

ENVIRONMENT

Brackley Property Developments Ltd

Axis 50 Near Willington

Derby

Phase 2 Geo-Environmental Assessment

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Derby

Phase 2 Geo-Environmental Assessment

Birmingham

Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB

T: 0121 233 3322

Cambridge

14-16 High Street, Histon, Cambridge

CB24 9JD

T: 01223 235 173

Leeds

Whitehall Waterfront, 2 Riverside Way, Leeds

LS1 4EH

T: 0113 233 8000

London

11 Borough High Street

London, SE1 9SE

T: 0207 407 3879

Manchester

4th Floor Carvers Warehouse, 77 Dale Street

Manchester, M1 2HG

T: 0161 233 4260

Market Harborough

12a Woodcock House, Compass Point Market Harborough, Leicestershire, LE16 9HW

T: 01858 455020

Nottingham

Waterfront House, Station Street, Nottingham NG2 3DQ

T: 0115 924 1100

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY	
Site Address	Land off Etwall Road, Willington, Derbyshire, DE65 6ED.
Proposed Development	It is understood that the client wishes to develop the site for a commercial/industrial end use, with mixed sized units varying from 50,000sq.ft to 400,000sq.ft.
Site Setting and History	The site is irregular in shape and occupies approximately 32 hectares (ha) of land. The site currently comprises five large open fields used for livestock grazing with a small yard area and two barns located towards the south east area of the site. The northern half of the site (north of the barns) is generally flat with the southern area noted to be undulating. The yard area comprises two small to medium sized barns of brick construction with suspected asbestos cement cladding and roofing. Some pieces of farm machinery are stored here with small stockpiles of old vehicle tyres. The site has been historically utilised agricultural land before sand & gravel and marl pits were created between 1880's and 1960's, and eventually landfilled with PFA, foundry wastes and domestic refuse. The site has since been returned to agricultural use, with farm sheds constructed to the centre of the site in the early 1990s.
Scope of Investigation works	The ground investigation comprised the advancement of five cable percussive boreholes to a maximum depth of 15.45m below ground level (bgl), 28 trial pits to a maximum depth of 5.1m bgl, collection of soil and groundwater samples for laboratory analysis and four following up ground gas and groundwater monitoring visits.
Encountered Ground Conditions	The ground conditions recorded generally confirm the published geology of the site with the exception of much wider deposits of Glacial Till being encountered than anticipated. In general, varying thickness of topsoil was recorded across the site, underlain by the Etwall Sand and Gravel member in the north, Made Ground in the centre of the site (up to 7.0m) and the Egginton Sand and Gravel member to the south of the site. Glacial Till was encountered sporadically across the site with weathered deposits of the Gunthorpe Member beneath. Groundwater has been recorded at standing depths of between 53.07mAOD and 57.12mAOD within the Made Ground deposits and 46.12mAOD and 55.92mAOD within the Glacial Till and Gunthorpe Member.
Geotechnical Appraisal	The Made Ground in its current condition is not suitable as a founding material. Where Made Ground deposits are $\leq 2.0\text{m}$ thick it may be possible to excavate and reengineer the materials through stabilisation techniques to allow for shallow spread foundations and ground bearing floor slabs. The shallow glacial Till, Etwall & Eggington Sand and Gravel Deposits and weathered Gunthorpe Member are considered suitable as a founding medium should they be in economic reach for traditional foundations types. In deeper areas of Made Ground ($\geq 3.0\text{m}$) a piled foundation solution will likely be required. Design sulphate class DS-3 and ACEC class AC-4s is required for concrete in contact with the Made Ground deposits, concrete in contact with natural ground only is required to be designed to sulphate class DS-4 and ACEC class AC-3s to resist attack from sulphate levels across the site.
Environmental Appraisal	Localised areas of Made Ground deposits are impacted with asbestos fibres. The risk posed by ACMs to ground workers can be mitigated by following PPE guidelines and maintaining good hygiene. The risk to future site users can be mitigated via the installation of a capping medium installed in areas of soft landscaping above Made Ground deposits. Leachable heavy metals and inorganics have been identified within the Made Ground deposits in several locations, these are considered to represent a low risk to controlled waters. The development is likely to comprise large warehouse buildings and hardstanding, therefore limiting rain infiltration and leaching of contaminants. Elevated heavy metals, inorganics and Total TPH have been identified within the groundwater samples recovered from within the landfill area. Concentrations of heavy metals and inorganics are considered to be low and represent a low risk when the

	migration pathway and low sensitivity of the underlying aquifer is considered. Given the cohesive nature of the soils beneath the landfill, it is considered unlikely that the TPH will become mobile and migrate into the wider environment. There is a risk that methane concentrations could accumulate within enclosed spaces within buildings positioned above the northern landfill area which presents a risk to future site users through explosion / flammability.
Waste Classification	Soil samples have been characterised against hazardous waste criteria using Hazwasteonline. The assessment indicates that the Made Ground soils analysed are likely to be classified as non-hazardous. For the purpose of this assessment, BWB has assumed that the materials on site are non-flammable, further laboratory testing is recommended for off site disposal. If other soils are to be disposed of off-site then further analysis may be required. Asbestos has been found within Made Ground deposits at the site.
Recommendations	A clean soil cover system will be required in landscaped areas above any Made Ground deposits. An earthworks specification should be produced prior to any earthworks being undertaken at the site. A Material Management plan is also likely to be required. A plot specific foundation assessment is recommended once the proposed development layouts and foundation loadings are confirmed. To mitigate the risk from methane ground gases, gas protection will need to be installed for a CS2 scenario across the central landfill area. Further plot specific assessment is considered to be required due to the potential variability of the Made Ground composition. A Piling Risk Assessment and working platform design will be required for the proposed development. A suitable qualified and experienced piling contractor should be consulted to confirm the detailed pile design for the proposed development. It is recommended that test piles are installed to ensure the detailed design is suitable for the end use. The Control of Asbestos Regulations 2012 should be referred to during the development to ensure safe working practices.
This summary should be read in conjunction with BWB's full report (ref. BUR-BWB-00-XX-YE-RP-0001_PH2_P1) and reflects an assessment of the Site based on information received by BWB at the time of production.	

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1. INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) was instructed by Brackley Property Developments Ltd (the Client) to carry out a Phase 2 Geo-environmental Assessment at the site known as Axis 50 near Willington, Derby. Details of the project brief are included in BWB proposal reference 180207/R2/0001/NTH2364/KES/RTR, dated 7th February 2018.
- 1.2 It is anticipated that the site is to be developed for a commercial/industrial end use, with mixed used units ranging between 25,000sq.ft and 250,000sq.ft in size and incorporating service yards car parks, access roads and limited soft landscaping. An indicative proposed development plan, current at the time of writing this report is included as **Appendix 1** (ref: 16-078-MP04) dated April 2018.
- 1.3 The development scheme is likely to change depending upon the development opportunities that arise. The proposed works are to understand potential development constraints to inform design and also support planning requirements although it is expected that further plot specific site investigation will be required.
- 1.4 At this time, BWB understand the site will be subject to an earthworks scheme to create development plateaus.

Previous Reports

- 1.5 The following geo-environmental reports have previously been completed for the site:
 - Tamdown Regeneration, on behalf of KHK Group, Site Investigation and Environmental Risk Assessment Report, reference TR.R062.2.2.1.EG, Issue 3 dated July 2004; and
 - Axis 50 by BWB Consulting Ltd, Phase 1 Geo-environmental Assessment, reference BUR-BWB-ZZ-XX-RP-YE-0001_DS_P1, dated March 2018.
- 1.6 It is understood that the Client has reliance on the above reports and therefore pertinent information has been included within this report.

Objectives

- 1.7 The objectives of the report are to assess:
 - The prevailing ground and groundwater conditions across the site;
 - The potential presence and extent of contamination in shallow soil and groundwater beneath the site;
 - The significance and magnitude of the observed contamination through comparison of analytical data to appropriate published environmental screening criteria;
 - The strength properties of the soil beneath the site to enable foundation design; and

- The ground gas regime beneath the site.
- 1.8 The above objectives will allow the preliminary Conceptual Site Model presented in the Phase 1 report to be verified and updated. The report has been completed in accordance with BS10175:2011(+A2:2017) 'Investigation of Potentially Contaminated Sites, Code of Practice' and CLR11 'Model Procedures for the Management of Land Contamination'.
- 1.9 This report presents the information obtained from a desk study and the supplementary ground investigations and contains relevant factual information from the previous investigations undertaken by others. Sections 2 to 5 of the report, together with the associated Figures and Appendices, provides a Ground Investigation Report (GIR), as defined in BS EN 1997-1:2004 and BS EN 1997-2:2007
- 1.10 The report also includes information required to form a Geotechnical Design Report as defined in BS EN 1997-1:2004, and the salient information, assessments and recommendations are presented in Sections 6 to 11 of the report, together with the associated Figures and Appendices.

Scope of Works

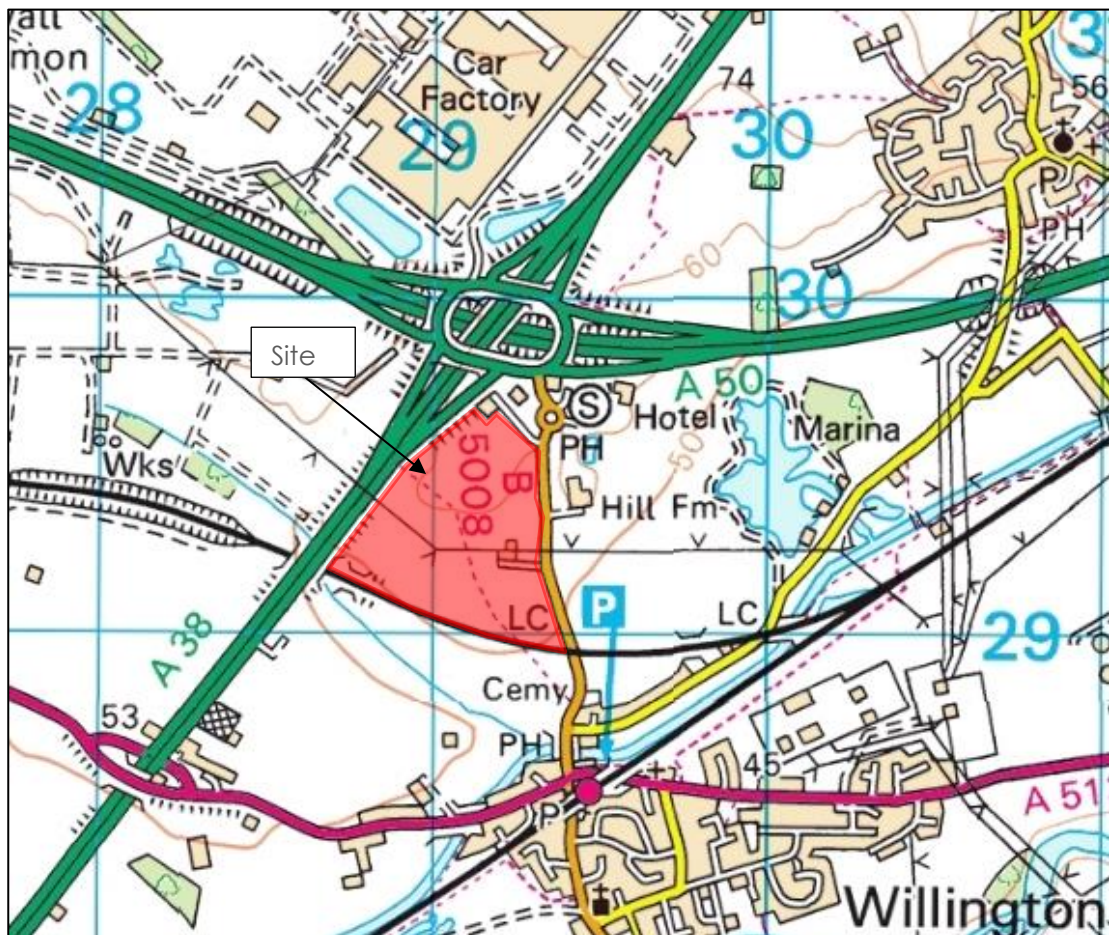
- 1.11 The intrusive ground investigation scope of works was completed by the 5th March 2018 with the ground gas monitoring programme completed by the 3rd April 2018. The investigation works comprised the following:
- Non-intrusive survey of excavation locations for underground utilities;
 - Collection of XYZ coordinates of each exploratory hole location;
 - 28 machine excavated trial pits;
 - 5 cable percussive boreholes;
 - Four gas and groundwater monitoring visits;
 - Chemical analysis of soils and groundwater; and
 - Geotechnical testing of soil.

2. THE SITE

Site Location

- 2.1 The site is located near Willington, Derby, centred at National Grid reference 429101, 329365. The approximate location of the site is shown in **Figure 2.1**.

Figure 2.1 Site Location Plan



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Site Description

- 2.2 The layout of the site with the main features is presented as **Drawing 1**. A detailed description of the key features of the site and its surrounding is included in the Phase 1 Report (ref: BUR-BWB-ZZ-XX-RP-YE-0001_DS_P1), dated March 2018.

Previous Report Summary

- 2.3 A review of the Tamdown Regeneration Site Investigation and Environmental Risk Assessment Report (ref: TR.R06.2.2.1.EG) dated July 2004 is included within the 2018 BWB Phase 1 report referenced above.

3. GROUND CONDITIONS

- 3.1 It is understood that much of the site is absent of superficial deposits although the Egginton Common Sand and Gravel deposits (Secondary A Aquifer) are indicated to be present in the southern area, although these are reported to have been wholly extracted. Findern Clay (Secondary B Aquifer) deposits are indicated across the northern area of site, with limited Etwall Sand and Gravel deposits (Secondary A Aquifer) also mapped. Head deposits (Secondary Aquifer (Undifferentiated)) may be present across the south-eastern boundary with Alluvium encroaching across the south western boundary. The site is indicated to be underlain by bedrock comprising the Gunthorpe Member of the Mercia Mudstone Group (Secondary B Aquifer).
- 3.2 The site is indicated to have Made Ground present across much of the central, northern and south-eastern areas as a result of gravel extraction and landfilling activities and has been proven to a depth of 5.3m bgl through historical investigation works. An intrusive ground investigation was completed across the site in July 2004 (report ref: TR.R062.2.2.1.EG). In areas outside of the landfill, topsoil was encountered to a maximum depth of 0.9m, overlying either Sands and Gravel deposits or Glacial Till deposits with Mercia Mudstone below. Note that the presence of Glacial Till is not obvious on geological mapping – refer to Section 6). Within the landfill areas (assumed central area), topsoil was encountered to 0.3m, with Pulverised Fuel Ash (PFA) and “clayey fill with refuse” beneath, proven to a maximum depth of approximately 5.3m bgl.

