging dens) or for other purposes such as swimming pools, ponds, house extensions. • Uptake by deep rooting shrubs or trees. • Intake by or arising from the activities of burrowing animals. • Intake arising from construction/ maintenance of buildings and services, for example: a. Foundations (usually within 2.0 m of final formation level). b. Water supply pipes, telecommunications, gas and power (0.5 m to 1.0 m of final formation levels). c. Sewers (from 0.5 m to >1.0 m of final formation level). • To locate perched water of groundwater. • To confirm depth of made ground. • To locate possible lateral pathways for gas or vapour migration in made ground. • To establish the extent of any leaching of soluble constituents from superficial soils. • To detect 'deep' contamination (e.g. gas generating materials, leachable materials, dense solvents located above an impermeable stratum). • To obtain information on 'background' soil properties. • To locate 'natural' lateral migration pathways.

3.4.4 Please refer to Appendix 7 for a tabulated summary of the soil sampling and analysis strategy for individual exploratory hole locations.

3.5 Analytical Procedures

3.5.1 Analytical procedures adopted during the chemical analyses, carried out on behalf of the consultant, by Derwentside Environmental Testing Services (DETS), conformed to recognised practices, allowing the award of UKAS accreditation (unless indicated otherwise).



NOTES

TP01 to TP35 — Trial pit excavated by Mason Evans (December 2017)

BH1 to BH7 — Borehole sunk by SKF Ltd (December 2017)

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

LOCATION OF
EXPLORATORY HOLES

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	1:2000 @ A4

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/06	

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A4 border. 297 X 210

4.0 INVESTIGATION RESULTS

4.1 Ground Conditions

4.1.1 No significant alluvial deposits were encountered within the exploratory holes, otherwise the ground conditions encountered during the investigation were generally consistent with the anticipated sequence indicated by the desk study information. The soils were noted to comprise of topsoil generally overlying glacial till. Possible rockhead was encountered in 31 of the trial pits and all 7 of the boreholes.

TABLE 9 – Summary of Ground Conditions

Soil Type	Depth Range (mbgl)
Topsoil	0.20 – 0.70
Glacial till	0.20 – 2.60
Rockhead	0.30 – 2.60

Soils Encountered

4.1.2 The generalised soil sequence encountered was as follows:

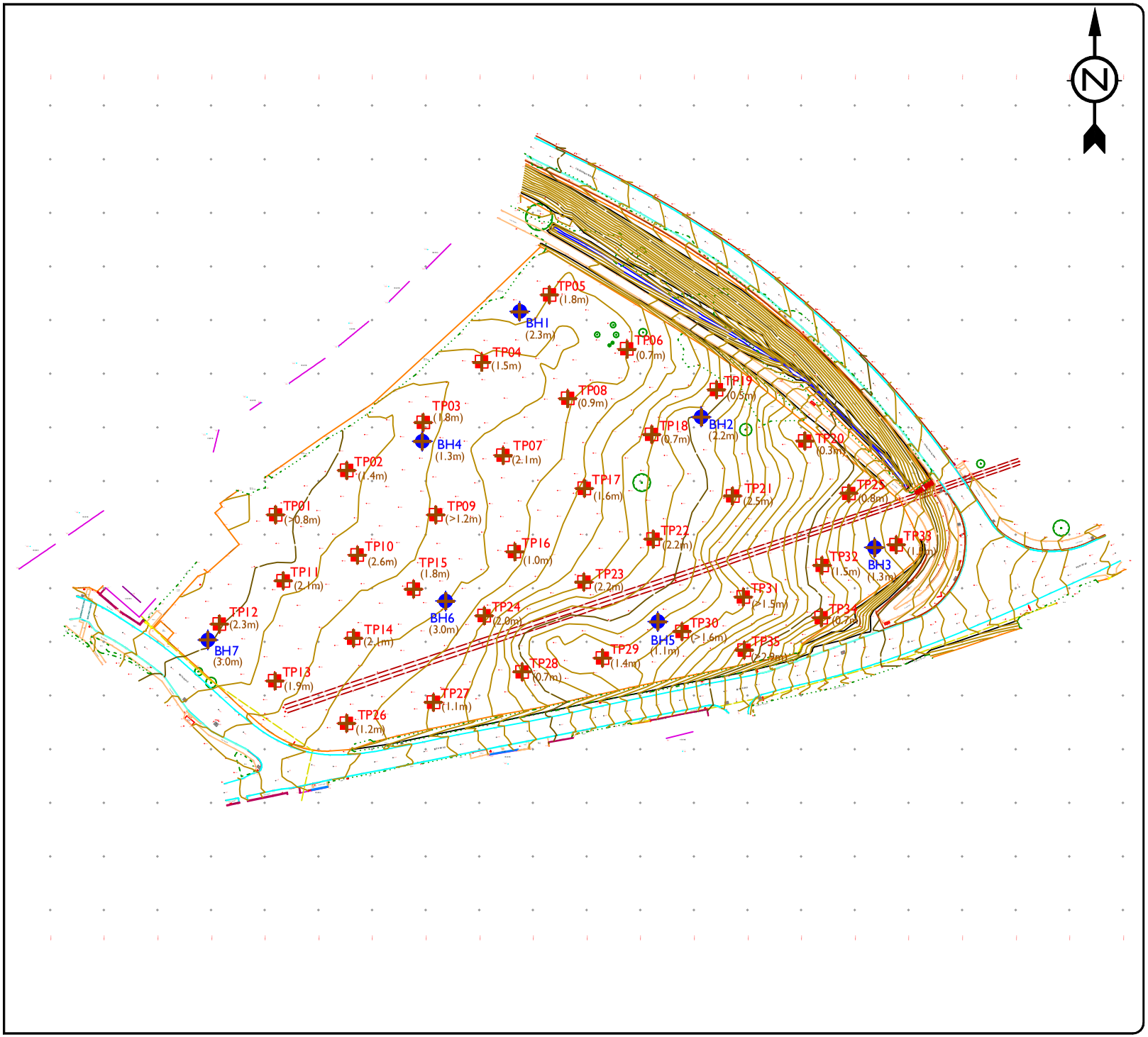
- **Made Ground** –no significant made ground was recorded, although some extraneous material was indicated in the topsoil at two locations, this was considered to have been ploughed into the ground and would not be expected to significantly impact on the development of the site.

- **Topsoil** – dark brown sandy gravelly occasionally peaty clay with occasional cobbles was encountered in all of the boreholes from 0.2m to 0.6 m depth.

- **Glacial Till** – the dominant underlying soil beneath the site consisted of orange, brown or grey sandy gravelly clay with occasional cobbles and boulders. One of the trial pits (TP32) encountered significant sand deposits, considered to represent soils of a fluvioglacial deposition. The glacial till was encountered underlying the topsoil and was proven to extend to rockhead at depths of between 0.3m and 2.6m in the soils boreholes sunk within the site.

Rockhead

4.1.3 Possible rockhead was encountered in most of the trial pits and all the soils boreholes at depths of between 0.3m and 2.6m and was described a sedimentary, generally mudstone and sandstone. The depth to the conjectured rock strata is indicated on Drawing No P17/517/SI/R/F/07.



NOTES

TP01 to TP35 — Trial pit excavated by Mason Evans (December 2017)

BH1 to BH7 — Borehole sunk by SKF Ltd (December 2017)

(0.8m) — Recorded depth to rockhead (m)

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

RECORDED DEPTH
TO ROCKHEAD

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	1:2000 @ A4

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/07	

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4.2 Groundwater

4.2.1 Two of the boreholes encountered groundwater during excavation at 1.0m and 1.6m depth with flows described as 'slow' or 'moderate'. Monitoring wells were installed in all 7 of the soils boreholes to provide a more accurate assessment of the groundwater behaviour within the superficial deposits and have been monitored on three occasions at the time of reporting (Appendix 8). The results of the groundwater depth monitoring are summarised in the table below:

TABLE 10 - Summary of Groundwater Monitoring Results

Location	BH1	BH2	BH3	BH4	BH5	BH6	BH7
Minimum Depth (mbgl)	0.35	0.15	0.15	0.35	Dry	0.40	0.65
Maximum Depth (m bgl)	0.7	1.05	0.45	0.40	Dry	0.60	0.7

4.2.2 The water depth results suggest that a shallow perched but inconsistent groundwater table is present within the superficial deposits beneath the site, probably restricted to sand and gravel lenses within the glacial till. A deeper water body was considered possible in the rock strata. The shallow groundwater should not be considered as a water body as defined by SEPA Document WAT-PS-10-01 (and supporting guidance WAT-SG-53 based on the current data). The solid strata were not considered to represent a significant groundwater source, based on the documentary data, which indicated the site to be underlain by a minor or moderately permeable aquifer.

4.3 Visual/Olfactory Evidence of Contamination

4.3.1 An orange gravel layer was recorded in trial pit 1, which had an organic odour which was considered consistent with a septic tank or sewer pipe. Samples were recovered and tested for a range of pathogens.

5.0 CONTAMINATION RISK ASSESSMENT

5.1 Human Health and Groundwater Risk Assessment Screening Criteria

5.1.1 Consideration of analytical results against applicable, conservative risk based screening criteria has been used to provide an assessment of risk. A tiered risk based approach comprises:

- Preliminary Risk Assessment (e.g. establishing potential pollutant linkages);
- Generic Quantitative Risk Assessment (GQRA) (e.g. the comparison of contaminant concentrations against Soil Guideline Values (SGV) or other Generic Assessment Criteria (GAC)); and
- Detailed Quantitative Risk Assessment (DQRA) (e.g. the comparison of contaminant concentrations against site specific assessment criteria).

5.1.2 A GQRA has been carried out as part of this assessment. Soil chemical analysis data has been assessed in terms of risks to human health. The GACs utilised are the recently published Suitable 4 Use Levels (S4ULs) derived by LQM/CIEH, based on the exposure parameters, outlined in the DEFRA publication SP1010 (Category 4 Screening Levels (C4SLs) (March 2014). The S4ULs are derived in accordance with current UK legislation, and national policy using the most recent version of the CLEA software (v1.06). Normally the CLEA software utilises the default exposure pathways and land use assumptions outlined in SR3 (Environment Agency 2009b). In order to implement the revised exposure and land use assumptions introduced by DEFRA publication SP1010, a number of modifications were made to the land use and receptor databases of the CLEA model including the introduction of two additional land use scenarios: **Public Open Space 'park'** and **Public Open Space, near residential housing**. These changes are summarised in both DEFRA publication SP1010 (2014), and LQM/CIEH publication S4UL3203 (2015).

5.1.3 The derived S4ULs are based on the concept of minimal tolerable risk as described in SR2 (Environment Agency 2009a) which underpins all previous EA SGVs and other GACs. Please note that S4ULs do not incorporate any toxicological parameter changes to the CLEA base model, however recent toxicological data has been incorporated into the contaminant databases. Furthermore, S4UL GACs are considered to be equivalent to the previously published Environment agency SGVs, and previous iterations of LQM/CIEH GACs and as such are suitable for use in generic quantitative risk assessments under both planning and Part IIa regimes.

5.1.4 In this case we have utilised S4UL values for the most appropriate end-use, which is for a **residential housing development with gardens.**

5.2 Statistical Analysis of Data

5.2.1 Where appropriate, chemical data for soils can be considered statistically in general accordance with the guidelines given in the Chartered Institute of Environmental Health Publication *Guidance on comparing Soil Contamination Data with a Critical Concentration* (May 2008).

Sample Depths

5.2.2 At the generic assessment stage, it should be assumed that all pathways contained within the generic model applied will be active. In reality, unless a contaminant is volatile (e.g. organic), exposure by direct contact will likely be mitigated by the depth of the contaminant or available surface cover. Generally, direct contact with contaminants at greater than 600 mm depth or under hardstanding is highly unlikely to occur unless the ground is to be disturbed through removal of surfacing or earthworks.

5.3 Ground Gas Assessment

5.3.1 The potential presence of carbon dioxide and methane at the target site have been appraised in compliance with *'BS Standard 8485:2015 Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings'.* This document details site investigations methodologies and risk assessment procedures for assessing the results from such investigations. The risk assessment procedures are primarily based on those detailed by Wilson and Card (1999).

5.4 Building Materials Assessment

5.4.1 BRE Special Digest 1 'Concrete in Aggressive Ground' (3rd Edition, 2005) has been used to determine an appropriate concrete class for the development.

6.0 HUMAN HEALTH RISK ASSESSMENT

6.1 Contaminants in Soils

6.1.1 The results of analysis for a range of contaminants have been compared directly to their respective Generic Assessment Criteria A summary table of all chemical results is included in Appendix 9.

TABLE 11 - Exceedance of Guideline Levels (Residential End-Use with Gardens)

Contaminant	Effect	Measured Concentrations in Excess of SGV/GSV/SSTL (mg/kg)	Measured Exceedance Concentrations (mg/kg)	SGV/GSV/ SSV (mg/kg)	Source
		Natural Soils	Natural Soils		
Arsenic	Toxic	0 out of 18	-	37	LQM/CIEH S4ULs (2015)
Mercury (Inorganic)	Toxic	0 out of 18	-	40	LQM/CIEH S4ULs (2015)
Boron	Toxic	0 out of 18	-	290	LQM/CIEH S4ULs (2015)
Chromium III	Toxic	0 out of 18	-	910	LQM/CIEH S4ULs (2015)
Chromium VI	Toxic	0 out of 18	-	6	LQM/CIEH S4ULs (2015)
Lead	Toxic	1 out of 18	230 (TP6)	210	C4SL (2014)
Cadmium	Toxic	0 out of 18	-	11	LQM/CIEH S4ULs (2015)
Selenium	Toxic	0 out of 18	-	250	LQM/CIEH S4ULs (2015)
Nickel	Toxic	0 out of 18	160 (TP28)	130	LQM/CIEH S4ULs (2015)
Nickel	Phytotoxic	1 out of 18	160 (TP28)	75	BS:3882 (2015)
Copper	Toxic	1 out of 18	-	2400	LQM/CIEH S4ULs (2015)
Copper	Phytotoxic	0 out of 18	-	135	BS:3882 (2015)
Zinc	Toxic	0 out of 18	-	3700	LQM/CIEH S4ULs (2015)
Zinc	Phytotoxic	0 out of 18	-	200	BS:3882 (2015)
Total Sulphate	Phytotoxic	0 out of 18	-	10,000	ICRCL/SAC
Phenol	Toxic	0 out of 18	-	550	LQM/CIEH S4ULs (2015)
Petroleum Hydrocarbons					
Aliphatic C5-C6	Toxic	0 out of 18	-	78	LQM/CIEH S4ULs (2015)
Aliphatic C6-C8	Toxic	0 out of 18	-	230	LQM/CIEH S4ULs (2015)
Aliphatic C8-C10	Toxic	0 out of 18	-	65	LQM/CIEH S4ULs (2015)
Aliphatic C10-C12	Toxic	0 out of 18	-	330	LQM/CIEH S4ULs (2015)
Aliphatic C12-C16	Toxic	0 out of 18	-	2400	LQM/CIEH S4ULs (2015)
Aliphatic C16-C35	Toxic	0 out of 18	-	92,000	LQM/CIEH S4ULs (2015)
Aromatic C5-C7 (Benzene)	Toxic	0 out of 18	-	140	LQM/CIEH S4ULs (2015)
Aromatic C7-C8 (Toluene)	Toxic	0 out of 18	-	290	LQM/CIEH S4ULs (2015)
Aromatic C8-C10	Toxic	0 out of 18	-	83	LQM/CIEH S4ULs (2015)
Aromatic C10-C12	Toxic	0 out of 18	-	180	LQM/CIEH S4ULs (2015)
Aromatic C12-C16	Toxic	0 out of 18	-	330	LQM/CIEH S4ULs (2015)
Aromatic C16-C21	Toxic	0 out of 18	-	540	LQM/CIEH S4ULs (2015)
Aromatic C21-C35	Toxic	0 out of 18	-	1500	LQM/CIEH S4ULs (2015)
PAHs					
Acenaphthene	Toxic	0 out of 18	-	510	LQM/CIEH S4ULs (2015)
Acenaphthylene	Toxic	0 out of 18	-	420	LQM/CIEH S4ULs (2015)
Anthracene	Toxic	0 out of 18	-	5400	LQM/CIEH S4ULs (2015)
Benz(a)anthracene	Toxic	0 out of 18	-	11	LQM/CIEH S4ULs (2015)
Benzo(a)pyrene	Toxic	0 out of 18	-	2.7	LQM/CIEH S4ULs (2015)
Benzo(b)fluoranthene	Toxic	0 out of 18	-	3.3	LQM/CIEH S4ULs (2015)
Benzo(g,h,i)perylene	Toxic	0 out of 18	-	340	LQM/CIEH S4ULs (2015)
Benzo(k)fluoranthene	Toxic	0 out of 18	-	93	LQM/CIEH S4ULs (2015)
Chrysene	Toxic	0 out of 18	-	22	LQM/CIEH S4ULs (2015)
Dibenz(a,h)anthracene	Toxic	0 out of 18	-	0.28	LQM/CIEH S4ULs (2015)
Fluoranthene	Toxic	0 out of 18	-	560	LQM/CIEH S4ULs (2015)
Fluorene	Toxic	0 out of 18	-	400	LQM/CIEH S4ULs (2015)
Indeno(1,2,3-CD) Pyrene	Toxic	0 out of 18	-	36	LQM/CIEH S4ULs (2015)
Naphthalene	Toxic	0 out of 18	-	5.6	LQM/CIEH S4ULs (2015)
Phenanthrene	Toxic	0 out of 18	-	220	LQM/CIEH S4ULs (2015)
Pyrene	Toxic	0 out of 18	-	1200	LQM/CIEH S4ULs (2015)
Other					
Asbestos	Toxic	0 out of 18	<0.001	Detection	HSE

* Based on SOM of 2.5%. Phytotoxic values based on pH of 6.0 - 7.0.

6.1.2 The GRQA has identified elevated concentrations of toxic contaminants lead (TP6) and nickel (TP28) each at a single localised location. The nickel was also above phytotoxic guideline levels. No made ground was recorded on the site during the investigations, consequently, only natural soil samples were tested. Asbestos was not encountered in any of the tested soil samples.

6.1.3 Two samples were tested for PCB's adjacent to the electrical sub-station and one sample, recovered from a suspect sewer/septic tank drain, was tested for pathogens, including ecoli, salmonella and coliforms, none of the samples detected any exceedences above detection limits. In addition to the above, we tested for a range of herbicides and pesticides in accordance with the site's current and historic use as agricultural land. The test results did not record any exceedences above detection limits for these chemicals.

7.0 WATER ENVIRONMENT RISK ASSESSMENT

7.1 Water Environment Vulnerability

7.1.1 As previously discussed the nearest surface water body was the Powgree Burn located approximately 30m to the south of the site, which was considered to be the main Water Environment receptor. Although a localised and perched, but impersistent, water table was considered to exist within granular layers of the glacial till, this was not considered to be in continuity with any deeper groundwater, considering the underlying relatively impermeable glacial till soils and results of the groundwater monitoring. Consequently the shallow groundwater was not considered to be a significant receptor.

7.2 Groundwater Assessment

7.2.1 Following SEPA Position Statement WAT-PS-10-01, *'Assigning Groundwater Assessment Criteria for Pollutant Inputs'* (August 2014), the following assessment should be carried out for potential pollutant linkages to the water environment:

1) Assess which receptors (including surface/coastal waters, wetlands, potable water extractions, and future drinking water potential) may be affected by contamination sources.
2) For potential pollutant linkages, assess contaminant concentrations against relevant screening values at the recommended assessment point, taking into consideration mixing and upstream/upgradient concentrations, where appropriate.
3) Evaluate whether remedial measures would be either disproportionately costly, a risk to other receptors, or cause deterioration of the natural environment.

7.2.2 All leachate results have been compared to the appropriate guideline values in Table 12. Where surface water is considered a primary risk, as is the current case, Environmental Quality Standards are used (EQSs) as obtained from SEPA document WAT-SG-53 (v6, December 2015). In the absence of any SEPA published EQS we have reverted to 'limits of detection'(LOD) as recommended in SEPA position Statement WAT-PS-10-01. A summary table of all the result are included in Appendix 9.

TABLE 12 – Leachate Analysis Compared with Appropriate Water Quality Standards

Potential Contaminant	EQS (µg/l)	LOD (µg/l)	No of Samples Tested (Total)	No of Samples Above Guidelines	Range of Concentrations which Exceeded Relevant Guidelines (µg/l)
Arsenic	50		8	0	-
Mercury	0.07		8	0	-
Chromium III	4.7		8	0	-
Cadmium	<0.08*		8	0	-
Lead	1.2		8	0	-
Selenium		0.25	8	7	0.3 – 1.1
Sulphate	400,000		8	0	-
Phenol	7.7		8	0	-
Copper	1		8	0	-
Nickel	4		8	0	-
Zinc	11.9		8	0	-

* For cadmium, EQS values is based on a hardness value of 7.2.

7.2.3 Against current guideline values, the leachate testing identified only selenium to be potentially leachable within the soil samples in relation to current guideline levels.

TABLE 13: Analysis of Groundwater Samples Compared with Environmental Quality Standards

Potential Contaminant	Environmental Quality Standard (µg/l)	Limits of Detection (µg/l)	No of Samples Above Assessment Levels	Range of Concentrations which Exceeded Relevant Guidelines mg/l
Metals				
Arsenic	50	-	0 out of 4	-
Boron (water soluble)	2000	-	0 out of 4	-
Cadmium*	<0.08	-	0 out of 4	-
Chromium III	4.7	-	1 out of 4	5.0
Copper	1.0	-	1 out of 4	5.6
Lead	1.2	-	1 out of 4	4.0
Mercury	0.07	-	0 out of 4	-
Nickel	4.0	-	0 out of 4	-
Selenium	-	0.25**	3 out of 4	0.33 – 0.57
Zinc	11.9	-	1 out of 4	230
Inorganics				
Sulphate as SO4	400 (mg/l)	-	0 out of 4	-
Total Cyanide	1.0	-	0 out of 4	-
Sulphide	N/A	N/A	0 out of 4	-
Calcium	N/A	N/A	0 out of 4	-
Magnesium	N/A	N/A	0 out of 4	-
Total Petroleum Hydrocarbons (TPHs)				
Aliphatic C5-C6**	15,000*		0 out of 4	-
Aliphatic C6-C8**	15,000*		0 out of 4	-
Aliphatic C8-C10**	300*		0 out of 4	-
Aliphatic C10-C12**	300*		0 out of 4	-
Aliphatic C12-C16**	(300)****		0 out of 4	-
Aliphatic C16-C21**	(300)****		0 out of 4	-
Aliphatic C21-C35**	300*		0 out of 4	-
Total Aliphatic Hydrocarbons (C5-C35)	N/A		0 out of 4	-
Aromatic C5-C7**	10*		0 out of 4	-
Aromatic C7-C8**	700*		0 out of 4	-
Aromatic C8-C10**	300*		0 out of 4	-
Aromatic C10-C12**	100*		0 out of 4	-
Aromatic C12-C16**	100*		0 out of 4	-
Aromatic C16-C21**	90*		0 out of 4	-
Aromatic C21-C35**	90*		0 out of 4	-
Total Aromatic Hydrocarbons (C5-C35)	N/A		0 out of 4	-
Total Petroleum Hydrocarbons (Aliphatic and Aromatics (C5-C35)	N/A		0 out of 4	-
Poly Aromatic Hydrocarbons (PAH's)				
PAHs (Sum of Four – benzo(b)fluoranthene; benzo(g,h,i)perylene, benzo(k)fluoranthene, indeno(1,2,3-c,d)pyrene)	0.1*		0 out of 4	-
Benzo(a)pyrene*****	0.05		0 out of 4	-
Phenols				
Phenols – Monohydric	7.7	-	0 out of 4	-

* WHO Organic Tier 1 Water Environment Screening Criteria

** Most conservative Limit of Detection value used as no reporting value was available in the WAT-SG-53 (2015) document.

*** Laboratory Limit of Detection is greater than the EQS guideline value.

**** There are no WHO Guideline Values for aliphatic fractions C16-C21 and C21-C35, therefore the guideline value for aliphatic fractions inclusive of C8-C16 (300 µg/l) have been applied.

***** Benzo(a)pyrene is used as a marker for PAH contamination

Interpretation of Groundwater and Leachate Results

7.2.4 The groundwater testing identified exceedances of the contaminants chromium, copper, lead, zinc and selenium in a water sample taken from BH03, selenium was also recorded above detection levels in BH2 and BH4.

Consequently, further consideration of the impact on surface and groundwater receptors is required in relation to selenium, chromium, lead, copper and zinc.

7.2.5 The MBAT and Lead Screening Tool analysis of the groundwater exceedances for copper and lead indicated that the concentration of contamination at the target point receptor was below the EQS value in all occurrences. For the zinc, MBAT analysis indicated that levels remained above EQS. For the elevated chromium and selenium, further consideration was considered necessary.

7.2.6 Groundwater modelling of chromium, selenium and zinc was undertaken to assess the potential risk of these contaminants to the water environment. We utilised RD P20 RTM (V3.2) published by the Environment Agency in our assessment and a copy of the models is included in Appendix 9. While we recognise that the Powgree Burn is approximately 30 m to the south of the site at its closest point, groundwater level data suggests groundwater flow to be also towards the south. The groundwater modelling was undertaken relative to a compliance point identified as the closest exceedance point to the surface water receptor (i.e. the Powgree Burn to the south of the site at its closest point). We have also assumed a glacial till soil to represent a worst case scenario. The model was run for each of the contaminants which were recorded to exceed EQSs or LOD's following M-BAT analysis (where applicable). The results of the modelling are shown in Table 14.

TABLE 14 – Results of P20 Groundwater Modelling (compliance point of 150 m)

Contaminant	Maximum Recorded Exceedance (µg/l)	Target Value (µg/l)	Target Value Source	Final concentration (µg/l)
Zinc	123.34	11.9	EQS (AA)	9.23
Chromium	14	4.7	EQS (AA)	7.45×10^{-4}
Selenium	1.1	0.25	EQS (AA)	3.2×10^{-4}

7.2.7 Modelling to a compliance point of 50m to represent the distance of the closest point of exceedance (BH3) to the compliance point (The Powgree Burn), the final concentration of the contaminants zinc, chromium, and selenium were recorded to be lower than the target concentrations. Furthermore, no groundwater abstractions were recorded within 250 m of the site and groundwater abstraction is not proposed within the future development. It is therefore considered that the contaminants pose a low risk to the groundwater and surface water environment.

7.3 Conclusions

7.3.1 As demonstrated through chemical analysis and groundwater modelling, the site conditions are not considered to pose a significant risk to the Water Environment.

8.0 GROUND GAS EMISSIONS

8.1 General

8.1.1 A ground gas assessment has been undertaken to assess risks associated with carbon dioxide and methane to new buildings and their users. No significant made ground or biodegradable soils were recorded within the site and no additional potential sources were identified. However, it was considered prudent to undertake a ground gas assessment given the potential for gas migration from former limestone quarries, which may have been backfilled with unknown material, close to the site.

8.1.2 The assessment of risk due to ground gases has been further discussed in publications for CIRIA and BRE, which have indicated a number of 'characteristic situations' depending on the concentrations and flow rates of gas. This classification system has been further developed by Wilson and Card (1999), and Boyle and Witherington (2006) and a revised industry guidance has been provided within CIRIA Report C735 (2015) and BS 8485 (2015).

8.1.3 The gas monitoring data was reviewed and a risk assessment prepared in line with British Standard BS 8485 (2015), whereby a scoring system is used to design suitable gas preclusion measures.

8.2 Ground Gas – Results

8.2.1 Ground gas monitoring was undertaken at the site on four occasions at the time of reporting using a portable gas meter in boreholes BH01 to BH07. Results are included in Appendix 8.

8.2.2 Measurements were taken over a variety of atmospheric conditions, including falling pressure conditions, with barometric pressure ranging from 982 mB to 10520 mB. Carbon dioxide concentrations ranged between 0.0% vol to 2.2% vol and methane concentrations were recorded to be 0.0% vol throughout the monitoring period. Oxygen concentrations ranged between 12.8% vol and 20.4% vol and flow was recorded to be 0.0 l/h steady state on all occasions. The results of the gas monitoring undertaken are indicated on Drawing P15/577/SI/R/F/08.