Hydrogeology

- 3.3 The Environment Agency (EA) classifies the superficial deposits and bedrock beneath the site as follows:
- Findern Clay – Secondary B Aquifer;
 - Etwall Sand and Gravel Member – Secondary A Aquifer;
 - Egginton Sand and Gravel Member – Secondary A Aquifer;
 - Head deposits – Secondary Aquifer (undifferentiated);
 - Alluvium deposits – Secondary A Aquifer; and
 - Gunthorpe Member; Secondary B Aquifer.

Hydrology

- 3.4 A drain is indicated to be present on site, located along the north-east boundary before becoming culverted approximately 50m north of the site where it passes beneath the A38/A50 junction. The Groundsure Report lists the drain as a Tertiary River with the Willington/Sands Brook located approximately 30m southwest of the site and listed as a Tertiary River.
- 3.5 The nearest major surface water feature is the Trent and Mersey Canal located 300m south of the site.

- 3.6 The site is not located within a Zone 2 or 3 floodplain, however a Zone 2 floodplain is located approximately 50m south of the site relating to Willington/Sands Brook.

4. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

Introduction

- 4.1 The risk posed by any contaminants in soil or groundwater will depend on the nature of the hazard, the probability of exposure, the pathway by which exposure occurs, and the likely effects on the receptors. A contaminant is defined as a substance that has the potential to cause harm, while a risk is considered to exist if such a substance is present in sufficient concentration to cause harm and a pathway exists for a receptor to be exposed to the substance.
- 4.2 The following sections discuss all the identified potential on and off site sources, pathways and receptors in the context of the proposed development and plausible pollutant linkages which may represent a risk to identified receptors such as human health and/or controlled waters from the data gained from the desk study. At this stage the assessment is qualitative and aimed to determine all pollutant linkages, irrespective of significance or allowing for uncertainty.
- 4.3 Three impact potentials exist for any given site; these are:
- The site impacting upon itself;
 - The site impacting on its surroundings; and
 - The surroundings impacting on the site.
- 4.4 All three impacts need to be considered in a risk assessment.
- 4.5 A Source, Pathway, Receptor analysis has been undertaken for the site based on the information provided in the BWB Phase 1 Report. This is presented as **Table 5**.
- 4.6 **Sources (S);** These are potential or known sources of contamination that may relate to a former land use or present site feature or process (e.g. fuel storage tanks).
- 4.7 **Pathways (P);** A pathway is defined as a mechanism or route by which a contaminant comes into contact with, or otherwise affects a receptor. Pathways by which the identified receptors may be impacted upon in the context of the proposed development.
- 4.8 **Receptors (R);** Receptors are defined as people, living organisms, ecological systems, controlled waters, atmosphere, structures and utilities that could be adversely affected by contaminant(s).

Table 4.1: Preliminary Conceptual Site Model

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
S1: On site: Made Ground / infilled ground. Recorded elevated concentrations of sulphate, boron and hazardous ground gases. Known hotspots of petroleum hydrocarbons. Known leachable boron, arsenic and petroleum hydrocarbons. Other possible contaminants to include asbestos, heavy metals, pesticides, herbicides and hazardous ground gases.	P1: Direct contact, incidental ingestion and inhalation of vapours and particulates.	R1: Construction personnel	Md	Lw	M/L	A ground investigation is recommended in order to assess current concentrations of organic and inorganic contaminants within soils and groundwater at the site that may impact construction workers and future site users via ingestion, direct contact and inhalation pathways.
		R2: Future site users (commercial)	Md	UI	L	
	P2: Vertical migration of contaminants in the soil leachate.	R3: Underlying Secondary A Aquifer (Etwall Sand and Gravel Member, Egginton Sand and Gravel Member & alluvium deposits)	Mi	Lw	L	It is understood that the majority of the granular deposits across the site have wholly been removed from site, if this is correct then contamination migration in soil leachates should be reduced by the cohesive deposits present on site. Further investigation should be conducted to prove ground conditions and establish the hydrogeological profile of the site.
	P3: Lateral migration of contaminated groundwater.	R4: Offsite controlled water receptors – Secondary A Aquifers, the Willington/Sands Brook and numerous drains/culverts.	Mi	Lw	L	It is likely that these contaminant linkages could be removed through remediation/mitigation measures such as the provision of a hardstanding surface layer, capping layers in areas of soft landscaping, ground gas/vapour protection measures, the use of Personal Protection Equipment (PPE) and good personnel hygiene during construction works.
	P4: Direct contact	R5: Utility pipes	Md	Lw	M/L	Testing results from ground investigation may be required by the water utility providers to confirm the most suitable pipe materials.
		R6: Buried structures	Md	Li	M	Sulphates and low pH in the ground could accelerate the degradation of buried concrete structures (e.g. foundations). Ground investigation should include an assessment of the concrete design class.

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
						Suitably chemically resistant concrete should be adopted for any below ground structures.
	P5: Migration and accumulation of ground gases in enclosed spaces	R1: Construction personnel	Sv	Lw	M	Ground gas assessment in line with guidance detailed in CIRIA 665 and BS8485 2015 should be undertaken to calculate the gassing regime beneath the site.
		R2: Future site users (commercial)				
S2: Potential contamination from off-site sources as a result of historical and current uses, most notably infilled ground, works, petrol stations, earthworks and railways. Contaminants to potentially include hydrocarbons, Perfluorinated Compounds (PFCs (firefighting water), heavy metals, inorganics and hazardous ground gases.	P2: Leaching and permeation through the soil profile and migration off-site	R3: Secondary A Aquifers underlying and surrounding the site	Md	UI	L	Ground investigation with ground gas and groundwater monitoring wells installed around the site boundaries should be conducted. A ground gas and groundwater monitoring program will aid the assessment of potential contamination to risks to human health and controlled water receptors from off-site sources.
	P3: Migration into buildings through foundation cracks, service entry points	R7: Confined spaces in buildings, future site users	Sv	UI	M/L	
VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low						
KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely						

5. PHASE II ENVIRONMENTAL AND GEOTECHNICAL GROUND INVESTIGATION

5.1 Intrusive ground investigation works were undertaken between 21st February and 5th March 2018 and comprised the following works:

- Clearance of investigation locations by a specialist buried services tracing company;
- Collection of coordinates and elevations of exploratory hole locations;
- The advancement of five cable percussive boreholes (BH01 to BH05 inclusive) to a maximum depth of 15.45m below ground level (bgl) with completion of SPTs and installations of single/dual gas and groundwater monitoring wells;
- The advancement of 28 machine excavated trial pits (TP01 to TP10, TP12 to TP21 and TP23 to TP30) to a maximum depth of 5.1m bgl;
- Hand Shear Vane (HSV) testing at regular intervals within cohesive arisings;
- Collection of environmental soil and groundwater samples for chemical analysis at a UKAS and MCERTS accredited laboratory;
- Collection of bulk and disturbed soil samples for geotechnical analysis at a UKAS accredited laboratory; and
- Four post investigation ground gas and groundwater level monitoring visits.

5.2 An exploratory hole location plan is presented as **Drawing 2**. BWB exploratory hole records are presented as **Appendix 2**, Drillers' Logs are presented as **Appendix 3**, the SPT calibration certificate is presented in **Appendix 4**, and the post investigation gas and groundwater monitoring data is presented as **Appendix 5**.

5.3 The site investigation works were carried out in general accordance with BS5930:2015 'Code of Practice for Site Investigations' and BS10175:2011+A2:2017 'Investigation of Potentially Contaminated Sites'.

Chemical Sampling Strategy

5.4 The Phase 1 Desk Study Report revealed a number of potential contamination sources, most notably an area of landfill located across the centre of the site. The exploratory hole location rationale is as follows:

- Locations BH01 to BH04, TP02, TP05, TP07 to TP09, TP12 to TP23 and TP25 were positioned within the inferred landfill area to assess the potential contamination from this source and delineate the feature; and
- Locations BH05, TP01 to TP04, TP06, TP10, TP18, TP24 and TP26 to TP30 were positioned to provide coverage to assess shallow ground conditions.

Chemical Analytical Strategy

Soil Strategy

5.5 Selected soil samples collected from exploratory hole locations were sent to I2 Analytical Services (UKAS and MCERTS accredited) for chemical analysis. The following chemical analytical testing was undertaken:

- 26 soil samples tested for a soil suite (BWB Standard Suite) comprising arsenic, barium, beryllium, water soluble boron, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate (2:1 extract), total phenols, total cyanide, free cyanide, complex cyanide, fraction of organic carbon, pH, Polycyclic Aromatic Hydrocarbons (PAHs) (United States Environment Protection Agency priority 16 compounds) and Total Petroleum Hydrocarbons (TPH) C6-C40;
- Eight soil samples tested for TPH speciated to the UK Criteria Working Group (TPHCWG) aliphatic and aromatic compounds including benzene, toluene, ethylbenzene and xylene (BTEX);
- Five soil samples for Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs);
- Five soil samples for polychlorinated biphenyls (PCBs);
- 20 soil samples for asbestos screening; and
- Ten soil samples tested for a suite of common leachable contaminants, namely arsenic, barium, beryllium, water soluble boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate (2:1 extract), sulphate, total cyanide and pH.

5.6 The results of the soil chemical testing are presented as **Appendix 6**.

Groundwater Strategy

5.7 Groundwater samples obtained using a bailer following the removal of 3 times the well volume of water or the well bailed dry and was allowed to recharge. The groundwater samples were sent to I2 Analytical Services (UKAS and MCERTS accredited) for the following suite of groundwater chemical testing:

- Six water samples tested for arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, conductivity, soluble sulphate, ammoniacal nitrogen, total phenols, total cyanide, pH, total organic carbon, PAHs (US EPA priority 16 compounds);
- Five water samples tested for TPHCWG including BTEX;
- Five water samples for VOCs & SVOCs; and
- Five water samples for EQS Parameters suite including Dissolved Oxygen Content (DOC), calcium and chromium VI.

5.8 The results of the water chemical testing are presented as **Appendix 7**.

Geotechnical Strategy

- 5.9 The cable percussive borehole locations were positioned across the site, with four targeting the known landfill to assess prevailing geotechnical characteristics and strength properties as the proposed development layout is yet to be confirmed. The trial pits were positioned to further delineate the landfill and assess shallow ground conditions, strength properties and characteristics across the wider site area.
- 5.10 In-situ soil strength testing comprising SPTs were undertaken with the cable percussive. SPT 'N' values are included on the exploratory hole logs presented as **Appendix 2**.
- 5.11 Selected disturbed and bulk samples were collected from the investigation locations and sent to the geotechnical project laboratory (I2 Analytical Services Ltd), which is UKAS accredited. The following geotechnical testing was undertaken;
- 20 samples tested for moisture content;
 - 11 samples tested for Atterberg (liquid and plastic) limits;
 - 12 samples tested for particle size distribution by wet sieve
 - Six samples tested for particle distribution by pipette;
 - Five samples tested for bulk density;
 - 15 samples tested for BRE Suite comprising aqueous sulphate and pH; and
 - Four samples tested for quick undrained triaxial testing.
- 5.12 The results of the geotechnical testing are included as **Appendix 8**.

Limitations and Uncertainty

- 5.13 BH04 was terminated at a shallower depth than targeted due to an obstruction at the depth of 10.0m bgl, considered most likely to be a cobble or boulder.
- 5.14 During the construction of the groundwater monitoring well within BH01, the drilling casings became breached, meaning all casing had to be removed before the well screen and filter materials could be put in place. It is therefore likely that some of the Made Ground could have collapsed into the hole and bentonite seal not positioned correctly, therefore any groundwater or ground gas results at this location may not be a true reflection of the site conditions and should be considered within the CSM.
- 5.15 Due to the materials within the landfill (predominately Pulverised Fuel Ash (PFA)), trial pits TP05, TP07, TP09, TP13, TP14, TP17 & TP22 were all ended before the base of the landfill could be proven because of the presence of water creating very soft ground once backfilled, which could present a health and safety issue.

6. GROUND CONDITIONS ENCOUNTERED

Geological Summary

- 6.1 The ground conditions recorded generally confirmed the published geology of the site with the exception of much wider deposits of Glacial Till being encountered than anticipated. In general, varying thicknesses of topsoil were recorded across the site, underlain by the Etwall Sand and Gravel member to the north, Made Ground in the centre of the site and the Egginton Sand and Gravel member to the south of the site. Glacial Till was encountered sporadically across the site with weathered deposits of the Gunthorpe Member beneath.
- 6.2 Following a further review of BGS 1:50,000 solid and drift map (Sheet Number 141 - Loughborough, dated 2001), it would appear that a glacial channel is indicated in the surrounding area, from the findings of this investigation BWB would suggest this feature is present on site.
- 6.3 The recorded ground conditions are summarised in **Table 6.1** below and **Drawing 3** presents geological cross sections through the site. Uncorrected SPT results collected from the borehole locations are presented on the exploratory hole records presented in **Appendix 2**.

Table 6.1 Summary of Ground Conditions

Stratum	Top Depth (m)		Base Depth (m)		Thickness (m)		SPT N ₆₀ Value	
	Min	Max	Min	Max	Min	Max	Min	Max
Topsoil	Ground level		0.15	1.05	0.15	1.05	-	-
Made Ground	0.15	1.05	0.35	7.0	0.35	6.8	0	55
Egginton Sand and Gravel Member	0.25	1.4	0.45	Not Proven	0.15	Not Proven	-	-
Etwall Sand and Gravel Member	0.3	1.75	1.5	4.0	0.9	Not Proven	-	-
Glacial Till	0.3	7.0	1.1	Not Proven	0.25	Not Proven	11	52
Gunthorpe Member	1.1	12.5	2.0	Not Proven	Not Proven		28	61

Geological Descriptions

Topsoil

- 6.4 Topsoil was encountered at all locations with a typical thickness of between 0.15m and 0.3m with one location (TP12) recording 1.05m of topsoil, however BWB would suggest

this is an anomaly and should not be used in any quantity estimates. The composition generally displayed consistency, typically comprising brown gravelly fine and medium sand with frequent rootlets.