8.3 Ground Gas – Assessment

8.3.1 Gas Screening Values have been calculated in line with CIRIA 735 (2015) and BS 8485 (2015) guidance.

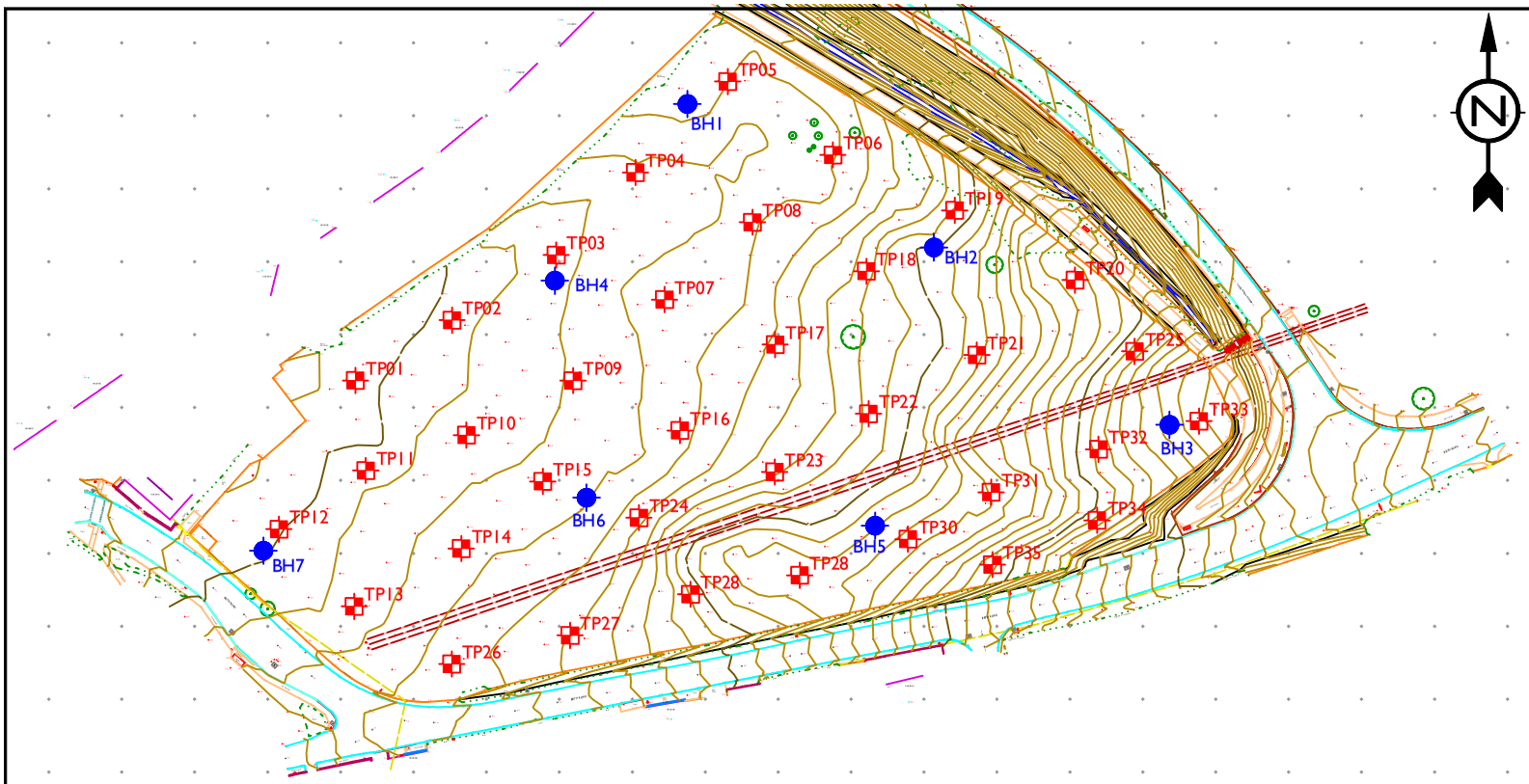
8.3.2 This is done by calculating a Q_{hg} for each monitoring point, for each monitoring event. Hazardous gas flow rate Q_{hg} (in lh^{-1}) is calculated using the following:

$$Q_{hg} = C_{hg}/100 \times q$$

Where:

C_{hg} is the measured hazardous gas concentration (in percentage volume-by-volume)

q is the flow rate (in litres per hour) of combined gasses from the standpipe found by direct measurement.



NOTES

TP01 to TP35 Trial pit excavated by Mason Evans (December 2017)

BH1 to BH7 Borehole sunk by SKF Ltd (December 2017)

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

GROUND GAS
EMISSIONS SURVEY

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	1:2000 @ A4

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/08	

MASON EVANS
Geo-Environmental Consultants
t: 0141 420 2025 e: mail@masonevans.co.uk
The Piazza, 95 Morrison Street, Glasgow, G5 8BE

Borehole BH01

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.4	20.0	10.9	985	0.70
17.01.18	0.0	0.6	19.6	0.0	993	0.55
08.02.18	0.0	0.1	20.1	0.0	1006	0.35
23.02.18	0.0	0.1	19.9	0.0	1019	0.55
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH02

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.7	18.8	3.7	985	0.90
17.01.18	0.0	0.0	20.0	0.0	993	1.05
08.02.18	0.0	0.2	18.3	0.0	1006	0.90
23.02.18	0.0	0.9	19.2	0.0	1019	1.55
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH03

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.2	20.3	0.0	985	0.45
17.01.18	0.0	0.0	20.0	0.0	993	0.15
08.02.18	0.0	0.1	19.5	0.0	1006	0.30
23.02.18	0.0	0.0	19.9	0.0	1019	0.85
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH04

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.7	19.8	1.6	985	0.40
17.01.18	0.0	0.2	19.9	0.0	993	0.30
08.02.18	0.0	0.0	20.2	0.0	1006	0.35
23.02.18	0.0	0.8	19.1	0.0	1019	0.50
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH05

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.1	20.4	0.0	985	Dry
17.01.18	0.0	0.1	19.8	0.0	993	Dry
08.02.18	0.0	2.2	12.8	0.0	1006	Dry
23.02.18	0.0	0.1	19.9	0.0	1019	Dry
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH06

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.1	20.3	0.0	985	0.40
17.01.18	0.0	0.0	20.0	0.0	993	0.45
08.02.18	0.0	0.0	20.1	0.0	1006	0.60
23.02.18	0.0	0.6	19.6	0.0	1019	0.75
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Borehole BH07

Date.	CH4 % Vol.	CO2 % Vol.	O2 % Vol.	Ave Flow (l/h)	Atmos. Pressure (mb)	G/Water Depth (m)
05.01.18	0.0	0.5	19.4	8.2	985	0.65
17.01.18	0.0	0.0	20.0	0.0	993	0.70
08.02.18	0.0	0.1	20.1	0.0	1006	0.70
23.02.18	0.0	0.0	19.9	0.0	1019	0.85
-	-	-	-	-	-	-
-	-	-	-	-	-	-

8.3.3 Hazardous gas flow rates were calculated for each monitoring point during each event. A worst case scenario was realised on 8th February 2018 in BH5 where carbon dioxide was 2.2% vol and a gas flow rate of 0.0 l/h was recorded. The resultant hazardous gas flow rate is therefore as follows:

$$Q_{hg} = 2.2/100 \times 0.1^*$$

$$Q_{hg} = 0.0022$$

* 0.1% used for calculation purposes since no steady state flow was recorded.

The value derived above is the highest hazardous gas flow rate calculated over the duration of the gas monitoring. Given the number of monitoring rounds, it was considered conservative to use this maximum value to proceed with the characterisation of the site and evaluate the gas protection measures employed.

8.3.4 Based on the BS 8485 (2015) guidance, the calculated GSV corresponds generally to '*Characteristic Situation 1* (Table 15), in addition the maximum concentration of carbon dioxide or methane was below the 5% and 1% threshold respectively. Consequently, ground gas is not considered to be a constraint to development and gas preclusion measures will not be necessary for the development. However, gas monitoring was ongoing at the time of reporting and this will be reported as an addendum letter.

TABLE 15 – Assessment of Gas Characterisation

Characteristic Situation	Hazard Potential	Gas Screening Value (GSV) (l/hr))	Additional Limiting Factors
1	Very Low	<0.07	Methane not to exceed 1% by volume and carbon dioxide not to exceed 5% by volume.
2	Low	0.07 to <0.7	Borehole air flow not to exceed 70 l/hr, otherwise increase to CS3.
3	Moderate	0.7 to <3.5	None
4	Moderate to High	3.5 to <15	None
5	High	15 to <70	None
6	Very High	>70	None

8.3.5 The construction and use of the buildings, together with the control of future structural changes to the building and its maintenance (the building's management) should be assessed, since potential risks posed by ground gases are strongly influenced by these factors. The assessment should lead to the categorization of the building as a whole, or each different part of the building, into one of four building types: Type A, Type B, Type C or Type D.

8.3.6 New buildings should be categorized in accordance with Table 16, as outlined in BS 8485 (2015). The proposed developments are considered to be Type A.

TABLE 16 – Building Types and Descriptions (BS 8485 – 2015)

Building Type	Description
A	Private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present. Probably conventional building construction (rather than civil engineering). Examples include private housing and some retail premises.
B	Private or commercial property with central building management control of any alterations to the building or its uses but limited or no central building management control of the maintenance of the building, including the gas protection measures. Multiple occupancy. Small to medium size rooms with passive ventilation of rooms and other internal spaces throughout ground floor and basement areas. May be conventional building or civil engineering construction. Examples include managed apartments, multiple occupancy offices, some retail premises and parts of some public buildings (such as schools, hospitals, leisure centres) and parts of hotels.
C	Commercial building with central building management control of any alterations to the building or its uses and central building management control of the maintenance of the building, including the gas protection measures. Single occupancy of ground floor and basement areas. Small to large size rooms with active ventilation or good passive ventilation of all rooms and other internal spaces throughout ground floor and basement areas. Probably civil engineering construction. Examples include offices, some retail premises, and parts of some public buildings (such as schools, hospitals, leisure centres and parts of hotels).
D	Industrial style building having large volume internal space(s) that are well ventilated. Corporate ownership with building management controls on alterations to the ground floor and basement areas of the building and on maintenance of ground gas protective measures. Probably civil engineering construction. Examples are retail park sales buildings, factory shop floor areas, warehouses. (Small rooms within these style buildings should be separately categorized as Type B or Type C).

8.4 Radon

8.4.1 Researches of BGS information, the Envirocheck Report and the BRE Report BR211(20015): "Radon: Protective Measures for New Buildings" indicated that the site is located in an intermediate radon probability area and that in accordance with the current guidelines indicated within the report, basic protection measures are required.

8.5 Conclusions

8.5.1 From the site characteristic hazardous gas flow rate as calculated, the ground gas regime was classified as Characteristic Situation 1, consistent with the lack of a gas source. Taking into account the building type (private residences) this corresponded to a required solution score of 0 for the site. As such, the site was considered to be at low risk from ground gas and gas preclusion measures were not considered necessary, assuming the worst case scenario as indicated by the monitoring data to date.

9.0 RISKS TO CONSTRUCTED DEVELOPMENT

9.1 Sulphate Attack on Construction Materials

9.1.1 Laboratory testing was undertaken on selected soil samples recovered from the site, to determine the sulphate content and acidity and hence the concrete class required for buried concrete (results included in Appendix 9). The results of chemical tests carried out are summarised below:

TABLE 17 - Sulphate and pH Summary

Determinant	Range	SD1 DS Class	SD1 ACEC Class
pH	5.2 – 8.1	DS-1	AC-1s
Total Sulphate as SO_4 (%)	0.03 – 0.17		
Sulphate as SO_4 (mg/l)	2.2 – 5.1		

9.1.2 Total sulphate as SO_4 (%) was recorded to generally range between, 0.03% and 0.17%. In this instance, the mean of the highest two of the results was 0.135%. Therefore, in accordance with BRE Special Digest 1:2005 *'Concrete in Aggressive Ground',* recommendations for concrete would be Aggressive Chemical Environment for Concrete (ACEC) Classification AC-1s with a Design Sulphate Class for the site of DS-1. The concrete classification takes into account the potential for buried structures to encounter a groundwater body beneath the site. The monitoring period has indicated that a shallow, mobile groundwater body is unlikely to exist within the superficial deposits, but the background researches highlighted the potential for a deeper groundwater body below rockhead. As such, a conservative concrete class has been utilised to take into account the potential for foundations penetrating bedrock encountering a groundwater table at depth.

9.2 Water Supply Pipes

9.2.1 UK Water Industry Research (UKWIR) document, '*Guidance for the Selection of Water Supply Pipes to be Laid in Brownfield Sites*', ref 10/WM/03/21, states that on brownfield sites, MDPE/HDPE water supply pipes could be at risk from organic contaminants including mineral oils, VOC's and SVOC's, if the pipes are laid within 15 m of recorded contamination. Additionally, UKWIR states that where metallic pipes are being considered for use, conductivity, pH and redox state of the soil should be assessed to determine if the pipes are at risk of being corroded.

9.2.2 The water supply pipeline route and site levels had not been confirmed at the time of reporting and no UKWIR assessment was undertaken. In instances such as this, where a site has remained essentially greenfield in nature Scottish Water guidance allows for a letter to this effect to be issued which may remove the requirement for a UKWIR assessment and allow the use of PE (plastic) water supply pipes. However, this will require to be confirmed by Scottish Water.

9.3 Phytotoxicity

9.3.1 Guidance on the effects of metal contamination on plant growth is provided within BS3882:2015 Specification for Topsoil and similar guidance issued by the Scottish Agricultural College (SAC). A summary of test results, versus the recommended phytotoxic screening criteria is provided below:

Table 18: Summary of Soil Results vs Phytotoxic Screening Criteria

Contaminant	Screening Value (mg/kg)	Conc Range (mg/kg)	Max > MAFF Screening Value
Zinc	200	24 – 170	No
Copper	135	21 – 170	No
Nickel	75	8.9 - 160	No

Note – screening value based on an average pH 6.0 - 7.0.

9.3.2 One exceedences of MAFF screening values have been noted for nickel. However, given the greenfield nature of the site, lack of a contamination source and the sites agricultural history and assumed topsoil mixing on uplift and emplacement diluting the exceedance, the phytotoxic risk to plant growth is considered to be low.

10.0 REVISED CONCEPTUAL SITE MODEL

10.1 Contamination Sources

Human Health: Elevated concentrations of toxic lead and nickel were recorded at one location each from the tested soil samples. However, given the sites greenfield history, lack of a contamination source, and localised occurrence of the contamination, the risk to site users and construction personnel was considered to be low. Asbestos was not recorded within any of the tested soil samples tested.

Water Environment: Modelling and risk assessment indicated the potential impact of the site on the Water Environment was considered to be low.

Ground Gas: Gas monitoring indicated that the site conditions correspond to a Characteristic Situation 1. It was therefore considered that gas preclusion measures were not required for the development. However, gas monitoring was ongoing at the time of reporting and this will be reassessed on its completion, although the conclusions are considered unlikely to change.

The site was indicated to be located in an intermediate radon area where basic radon protective measures are required.

Built Environment: The BRE classification derived from the recorded pH and sulphate concentrations within the tested soil samples indicated an ACEC classification of AC-1s and a Design Sulphate Class of DS-1 for buried structures within the proposed development.

UKWIR testing was not undertaken at the site as final levels and water supply pipeline route and levels had not been confirmed at the time of the investigations. Given the results of the chemical testing, and the generally greenfield history of the site PE (plastic) water supply pipes are likely to be suitable. However, a 'greenfield letter' will require to be issued to Scottish Water, when development proposals are confirmed.

Plant Life: Elevated concentrations of phytotoxic nickel was recorded in one sample tested. However, given the lack of any contamination source, the greenfield nature of the site and its history as agricultural land, we do not consider there to be any significant risk to plant growth. Consequently, the risk to plant life was considered to be low.

Invasive Plants The specialist Contractor Kleerkut undertook an invasive weed survey at the site. No evidence of Japanese Knotweed, Giant Hogweed or Himalayan Balsam were found. In addition, no problematic plants were recorded within the site.

10.2 Pollutant Linkage Assessment

10.2.1 Although marginally elevated nickel and lead were recorded in one sample each, these were not considered to be representative of the site conditions, given the site's greenfield history and lack of any made ground or other contamination source. The conceptual site model has been revised as indicated on Drawing No P15/577/SI/R/F/9.

10.3 Mitigation Measures

Soils

10.3.1 Due to the generally low levels of contaminants in the soils, mitigation measures are not considered necessary.

10.3.2 Construction personnel should be aware of the nature of the soils on the site and vigilance should be maintained for any soils at variance from those anticipated during construction works. Appropriate health and safety procedures should be adopted at the site in relation to these matters.

The Water Environment

10.3.3 Although leachate testing identified leachable levels of contaminants, following risk assessment these were not considered to present a significant risk to the Water Environment.

Ground Gas

10.3.4 No elevated ground gases were recorded at the site and mitigation measures in this respect were not considered necessary. However, monitoring was ongoing at the time of reporting and this will be reassessed upon its completion. The site was indicated to be located within an intermediate radon probability area and, consequently, basic protection measures will be required for this gas.

The Built Environment

10.3.5 No UKWIR testing was undertaken at the site as the proposed water supply pipe route and levels were not known at the time of the investigations. Given the generally greenfield history of the site, It is considered likely that PE (plastic) water supply pipework will be suitable at the site. A letter to this effect should be issued to Scottish Water, which may avoid the need for a UKWIR assessment.

10.3.6 Concrete class DS-1, AC-1s is considered sufficient to protect buried concrete from pH and sulphate levels in the soils and groundwater.

Construction/Maintenance Workers

10.3.7 All site staff should remain vigilant to the possible risk of encountering isolated areas of unrecorded contaminated material. Should such materials be encountered, further testing may be required to assess the risk to health and safety of the site workers and the environment.

10.3.8 Good site working practices should be followed, including:

- Use of appropriately qualified personnel for the task;
- Use of appropriate PPE
- Provision of on-site washing facilities;
- Maintenance of a high standard of basic hygiene; and

- Implementation of a non-smoking and eating policy within the working area, with designated clean areas set aside for these activities.

10.4 Waste Management Legislation

10.4.1 Should materials be removed and disposed off-site, the developer has a statutory responsibility under the Duty of Care Regulations of the Environmental Protection Act 1990 to ensure that contaminated soil is disposed of off-site to a suitably licensed waste management facility in a safe and approved manner.

10.4.2 Waste Acceptance Criteria (WAC) testing should be required to determine the limit values for waste destined to various classes of landfill.

10.4.3 To comply with the Duty of Care all wastes taken off site, in solid or liquid form, must be handled by a registered waste carrier and be accompanied by a consignment note which describes the waste.

10.4.4 Should development plans include the removal of materials; details of proposed frequency and assessment standards for the waste disposal strategy should be developed.

10.4.5 In the event that material, uncharacteristic to that which has been previously identified within the site is encountered, we would recommend that a suitably qualified engineer/scientist obtain samples of the suspect material for chemical analysis, thus determining how the material should be managed.

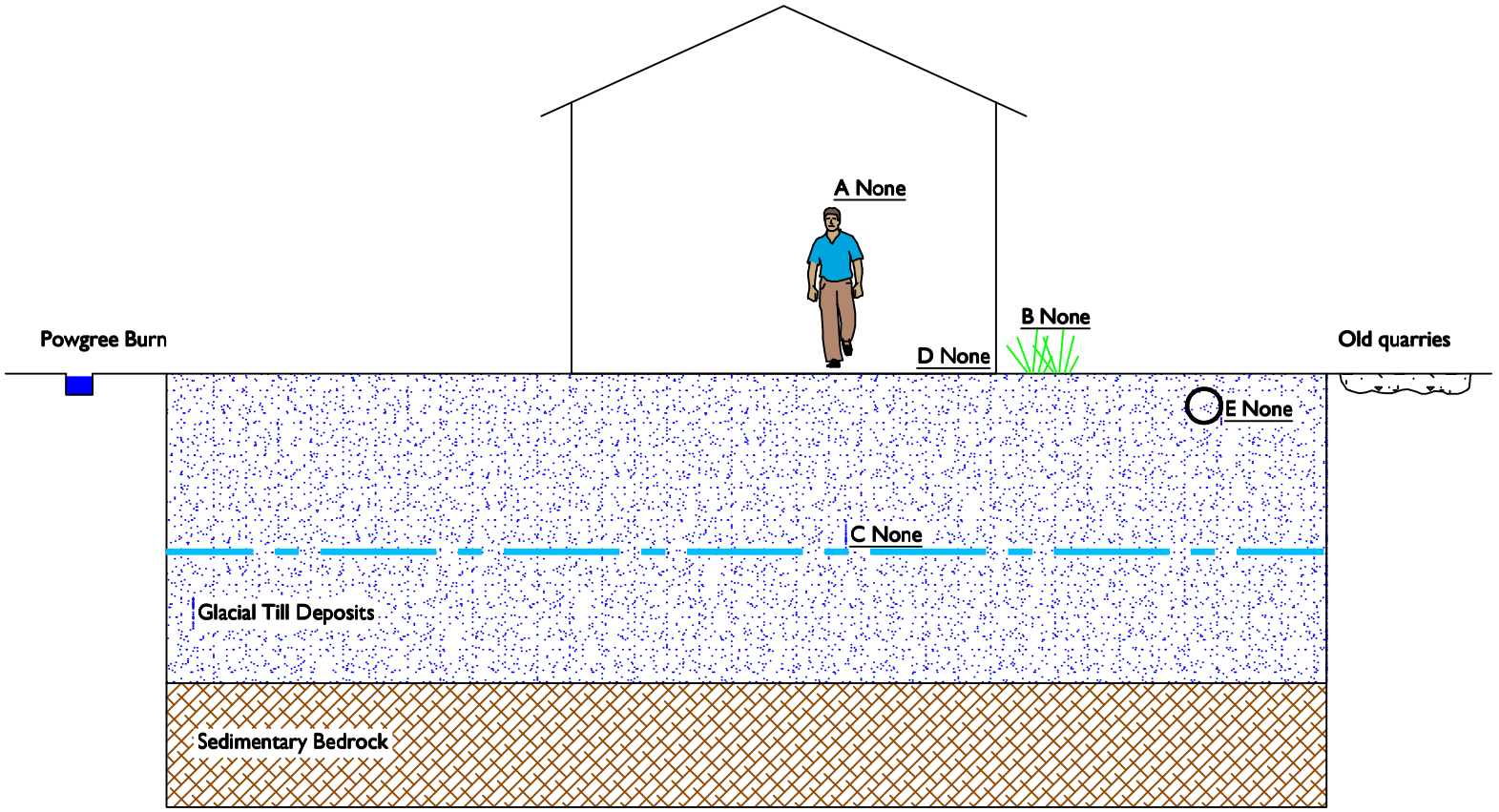
10.5 Contingent Liabilities

10.5.1 Assessments of the site include the determination of contingent liabilities in respect of current and future ownerships subsequent to remedial measures. These consider the impact of the environmental conditions on the study area and surrounding areas on site users, properties and also the liability of the site owners.

10.5.2 With regard to site users, considerations in relation to liability are inherent in the development of a suitable remedial strategy. In the site-specific circumstances presented by the identified conditions, the risk levels suggest minimal liability on ownership due to the environmental conditions, subsequent to development.

10.5.3 The potential for liability arising from site conditions impacting on the surrounding environment largely considers the potential for migration of pollutants beyond the site boundary normally associated with groundwater. The intrusive investigations indicated that the risk to the Water Environment from the proposed development was considered to be low. Consequently, we consider the potential for liability arising from the site conditions to be low.

10.5.4 In the event that more definitive advice is required, we would recommend that the Client seeks specific advice on the liabilities incumbent on ownership from their legal advisors.



Source

· None.

Exposure Pathways

1. Outdoor ingestion of dust.
2. Indoor ingestion of dust.
3. Consumption of homegrown vegetables.
4. Ingestion of soil attached to vegetables.
5. Skin contact with outdoor soil.
6. Skin contact with indoor dust.
7. Outdoor inhalation of dust.
8. Indoor inhalation of dust.
9. Contaminant uptake by vegetation.
10. Contaminant migration in the groundwater.

Receptors

A. Site users / construction personnel.
B. Vegetation / fauna.
C. Groundwater.
D. Buried concrete (Service and foundations)
E. Plastic water supply pipes.

NOTES

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

REVISED CONCEPTUAL SITE MODEL

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	Not to Scale

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/09	

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11.0 GEOTECHNICAL ASSESSMENT

11.1 General

11.1.1 In-situ geotechnical testing consisting of standard penetration tests (SPTs) and visual assessment was undertaken on samples of the natural soils encountered in the boreholes and trial pits during the investigation. It should be recognised that SPT testing of cohesive soils will only provide an indicative assessment of soils strength, although testing of granular soils will provide more reliable test data. In addition, geotechnical laboratory testing was undertaken on a number of representative samples of the natural soils. This included particle size distribution (PSD), triaxial test, compaction tests, Atterberg Limits and natural moisture content.

11.2 Made Ground

11.2.1 No significant made ground deposits were recorded within the site.

11.3 Glacial Till

11.3.1 Encountered across the site, underlying the topsoil, these soils were described as generally orange, brown or grey sandy gravelly clay with occasional cobbles and boulders, although one trial pit recorded gravel from 1.2m to at least 2.9m depth. The deposit was recorded to extend to rockhead at depths of up to 2.6m.

11.4 Rockhead

11.4.1 Rockhead was encountered in all of the soils boreholes and the majority of the trial pits at depths of between 0.3m and 2.6m. The rock was recorded to consist of generally sandstone and mudstone.

11.5 Soil Tests

11.5.1 Particle Size Distribution analysis undertaken on the glacial till indicated that the soil description was variable, with Gravelly very sandy silty CLAY with cobbles; gravelly very clayey SAND; gravelly very sandy CLAY; very clayey SAND and GRAVEL and sandy very clayey GRAVEL, clayey silty very sandy GRAVEL, gravelly very sandy clayey SILT and Clayey very silty SAND recorded. These results are typical of glacial till which are typically variable and tend to show a cohesive character on visual assessment, but have a high granular content on analysis.

11.5.2 A range of soil tests were carried out by MatTest Limited on our behalf. These laboratory tests consisted of 10 No. Moisture Content, 2 No. Atterberg Limits, 5 No. compaction tests and 3 No. Soil Strength Tests, the results are tabulated below and included in Appendix 10:

TABLE 19 – Geotechnical Summary

Borehole/ Trial Pit	Depth (m)	Soil Type	MC (%)	Compaction Tests		Triaxial Test		
				Optimum Moisture Content	Maximum Dry Density (Mg/m3)	Average Shear Strength (kPa)	Cohesion (kPa)	Friction Angle (Degrees)
BH1	1.6	Glacial Till	13			51	36.7	9.2
BH3	1.0	Glacial Till	29					
BH4	1.0	Glacial Till						
BH6	1.7	Glacial Till	27			20	16.1	4.2
BH7	1.0	Glacial Till	23					
BH7	1.6	Glacial Till	17			35	19	11.8
TP5	1.0	Glacial Till	29	24.0	1.57			
TP10	1.0	Glacial Till	46	33.3	1.34			
TP23	1.0	Glacial Till	67	34.6	1.28			
TP26	1.0	Glacial Till	24	23.6	1.57			
TP33	1.0	Glacial Till	44	28.6	1.46			

TABLE 20 – Geotechnical Summary Continued

Borehole/ Trial Pit	Depth (m)	Soil Type	Atterberg Limits			
			Liquid Limit Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Atterberg Classification
BH3	1.0	Glacial Till	45	24	21	CI
BH7	1.5	Glacial Till	36	18	18	CI

11.5.3 The moisture content of the soils varied from 13% to 67%, which is generally higher than the optimum moisture content and would therefore likely require improvement, such as lime stabilisation, if they were to be used in earthworks as structural fill. Cohesion values ranged from 16.1kPa to 36.7kPa, with friction angle varying from 4.2° to 11.8° and share strengths from 20 to 51 were recorded. These would indicate soil strength ranging from 'soft' to 'firm'. Plasticity index indicates the soils to be clays of an intermediate plasticity.

12.0 FOUNDATION RECOMMENDATIONS

12.1 Details of the Development

12.1.1 The proposed development was understood to consist predominantly of low rise residential properties, with gardens and soft landscaping. We had no details of any earthworks proposals at the time of reporting and the following recommendations are based on current site levels.

12.2 Foundations (Relevant to Existing Site Levels)

12.2.1 The underlying natural superficial deposits were characterised by glacial till soils. The soils varied in strength from 'soft' to 'firm' consistency, with the granular deposit indicated as 'medium dense'.

12.2.2 Rockhead consisting of sandstone and mudstone was encountered at depths of between 0.3m and 2.6m in the exploratory holes sunk within the site.

12.2.3 A combination of deepened and normal strip foundations designed to an allowable bearing capacity of 75kPa and bearing on the firm, or stronger, glacial till soils, or on rock, at depths of between 0.3m and 2.2m are considered suitable across the site (Drawing No P15/632/SI/R/F/10). The areas of deepened foundations are considered to be localised and trench fill or extended blockwork would be suitable. Where soft areas, or areas of unrecorded made ground are encountered in foundation trenches, these should be excavated out and replaced with lean mix concrete, or the foundations stepped and extended blockwork utilised. In areas where foundations straddle both the glacial till and rock, consideration in design will be required for differential settlement. This may include using additional reinforcing or widening the foundations.