- 6.5 The depth of topsoil over the site may vary from that encountered at the locations investigated within the scope of this investigation, which may result in inaccurate estimations of topsoil quantities on the site.

Made Ground

- 6.6 Made Ground was encountered within 19 exploratory holes at the site, typically across the centre of the site within the area of the known landfill. The Made Ground was encountered beneath the topsoil at the site with thicknesses ranging between 0.35m and 6.8m.
- 6.7 Inferred Made Ground thicknesses across the site are indicated on **Drawing 4**.
- 6.8 The Made Ground deposits were recorded in multiple forms, most commonly as either sandy gravel or gravelly sand of Pulverised Fuel Ash (PFA). Made Ground was also recovered as black sandy gravel with high cobble content (brick waste) or to include glass bottles, paper, cloth, plastic, clothing items, timber and metal products (household wastes). During the ground investigation no apparent landfill cells were noted, the types of wastes recovered appeared to be sporadic, with PFA encountered both above and below the household waste.
- 6.9 In two locations (TP09 & TP19) materials classified as reworked natural ground were recorded between depths of 0.95m and 1.1m and 0.45m and 1.75m respectively. These arising's were logged as either a orangish brown sand and gravel (reworked Etwall Sand and Gravel Member) or a soft brown to greyish brown sandy gravelly clay (reworked Alluvium) with PFA recorded beneath at both locations.
- 6.10 SPT N_{60} values within the Made Ground were recorded in the range 0 and 55 blows, indicating extremely variable deposits. A plot of corrected SPT ' N_{60} ' Value Vs Depth is presented as **Figure 6.1** below.
- 6.11 Five samples of the Made Ground were sent for moisture content analysis, recording results of between 17% and 44%. An A Line Plasticity Chart is included with **Appendix 8**.
- 6.12 Five samples of the Made Ground were tested for particle density, recording results between 2.14 and 2.51Mg/m³.
- 6.13 Three PSD tests were undertaken on samples from the PFA arising's, a summary of the results is provided in **Table 6.2** overleaf.

Table 6.2 PSD Results Summary – Made Ground

Location	Depth (m)	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Clay/ Silt Content (%)	Earthworks Classification
BH02	1.2 – 2.0	0.0	0.0	51.0	49.0	2A/B

BH03	1.2 – 2.0	0.0	32.4	36.8	30.8	2A/B
BH04	1.2 – 2.0	0.0	9.7	39.3	51.0	2C

Etwall Sand and Gravel Member

- 6.14 Deposits of the Etwall Sand and Gravel Member were recorded in the norther, western and southwestern areas of site, being encounter within locations TP01 to TP04, TP06, TP08, TP10, TP15, TP18 and TP19 to a maximum depth of 4.0m bgl (TP19, thickness not proven). The arising's were typically logged in the northern extents of the site and described as;
- Light brown becoming organics born slightly clayey sandy gravel;
 - Orangish brown occasionally grey sandy gravel;
 - Orange sand and gravel;
 - Firm reddish brown mottled grey slightly sandy gravelly clay; and
 - Brown gravelly fine to coarse sand.
- 6.15 Where encountered, the cohesive airings of the Etwall member were recorded beneath the granular deposits and was typically only recorded with a thickness of approximately 0.5m.
- 6.16 No in-situ testing was undertaken within the Etwall Sand and Gravel Member.
- 6.17 Three PSD tests were undertaken on samples from the Etwall Sand and Gravel Member, a summary of the results is provided in **Table 6.3** below.

Table 6.3 PSD Results Summary – Etwall Sand and Gravel Member

Location	Depth (m)	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Clay/ Content (%)	Silt	Earthworks Classification
TP03	0.5 – 1.0	0.0	64.2	28.6	7.2		1 A/B
TP18	1.0 – 1.3	0.0	49.2	44.4	6.3		1 A/B
TP19	2.0 – 2.5	5.9	59.2	30.7	4.3		1 A/B

Egginton Sand and Gravel Member

- 6.18 Deposits of the Egginton Sand and Gravel Member were recorded at locations BH05, TP23 and TP25 to TP29 to a maximum depth of 3.4m bgl with a maximum thickness of 1.3m (TP26). The arising's were typically logged to the south of the site (south of the known landfill area) and described as:
- Orangish brown slightly gravelly sand;
 - Soft yellowish mottled orange lightly sandy gravelly clay;
 - Stiff reddish brown mottled grey slightly gravelly slightly sandy clay;
 - Orange sand and gravel;
 - Yellowish brown sandy gravel;

- Reddish brown sand and gravel;
 - Yellow, orange and grey sandy gravel;
 - Firm orange mottled reddish brown sandy gravelly clay;
 - Reddish brown slightly clayey sand and gravel;
 - Stiff brown mottled grey gravelly clay; and
 - Reddish brown occasionally yellow and grey slightly clayey fine sand.
- 6.19 Again, where encountered, the cohesive arisings of the Egginton Member were recorded beneath the granular deposits.
- 6.20 No in-situ testing was undertaken within the Egginton Sand and Gravel Member.
- 6.21 Two HSV tests were undertaken within the cohesive deposits of the Egginton deposits. The tests comprised three readings, the average undrained shear strength values obtained from in-situ HSV tests taken within the cohesive deposits were recorded between 64kPa and 113kPa indicating medium to high strength deposits. Shear strengths have been noted to increase with depth.
- 6.22 Three PSD tests were undertaken on samples from the Egginton Sand and Gravel Member, a summary of the results is provided in **Table 6.4** below.

Table 6.4 PSD Results Summary – Egginton Sand and Gravel Member

Location	Depth (m)	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Clay/ Silt Content (%)	Earthworks Classification
TP26	0.8 – 1.2	0.0	5.2	20.9	73.9	2A/B
TP27	0.4 – 1.0	0.0	53.6	31.7	46.4	1A/B
TP29	0.4 – 1.0	0.0	66.1	26.5	7.4	1A/B

Glacial Till

- 6.23 Glacial Till deposits were recorded in 11 locations across the site and were generally recorded as the following;
- Firm orangish brown slightly sandy clay;
 - Medium dense to dense orangish brown and light brown fine and medium grained sand;
 - Firm orangish brown slightly gravelly laminated clay;
 - Stiff reddish brown, or reddish brown mottled grey slightly sandy gravelly clay; and
 - Firm orangish mottled light grey and occasionally bluish grey sandy gravelly clay.
- 6.24 The deposits were generally logged as containing gravels of quartzite, flint, sandstone and mudstone with occasional traces of gypsum.

- 6.25 The glacial deposits were found to be locally absent, and recorded to a maximum depth of 15.45 bgl (BH05), the thickness of the Glacial Till deposits was not proven at multiple locations across the site.
- 6.26 SPT N_{60} values within the cohesive Glacial Till deposits were recorded to range between 11 and 54 blows, indicating firm to stiff deposits. SPT N_{60} values within the granular Glacial Till deposits were recorded to range between 11 and 46 blows indicating medium dense to dense deposits (**Figure 6.1**). No discernible correlation with depth was observed.
- 6.27 HSV tests obtained within the cohesive Glacial Till deposits recorded results between 47kPa and ≥ 130 kPa, indicating medium to high strength soils. An increase of shear strength has been noted with depth.
- 6.28 Moisture content analysis carried out on samples from the Glacial Till deposits recorded results between 12% and 23%, with plasticity index results between 19% and 32%.
- 6.29 Two PSD tests were undertaken on samples from the Glacial Till, a summary of the results is provided in **Table 6.5** below.

Table 6.5 PSD Results Summary – Glacial Till

Location	Depth (m)	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Clay/Silt Content (%)	Earthworks Classification
BH04	7.0 – 8.0	0.0	4.6	19.6	75.8	2A/B
BH05	1.0 – 2.0	0.0	6.8	9.6	83.6	2A/B

- 6.30 Two undrained triaxial tests were completed on U100 samples of the Glacial Till, the results are summarised below in **Table 6.6**.

Table 6.6 Triaxial Results – Glacial Till

Location	Depth (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Shear Strength (kPa)
BH04	7.0 – 8.0	25	2.4	1.91	70	30
BH05	1.0 – 2.0	21	1.99	1.64	80	71
					160	132
					350	236

Gunthorpe Member

- 6.31 The Gunthorpe Member was encountered as weathered, typically noted as a stiff to very stiff red, reddish brown or brown to dark brown gravelly friable clay.
- 6.32 SPT N_{60} values within the Gunthorpe Member were recorded to range between 23 and 62 blows (**Figure 6.1**). No discernible correlation with depth was observed.

- 6.33 HSV tests undertaken within the Gunthorpe Member recorded results between 70kPa and ≥ 130 kPa, indicating medium to high strength soils, shear strengths have been noted to increase with depth.
- 6.34 Moisture content analysis carried out on samples from the Gunthorpe Member deposits recorded results between 21% and 26%, with plasticity index results between 17% and 31%.
- 6.35 One PSD tests were undertaken on samples from the Gunthorpe Member, a summary of the result is provided in **Table 6.7** below.

Table 6.7 PSD Results Summary – Gunthorpe Member

Location	Depth (m)	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Clay/ Silt Content (%)	Earthworks Classification
BH02	4.0 – 5.0	0.0	1.5	7.7	90.8	2A/B

- 6.36 Two undrained triaxial tests were completed on U100 samples of the Gunthorpe Member, the results are summarised below in **Table 6.8**.

Table 6.8 Triaxial Results – Gunthorpe Member

Location	Depth (m)	Moisture Content (%)	Bulk Density (mg/m ³)	Dry Density (mg/m ³)	Cell Pressure (kPa)	Shear Strength (kPa)
BH01	4.0 – 4.45	22	2.12	1.74	40	144
					80	149
					200	172
BH02	5.0 5.45	29	1.96	1.52	50	38
					100	42
					200	46

In Situ Testing

Standard Penetration Tests

- 6.37 SPT results collected from the borehole locations are presented on the exploratory hole records presented in **Appendix 2**. A plot of corrected SPT 'N' Value vs. Depth is presented as **Figure 6.1**.

Figure 6.1 Corrected SPT N Value vs. Depth

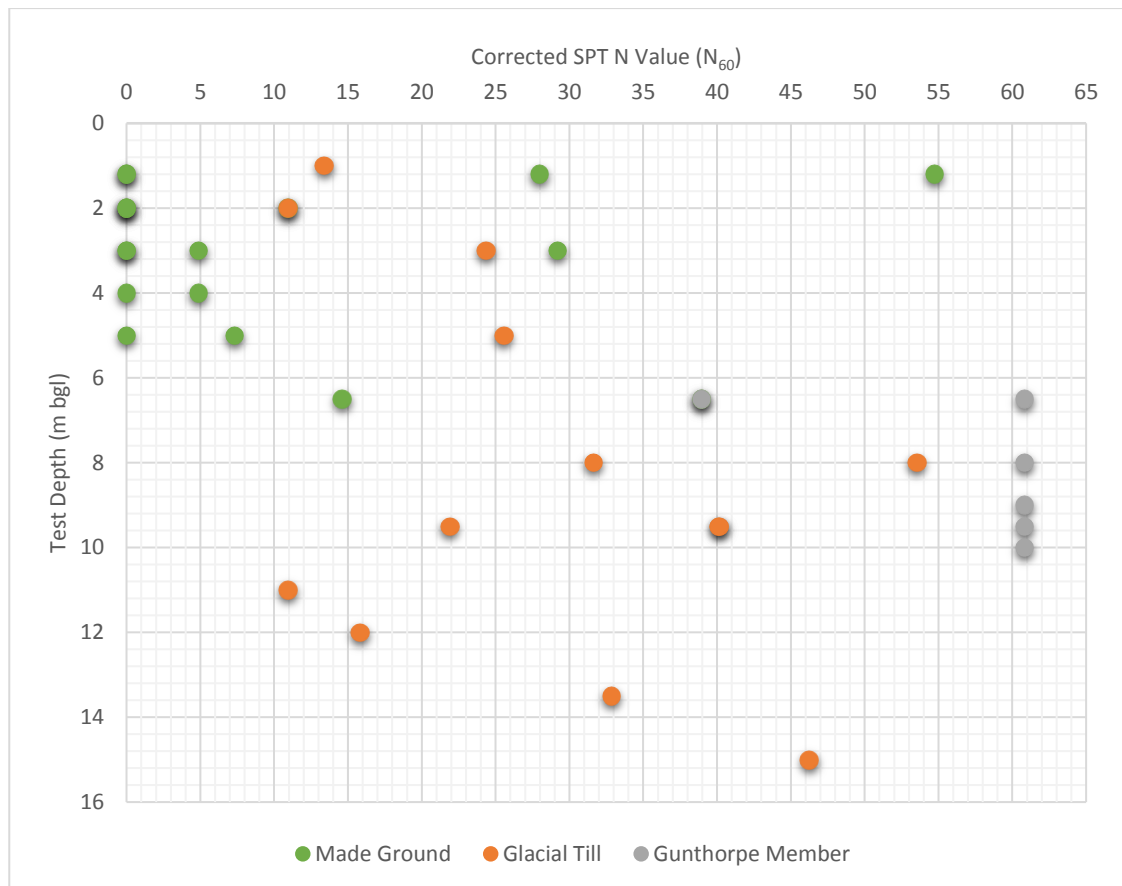
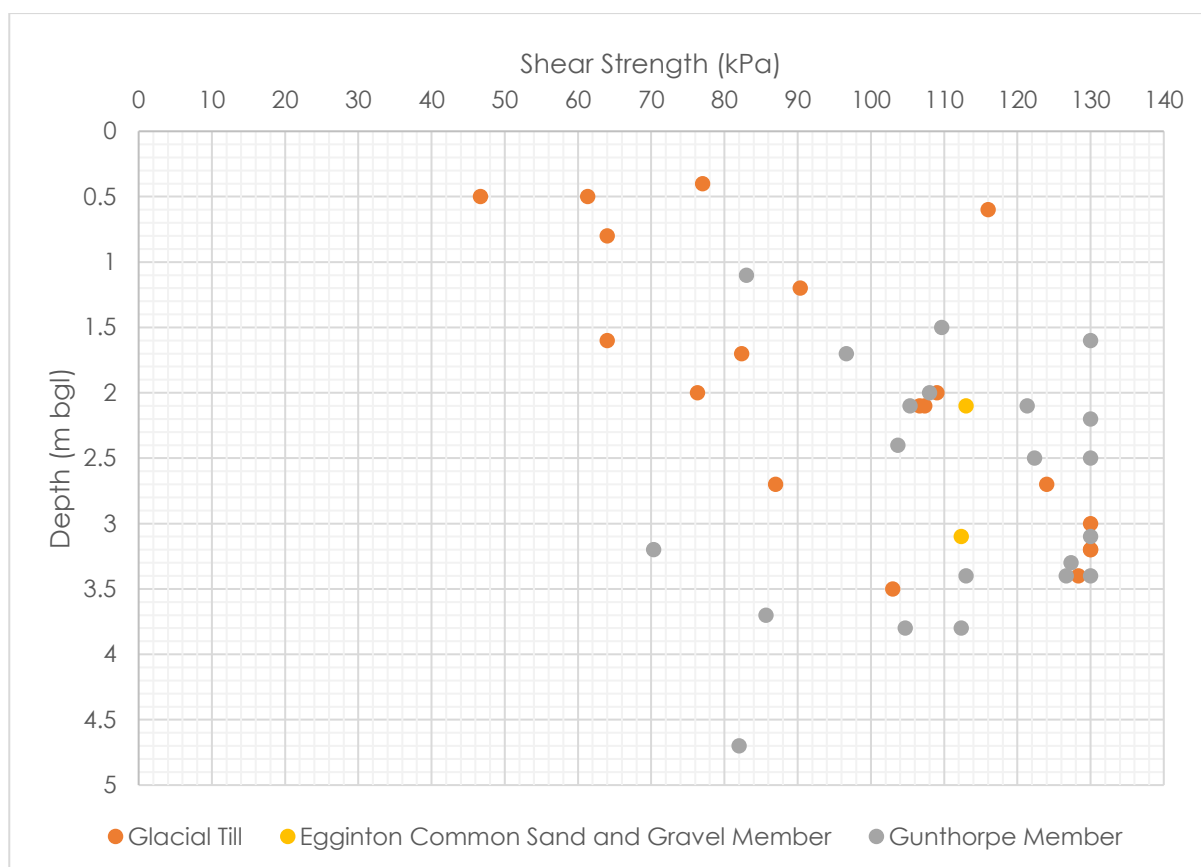