12.3 Excavations

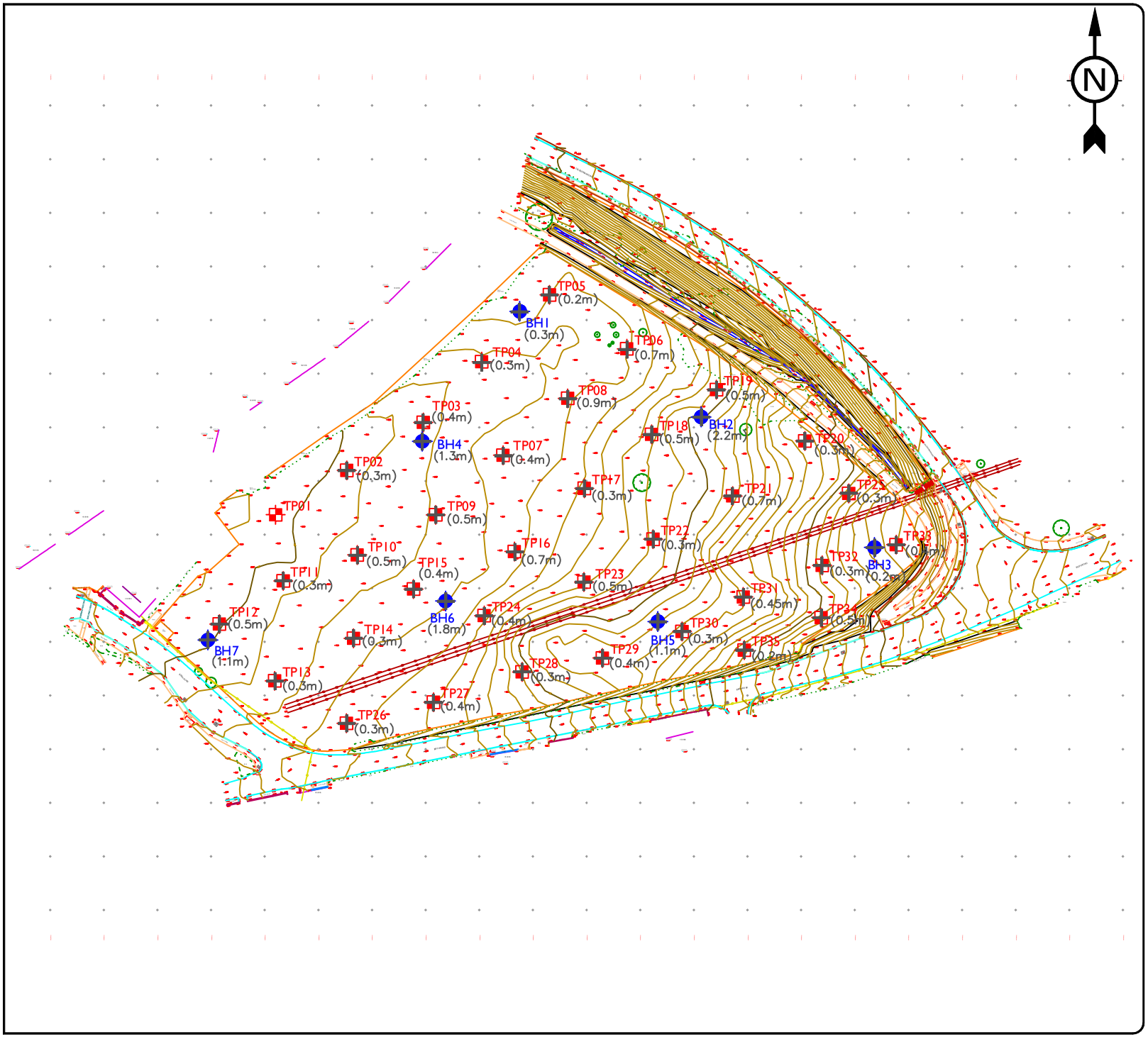
12.3.1 The exploratory holes indicated that the natural glacial till soils are likely to be stable in the short term on excavation, although any granular deposits are unlikey to be stable. All excavations requiring manned entry should be assessed for stability and battered well back or provided with close/continuous support where considered potentially unstable.

12.4 Buried Obstructions

12.4.1 Boulder obstructions were encountered in some of the trial pits during the site investigations. These should be removed where encountered in foundation excavations.

12.5 Earthworks

12.5.1 We are unaware of any earthworks proposals for the site. However, should earthworks be considered, we should be consulted to comment on any potential impact on foundation solutions.



NOTES

TP01 to TP35 — Trial pit excavated by Mason Evans (December 2017)

BH1 to BH7 — Borehole sunk by SKF Ltd (December 2017)

(0.8m) — Recorded depth to 75kPa allowable bearing horizon (m)

REV	DATE	DETAILS

THE JR GROUP LTD
5 SANDYFORD ROAD
PAISLEY
PA3 4HP

PROJECT TITLE

LONGBAR
GLENGARNOCK

DRAWING TITLE

RECORDED DEPTH TO A FOUNDATION HORIZON WITH AN ALLOWABLE BEARING CAPACITY OF 75kPa

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
AC	NH	NDL	12.01.18	1:2000 @ A4

PROJECT No.	DRAWING No.	REVISION
P17/517	P17/517/SI/R/F/10	

MASON EVANS
Geo-Environmental Consultants
t: 0141 420 2025 e: mail@masonevans.co.uk
The Piazza, 95 Morrison Street, Glasgow, G5 8BE

A4 border. 297 X 210

13.0 MINING AND MINE ENTRIES

13.1 General

13.1.1 Researches of the geological maps and further information from the British Geological Survey (BGS) indicated that several limestones outcrop beneath the site, including the Blackhall and Hosie Limestones. The strata were conjectured to dip to the south west at an unspecified inclination. At least two faults were indicated within the site, with further faulting to the north, west and east. The Dalry Blackband Ironstone was indicated to outcrop to the south west of the site, but is not anticipated to underlie the site due to the south westerly dip of the strata. The site was recorded to lie within a Coal Authority Reporting Area, but outwith a Development High Risk Area.

13.1.2 The Coal Authority Report (included in Appendix 11) stated that the property was not located an area that could be affected by past or present underground mining.

13.1.3 The Coal Authority indicated that there are no known coal mine entries present within 20 m of the site boundaries. Review of BGS maps and geological memoirs have not identified any mine entries within the site or immediate surrounding area.

13.1.4 Review of non-coal mining in the area indicated that the Dalry Clayband Ironstone was mined in the vicinity, associated with nearby Glengarnock Ironworks. The Envirocheck report indicated metalliferous mining beneath the site. However, the ironstone appears not to have extended beneath the site, possibly due to the density of faulting in the strata at this location, which appears to have 'faulted out' the ironstone. Consequently, our researches have indicated that no shallow ironstone seams underlie the site and any mining, if present, would be at significant depth and not impact on surface stability.

13.1.5 Several limestone quarries and limekilns were indicated to the north of the site. Review of historical maps have indicated that these did not extend into the site and no evidence of quarrying was found during the site investigations.

13.2 Potential for Future Mineral Extraction

13.2.1 While we feel that it is highly unlikely that underground or surface mineral extraction will occur beneath or within the site in the future, we have not carried out detailed assessments of this matter during the course of this study. However, mineral reserves exist in the locality which could be worked at some time in the future, subject to feasibility licenses and planning consent and therefore should be examined by the client's legal advisors.

13.3 Mine Entries

13.3.1 The Coal Authority Report (Appendix 11) and historical Ordnance Survey Maps (Appendix 4) did not record any mineshafts within 20 m of the proposed development area.

13.3.2 We would highlight that in all areas of historical mining, the presence of unrecorded shafts may exist. Therefore, it is recommended that vigilance be maintained during all future site works for features that may represent mine entries.

13.4 Quarrying

13.4.1 Our historical researches and site investigations did not disclose any evidence of quarrying below the site. However, the potential presence of unrecorded quarrying, although highly unlikely, cannot be completely discounted.

13.5 Risk Assessment

13.5.1 Table 21 has been derived from the researches, highlighting the risk relating to shallow mineworkings at the property. Where a red colouration is in the boxes, a development mining risk has been identified, with commentary on the process that should be instigated. Where green, no significant risk has been identified.

TABLE 21 – Coal Mining Risk Assessment

Mining Issue	Yes	No	Comments
Possible mining in coal, ironstone or limestone horizons.			No evidence of recorded or unrecorded mining beneath the site was found. Only limestones were indicated to outcrop beneath the site, with no evidence of extraction recorded.
Mine entries (shafts and adits)			No mine entries recorded within the site boundaries
Coal mining geology (fissures)			No record of damage
Record of past mine gas emissions			No record
Recorded coal mining surface hazard			None recorded
Surface mining (opencast workings)			None recorded

13.6 Conclusions

13.6.1 Following researches, we consider that the proposed residential development is at low risk from underground mining. No evidence of quarrying activities or shallow coal or non-coal mining was recorded. Mitigation measures are therefore not considered necessary and development can proceed without significant risk from shallow mining. As in all areas of former mining, unrecorded mine entries may exist. Consequently, vigilance should be maintained for any features indicative of an unrecorded mine entry.

14.0 ROAD CONSTRUCTION

14.1 General

14.1.1 The final proposed development layout was not available at the time of reporting. However, it is anticipated that any proposed development roads will be constructed to an adoptable standard and we can provide the following general comments in this regard.

14.2 Ground Conditions

14.2.1 Any new access road would generally be underlain by glacial till deposits. Once the road layout and levels are confirmed, CBR testing will be required to confirm the capping requirement. It is considered prudent to assume a full capping layer will be required, although this could potentially be reduced following testing given the nature of the natural soils.

14.3 Chemical Contamination

14.3.1 Although elevated levels of toxic lead and nickel contamination, localised to a single sample in each case was identified within the soil samples tested from the site, these were isolated and not considered to be representative of the site conditions. Consequently, the risk to site workers is considered to be low.

14.4 Gas Emissions

14.4.1 No elevated ground gases were recorded from the monitoring to date. Consequently, ground gas is not expected to present a significant risk to site workers for excavations up to 1.2m depth where these remain open to the air. For deeper excavations, the contractor should make their own assessment of risk. However, gas monitoring was ongoing at the time of reporting and this will be reassessed following its completion.

14.5 Mining, Quarrying and Mineral Stability

14.5.1 Based upon our researches, we have concluded that there is a low risk from shallow mineworkings, mine entries or quarrying.

15.0 CONCLUSIONS AND RECOMMENDATIONS

15.1 General

15.1.1 Investigations were undertaken to identify ground related risks that have the potential to impact on the proposed development at the site. The ground conditions encountered during the investigation were generally consistent with those anticipated from published information. The site was considered to be generally suitable for the proposed residential development.

15.2 Contamination and Gas Emissions

15.2.1 Although marginally elevated levels of toxic lead and nickel contamination were recorded during the investigations, these were an isolated occurrence and not considered to be representative of the site conditions, given the greenfield nature and lack of any made ground or contamination source. Consequently, remedial measures are not considered necessary.

15.2.2 Following review of the chemical test results and risk assessment, the risk to Water Environment was considered to be low.

15.2.3 From the gas monitoring undertaken to date, gas preclusion measures are not considered necessary for the site. However, monitoring was ongoing at the time of reporting and this will be reassessed on its completion, although it is not expected to change the recommendations. The site is located within an intermediate probability radon area. Consequently, basic protection measures are necessary for this gas.

15.3 The Built Environment

15.3.1 A letter confirming the generally greenfield history of the site should be provided to Scottish Water, which should remove the requirement for a UKWIR assessment. Following submission of the letter, it is considered likely that PE (plastic) water supply pipes will be suitable for use.

15.3.2 Concrete Class DS-1, AC-1s is considered sufficient to protect buried concrete from the recorded pH and sulphate concentrations.

15.4 Invasive Plants

15.4.1 The invasive weed survey did not record any evidence of invasive or problematic plant species.

15.5 Geotechnical Conclusions and Recommendations

15.5.1 No significant made ground deposits were recorded within the site. The natural soils comprised of glacial till, which was proven to extend to rockhead. A combination of deepened and shallow strip foundations, designed to an allowable bearing capacity of 75kPa, could be placed on the firm, or stronger glacial till, or rock, at depths of between 0.3m and 2.2m across the site. Trench fill and extended blockwork should be suitable for the deepened foundations. Consideration of the foundation design should be taken for foundations which straddle

the glacial till and rock. Following the confirmation of development layouts and levels, the foundation solutions should be reappraised.

15.6 **Mining**

15.6.1 The site was considered to be at a low risk from instability derived from shallow mineworkings or quarrying. There was no record of any mine shafts or entries within the site or its immediate vicinity.

15.7 **Consultations with Public Authorities**

15.7.1 It should be noted that various local authority departments may become involved in the review of the site conditions. While measures proposed are consistent with conventional practice we would advise that before design works are advanced to any considerable stage appropriate approvals are received from the relevant Council departments. We would be pleased to liaise with the Council's representatives in this regard.

We trust that this will meet with your current requirements. However, should you require any further information, please do not hesitate to contact us.

Neil Hands
Associate

Niall Lawless
Managing Director

Appendix 1

Site Walkover Survey

WALKOVER SURVEY RECORD

Project Name: Longbar, Glengarnock
Project Number: P17/517
Date of Survey: 14/12/17
Surveyed By: NH
Weather: Dry and overcast

MASON EVANS
Geo-Environmental Consultants

VICINITY OF THE SITE

		DESCRIPTION
Are there any street/house/locality/pub names indicating current or former land use?	NO	
What are the neighbouring land uses?	NORTH	Residential housing.
	EAST	Road and open fields.
	SOUTH	Road and residential housing.
	WEST	Road and fields beyond.
Potential off-site receptors		Powgree Burn approximately 30m to the south.

ACCESSES

Describe the site accesses - type, width and headroom.		Field gate in east of site of a relatively busy road.
Describe any access difficulties for SI plant		Soft ground and overhead power lines.

SITE DESCRIPTION - GENERAL

What is the current land use?		Vacant/agricultural.
What is the topography		Sloping to the north west and west.
What is the surface cover?		Long grass.
Are there any waterlogged areas - indicate on plan?		Yes, to the north east was waterlogged.
How are the boundaries formed?		Stab and wire fencing, wooden fencing and hedgerows.

Does the topography suggest filling or platforming?	No	
Are there any subsidence features?	No	

EXISTING BUILDINGS

What proportion of the site do the buildings cover?		No buildings on site.
Do the building(s) show any evidence of distress?		NA
Indicate building usage on available site plan.		NA
Indicate nature and location of materials in storage.		NA
What processes are evident in the facility?		NA

TANKS AND WASTE STORAGE

Are there any fuel or chemical storage tanks (surface and underground)? For each tank record whether it is above/underground, nature of contents, whether full or empty, bunded/unbunded/leaking bund, presence of staining. Mark locations on plan.	No	
Is there any evidence of waste storage or disposal?	No	
Are there any chemical drums or other containers?	No	
Are there any discharges to surface water?	No	

HYDROLOGY

Describe any groundwater sources - including flow rate.		Standing water in north eastern area. Possibly light flow to the west.
Record positions all springs, ponds and other water on site. P1		As shown.

PUBLIC UTILITIES

Are there any overhead cables - indicate type and location?	Yes	Overhead power lines in south of site crossing east to west.
Are there any manholes - describe?	No	
Are there other indications of utilities?	Yes	Power lines overhead.
Are there any electricity transformers	Yes	Electrical sub-station on western boundary.

HAZARDS

Describe any obvious public health hazards.		None identified.

SPILLAGES AND CONTAMINATION

Are there any indication of oil or other spillages?	No	
Is their evidence of contaminated soils?	No	
Is there evidence of distress to vegetation?	No	
Describe constituents of any flytipping.		None recorded.
Is there surface evidence of asbestos contaminated soil?	No	
Are there any noxious smells?	No	

GEOLOGY

Soil and rock – Record and describe any exposed soils or rocks that are present.		No exposed soils.

MINING AND QUARRYING

Are there any signs of mineral extraction in the area, such as old mine buildings, derelict or hummocky land, surface depressions, evidence of infilling or spoil heaps.	No	
Is their evidence of any quarrying?	No	

SLOPE STABILITY

Are there any risks of slope instability?	No	
Is there evidence of previous land slipping?	No	

INVASIVE PLANTS

Are there any obvious invasive plants?	No	

Site Boundary

Flooded area

Timber Pylons and Overhead Power Lines

SITE PHOTOS

Photo 1: Site Access

Photo 2: Site Access

Appendix 2

Envirocheck Report

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
149430147_1_1

Customer Reference:
P17-517-NH

National Grid Reference:
232960, 652660

Slice:
A

Site Area (Ha):
3.11

Search Buffer (m):
1000

Site Details:

Longbar
Glengarnock

Client Details:

Ms P Morton
Mason Evans Partnership
The Piazza
95 Morrison Street
(office side door on Dalentober St)
Glasgow
G5 8BE

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 7		3	1	6
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 9				6
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 10		Yes		
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 10			1	
Substantiated Pollution Incident Register					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 10	Yes	n/a	n/a	n/a
Drift Deposits	pg 10	1	n/a	n/a	n/a
Source Protection Zones					
River Flood Data (Scotland)	pg 10	Yes	Yes	n/a	n/a
OS Water Network Lines	pg 10		28	18	74
Waste					
BGS Recorded Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 25	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 25		1		1
Potentially Infilled Land (Non-Water)	pg 25		4	4	6
Potentially Infilled Land (Water)	pg 26				13
Registered Landfill Sites	pg 27				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 28	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 28	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 30		5	5	7
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 33	Yes	n/a	n/a	n/a
Mining Instability	pg 33	Yes	n/a	n/a	n/a
Man-Made Mining Cavities	pg 33			1	
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 33	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 33	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 33	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 34	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 34	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 34	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 34	Yes		n/a	n/a
Radon Potential - Radon Affected Areas	pg 35	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 35	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 36		2		29
Fuel Station Entries					
Points of Interest - Commercial Services	pg 38				12
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 40		2		21
Points of Interest - Public Infrastructure	pg 41		1	1	2
Points of Interest - Recreational and Environmental	pg 42		2		2
Gas Pipelines					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 43		1		1
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
National Scenic Areas					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	0	1	233050 652650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	0	1	233100 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SE)	0	1	232960 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (E)	0	1	233000 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	0	1	233050 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	0	1	233000 652650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	4	1	233000 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	12	1	233050 652600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	24	1	233100 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	30	1	232900 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	32	1	232960 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	34	1	232950 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	39	1	233100 652600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	47	1	233000 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (S)	51	1	233000 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	61	1	233050 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	64	1	233100 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (S)	79	1	232950 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (S)	90	1	232960 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	95	1	233200 652650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	104	1	233100 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (E)	110	1	233200 652600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	116	1	233050 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (S)	139	1	232960 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	141	1	232700 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	145	1	233250 652650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	145	1	233250 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (SE)	147	1	233150 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	159	1	232750 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	162	1	232700 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	171	1	232800 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	174	1	233150 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	192	1	232700 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	198	1	233000 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	200	1	232750 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	207	1	232650 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	208	1	233050 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	219	1	233100 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	231	1	232650 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (N)	232	1	232960 653000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (W)	232	1	232600 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (S)	232	1	232850 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	234	1	233150 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	235	1	233000 653000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	242	1	232750 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	248	1	233300 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	249	1	233350 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	258	1	232850 653000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	258	1	233200 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	267	1	233350 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	270	1	232700 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	271	1	232550 652600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12SE (W)	271	1	232550 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	274	1	233250 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	274	1	232600 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	279	1	232960 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	280	1	232550 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	281	1	232650 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (SE)	282	1	233300 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	284	1	233350 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	287	1	232700 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	295	1	233400 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	296	1	233000 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	297	1	232550 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	299	1	232650 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (NW)	301	1	232600 652850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	305	1	233300 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	306	1	233050 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (NE)	310	1	233350 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	311	1	232700 652950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	314	1	233250 652950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (SW)	314	1	232600 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	319	1	232550 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (SW)	321	1	232550 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	327	1	233250 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	329	1	232900 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	329	1	233400 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (NW)	333	1	232600 652900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	334	1	233400 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	344	1	233300 652950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	345	1	233200 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	348	1	233450 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (SW)	351	1	232600 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (NE)	352	1	233400 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	355	1	233050 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	359	1	233400 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	361	1	233450 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	364	1	232500 652800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SW)	364	1	232500 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	365	1	233100 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	369	1	233250 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (SW)	374	1	232700 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	376	1	233150 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	379	1	232950 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	381	1	232850 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	382	1	232950 653150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	384	1	232960 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NE (W)	386	1	232500 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	389	1	232600 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	390	1	232450 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	390	1	232450 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (SE)	390	1	233350 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SW)	391	1	232500 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	392	1	233200 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	398	1	233500 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	407	1	233500 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	409	1	233500 652550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SW)	409	1	232450 652450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	412	1	233250 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	414	1	233350 653000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (SW)	419	1	232700 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	421	1	233500 652800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	426	1	232400 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NW (SE)	429	1	233350 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	430	1	232850 652150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SW)	433	1	232450 652400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	438	1	232400 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	439	1	233200 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (NW)	440	1	232550 653000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (SW)	441	1	232650 652200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (NE)	446	1	233400 653000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	460	1	233450 652350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	460	1	232550 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	472	1	233550 652500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	475	1	232350 652700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (N)	483	1	233000 653250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	483	1	232960 652100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	486	1	233550 652850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	486	1	232350 652750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	493	1	232500 652250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9NW (SE)	494	1	233450 652300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (E)	495	1	233600 652650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (E)	495	1	233600 652661
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	498	1	232550 652200
1	**Discharge Consents** Operator: H A Gilbert And Son Property Type: Not Given Location: Outfall C, Two Dwellings, Auchengree Road, GLENGARNOCK, Ayrshire Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 7687 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 31st July 1987 Revocation Date: Not Supplied Discharge Type: Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Powgree Burn **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A13SW (W)	28	2	232800 652605
1	**Discharge Consents** Operator: H A Gilbert And Son Property Type: Not Given Location: Outfall A, Two Dwellings, Auchengree Road, GLENGARNOCK, Ayrshire Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 7682 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 31st July 1987 Revocation Date: Not Supplied Discharge Type: Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Powgree Burn **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A13SW (W)	32	2	232800 652600
1	**Discharge Consents** Operator: H A Gilbert And Son Property Type: Not Given Location: Outfall B, Two Dwellings, Auchengree Road, GLENGARNOCK, Ayrshire Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 7686 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 31st July 1987 Revocation Date: Not Supplied Discharge Type: Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Powgree Burn **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A13SW (W)	35	2	232800 652595
2	**Discharge Consents** Operator: Mr And Mrs Kirkpatrick Property Type: Not Given Location: Cattery, Beith Road, Strathmore, GLENGARNOCK, Ayrshire Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 10413 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 21st July 1992 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Surface Water And Storm Sewerage Discharge Environment: Onto Land Receiving Water: Soakaway **Status: Not Supplied** Positional Accuracy: Manually corrected supplier location	A8NE (S)	394	2	233000 652200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Mr & Mrs Kirkpatrick Property Type: Not Given Location: Cattery, Strathmore, Beith Road, GLENGARNOCK, Ayrshire Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: CD10413 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 21st July 1992 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Surface Water Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A8NE (S)	594	2	233020 652000
4	**Discharge Consents** Operator: Strathclyde Regional Council Property Type: Not Given Location: Stormwater Overflow, GLENGARNOCK Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: CD10780 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 16th November 1992 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Surface Water Discharge Environment: Unknown Receiving Water: Not Supplied **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A12NW (W)	838	2	232000 652800
5	**Discharge Consents** Operator: Director Of Leisure And Recreation Property Type: Not Given Location: Clubhouse At Lochshore, KILBIRNIE Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 210 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 12th May 1983 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Surface Water Discharge Environment: Onto Land Receiving Water: Underground Strata **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A18NW (N)	872	2	232700 653600
6	**Discharge Consents** Operator: Unknown Operator Property Type: Not Given Location: Combined Storm Overflow, Grahamston Avenue, GLENGARNOCK Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 0 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 26th March 1996 Revocation Date: Not Supplied Discharge Type: Unknown Discharge Environment: Unknown Receiving Water: Cancelled; See Cd10780; Applied For Register Exemption **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A11NE (W)	936	2	231910 652845

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: West Of Scotland Water Property Type: Not Given Location: Combined Sewer Outfall, Grahamston Avenue, Glengarnock, GLENGARNOCK Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 107801 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 24th July 1996 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Garnock **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A11NE (W)	937	2	231910 652850
7	**Discharge Consents** Operator: West Of Scotland Water Property Type: Not Given Location: Combined Sewer Overflow, Main Road, Glengarnock, GLENGARNOCK Authority: Scottish Environment Protection Agency, West Region Catchment Area: Not Given Reference: 12909 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 7th March 1996 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Garnock **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A11NE (W)	963	2	231900 652910
8	**Local Authority Pollution Prevention and Controls** Name: Manders Graphics Location: Unit 6 Viewfield Road, BEITH, Ayrshire, KA15 1LZ Authority: Scottish Environment Protection Agency, West Region Permit Reference: Not Given Dated: 31st March 1994 Process Type: Local Authority Air Pollution Control Description: Part B process (no specific reference) **Status: Authorised** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	730	2	233550 653245
8	**Local Authority Pollution Prevention and Controls** Name: Manders Graphics Location: Unit 6 Viewfield Road, BEITH, Ayrshire, KA15 1LZ Authority: Scottish Environment Protection Agency, West Region Permit Reference: APC/W/00068 Dated: 21st November 1995 Process Type: Local Authority Air Pollution Control Description: PG6/16 Printworks **Status: Authorisation has varied** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	734	2	233550 653250
9	**Local Authority Pollution Prevention and Controls** Name: Anderson Stewart Castings Ltd Location: Lochshore Ltd, Glengarnock Workshops, Glengarnock, BEITH, Ayrshire, KA14 3DA Authority: Scottish Environment Protection Agency, West Region Permit Reference: Apc/W/0000159 Dated: 25th November 1998 Process Type: Local Authority Air Pollution Control Description: PG2/4 Iron, steel and non-ferrous metal foundry processes **Status: Authorised** Positional Accuracy: Manually positioned within the geographical locality	A17SE (NW)	798	2	232403 653337
10	**Local Authority Pollution Prevention and Controls** Name: John Moran Location: Lochshore, South Industrial Estate, KILBURNIE, Ayrshire, KA25 Authority: Scottish Environment Protection Agency, West Region Permit Reference: n/a Dated: 31st March 1993 Process Type: Local Authority Air Pollution Control Description: PG6/12 Production of natural sausage casings, tripe, chitterlings and other boiled green offal products **Status: Application Withdrawn** Positional Accuracy: Manually positioned to the road within the address or location	A17SW (NW)	956	2	231983 653091

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Local Authority Pollution Prevention and Controls** Name: Apw Enclosure Systems (Uk) Ltd Location: Willowyard Road, Beith, Ayrshire, KA15 1JG Authority: Scottish Environment Protection Agency, West Region Permit Reference: Apc/W/0020015 Dated: 19th April 2001 Process Type: Air Pollution Controls (Part B Processes) Description: Not Supplied **Status: Not Supplied** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	988	2	233878 653276
11	**Local Authority Pollution Prevention and Controls** Name: A P W Enclosure Systems (Uk) Ltd Location: Willowyard Road, Beith, Ayrshire, KA15 1JG Authority: Scottish Environment Protection Agency, West Region Permit Reference: Apc/W/0020451 Dated: 13th October 1999 Process Type: Air Pollution Controls (Part B Processes) Description: Not Supplied **Status: Not Supplied** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	988	2	233878 653276
	Nearest Surface Water Feature	A13SW (SW)	24	-	232917 652560
	River Quality Name: Not Supplied GQA Grade: River Quality A Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1990	A12SE (W)	271	3	232549 652667
	Groundwater Vulnerability Geological Classification: Minor or Moderately Permeable Aquifer - Fractured or potentially fractured rocks which do not have a high primary permeability or other formations of variable permeability Soil Classification: Not classified Map Sheet: Map of Scotland Scale: 1:625,000	A13SW (SE)	0	3	232960 652661
	Drift Deposits Drift Deposit: Low permeability drift deposits which include till, head, peat, lacustrine deposits, clay-with-flints and brick earths Map Sheet: Map of Scotland Scale: 1:625,000	A13SW (SE)	0	3	232960 652661
	River Flood Data (Scotland) Type: Flood Plain Depth 0 -1 Metres Flood Plain Type: 0-1m estimated 100yr flood depth Source: Centre for Ecology and Hydrology	A13SW (W)	0	4	232900 652661
	River Flood Data (Scotland) Type: Flood Plain Depth 1 - 2 Metres Flood Plain Type: 1-2m estimated 100yr flood depth Source: Centre for Ecology and Hydrology	A13SW (W)	0	4	232850 652650
	River Flood Data (Scotland) Type: Flood Plain Depth 0 -1 Metres Flood Plain Type: 0-1m estimated 100yr flood depth Source: Centre for Ecology and Hydrology	A13SW (S)	0	4	232950 652600
	River Flood Data (Scotland) Type: Flood Plain Depth 1 - 2 Metres Flood Plain Type: 1-2m estimated 100yr flood depth Source: Centre for Ecology and Hydrology	A13SW (SW)	84	4	232850 652500
	River Flood Data (Scotland) Type: Flood Plain Depth 1 - 2 Metres Flood Plain Type: 1-2m estimated 100yr flood depth Source: Centre for Ecology and Hydrology	A13SW (W)	119	4	232700 652650
12	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 403.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SE (S)	25	5	232974 652561

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 69.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (W)	39	5	232780 652629
14	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 202.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	69	5	233007 652822
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 119.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SW (SW)	75	5	232807 652536
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (SW)	76	5	232808 652534
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 593.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SW (W)	95	5	232725 652617
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 89.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (N)	97	5	233015 652850
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 174.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (N)	106	5	232995 652869
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 446.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (SW)	109	5	232788 652508
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 87.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (SW)	109	5	232787 652508

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 200.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (N)	113	5	233020 652865
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 40.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SE (SE)	122	5	233033 652484
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 200.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (N)	135	5	232997 652899
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SE (SE)	146	5	233070 652468
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SE (SE)	146	5	233070 652468
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 104.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	158	5	232963 652926
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 2	A13SE (SE)	159	5	233065 652453
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 346.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A13SE (SE)	164	5	233091 652454
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 153.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (NE)	174	5	233090 652894

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (SW)	192	5	232731 652447
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 152.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A13SW (SW)	230	5	232691 652432
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 2	A13NE (N)	231	5	233033 652988
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	235	5	233010 652998
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	235	5	233010 652998
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	239	5	233015 653002
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	239	5	233007 653003
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 86.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	244	5	233021 653005
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 50.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A13NE (N)	245	5	233003 653010

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	280	5	232970 653048
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 65.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	283	5	233085 653024
42	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 16.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	286	5	232965 653054
43	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 74.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SW (N)	294	5	232864 653045
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SW (N)	297	5	232953 653065
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	302	5	233039 653060
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 140.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	312	5	233108 653044
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 210.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8NW (SW)	352	5	232659 652300
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 92.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8NW (SW)	353	5	232655 652301