Figure 6.2 In Situ Hand Shear Vane Results vs. Depth



Hydrogeology

6.39 Groundwater strikes encountered during the ground investigation are summarised in **Table 6.9** below.

Table 6.9 Groundwater Strikes

Location	Depth (m bgl)	Strata	Comments
BH01	1.0	Made Ground	Slow ingress noted, sealed off at 3.5m
BH02	1.0	Made Ground	Seepage
BH03	4.0	Made Ground	-
BH05	0.9	Egginton Common Sand and Gravel Member	Seepage encountered at boundary with Glacial Till deposits, sealed off at 1.0m
	9.1	Glacial Till	-
TP02	1.5	Etwall Sand and Gravel Member	Seepage noted
TP03	1.65	Etwall Sand and Gravel Member	Seepage noted
TP05	3.6	Made Ground	Slow ingress
TP06	1.85	Etwall Sand and Gravel Member	Seepage noted

Location	Depth (m bgl)	Strata	Comments
TP07	2.4	Made Ground	Slow ingress
TP08	1.85	Etwall Sand and Gravel Member	-
TP09	2.45	Made Ground	Slow ingress noted
TP10	0.9	Etwall Sand and Gravel Member	Steady ingress noted
TP12	2.05	Made Ground	Rapid ingress
TP13	2.4	Made Ground	Slow ingress noted
TP14	4.2	Made Ground	Seepage noted
TP15	2.5	Etwall Sand and Gravel Member	Seepage noted
TP17	2.9	Made Ground	Moderate ingress noted
TP18	1.95	Etwall Sand and Gravel Member	Seepage noted
TP19	3.2	Etwall Sand and Gravel Member	Seepage noted
TP20	2.4	Made Ground	Steady ingress
TP21	1.2	Made Ground	Steady ingress
	3.1		Rapid ingress
TP22	1.0	Made Ground	Seepage noted
TP24	0.6	Glacial Till	Seepage noted
	2.1		Slow ingress
	3.5		Slow ingress
TP26	0.9	Egginton Common Sand and Gravel Member	Seepage noted
TP29	1.0	Egginton Common Sand and Gravel Member	Seepage noted

6.40 Standing water levels recorded within the boreholes installed in the Landfill deposits ranged between 53.07mAOD (BH03) and 57.12mAOD (BH02 S). The varying recorded depths would suggest this represents a perched groundwater body is present. The monitoring data indicates that there is no discernible flow direction, based upon the limited data available it would appear that the groundwater is pooling at the lowest point of the landfill.

6.41 Water levels within the boreholes installed into the underlying natural deposits were recorded to range between 46.12mAOD (B505) and 55.92mAOD (BH02 D). Due to the limited number of boreholes installed within the natural ground a flow direction can not be calculated. Given that these monitoring wells are within cohesive strata, the groundwater is considered to be reflective of minor accumulations within more granular pockets.

Hydrology

6.42 No surface water monitoring has been undertaken as part of this investigation.

Contamination Observations

- 6.43 During the ground investigation a number of potential contamination issues were identified within the Made Ground deposits across the site, a summary of these is presented below in **Table 6.10**.

Table 6.10 Summary of Contamination Observations

Location	Depth (m bgl)	Observations
BH03	2.4 – 2.45	Suspected asbestos lagging recorded
TP12	2.05 – 2.7 (terminated depth)	Strong hydrocarbon odour noted when groundwater disturbed with visible sheen and possible product observed
	2.4 – 2.7	Suspected asbestos cement sheeting noted
TP20	0.6 – 1.0	Suspected asbestos lagging noted
TP21	0.6 – 1.0	Suspected asbestos lagging noted

- 6.44 No contamination observations were noted during the groundwater sampling visit or subsequent gas and groundwater monitoring period.

7. GEOTECHNICAL ASSESSMENT

Introduction

- 7.1 It is anticipated that the site is to be developed for a commercial/industrial end use. An indicative development plan supplied to BWB, current at the time of writing this assessment (ref; 16-078-MP04) dated April 2018, incorporates the construction of up to 11 units ranging between 25,000sq.ft and 250,000sq.ft in size, service yards car parks, access roads and limit soft landscaping.
- 7.2 The proposed development plan is presented as **Appendix 1** although this is understood to be for preliminary design and is expected to change.
- 7.3 At this time, BWB understand the site will be subject to an earthworks scheme to create development plateaus.
- 7.4 At the time of writing, specific column loads for the proposed developments are unknown, floor slab loadings of 50kPa and foundation pressures of 150kPa have been assumed for a preliminary assessment.
- 7.5 Ground conditions were generally found to comprise topsoil over the entire site overlying varying thickness of Made Ground across the centre of the site with the Gunthorpe Member beneath. The Etwall Sand and Gravel Member was recorded to the north of the site underlain by the Gunthorpe Member, with Glacial Till to the south of the site with sporadic recordings of Egginton Common Sand and Gravel Member across the southern area of site.

Geotechnical Constraints

- 7.6 The results of the ground investigation have identified the Made Ground to be highly variable in nature. The results of the SPT and HSV plots presented as **Figures 6.1** and **6.2** also confirm the variability of this stratum.
- 7.7 In addition to the above, some of the waste materials contained within the landfill (i.e. brick wastes) could stop the advancement of CFA piles.
- 7.8 The Glacial Till deposits were recorded at sporadic depths and thicknesses across the site and often found to be absent. Based upon the in-situ testing and laboratory analysis results this strata may be a suitable founding strata for lightly and moderately loaded structures.
- 7.9 The underlying weathered Gunthorpe Member is anticipated to provide sufficient bearing capacities for the assumed column loadings.
- 7.10 Due to the thickness of the Made Ground (up to 7.0m), it is considered that shallow spread foundations are not a viable founding method for much of the site and therefore a piled solution will be required in these areas. A breakdown of suitable foundation solutions for each area of the site is presented as **Drawing 5**.

- 7.11 Perched groundwater has been identified within the Made Ground deposits across the site. Groundwater will likely be encountered in the sand and gravel deposits across the site and deeper granular deposits of the Glacial Till ($\geq 9.0\text{m}$ bgl). Therefore, when piling within these strata, borings may be prone to inundation and collapse unless suitable methodologies are adopted to counter the identified risk.
- 7.12 Blowing sand deposits was noted at one location (BH05) between 12.0m and 15.45m bgl, piling techniques may have to be altered to mitigate this risk.
- 7.13 Wide spread Asbestos Containing Material (ACM) have been recorded within the landfill materials, should CFA piles be used across the site then protection measures for the groundworks will be required to be put in place.

Foundation Solutions

Traditional Spread Foundations

- 7.14 The untreated Made Ground is not considered a suitable founding strata for conventional spread footings owing to the risk of unpredictable total and differential settlements.
- 7.15 In areas where the Made Ground (PFA & re-worked natural ground) is less than $\leq 2.0\text{m}$ thick and sits upon suitable natural deposits, it may be possible to excavate the Made Ground and re-engineer the ground through stabilisation techniques to provide adequate bearing capacities for anticipated loads.
- 7.16 In the northern and southern areas of site, the near-surface natural strata may provide a suitable founding medium for traditional foundations should these be in economical reach subject to finished design levels.
- 7.17 Individual structures should ideally be supported fully on one type of stratum, i.e. solely within the Glacial Till or weathered Gunthorpe Member, in order to limit any potential for differential settlements. This may prove to be difficult to achieve with various geological sequences being encountered across the site without an earthworks scheme being completed to create consistent founding mediums.
- 7.18 For this assessment, an indicative foundation pressure of 150kPa has been assumed for the site, it may be expected that a traditional pad foundation founded within either the Glacial Till or Gunthorpe Member will achieve the assumed bearing capacities with settlements limited to $\leq 25\text{mm}$. This should be further assessed when precise details of the proposed developments are available.

Piles

- 7.19 A piled foundation solution will be required across the central area of the site (within the deeper landfilled area ($\geq 3.0\text{m}$), penetrating through the Made Ground and Glacial Till where present) and founding into the underlying Gunthorpe Member, typically recorded between 3.5m and 12.5m bgl.

- 7.20 The particular performance and overall design requirements of the piles will depend on a number of factors including type, method of installation, length and diameter of the pile together with the specific loading and layout details for the proposed structure.
- 7.21 The advice of specialist piling contractors should be sought to develop the most suitable and economic solution based on their proprietary systems and in the context of the particular ground conditions encountered at the site.
- 7.22 A piling platform should be designed to accommodate the chosen piling rig in accordance with guidance set out in BRE470 'Working Platforms for Tracked Plant'.

Ground Improvement Techniques

- 7.23 Based on the identified ground conditions, BWB considered that the landfill waste (excluding the PFA) cannot be improved, therefore ground improvement techniques are considered unsuitable as a founding option at this time.

Floor Slabs

- 7.24 For the purpose of this assessment, a floor slab loading of 50kPa has been assumed. As for structural foundations, ground floor slabs laid on to any untreated Made Ground risk unacceptable total and differential settlements, as a result of its variability and compressibility.
- 7.25 A ground bearing floor slab may offer suitable loading capacities where the development is placed on shallow spread foundations. However, this is dependent on any Made Ground being excavated to depth and re-engineered to limit differential settlements.
- 7.26 Floor slabs cast onto natural ground are anticipated to achieve the anticipated loads with settlements being limited to $\leq 25\text{mm}$.
- 7.27 For floor slabs or service yards in areas of deep fill ($>2.0\text{m}$ bgl), if the Made Ground was excavated by 2.0m and the materials separated and sorted, before being reengineered back, then a ground-bearing floor slab may be suitable. These works would have to be carried out in accordance with a site-specific earthworks strategy.
- 7.28 If the proposed development comprises a piled foundation solution then it is assumed that a suspended floor slab would be required.

Roads and Pavements

- 7.29 No CBR testing has been undertaken as part of this investigation.
- 7.30 Based upon guidance within the Highways England Interim Advice Note 73/06 (IAN73/06) Revision 1 2009, roads should be designed with CBR's between 3% and for 5%. Based on the ground conditions encountered, the following long-term CBR values may be assumed:

- Made Ground: <2.5% (may therefore require improvement);
- Eggington and Etwall Sand & Gravels: 15%; and
- Glacial Till: 3%.

7.31 CBR values should be confirmed by in-situ testing once detailed designs are available.

Drainage

7.32 No permeability testing was undertaken as part of the site investigation. The Made Ground and surrounding cohesive ground across are not considered suitable for the construction of shallow soakaways. Should significant thicknesses of shallow granular deposits be encountered then a ground attenuation solution is may be suitable.

Excavations

Ease of Excavation

7.33 Excavations using backhoe excavators are expected to be suitable within shallow Made Ground and natural strata across the site. Areas of hardstanding and underlying brick and concrete foundations will likely require the use of hydraulic breakers.

7.34 Existing foundations and obstructions present beneath the proposed building footprints will require removal prior to construction of the new building. Resultant voids should be backfilled with a suitably engineered fill and placed to an appropriate standard.

Stability of Excavation

7.35 Excavations advanced into the Made Ground (particularly within the PFA) and granular deposits are expected to be prone to instability. Where personnel entry is required for inspection; excavations should be sufficiently enlarged and an assessment of safe temporary angles should be assessed. Alternatively, temporary shoring should be provided.

Legislation on Personnel Entry to Excavations

7.36 It is recommended that no excavations should be entered into without appropriate support and a full risk assessment should be completed prior to entry. Mitigation measures to protect from accumulating ground gases should be implemented.

Groundwater

7.37 Groundwater has been recorded at standing depths between 53.07mAOD and 57.12mAOD within the Made Ground deposits and 46.12mAOD and 55.92mAOD within the Glacial Till and Gunthorpe Member.

7.38 The majority of encountered groundwater within the Made Ground and natural ground may be removed using conventional construction of sumps and submersible pumps, depending on depths and any shoring techniques in place.