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 85.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (NE)	408	5	233258 653062
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 344.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (NE)	408	5	233258 653062
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 187.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (NE)	411	5	233162 653127
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A14SW (SE)	413	5	233390 652354
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 104.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A9NW (SE)	425	5	233383 652332
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 156.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SW (N)	451	5	232856 653207
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 293.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SW (N)	451	5	232856 653207
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	472	5	233010 653237
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	496	5	233065 653254

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 892.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A14SW (E)	514	5	233617 652622
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 38.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8NW (SW)	514	5	232649 652118
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 306.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9NW (SE)	516	5	233477 652296
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 614.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A9NW (SE)	516	5	233477 652296
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 39.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18SE (N)	536	5	233001 653303
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8NW (SW)	551	5	232641 652081
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 636.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8NW (SW)	555	5	232641 652077
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 84.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SW (NE)	601	5	233471 653143
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 440.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A12NW (W)	610	5	232215 652706

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A12NW (W)	610	5	232215 652706
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9NW (SE)	662	5	233409 652053
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 346.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A12NW (NW)	678	5	232248 652997
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 154.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9SW (SE)	710	5	233305 651947
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 161.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A8SE (SE)	712	5	233283 651939
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 449.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9SW (SE)	714	5	233301 651944
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 165.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9NW (SE)	714	5	233439 652011
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 80.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 2	A12NW (W)	716	5	232177 652939
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	723	5	233158 653464

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 30.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	729	5	233087 653487
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 338.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A17SW (NW)	734	5	232259 653121
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 92.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SW (NE)	735	5	233457 653321
79	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 69.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	736	5	232882 653499
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SW (NE)	738	5	233464 653320
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 168.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	744	5	232755 653482
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 2	A12NW (W)	745	5	232114 652866
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	748	5	233144 653494
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 48.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	750	5	233428 653361

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 51.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	752	5	233127 653502
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SW (NE)	752	5	233484 653322
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 67.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	756	5	233039 653520
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	761	5	233015 653528
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	765	5	233004 653532
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 65.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	771	5	232986 653538
91	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 20.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	784	5	232922 653551
92	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 37.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	792	5	232902 653558
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 156.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SW (NE)	797	5	233534 653341

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	799	5	233450 653405
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 648.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A17SE (NW)	810	5	232348 653311
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 51.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A14SE (E)	819	5	233918 652560
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 43.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	823	5	233354 653492
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 22.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	823	5	233378 653478
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 84.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	823	5	233378 653478
100	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 49.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	829	5	232907 653596
101	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 272.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kilbirnie Loch Catchment Name: Black Cart Water Primacy: 1	A18NW (N)	829	5	232907 653596
102	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 545.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9SW (SE)	834	5	233597 651978

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
103	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	836	5	233334 653517
104	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	836	5	233457 653446
105	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 109.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	836	5	233457 653446
106	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	839	5	233330 653523
107	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	842	5	233331 653526
108	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	844	5	233321 653532
109	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 84.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (N)	845	5	233316 653536
110	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 149.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	845	5	233338 653526
111	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A14SE (E)	867	5	233963 652535

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
112	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A14SE (E)	872	5	233968 652532
113	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1212.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Garnock Catchment Name: River Garnock Primacy: 1	A12NW (W)	877	5	231955 652774
114	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 91.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	895	5	233388 653556
115	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	898	5	233280 653608
116	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	902	5	233278 653613
117	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 129.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	914	5	233273 653628
118	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	914	5	233273 653628
119	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 267.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SE (NE)	927	5	233792 653286
120	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 173.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SE (NE)	927	5	233792 653286

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
121	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 79.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	936	5	233513 653528
122	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 161.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	948	5	233374 653622
123	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A9NE (SE)	959	5	233910 652133
124	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A11SE (W)	959	5	231865 652524
125	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 291.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Powgree Burn Catchment Name: River Garnock Primacy: 1	A9NE (SE)	960	5	233914 652137
126	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	962	5	233298 653670
127	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 117.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: River Garnock Primacy: 1	A6NE (W)	962	5	231926 652268
128	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 240.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Garnock Catchment Name: River Garnock Primacy: 1	A11SE (W)	965	5	231860 652524
129	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 75.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A18NE (N)	967	5	233296 653675

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
130	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 492.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19SE (NE)	970	5	233925 653176
131	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 115.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Black Cart Water Primacy: 1	A19NW (NE)	975	5	233636 653488

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: North Ayrshire Council - Has supplied landfill data		0	6	232960 652661
132	**Local Authority Recorded Landfill Sites** Location: Longbar Amenity Site Reference: 28 Authority: North Ayrshire Council **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A13SE (E)	57	6	233156 652631
133	**Local Authority Recorded Landfill Sites** Location: Cricketers Bing, Glengarnock Reference: 17 Authority: North Ayrshire Council **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A12NE (NW)	521	6	232431 652991
134	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	48	-	233148 652676
135	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	108	-	233173 652748
136	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (NE)	162	-	233178 652814
137	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	180	-	233278 652703
138	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A14NW (E)	287	-	233366 652773
139	**Potentially Infilled Land (Non-Water)** Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18SW (NW)	288	-	232813 653014
140	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12SE (W)	300	-	232520 652606
141	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18SE (N)	479	-	233133 653215
142	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	636	-	232216 652826
143	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A7NW (SW)	714	-	232199 652272
144	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A7SE (SW)	729	-	232621 651898

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
145	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A7NW (SW)	811	-	232137 652186
146	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A9SW (SE)	870	-	233552 651898
147	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A11NE (W)	936	-	231926 652904
148	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A17SE (NW)	557	-	232497 653108
149	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A17SE (NW)	561	-	232536 653140
150	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1897	A18SW (N)	590	-	232730 653311
151	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A12NW (W)	615	-	232271 652902
152	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1858	A18NW (N)	650	-	232795 653396
153	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A12NW (NW)	676	-	232242 652984
154	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1858	A12NW (W)	713	-	232186 652952
155	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1858	A17NE (NW)	715	-	232611 653391
156	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A19SW (NE)	731	-	233565 653233
157	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A18NW (N)	745	-	232764 653487
158	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1858	A19NW (NE)	755	-	233328 653429
159	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1911	A18NW (N)	826	-	232704 653553
160	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1897	A22SE (N)	1000	-	232597 653699

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill Sites				
161	Licence Holder: Scottish Development Agency Licence Reference: 17 Site Location: Cricketers Bing, Glengarnock Railway Station, Kilbirnie, Ayrshire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Walker Memorial Hall, Main Street, Kilbirnie, Ayrshire Authority: Scottish Environment Protection Agency, West Region Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st January 1980 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste: Soil Infill	A12NW (W)	708	2	232177 652923

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Clackmannan Group	A13SW (SE)	0	1	232960 652661
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	0	1	233000 652661
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: 2.2 - 3.0 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SE)	0	1	232960 652661
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: 2.2 - 3.0 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (N)	48	1	232991 652807
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (N)	53	1	233000 652807
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: 2.2 - 3.0 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (N)	83	1	232941 652848
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (N)	126	1	233000 652889

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: 1.8 - 2.2 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (W)	319	1	232500 652661
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	395	1	233500 652661
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	520	1	233500 653000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	733	1	233000 653500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (SE)	757	1	233500 652000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SE (S)	765	1	233136 651849

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A20SW (E)	995	1	234000 653090
162	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Crawfield, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26230 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Blackhall Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (E)	54	1	233145 652695
163	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Crawfield, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26231 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Hurlet Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	114	1	233175 652755
164	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Crawfield, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26232 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Hurlet Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	172	1	233180 652825
165	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Crawfield, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26235 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Blackhall Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (E)	173	1	233270 652705
166	**BGS Recorded Mineral Sites** Site Name: Whitestanes Farm Bing Location: Whitestanes Farm, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 30382 Type: Tip **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Present Day Geology: Quarry Waste Commodity: Quarry Waste Positional Accuracy: Located by supplier to within 10m	A13SE (E)	188	1	233283 652595

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
167	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Crawfield, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26238 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Blackhall Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	279	1	233320 652840
168	**BGS Recorded Mineral Sites** Site Name: Langbar Location: Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26202 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Kilburnie Mudstone Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SE (W)	285	1	232535 652605
169	**BGS Recorded Mineral Sites** Site Name: Crawfield Location: Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 233935 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Blackhall Limestone Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A14NW (E)	288	1	233366 652777
170	**BGS Recorded Mineral Sites** Site Name: Langbar Location: Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26199 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Kilburnie Mudstone Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SE (W)	355	1	232465 652635
171	**BGS Recorded Mineral Sites** Site Name: Langbar Colliery Location: Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 29371 Type: Underground **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A18SW (N)	388	1	232830 653133
172	**BGS Recorded Mineral Sites** Site Name: Meikle Auchengree Location: Meikle Auchengree, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26190 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	702	1	232205 652285

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
173	**BGS Recorded Mineral Sites** Site Name: Maulside Location: Maulside, The Den, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26208 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	722	1	232620 651905
174	**BGS Recorded Mineral Sites** Site Name: Glengarnock Iron Works Pit No.3 Location: Glengarnock, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 233944 Type: Underground **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	745	1	232538 653380
175	**BGS Recorded Mineral Sites** Site Name: Meikle Auchengree Location: Meikle Auchengree, Longbar, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 26187 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	789	1	232155 652200
176	**BGS Recorded Mineral Sites** Site Name: Coalburn Bridge Location: The Den, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 233936 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	870	1	233557 651902
177	**BGS Recorded Mineral Sites** Site Name: Coalburn Quarry Location: Coalburn, Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 29400 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	900	1	233850 652150
178	**BGS Recorded Mineral Sites** Site Name: Willowyard Location: Beith, Ayrshire Source: British Geological Survey, National Geoscience Information Service Reference: 29370 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Limestone Coal Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	1000	1	233621 653530

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13SW (SE)	0	7	232960 652661
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SE (E)	0	-	233000 652661
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SW (SE)	0	-	232960 652661
	Mining Instability Mining Evidence: Conclusive Metaliferous Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SE (E)	0	-	233000 652661
	Man-Made Mining Cavities Easting: 233300 Northing: 652900 Distance: 305 Quadrant Reference: A14 Quadrant Reference: NW Bearing Ref: NE Cavity Type: Not supplied Commodity: Barytes Solid Geology Detail: No Details Superficial Geology Detail: No Details	A14NW (NE)	305	8	233300 652900
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	16	1	232941 652573
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	1	232802 652883
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	232984 652661
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	44	1	232991 652807
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	116	1	233221 652661
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	232984 652661
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	44	1	232991 652807
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	116	1	233221 652661

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	232960 652670
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	232979 652741
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	152	1	233256 652668
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	16	1	232941 652573
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	50	1	233032 652784
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	135	1	232706 652551
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	232984 652661
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	11	1	232949 652577
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	34	1	233052 652762
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	44	1	232991 652807
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	116	1	233221 652661
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	116	1	232714 652577
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	11	1	232949 652577
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	34	1	233052 652762
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	97	1	232972 652497
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	116	1	232714 652577
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	156	1	233130 652476

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	1	232960 652648
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	1	232960 652648
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (SE)	0	1	232960 652661

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
179	**Contemporary Trade Directory Entries** Name: Load King Tipper Bodies Ltd Location: The Old Lace Works,Main Street, Glengarnock, Beith, Ayrshire, KA14 3BD Classification: Hydraulic Systems & Equipment Manufacturers **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13SW (SW)	72	-	232798 652548
180	**Contemporary Trade Directory Entries** Name: Robert Kerr & Sons Location: Auchengree Works, Auchengree Road, Glengarnock, Beith, Ayrshire, KA14 3BU Classification: Gear Cutters **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	199	-	232730 652439
181	**Contemporary Trade Directory Entries** Name: Anderson Stewart Castings Location: Block 1, Lochshore Industrial Estate, Caledonia Road, Glengarnock, Beith, Ayrshire, KA14 3DB Classification: Die-Casting Equipment & Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	557	-	232417 653031
182	**Contemporary Trade Directory Entries** Name: Darby Scotland Ltd Location: Block 2, Lochshore Industrial Estate, Caledonian Road, Glengarnock, Beith, Ayrshire, KA14 3DB Classification: Glass Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	560	-	232464 653084
183	**Contemporary Trade Directory Entries** Name: Heatworks Location: Unit 4, Block 3, Lochshore Industrial Estate, Caledonia Road, Glengarnock, Beith, Ayrshire, KA14 3DB Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	578	-	232499 653136
184	**Contemporary Trade Directory Entries** Name: Garnock Books Location: Kersland Rd, Glengarnock, Beith, Ayrshire, KA14 3BA Classification: Bookbinding & Equipment **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	612	-	232210 652680
185	**Contemporary Trade Directory Entries** Name: J R Tait Location: Block 6,Lochshore Ind Est,Caledonia Pl, Glengarnock, Beith, Ayrshire, KA14 3BE Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	629	-	232523 653218
186	**Contemporary Trade Directory Entries** Name: Burnhouse M O T Centre Ltd Location: Block 7, Unit 2, Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, Ayrshire, KA14 3BE Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	668	-	232522 653271
186	**Contemporary Trade Directory Entries** Name: J R Tait Location: Unit 1,Block 7,Lochshore Ind Est,Caledonia Pl, Glengarnock, Beith, Ayrshire, KA14 3BE Classification: Car Painters & Sprayers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	668	-	232512 653262
186	**Contemporary Trade Directory Entries** Name: Biobased Europe Location: Unit 1, Block 7, Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, Ayrshire, KA14 3BE Classification: Chemical Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	683	-	232505 653276

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
187	**Contemporary Trade Directory Entries** Name: Orna Metal Location: 4, Glengarnock Workshops, Glengarnock, Beith, Ayrshire, KA14 3DA Classification: Wrought Ironwork **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	689	-	232365 653167
187	**Contemporary Trade Directory Entries** Name: Objets En Bois Location: 3, Glengarnock Workshop, Glengarnock, Beith, Ayrshire, KA14 3DA Classification: Cabinet Makers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	733	-	232332 653197
188	**Contemporary Trade Directory Entries** Name: J R Tait Location: Main St, Glengarnock, Beith, Ayrshire, KA14 3AT Classification: Spraying - Paint & Coatings **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A12NW (W)	742	-	232086 652734
188	**Contemporary Trade Directory Entries** Name: Mcleod Transport Location: The Laceworks,Main St, Glengarnock, Beith, Ayrshire, KA14 3BD Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	771	-	232060 652758
189	**Contemporary Trade Directory Entries** Name: Garnock Valley Meats Location: Meikle Auchengree, Auchengree Road, Glengarnock, Beith, Ayrshire, KA14 3BU Classification: Meat Product Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	762	-	232203 652176
190	**Contemporary Trade Directory Entries** Name: Lochshore Engineering Ltd Location: 9 Glengarnock Workshops, Glengarnock, Beith, KA14 3DA Classification: Ship Builders, Repairs & Fittings **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	765	-	232420 653308
191	**Contemporary Trade Directory Entries** Name: H Young Ltd Location: Main Street, Glengarnock, Beith, Ayrshire, KA14 3BD Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	790	-	232031 652673
192	**Contemporary Trade Directory Entries** Name: Bonnymans Location: Unit 8,Beechfield Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Cleaning Materials & Equipment **Status: Active** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	799	-	233586 653304
192	**Contemporary Trade Directory Entries** Name: Mckechnie Plastics Components Ltd Location: Block 8, Beechfield Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	799	-	233586 653304
192	**Contemporary Trade Directory Entries** Name: T R Bonnyman Son & Co Ltd Location: Block 8, Beechfield Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Chemical Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	799	-	233586 653304
193	**Contemporary Trade Directory Entries** Name: Strathbond Ltd Location: Willowburn Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Adhesives, Glues & Sealants **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19SE (NE)	825	-	233707 653227