Chemical Attack on Buried Concrete

- 7.39 Water soluble sulphate concentrations in soils varied from 10mg/l to 1,900mg/l with soil pH values ranging from 3.9 to 8.4.
- 7.40 Total sulphur concentration ranged from 0.02% to 2.9%.
- 7.41 Sulphate concentrations in the groundwater ranged from 89.6mg/l to 907mg/l with groundwater pH values ranging from 7.4 to 8.2.
- 7.42 In accordance with the recommendations of BRE Special Digest 1, 'Concrete in Aggressive Ground' 2005, the conditions of the Made Ground soils at the site would therefore be classified as Design Sulphate Class DS-3 and ACEC Class AC-4 for soils and groundwater with the concrete required to be designed to Sulphate Class DS-4 and AC-3s when in contact with the natural ground, when considering the most appropriate type of concrete to be used at the site in order to resist chemical attack from elevated sulphate present in the soils (assuming static groundwater in potentially pyritic soils).

Earthworks

- 7.43 A significant earthworks scheme is considered to be required across the site to create development plateaus.
- 7.44 No specific earthworks assessments have been undertaken as part of this investigation.
- 7.45 The materials present on site are likely to be classified as generally granular or cohesive fill (1A/B & 2A/B), in line with Table 6/2 'Specification for Highway Works'.
- 7.46 An earthworks specification should be produced prior to any earthworks being undertaken at the site.

8. GROUND GAS ASSESSMENT

Introduction

- 8.1 A ground gas assessment has been undertaken to assess the risks associated with ground gases and volatile vapours to new buildings and their occupants. The results obtained have been assessed in line with relevant guidance (notably CIRIA C665 and BS8485:2015).
- 8.2 Four gas monitoring visits have been undertaken as part of this assessment. Further monitoring at a higher density of monitoring wells will be required to satisfy the Local Authority.

Methodology

- 8.3 The ground gas monitoring visits undertaken to date have been completed by BWB at the site between 7th March and 3rd April 2018.
- 8.4 All borehole locations were installed with ground gas monitoring wells, with response zones targeting the Made Ground, Glacial Till deposits and Gunthorpe Member. Exploratory hole records showing the monitoring well construction are presented as **Appendix 2**.
- 8.5 The assessment of potential ground gas generation is based on the observation of trends and changes in gas evolution by the direct measurement of ground gases from gas wells. The works included measurement of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flows and barometric pressure. A PID survey was undertaken to measure volatile organic compounds within the borehole response zones.

Results

- 8.6 The minimum and maximum steady state concentrations recorded for borehole flow, oxygen, carbon dioxide and methane are summarised below in **Table 8.1**.
- 8.7 The ground gas monitoring results collected to date are presented in **Appendix 5**.

Table 8.1 Summary of Recorded Ground Gas Results

Borehole ID	Targeted Geology	Steady Flow (l/hr)		Carbon Dioxide (%v/v)		Methane (%v/v)	
		min.	max.	min.	max.	min.	max.
BH01	Various	<0.1	<0.1	<0.1	1.4	<0.1	<0.1
BH02S	Made Ground	<0.1	<0.1	0.7	2.8	<0.1	<0.1
BH02D	Gunthorpe Member	<0.1	0.4	<0.1	0.2	<0.1	<0.1
BH03	Made Ground	<0.1	<0.1	0.8	4.2	0.6	7.0

BH04	Made Ground	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH05	Glacial Till	<0.1	1.6	<0.1	0.4	<0.1	<0.1

Atmospheric Pressure and Flow

- 8.8 During the monitoring programme completed at the site the atmospheric pressure ranged between 983mB (recorded on 3rd April 2018) and 1024mB (recorded on 20th February 2018). During the monitoring visit completed on 7th March the pressure was noted to fall by 1mB between the start and end of the monitoring event. During the visits completed on 13th and 20th February the pressure was noted to remain steady with a rise in pressure of 1mB recorded during the visit completed on 3rd April 2018.
- 8.9 During the same period flow rates ranged between <0.1l/hr (recorded on 7th March 2018) and 1.6l/hr (recorded on 3rd April 2018) with the greatest flow rate being recorded during the lowest atmospheric pressure event.
- 8.10 On this basis, the monitoring is considered likely to have captured the worst case gassing scenario at the site as generally, ground gas emissions tend to increase when atmospheric pressure falls and particularly when the pressure drops below 1000mB.

Hazardous Ground Gas and Volatile Vapours – Made Ground

- 8.11 Steady carbon dioxide concentrations recorded ranged between <0.1% v/v (recorded at BH04 throughout the monitoring period) and 4.2% v/v (recorded on 3rd April 2018 in BH03).
- 8.12 Steady methane concentrations ranged between <0.1%v/v (recorded in several boreholes on several occasions) and 7.0%v/v (recorded in BH03 on 3rd April 2018).
- 8.13 Hydrogen sulphide concentrations were not recorded above the limit of detection of the equipment during the monitoring visits.
- 8.14 Carbon monoxide concentrations were generally not recorded above the limit of detection of the equipment during the monitoring visits with the exception of borehole BH03 where 10ppm and 24ppm were recorded on 7th February and 13th February 2018 respectively. Carbon monoxide is commonly recorded during the initial monitoring visits and the low concentrations are considered to relate to the drilling process, and not reflective of the actual ground gas regime.
- 8.15 PID concentrations were recorded between <0.1ppm (the limit of detection of the equipment) and a maximum of 0.4ppm in borehole BH03 on 3rd April 2018.

Hazardous Ground Gas and Volatile Vapours – Natural Ground

- 8.16 Steady carbon dioxide concentrations recorded ranged between 0.2% v/v (recorded at BH02 on multiple occasions) and 0.4% v/v (recorded on 3rd April 2018 in BH05).
- 8.17 Steady methane concentrations were recorded below the equipment's lowest detection limit ($\leq 0.1\%v/v$) throughout the monitoring period.

- 8.18 Hydrogen sulphide and carbon dioxide concentrations were not recorded above the limit of detection of the equipment during the monitoring visits.
- 8.19 PID concentrations were recorded between <0.1ppm (the limit of detection of the equipment) and a maximum of 0.7ppm in borehole BH05 on 7th February 2018.

Risk Assessment

- 8.20 CIRIA Report 665 "Assessing Risks Posed by Hazardous Ground Gases to Buildings" presents current best practice on the assessment of ground gases for commercial and residential buildings (with the exception of low rise traditional housing). The report presents a risk based approach based on gas screening levels which depend on both the concentration and emission rate of gas from the ground. Gas screening levels are calculated as follows:

$$\text{Gas screening value (l/hr)} = \frac{\text{gas concentration (\%)} \times \text{measured borehole flow rate (l/h)}}{100}$$

- 8.21 From the above results, a maximum gas screening value (GSV) of 0.112 has been calculated for the site, giving a classification of a Characteristic Situation 2 (CS2) site. However, following a more detailed review of the results it is considered possible to zone the site in order to reduce the requirements for gas protection measures. Any buildings positioned across the central belt of the site (landfill area) is classified as a CS2, with the northern and southern areas classified as a CS1 site.
- 8.22 It has also been noted that the Made Ground deposits have recorded relatively low Fractions of Organic Carbon (ranging between 0.0010 and 0.071), indicating low to moderate gas generation potential.

Recommendations

- 8.23 BWB understand that the site will likely be developed for a commercial end use, assuming these units will comprise large open spaces (type D building) with small office spaces (type C building), a points score between 0.0 and 2.5 will need to be achieved through gas protection measures.
- 8.24 **Drawing 6** defines the potential zones of the gas protection measures and points required. At this point, this is considered indicative and additional monitoring points, monitoring and assessment will be required to better assess the gassing regime in the different areas of the site. Gas protection measures will also need to consider the effects of placing large areas of hardstanding will have in driving gas flow laterally. Once a fixed Masterplan has been developed, this will need to be reviewed.

9. HUMAN HEALTH RISK ASSESSMENT

- 9.1 Soil contaminant data have been compared against Generic Site Assessment Criteria (GSAC) developed by BWB using the CLEA model 1.06 and the updated CLEA framework (2009) for assessing risk from soil contamination to human health. Details of the derivation of the GSACs are presented in **Appendix 9**. The results of the soil chemical laboratory results are provided within **Appendix 6** with a table summarising the results presented as **Appendix 10**.
- 9.2 The GSACs have been developed with the following assumptions which have been changed from the CLEA default parameter set. Soil type is a sandy loam with an organic matter content of 1%. This is considered to be more representative of shallow Made Ground found on most Brownfield sites than the CLEA default of 6% organic matter. The building type for a commercial development is assumed to be a post 1970s office which is representative of new commercial buildings.

Pathways

- 9.3 The proposed development is understood to comprise the construction of numerous warehouse units for a commercial/industrial end uses, with associated yard areas, car parking and limited soft landscaping areas.
- 9.4 On this basis, contamination data has been compared to the GSAC's for a commercial end use (i.e. using all pathways for that end use) based on an organic matter content of 1%. The key receptor for such a site is considered to be an adult female worker.
- 9.5 Exposure pathways considered in this assessment are presented in **Table 9.1**.

Table 9.1 Commercial Exposure Pathways

Source Pathway	Shallow Soils		Deep Soils	
	Commercial Industrial managed landscaped areas	/ with Hard standing areas	Commercial Industrial	/ with Hard standing areas
Ingestion of Soil	✓	✗	✗	
Ingestion of site derived household dust	✓	✗	✗	
Ingestion of contaminated vegetables	✗	✗	✗	
Ingestion of soil attached to vegetables	✗	✗	✗	
Dermal contact with Soil	✓	✗	✗	
Dermal contact with site derived household dust	✓	✗	✗	
Inhalation of fugitive soil dust	✓	✗	✗	
Inhalation of fugitive site derived household dust	✓	✗	✗	

Inhalation of vapours outside	✓	✓	✓
Inhalation of vapours inside	✓	✓	✓

Sources

- 9.6 The results have shown that all samples sent for analysis have concentrations below the relevant screening criteria for each contaminants.
- 9.7 All samples sent for TPH CWG analysis recorded concentrations below each of the relevant carbon banding GSAC, however elevated aromatic and aliphatic fractions have been noted in several intrusive locations on site, most notably TP07 in samples retrieved from 0.3m – 0.4m & 2.2m – 2.3m where total TPH concentrations of 610mg/kg and 1000mg/kg recorded respectively. No breakdown of individual TPH fractions is available for the 0.3m – 0.4m, however the highest concentrations from the 2.2m – 2.3m sample were recorded within the aliphatic EC21-25 (210mg/kg) and aromatic EC21-35 (470mg/kg) bands.
- 9.8 Whilst no comment was noted on the logs regarding hydrocarbon odours at TP07, waste materials such as brick, ash, PFA, clinker, concrete, cloth, timber and glass were recorded. Hotspots of petroleum products were also recorded during the July 2004 ground investigation, attributing these to waste conveyor belts and machinery wastes recorded within landfill.
- 9.9 The concentrations of TPH discussed above are not indicated to represent a significant risk to human health, however they may pose a risk to the controlled waters beneath the site.
- 9.10 From the analysis completed as part of this assessment, the topsoil present on site is likely to be suitable for re-use on site, however further assessment is likely to be required.

Asbestos

- 9.11 As part of the site investigation, 24 soil samples collected from the Made Ground were tested for the presence of asbestos. A summary of the samples which tested positive for asbestos are summarised in **Table 9.2** below. Asbestos fibres may present a risk to human health through inhalation of fibres.

Table 9.2 Summary of Asbestos Results

Location	Depth (m bgl)	Asbestos Type
TP05	0.3 – 0.4	Amosite – loose fibrous debris Chrysotile & amosite – loose fibres
TP07	0.3 – 0.4	Amosite – loose fibrous debris
	2.2 – 2.3	Amosite – loose fibrous debris
TP12	1.1 – 1.2	Chrysotile – loose fibres
	2.1 – 2.2	

Location	Depth (m bgl)	Asbestos Type
	2.3 – 2.7	Chrysotile – hard cement type material
TP14	1.0 – 1.1	Amosite – loose fibres
TP21	0.7 – 0.8	Chrysotile, amosite & crocidolite – loose fibrous debris
	1.2 – 1.3	Chrysotile & amosite – loose fibrous debris
	1.7 – 1.8	Chrysotile & amosite – loose fibres
TP25	0.4 – 0.5	Amosite – loose fibrous debris
		Chrysotile & amosite – loose fibres

- 9.12 During development the risk to ground workers is increased, however, ACMs have been identified between 0.3m bgl to 2.7m bgl meaning the risks associated with direct exposure are reduced. Where deep excavation are proposed, appropriate risk assessment will need to be undertaken.

10. CONTROLLED WATERS RISK ASSESSMENT

- 10.1 The results of soil leachate analysis and groundwater sampling are presented as **Appendix 6** and **Appendix 7** respectively.
- 10.2 The controlled waters assessment considers the potential impact of on-site contamination to pertinent controlled waters receptors identified at the site including:
- Secondary A Aquifers within the Etwall and Egginton Sand and Gravel Members and Alluvium superficial deposits;
 - The drain feature indicated to be on site (tertiary river); and
 - The Willington/Sands Brook located 30m southwest of the site.

Pathways

- 10.3 Controlled water risk assessment has been undertaken through assessment of leachable concentrations of contaminants in soil referring to exposure pathways considered and referencing **Table 10.1**.

Table 10.1 Controlled Water Exposure Pathways

Controlled Waters Exposure Pathway	Receptor
Leaching of soil contamination into recharge infiltration	✓
Vertical migration of impacted pore water through unsaturated zone into underlying aquifer	✓
Horizontal migration of groundwater through aquifer to off site receptors	✓

Soil Leachability

- 10.4 As part of this investigation, ten soil samples of the Made Ground deposits were tested for a leachable metals suite, cyanide, sulphide and pH.
- 10.5 Soil leachate results have been compared directly to water quality standards quoted in Environmental Quality Standards (EQS). A conservative water hardness level of between 100m/l and 200m/l CaCO₃ has been adopted therefore the upper limit of the EQS standards have been adopted. Where these are not available the UK Drinking Water Standards (UK DWS) 2000 have been used. A summary of the soil leachate concentrations which exceed the guideline concentrations are presented within **Table 10.2**.

Table 10.2 Summary of Leachate Contamination Exceedances

Leachable Contaminant	Exceedance Concentration Range (µg/l)	Location	EQS (µg/l)	UK DWS (µg/l)
Copper	6.9 – 18.0	TP02, TP05, TP07, TP09, TP12, TP20, TP21*, TP22 & TP25	1.0	-
Lead	1.3 – 3.1	TP02, TP12, TP20, TP21*, TP22 & TP25	1.2	-
Nickel	4.7	TP20	4	-
Selenium	15.0 – 21.0	TP05 & TP09	-	10.0
Zinc	12.0 – 24.0	TP05, TP07, TP20 & TP21*	10.9	-
Sulphate	532 – 670mg/kg	TP05 & TP21	400mg/kg	-

*Denotes exceedance at multiple depths.

- 10.6 Several contaminants including cyanide (total) and mercury are indicated to be elevated on the leachate screening sheet. However, the laboratories lowest detection limit is higher than the screening value used and, therefore, these contaminants are not considered to represent a risk to the underlying aquifers.
- 10.7 The exceedances highlighted above are considered to be marginal due to the limited concentrations of heavy metals recorded within the soils across the site. The proposed development is expected to comprise significant hardstanding and limited soft landscaping, therefore, at this stage BWB consider the leachable contaminants represent a low risk to control waters.
- 10.8 The leachate screening worksheets are presented as **Appendix 11**.

Groundwater

- 10.9 Six groundwater samples were collected from installed boreholes on one occasion for subsequent laboratory testing. The groundwater chemical analysis results are presented as **Appendix 6**.
- 10.10 The groundwater testing results have been compared directly to water quality standards and the recorded exceedances are summarised in **Table 10.3**.

Table 10.3 Summary of Groundwater Contamination Exceedances

Leachable Contaminant	Exceedance Concentration Range (µg/l)	Location	EQS (µg/l)	UK DWS (µg/l)
Arsenic	73.5	BH01	50.0	-
Cadmium	0.11 – 0.19	BH01, BH02 (D) & BH04	0.09	-
Chromium III	29.0	BH02 (S)	4.7	-
Chromium VI	30.0	BH02 (S)	3.4	-

Leachable Contaminant	Exceedance Concentration Range (µg/l)	Location	EQS (µg/l)	UK DWS (µg/l)
Copper	1.2 – 1.8	BH02 (S), BH02(D), BH03, BH04 & BH05	1.0	-
Mercury	0.14 – 0.21	BH01 & BH03	0.07	-
Selenium	46.0 – 140.0	BH01, BH02 (S) & BH02 (D)	-	10.0
Sulphate	461 – 907	BH01, BH02 (D), BH03 & BH04	400	-
Total TPH (EC5 – EC35)	91.0 – 170	BH03 & BH04	-	10.0

10.11 Several contaminants including cyanide (total), phenols, mercury, benzo(a)pyrene, fluoreanthene, total PAHs, Trichlorobenzenes, Hexachlorobutadiene and 1,2,4-Trichlorobenzene are indicated to be elevated on the screening sheet. However, the laboratories lowest detection limit is higher than the screening value used and, therefore, these contaminants are not considered to represent a risk to the underlying aquifers.

10.12 The groundwater exceedances detailed above are considered to be in continuity with the leachable concentrations found within the soils samples sent for analysis. Although there are a number of exceedances present the majority of the contaminants are at low concentrations that are of limited significance when migration pathways are taken into account. However, Chromium VI and Total TPH is present at a significantly elevated concentration in the groundwater samples retrieved from the landfill area.

10.13 The groundwater screening worksheets are presented as **Appendix 12**.

Surface Water

10.14 No surface water analysis has been undertaken as part of this assessment.

Summary

10.15 From the analysis summarised above, it is considered likely that the leachable contaminants present within the Made Ground deposits are leaching out of the landfill material at low concentrations, however it should be noted that the cohesive nature of the surrounding natural ground have limited the migration of contaminants.

10.16 Based upon the limited sensitivity of the underlying Aquifer within the bedrock geology (Secondary B Aquifer) and limited superficial deposits across the site, the exceedances discussed above are considered to represent a low risk to controlled waters beneath and surrounding the site.

11. ENVIRONMENTAL RISK ASSESSMENT

Introduction

- 11.1 An updated assessment of identified pollutant linkages has been made following completion of a ground investigation. The preliminary risk assessment presented in Section 3 has been updated in the light of the findings of the ground investigation and the revised conceptual site model developed, as presented in **Table 11.1**.

Sources

- Amosite, chrysotile and crocidolite asbestos in numerous forms has been recorded within the Landfill deposits;
- Marginally elevated leachable heavy metals and inorganics have been recorded within the Made Ground deposits;
- Marginally elevated metals and inorganics and elevated TPH have been recorded within the perched groundwater within the landfill area; and
- Elevated methane levels have been recorded in the landfill materials.

Pathways

- Inhalation of asbestos fibres;
- Leaching into infiltrating rainfall;
- Accumulation of potentially explosive ground gasses within new development;
- Direct contact of building materials with contaminants; and
- Vertical and lateral migration of contaminated groundwater.

Receptor

- Future site users;
- Construction and groundworkers;
- Water supply pipes;
- Below ground concrete structures; and
- Underlying Aquifers (Secondary A and B).

Summary of Potentially Significant Pollutant Linkages

Potential Accumulation of Hazardous Ground Gas to Future Site Users

- 11.2 There is a risk that methane concentrations could accumulate within enclosed spaces within buildings positioned above the northern landfill area which presents a risk to future site users through explosion / flammability.
- 11.3 The recorded concentrations indicate that the northern landfill area is categorised as CS2, whereby basic ground gas protection measures are required to mitigate against the risk. The northern and southern areas have been categorised as CS1, whereby no

specific protection measures are required. Further monitoring may be required on a plot by plot basis to assess specific gas requirements in consideration to lateral gas migration and the existing ground conditions.

Ground contamination impact to human health

- 11.4 Asbestos fibres have been identified within the Made Ground, this presents a risk to human health receptors associated with a commercial end use through particle dust inhalation.
- 11.5 To mitigate the risk, landscaping areas will require a soil cover system, with all exposed Made Ground required to be kept damp during the construction phase. The risks to construction and ground workers can be minimised by the adoption of appropriate PPE and respiratory protective equipment (RPE).
- 11.6 The specification should be set out in a remediation strategy and agreed with the local authority before implementation.

Soils to controlled Waters

- 11.7 Elevated TPH fractions recorded within the Made Ground are considered to represent a risk to controlled waters through leaching. It is understood that the proposed development will incorporate large areas of hardstanding and buildings which should reduce leaching of rainwaters and limit mobilisation of the contaminants.
- 11.8 Leachable heavy metals and inorganics has been recorded at elevated concentrations within the shallow Made Ground deposits, however the concentrations of heavy metals are considered to be low and therefore not represent a significant risk to controlled waters.

Groundwater Contamination to Controlled Waters

- 11.9 Elevated heavy metals, inorganics and Total TPH have been identified within the groundwater samples recovered from within the landfill area. Concentrations of heavy metals and inorganics are considered to be low and represent a low risk when the migration pathway and low sensitivity of the underlying aquifer is considered. Given the cohesive nature of the soils beneath the landfill, it is considered unlikely that the TPH will become mobile and migrate into the wider environment.
- 11.10 Following redevelopment, much of the site will be covered (hard standing and buildings) thereby reducing the potential for rainwater to infiltrate the ground and mobilise contamination.

Table 11.1 Preliminary Conceptual Site Model

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
S1: On site: Made Ground – presence of asbestos fibres and elevated TPH hotspots. Elevated leachable heavy metal and inorganics. Elevated methane levels arising from the Made Ground.	P1: Inhalation of fibres.	R1: Construction/ services personnel	Md	Li	M	It is understood that the development is likely to be predominantly covered by buildings and hard standing surface cover, therefore limiting any potential contact by the future site user. A clean soil cover system is recommended in areas of soft landscaping to break the pathway between the asbestos fibres and future site users. The risks to construction and ground workers can be minimised by the adoption of appropriate PPE and respiratory protective equipment (RPE). It is recommended that personal air monitoring is undertaken during future works at the site and the ground surface is kept damp to minimise the movement of free fibres. The Control of Asbestos Regulations 2012 must be adhered to.
		R2: Future site users (commercial)	Md	UI	L	
	P2: Leaching followed by migration of contaminated groundwater	R3: Underlying Secondary A Aquifer (Egginton & Etwall Sand and Gravel Members & Alluvium deposits)	Mi	Lw	L	This assessment indicates leachable heavy metals and inorganics contaminants are present within the Made Ground deposits. The underlying ground conditions surrounding the landfill are predominately cohesive, reducing the migration of any contaminated groundwater. Furthermore, following redevelopment, much of the site will be covered (hardstanding and buildings) thereby reducing the potential for rainwater to infiltrate the ground and mobilise contamination.
	P3: Lateral migration of contaminated groundwater.	R3: Underlying Secondary A Aquifer (Egginton & Etwall Sand and Gravel Members) R4: Offsite surface water features (drains, culverts and the Trent and Mersey Canal)	Md	UI	M/L	

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
	P4: Direct contact.	R5: Water utility pipes	Md	Lw	M/L	Barrier piping is likely to be required to prevent tainting of the water supply with organic contamination within the Made Ground. The chemical laboratory results should be provided to the utility supplier to provide the most suitable construction material.
		R6: Buried structures/ foundations.	Md	Lw	M/L	In accordance with the recommendations of BRE Special Digest 1, 'Concrete in Aggressive Ground' 2005, the conditions of the Made Ground soils at the site would be classified as Design Sulphate Class DS-3 and ACEC Class AC-4s for soils and groundwater with the concrete required to be designed to Sulphate Class DS-4 and ACEC 3s when being cast into natural deposits).
	P5: Migration and accumulation of ground gases in enclosed spaces leading to explosion (methane).	R1: Construction/ services personnel	Md	UI	L	An excavation risk assessment should be undertaken. Ground gas monitoring should be undertaken within excavations if left open.
		R2: Future site users (commercial)	Sv	UI	M/L	Based upon the preliminary gas monitoring results recorded as part of this investigation, gas protection measures are likely to be required in areas of the landfill (central area), while gas protection may not be required elsewhere. Further gas monitoring and assessment may be required once master plans are developed which will also need to consider the effects of lateral gas migration due to large areas of concrete hardstand. If significant earthworks are required as part of the site development then further site wide gas monitoring will likely be required following its completion. A plot by plot gas assessment is recommended which may allow for the downgrading of required gas protection measures.

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor Hi = High, Li = Likely, Lw = Low Likelihood, Ul = Unlikely						
Pollutant Linkage Assessment Summary The assessment has established numerous source-pathway-receptor pollutant linkages at the site, which when assessed in the context of proposed development are considered to pose a low to moderate risk to human health and low to moderate risk to controlled waters. The majority of pollutant linkages can be easily severed by the provision of a capping layer and gas protection measures, however, further investigation, modelling and assessment will be required to further delineate the landfill material and confirm the gassing regime.						

12. ENVIRONMENTAL LIABILITY ASSESSMENT/DEVELOPMENT CONSTRAINTS

Statutory Liability

- 12.1 Under statutory guidance for definition of contaminated land site may be classified into 4 categories. Categories 1 and 2 would meet the definition of contaminated land and categories 3 and 4 would not meet the definition.
- 12.2 It is considered that the site would fall within Category 3 based on the limited potential for significant contamination at the site.
- 12.3 The contaminated land regime has implications for those who cause or knowingly permit land to be contaminated, or who own or occupy land that is contaminated.
- 12.4 Contaminated land is defined in Section 78A(2) of Part IIA of the Environmental Protection Act 1990 as:
- 'Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under land, that:
 - a) *Significant harm is being caused or there is a significant possibility of such harm being caused; or*
 - b) *Pollution of controlled waters is being or is likely to be, caused*'.
- 12.5 Harm is defined in Section 78(4) of the Environmental Protection Act 1990 as:
- 'Harm to the health of living organisms or other interference with ecological systems of which them form part and, in the case of man, includes harm to his property'.
- 12.6 Once an area of land has been identified as contaminated land, appropriate persons will be identified as being responsible for the cost of cleaning up the land by the enforcing authority. The appropriate person will be liable for all or part of the remediation of the land. Two classes of appropriate person have been identified:
- Class A appropriate persons are those who cause or knowingly permit the pollutants to be in, on or under the land.
 - Class B appropriate persons are the owners(s) or occupier(s) of the land.
- 12.7 Where no Class A appropriate persons can be identified, then Class B appropriate persons may become liable.
- 12.8 Based on the information available regarding the site, the potential for Statutory Authority action based on 'pollution of controlled waters' or 'significant harm' as defined by Part IIA of the Environmental Protection Act 1990 is considered to be **Low**.

Third Party Liability

- 12.9 Based on the information contained in this report, it is the opinion of BWB that the potential for legal action by surrounding landowners, based on the potential for contamination to migrate off-site, is considered to be **Low** when considering the potential sources of contamination on site and the nature of the surrounding land uses.

Public Relations

- 12.10 It is considered that there is a Low risk of public relations being tarnished as a result of the development.

Development Implications

- 12.21 A clean capping layer in areas of soft landscaping overlying any Made Ground deposits will be required for commercial development. The specification will need to be agreed by the local authority before implementation.
- 12.22 Gas protection measures in line with a CS2 will likely be required to be installed into any new building constructed across the central area of the site.
- 12.23 Barrier piping is likely to be required for water supply pipes installed within the Made Ground deposits. This should be confirmed with the water utility provider.
- 12.24 Design sulphate class DS-3 and ACEC class AC-4s is required for concrete in contact with the Made Ground deposits, concrete in contact with Natural ground only is required to be designed to sulphate class DS-4 and ACEC class AC-3s to resist attack from sulphate levels across the site. This may mean steel piles need to be adopted.
- 12.25 A number of overhead powerlines are present on site, standoff zones are likely to be incorporated into the proposed layout of the site.
- 12.26 Given the presence of ACMs within Made Ground, appropriate mitigation measures will need to be implemented at the time of redevelopment to ensure free fibres are not released into the atmosphere. Such measures may include the damping down of materials during any earthworks and transportation and possible boundary misting.

13. WASTE MANAGEMENT

Waste Classification

- 13.1 Soil samples have been characterised against hazardous waste criteria using Hazwasteonline. The results of the waste classification are presented in **Appendix 13**. The assessment indicates that the soils analysed are likely to be classified as non-hazardous. The waste classification assessment only applies to those soils that have been tested. For the purpose of this assessment, BWB has assumed the materials on site are non-flammable, further laboratory testing is recommended to confirm this.
- 13.2 If other soils are to be disposed of off-site then further analysis may be required.
- 13.3 Asbestos has been found within Made Ground deposits at the site. The presence of visible asbestos containing materials in waste or at concentrations exceeding 0.1% by weight will classify the waste as mixed and require disposal as hazardous waste irrespective of the chemical properties of the waste.
- 13.4 Should any soils require disposal off site an assessment of waste classification of the soils for disposal should be made by a competent person. Further chemical analysis may be required to fully characterise waste soils for disposal to landfill or re-use off site. WAC analysis may be required for disposal of soils as inert or hazardous.