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
193	**Contemporary Trade Directory Entries** Name: Cleland Crosbie Ltd Location: Block 2, Beechfield Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	825	-	233707 653227
193	**Contemporary Trade Directory Entries** Name: Ist Printing Services Location: Block 2, Beechfield Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LN Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	825	-	233707 653227
193	**Contemporary Trade Directory Entries** Name: Mason Graphics Ltd Location: Unit 6 Lochfield Rd,Willowyard Indust Est, Beith, Ayrshire, KA15 1LY Classification: Screen Process Printers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A19SE (NE)	843	-	233742 653214
194	**Contemporary Trade Directory Entries** Name: J & S Montgomery Ltd Location: 1, Willowburn Road, Willowyard Industrial Estate, Beith, Ayrshire, KA15 1LP Classification: Agricultural Machinery - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	833	-	233760 653175
195	**Contemporary Trade Directory Entries** Name: Neil Engineering Gearboxes & Axles Location: 28, Main Street, Glengarnock, Beith, KA14 3AT Classification: Gearboxes **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	860	-	231972 652769
196	**Contemporary Trade Directory Entries** Name: Biolink Location: Beechfield Rd, Willowyard Ind Est, Beith, Ayrshire, KA15 1LN Classification: Chemical Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SE (NE)	873	-	233732 653271
197	**Contemporary Trade Directory Entries** Name: Darby Glass (Scotland) Ltd Location: Block 2-3, Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, Ayrshire, KA14 3AZ Classification: Glass Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	966	-	231988 653123
198	**Contemporary Trade Directory Entries** Name: Skotland Joinery Ltd Location: Block 5, Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, Ayrshire, KA14 3AZ Classification: Window Frame Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	981	-	231953 653087
198	**Contemporary Trade Directory Entries** Name: Scotskil Joinery Ltd Location: Block 5, Lochshore Industrial Estate, Caledonia Place, Glengarnock, Beith, Ayrshire, KA14 3AZ Classification: Joinery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	981	-	231953 653087
199	**Contemporary Trade Directory Entries** Name: A P W Location: Willowyard Road, Beith, Ayrshire, KA15 1JG Classification: Electronic Component Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	988	-	233878 653276
200	**Points of Interest - Commercial Services** Name: Garnock M O T Centre Location: 6 Caledonia Road, Beith, KA15 2BL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	651	9	232459 653197

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
200	**Points of Interest - Commercial Services** Name: Burnhouse M O T Centre Ltd Location: Block 7 Unit 2 Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, KA14 3BE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	668	9	232521 653270
200	**Points of Interest - Commercial Services** Name: J R Tait Location: Unit 1, Block 7, Lochshore Ind Est, Caledonia Pl, Glengarnock, Beith, Ayrshire, KA14 3BE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	668	9	232512 653262
201	**Points of Interest - Commercial Services** Name: Orna-Metal Location: 4 Glengarnock Workshops, Glengarnock, Beith, KA14 3DA Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A17SE (NW)	689	9	232365 653167
201	**Points of Interest - Commercial Services** Name: Orna Metal Location: 4 Glengarnock Workshops, Glengarnock, Beith, KA14 3DA Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A17SE (NW)	689	9	232364 653167
202	**Points of Interest - Commercial Services** Name: H Young Ltd Location: Main Street, Glengarnock, Beith, KA14 3BD Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SW (W)	790	9	232031 652673
202	**Points of Interest - Commercial Services** Name: H Young Ltd Location: Main Street, Glengarnock, Beith, KA14 3BD Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SW (W)	790	9	232031 652673
203	**Points of Interest - Commercial Services** Name: Neil Engineering Location: 28 Main Street, Glengarnock, Beith, KA14 3AT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	860	9	231972 652769
204	**Points of Interest - Commercial Services** Name: G S R Services Location: Block 6 Unit 2-3 Lochshore Industrial Estate, Caledonian Place, Glengarnock, Beith, KA14 3AZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	960	9	231993 653119
204	**Points of Interest - Commercial Services** Name: Iain Hill Ltd Location: Unit 2 Block 2 Lochshore Industrial Estate, Caledonia Place, Glengarnock, Beith, KA14 3AZ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A17SW (NW)	966	9	231988 653123
205	**Points of Interest - Commercial Services** Name: Delivery Depot Location: Unit 2 Block 9, Beechfield Road, Willowyard Industrial Estate, Beith, KA15 1LN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19NE (NE)	975	9	233736 653409
205	**Points of Interest - Commercial Services** Name: Multidrop UK Location: Unit 2 Block 9, Beechfield Road, Willowyard Industrial Estate, Beith, KA15 1LN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19NE (NE)	975	9	233736 653409

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
206	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	183	9	232731 652459
206	**Points of Interest - Manufacturing and Production** Name: Works Location: KA14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A13SW (SW)	197	9	232721 652449
207	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	532	9	233218 653235
208	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	534	9	233638 652624
209	**Points of Interest - Manufacturing and Production** Name: Lochshore East Industrial Estate Location: KA14 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A12NW (NW)	688	9	232233 652993
210	**Points of Interest - Manufacturing and Production** Name: G & A Kirkpatrick Location: 5 Glengarnock Workshops, Glengarnock, Beith, KA14 3DA Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A17SE (NW)	694	9	232382 653190
211	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	713	9	233563 653212
212	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	743	9	232184 652239
212	**Points of Interest - Manufacturing and Production** Name: Iain Telfer Location: Meikle Auchengree, Auchengree Road, Glengarnock, Beith, KA14 3BU Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A7NW (SW)	762	9	232203 652176
213	**Points of Interest - Manufacturing and Production** Name: Glengarnock Workshops Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	774	9	232467 653363
213	**Points of Interest - Manufacturing and Production** Name: Workshops Location: KA14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	782	9	232448 653357
214	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	811	9	233708 653205

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
214	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	831	9	233743 653194
215	**Points of Interest - Manufacturing and Production** Name: Lochshore South Industrial Estate Location: KA14 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	853	9	232070 653035
216	**Points of Interest - Manufacturing and Production** Name: Willowyard Industrial Estate Location: KA15 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	909	9	233827 653214
216	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	944	9	233835 653261
217	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	910	9	233425 653552
217	**Points of Interest - Manufacturing and Production** Name: Tanks Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	976	9	233373 653654
217	**Points of Interest - Manufacturing and Production** Name: Tanks Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	982	9	233421 653637
217	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19NW (NE)	983	9	233408 653644
217	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19NW (NE)	992	9	233422 653647
218	**Points of Interest - Manufacturing and Production** Name: Works Location: KA15 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A19NW (NE)	938	9	233478 653552
219	**Points of Interest - Manufacturing and Production** Name: Tank Location: KA15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19NE (NE)	972	9	233771 653372
220	**Points of Interest - Public Infrastructure** Name: Weir Location: KA14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	178	9	233090 652439

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
221	**Points of Interest - Public Infrastructure** Name: Weir Location: KA14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	286	9	233254 652407
222	**Points of Interest - Public Infrastructure** Name: Glengarnock Rail Station Location: KA14 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12NW (W)	649	9	232182 652748
222	**Points of Interest - Public Infrastructure** Name: Glengarnock Station Location: Beith Road, KA14 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12NW (W)	649	9	232182 652748
223	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NW (W)	122	9	232731 652722
223	**Points of Interest - Recreational and Environmental** Name: Playground Location: Davidson Avenue, KA14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NW (W)	135	9	232716 652720
224	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	812	9	232042 652860
224	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Main Road, KA14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12NW (W)	818	9	232037 652862

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
225	**Ancient Woodland** Name: Not Supplied Reference: 26477 Area(m²): 166203.65 Type: Long-Established Woodland of Plantation Origin	A13SE (SE)	46	10	233041 652560
226	**Ancient Woodland** Name: Not Supplied Reference: 26478 Area(m²): 26106.52 Type: Long-Established Woodland of Plantation Origin	A9NW (SE)	647	10	233560 652194

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
North Ayrshire Council	February 2013	Annual Rolling Update
Renfrewshire Council	January 2015	Annual Rolling Update
Discharge Consents		
Scottish Environment Protection Agency - West Region	May 1998	Not Applicable
Enforcement and Prohibition Notices		
Scottish Environment Protection Agency - West Region	January 2012	Not Applicable
Integrated Pollution Controls		
Scottish Environment Protection Agency - Head Office	February 1998	Variable
Scottish Environment Protection Agency - West Region	March 2002	Not Applicable
Local Authority Pollution Prevention and Controls		
Scottish Environment Protection Agency - West Region	March 2002	Not Applicable
Local Authority Pollution Prevention and Control Enforcements		
Scottish Environment Protection Agency - West Region	January 1998	Not Applicable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Prosecutions Relating to Authorised Processes		
Scottish Environment Protection Agency - West Region	March 2007	Not Applicable
Prosecutions Relating to Controlled Waters		
Scottish Environment Protection Agency - West Region	March 2007	Not Applicable
Registered Radioactive Substances		
Scottish Environment Protection Agency - West Region	April 1996	Not Applicable
Scottish Environment Protection Agency - Head Office	January 1998	Not Applicable
River Quality		
Scottish Environment Protection Agency - Head Office	December 1990	Not Applicable
Scottish Environment Protection Agency - West Region	December 1990	Not Applicable
Water Abstractions		
Scottish Government - Agriculture, Environment and Fisheries Department	December 1997	Not Applicable
Water Industry Act Referrals		
Scottish Environment Protection Agency - West Region	April 1996	As Designated
Groundwater Vulnerability		
Scottish Environment Protection Agency - Head Office	December 1995	Not Applicable
Scottish Environment Protection Agency - West Region	December 1995	Not Applicable
Drift Deposits		
Scottish Environment Protection Agency - Head Office	December 1995	Not Applicable
Scottish Environment Protection Agency - West Region	December 1995	Not Applicable
River Flood Data (Scotland)		
Centre for Ecology and Hydrology	September 1999	Not Applicable
OS Water Network Lines		
Ordnance Survey	October 2017	6 Weekly
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Scottish Environment Protection Agency - Head Office	January 1998	Not Applicable
Scottish Environment Protection Agency - West Region	January 1998	Not Applicable
Local Authority Landfill Coverage		
North Ayrshire Council	May 2000	Not Applicable
Renfrewshire Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
North Ayrshire Council	May 2000	Not Applicable
Renfrewshire Council	October 2003	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Scottish Environment Protection Agency - Head Office	December 2005	Not Applicable
Scottish Environment Protection Agency - West Region	December 2005	Not Applicable
Registered Waste Transfer Sites		
Scottish Environment Protection Agency - Head Office	December 2005	Not Applicable
Scottish Environment Protection Agency - West Region	December 2005	Not Applicable
Registered Waste Treatment or Disposal Sites		
Scottish Environment Protection Agency - Head Office	December 2005	Not Applicable
Scottish Environment Protection Agency - West Region	December 2005	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
North Ayrshire Council - Planning Department	February 2016	Annual Rolling Update
Renfrewshire Council - Planning Department	October 2015	Annual Rolling Update
Planning Hazardous Substance Consents		
North Ayrshire Council - Planning Department	February 2016	Annual Rolling Update
Renfrewshire Council - Planning Department	October 2015	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2017	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	September 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	September 2017	Quarterly
Points of Interest - Education and Health PointX	September 2017	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2017	Quarterly
Points of Interest - Public Infrastructure PointX	September 2017	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2017	Quarterly

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Scottish Natural Heritage	July 2014	Bi-Annually
Areas of Adopted Green Belt Renfrewshire Council	November 2017	As notified
Areas of Unadopted Green Belt Renfrewshire Council	November 2017	As notified
Environmentally Sensitive Areas Scottish Government	January 2017	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves North Ayrshire Council Renfrewshire Council	August 2017 August 2017	Bi-Annually Bi-Annually
Marine Nature Reserves Scottish Natural Heritage	September 2017	Bi-Annually
National Nature Reserves Scottish Natural Heritage	August 2017	Bi-Annually
National Parks Scottish Government	August 2017	Bi-Annually
National Scenic Areas Scottish Government	August 2017	Bi-Annually
Nitrate Vulnerable Zones Scottish Government	September 2017	Annually
Ramsar Sites Scottish Natural Heritage	August 2017	Bi-Annually
Sites of Special Scientific Interest Scottish Natural Heritage	August 2017	Bi-Annually
Special Areas of Conservation Scottish Natural Heritage	August 2017	Bi-Annually
Special Protection Areas Scottish Natural Heritage	August 2017	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Scottish Environment Protection Agency - West Region** 5 Redwood Crescent, Peel Park, East Kilbride, South Lanarkshire, G74 5PP	Telephone: 01355 574200 Fax: 01355 574688
3	**Scottish Environment Protection Agency - Head Office** Erskine Court, The Castle Business Park, Stirling, Stirlingshire, FK9 4TR	Telephone: 01786 457700 Fax: 01786 446885
4	**Centre for Ecology and Hydrology** Maclean Building, Crowmarsh Gifford, WALLINGFORD, Oxfordshire, OX10 8BB	Telephone: 01491 838800 Fax: 01491 692424
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 023 8079 2000 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**North Ayrshire Council** Cunninghame House, Friars Croft, Irvine, Ayrshire, KA12 8EE	Telephone: 01294 324100 Fax: 01294 324344 Website: www.north-ayrshire.gov.uk
7	**The Coal Authority - Property Searches** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
9	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
10	**Scottish Natural Heritage** 12 Hope Terrace, Edinburgh, Midlothian, EH9 2AS	Telephone: 0131 447 4784 Fax: 0131 446 2279
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Appendix 3

SEPA Database Information

Powgree Burn is a river (ID: 10727), in the River Garnock catchment of the Scotland river basin district. The main stem is approximately 7.8 kilometres in length.

Condition in 2014 and future objectives

	2014	2021	2027	Long Term
Overall	Moderate	Good	Good	Good
Access for fish migration	High	High	High	High
Water flows and levels	Good	Good	Good	Good
Physical condition	Good	Good	Good	Good
Freedom from invasive species	High	High	High	High
Water quality	Moderate	Good	Good	Good

Hover over the 'When will it be addressed?' column to view further explanations, if present. Note: if no pressures are shown below there are no pressures present for this water body or protected area.

Impacted Condition	What pressures are responsible?	What activity is responsible?	How will the pressure be addressed?	Who is responsible?	When will it be addressed?
Water quality	Diffuse source	Rural sources	Priority catchment action	Public bodies and land managers working together	Underway - continuing to 2021

Article 4 explanation links

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Article 4 explanation links