14. CONCLUSION AND RECOMMENDATIONS

Conclusions

- 14.1 The ground conditions recorded generally confirm the published geology of the site with the exception of much wider deposits of Glacial Till being encountered than anticipated. In general, varying thickness of topsoil was recorded across the site, underlain by the Etwall Sand and Gravel member to the north, Made Ground in the centre of the site (up to 7.0m) and the Egginton Sand and Gravel member to the south of the site. Glacial Till was encountered sporadically across the site with weathered deposits of the Gunthorpe Member beneath.

Environmental

- 14.2 Amosite, chrysotile and crocidolite asbestos in numerous forms has been recorded within the Made Ground deposits.
- 14.3 Leachable heavy metals and inorganics have been identified within the Made Ground deposits across the site, however the concentrations are considered to be only marginally elevated and given the cohesive nature of the surrounding ground conditions and low sensitivity of the underlying aquifers, these exceedances are believed to represent a low risk to controlled waters.
- 14.4 Elevated heavy metals, inorganics and TPH has been recorded within the perched groundwater within the landfill area. Concentrations of heavy metals and inorganics are considered to be low and represent a low risk when the migration pathway and low sensitivity of the underlying aquifer is considered. The underlying ground conditions surrounding the landfill is predominately cohesive, reducing the migration of any contaminated groundwater. Furthermore, following redevelopment, much of the site will be covered (hardstanding and buildings) thereby reducing the potential for rainwater to infiltrate the ground and mobilise contamination.
- 14.5 Gas monitoring undertaken has recorded concentrations of carbon dioxide in BH03 of up to 4.2% v/v, elevated methane was recorded at a maximum concentration of 7.0% v/v within BH03 and a maximum flow rate of 1.6/hr recorded at BH05. It is considered possible to zone the site into specific gas protection areas, with the northern and southern areas being classified a CS1 site, the central landfilled area as a CS2. Guidance provided by BS8485:2015 indicates the site requires gas protection measures totalling a score of between 0 (CS1) and 2.5 (CS2) points, dependant on the type of building and location on site. Further monitoring and assessment will be required once development plans and earthwork requirements have been finalised.

Geotechnical

- 14.6 The Made Ground deposits in their current form are unsuitable to support shallow spread foundations and floor slabs.

- 14.7 The shallow Glacial Till, Etwall & Eggington Sand and Gravel Deposits and weathered Gunthorpe Member are considered suitable as a founding medium should they be in economic reach for traditional foundations types.
- 14.8 Where Made Ground deposits are $\leq 2.0\text{m}$ thick it may be possible to excavate and reengineer the materials through stabilisation techniques to allow for shallow spread foundations and ground bearing floor slabs.
- 14.9 In deeper areas of Made Ground ($\geq 3.0\text{m}$) a piled foundation solution will likely be required. A suspended floor slab is considered most suitable in areas of a piled foundation solution.
- 14.10 Earthworks are likely to be required in the southern and eastern areas of the site to create development plateaus.
- 14.11 Design sulphate class DS-3 and ACEC class AC-4s is required for concrete in contact with the Made Ground deposits, concrete in contact with natural ground only is required to be designed to sulphate class DS-3 and ACEC class AC-4s to resist attack from sulphate levels across the site.

Recommendations

- 14.12 An earthworks specification should be produced prior to any earthworks being undertaken at the site.
- 14.13 The Control of Asbestos Regulations 2012 should be referred to during the development to ensure safe working practices.
- 14.14 A plot specific foundation assessment is recommended once the proposed development layouts and foundation loadings are confirmed.
- 14.15 To mitigate the risk posed to human health from asbestos fibres, a clean soil cover system will be required in landscaped areas. To mitigate the risk from methane ground gases, gas protection will need to be installed for a CS2 scenario across the central landfill area, with the rest of the site classified as a CS1 in accordance with BS8485: 2015. The mitigation requirements should be set out within a Remediation Strategy.
- 14.16 Further gas monitoring and assessment will be required across the entire site once development plans are formulated to assess specific gas protection requirements and migration pathways the development may create.
- 14.17 A Piling Risk Assessment and working platform design will be required for the proposed development.
- 14.18 A suitable qualified and experienced piling contractor should be consulted to confirm the detailed pile design for the proposed development.
- 14.19 It is recommended that test piles are installed to ensure the detailed design is suitable for the end use.

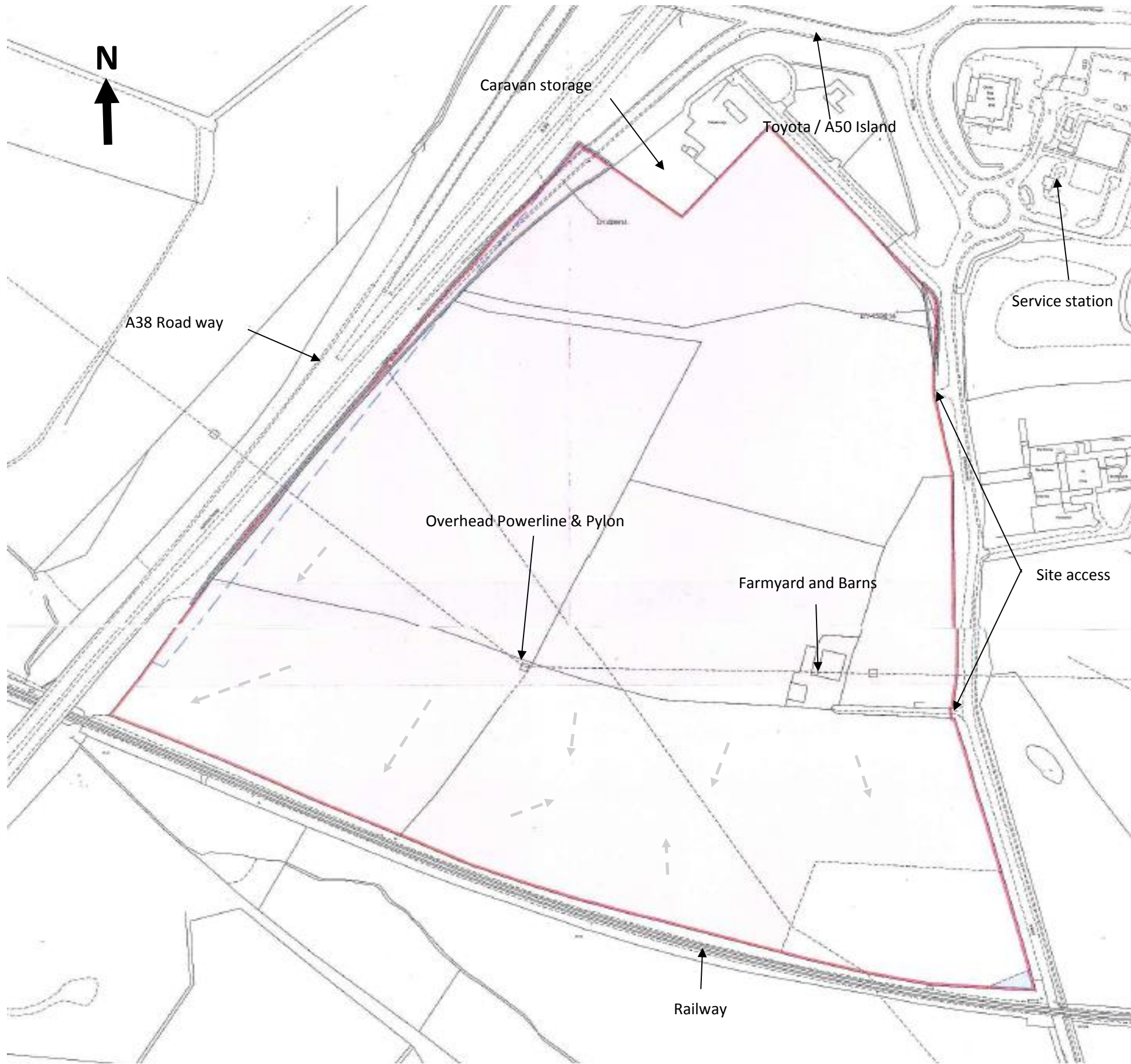
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11. Construction Industry Research and Information Association (CIRIA). 2007, Report C665, Assessing Risk Posed by on Hazardous Ground Gases to Buildings
12. Department for Communities and Local Government (DCLG), 2012, National Planning Policy Framework.
13. Department for Environment Food and Rural Affairs (DEFRA), 2012, Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.
14. Environment Agency report CLR11 'Model Procedures for the Management of Land Contamination'.
15. Environment Agency 2008, Updated technical background to the CLEA model Science Report – SC050021/SR3
16. Environment Agency 2008, Human health toxicological assessment of contaminants in soil Science Report – SC050021/SR2
17. Environment Agency 2009, CLEA Software (Version 1.05) Handbook Better Regulation Science Programme Science report: SC050021/SR4

18. Environment Agency 2008, A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA) Project SC050021/ Technical Review 1
19. Environment Agency, 2006, Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination
20. Health and Safety Executive (HSE) 'Protection of workers and the general public during the Development of Contaminated Land (1991).
21. NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D Publication 66: 2008.

DRAWINGS

Drawing 1: Site Layout Plan



NOTES

1. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/ VERIFIED ON SITE. IF IN DOUBT ASK.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
3. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METERS UNLESS NOTED OTHERWISE.
4. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

LEGEND

--> Downward slope

BWB

**Building, Infrastructure and
Environmental Consultancy**

5th Floor, Waterfront House, Station Street,
Nottingham, NG2 3DQ
T 0115 924 1100 F 0115 950 3966 W bwbconsulting.com

Client:
**BRACKLEY PROPERTY
DEVELOPMENTS LTD**

Project Title:
**BURNASTON CROSS,
WILLINGTON, DERBY**

Drawing Title:
SITE LAYOUT PLAN

Scale: Not to Scale	Date: 20.02.2018	Drawn: L. Cross	Authorised: R. Robinson
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Drawing Status:
FINAL

Drawing No: BUR-BWB-ZZ-XX-DR-YE-0001_DS	Revision: P1
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Drawing 2: Exploratory Hole Location Plan



- Notes**
1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
 2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
 3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
 4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

- Legend**
- LINETYPE DENOTES LOCATION OF SITE BOUNDARY
 - BH01 DENOTES LOCATION OF BOREHOLE
 - TP01 DENOTES LOCATION OF TRAIL PIT
 - DENOTES LOCATION OF GEOLOGICAL CROSS SECTION

P1	07.03.18	FINAL ISSUE	LC	RR
Rev	Date	Details of issue / revision	Drw	Rev

Issues & Revisions

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Client
BRACKLEY PROPERTY DEVELOPMENTS LTD

Project Title
BURNASTON CROSS

Drawing Title
EXPLORATORY HOLE LOCATION PLAN

Drawn:	I. Cross	Reviewed:	R. Robinson
BWB Ref:	NTH2364	Date:	07.03.18
Scale:	A3	NTS	
Drawing Status	FINAL		
Project - Originator - Zone - Level - Type - Role - Number	BUR-BWB-00-XX-YE-DR-0001		
Status	P	Rev	1

Drawing 3: Geological Cross Sections

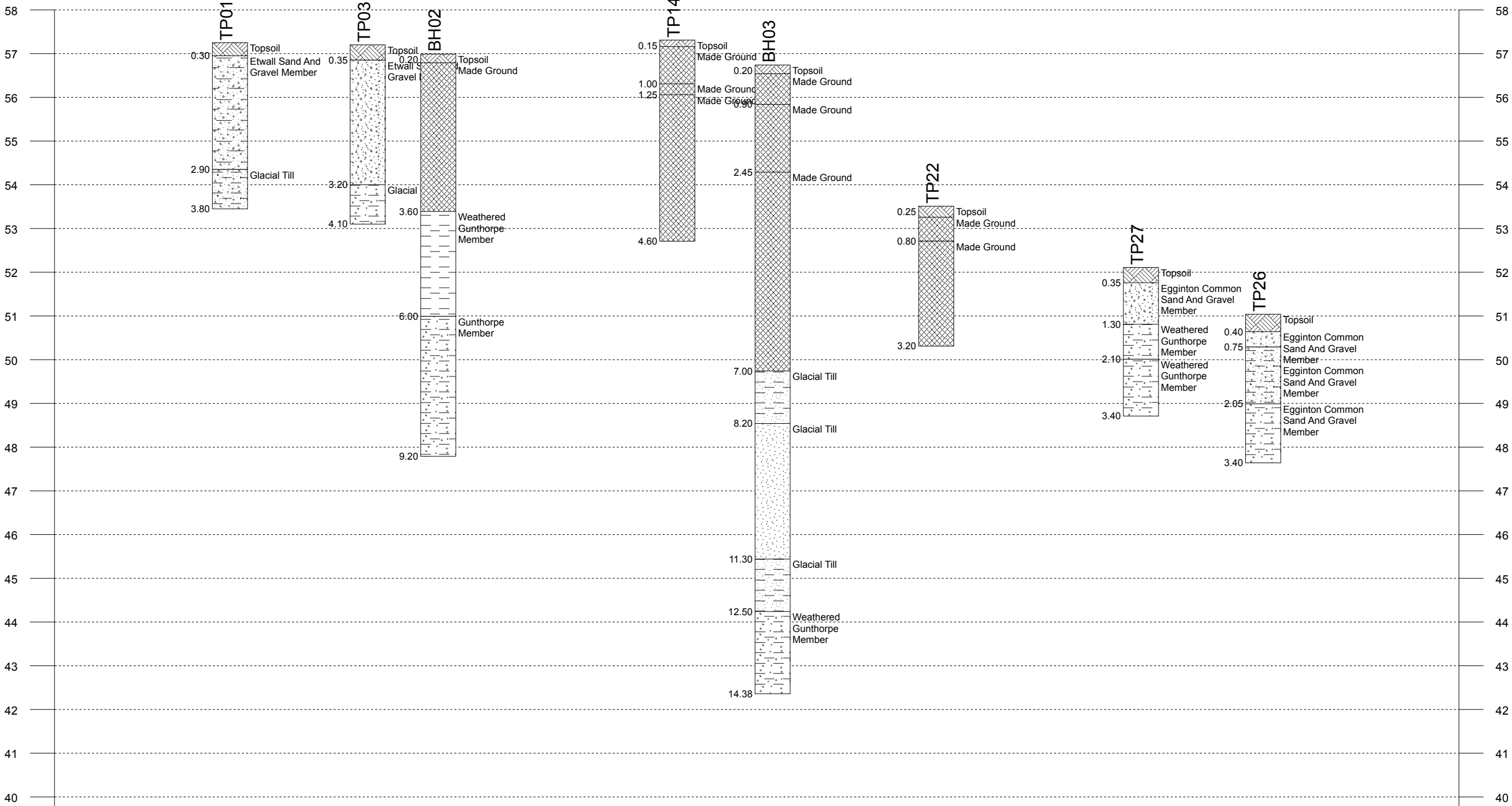
Project Id: NTH2364
Project Title: Burnaston Cross
Location:
Client: Brackley Property Developments Ltd

Title: Section Line
Vertical Scale: 1:100
Horizontal Scale: 1:2200
Engineer: LC

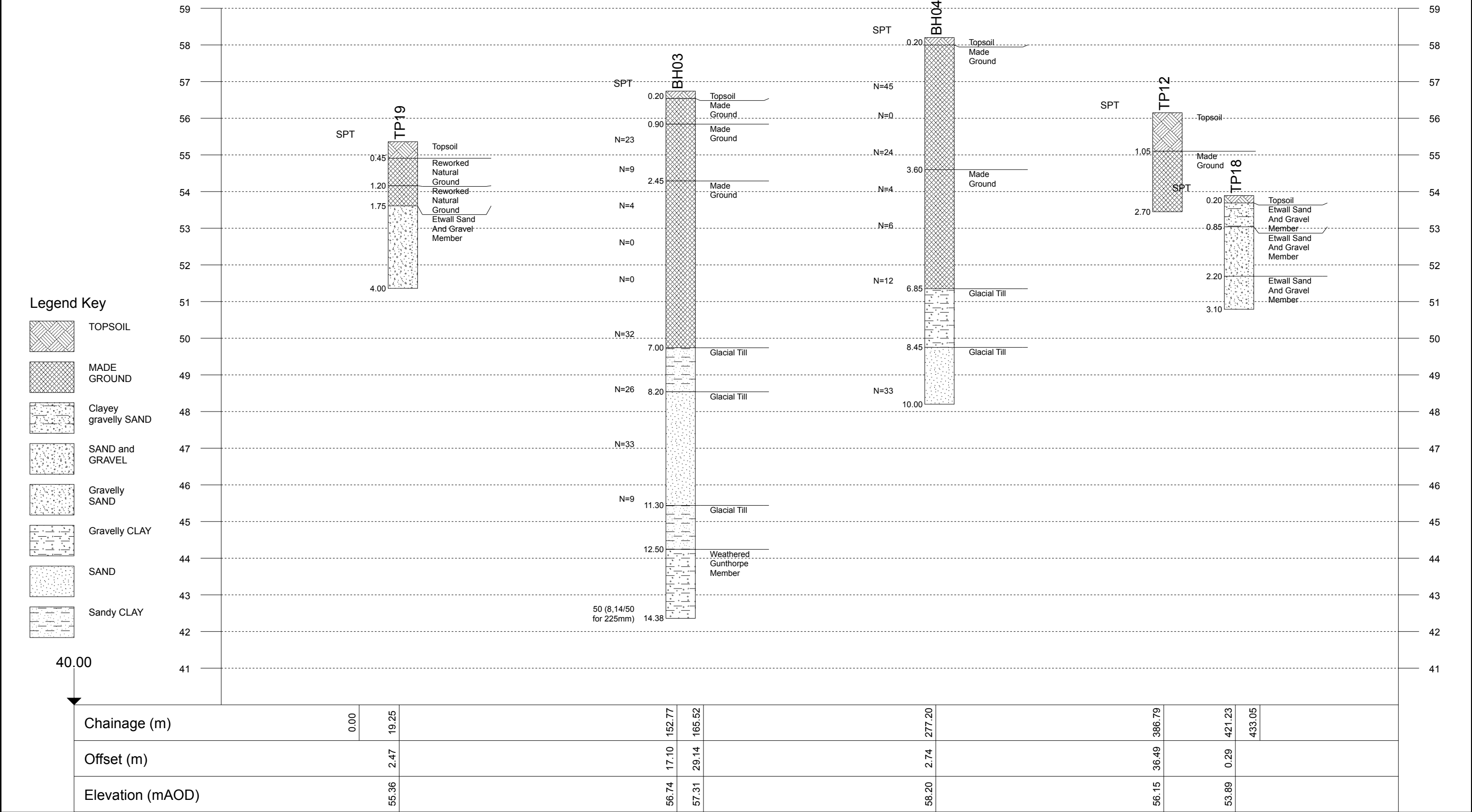
Legend Key

- TOPSOIL
- MADE GROUND
- Clayey sandy GRAVEL
- SAND and GRAVEL
- Sandy gravelly CLAY
- Gravelly CLAY
- CLAY
- Sandy GRAVEL
- Sandy CLAY
- SAND

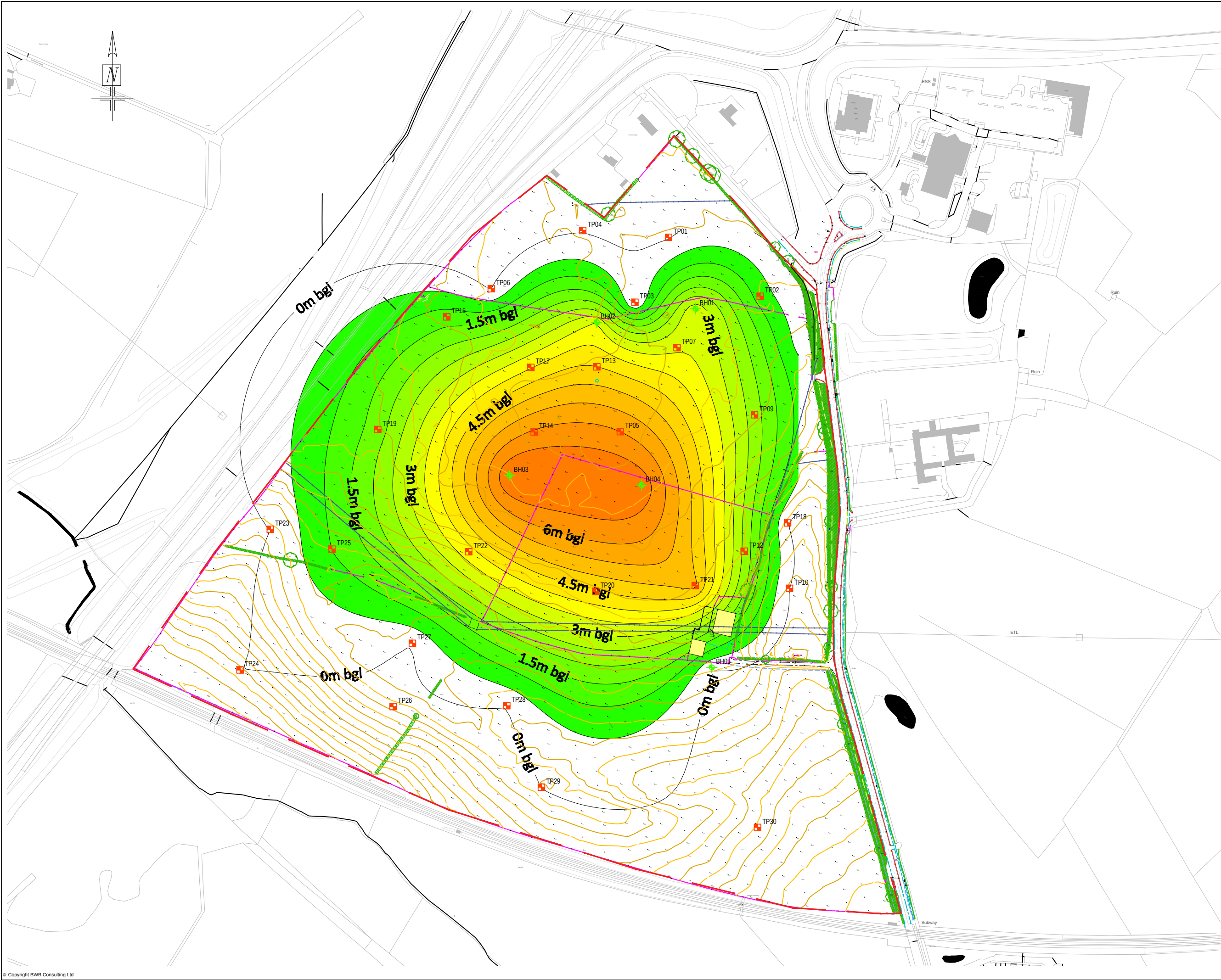
39.00



Chainage (m)	0.00	8.79	78.07	113.57	149.92	233.86	281.79	364.12	467.12	528.61	542.61
Offset (m)	0.73	2.97	18.95	2.39	17.17	15.47	12.77	14.40	0.43		
Elevation (mAOD)	57.25	57.20	56.99	57.18	57.31	56.74	53.51	52.11	51.04		



Drawing 4: Inferred Made Ground Thickness Plan



Notes

- Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
- This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
- All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
- Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Legend

LINETYPE DENOTES LOCATION OF SITE BOUNDARY

BH01 DENOTES LOCATION OF BOREHOLE

TP01 DENOTES LOCATION OF TRAIL PIT

P1	08.03.18	FINAL ISSUE	LC	RR
Rev	Date	Details of issue / revision	Dnw	Rev

Issues & Revisions

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Client
BRACKLEY PROPERTY DEVELOPMENTS LTD

Project Title
BURNASTON CROSS

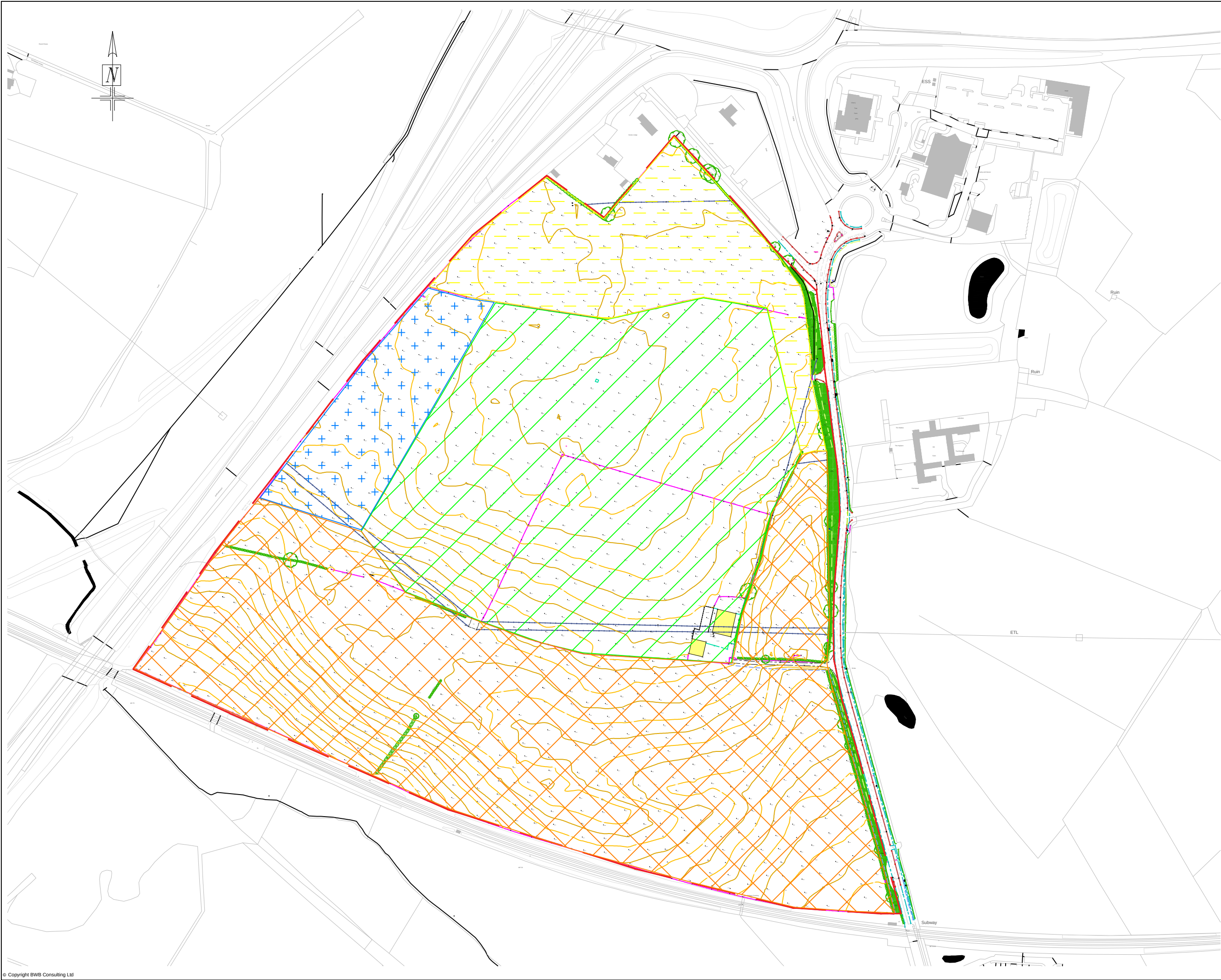
Drawing Title
DEPTH OF MAGE GROUND (M BGL)

Drawn:	I. Cross	Reviewed:	R. Robinson
BWB Ref:	NTH2364	Date:	08.03.18
Scale:	A3	NTS	

Drawing Status
FINAL

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
BUR-BWB-00-XX-YE-DR-0002	P	1

Drawing 5: Ground Gas Protection Measures Plan



- Notes**
1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
 2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
 3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
 4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Legend

LINETYPE DENOTES LOCATION OF SITE BOUNDARY

LINETYPE DENOTES SUITABILITY OF TRADITIONAL FOUNDATIONS

LINETYPE DENOTES SUITABILITY OF TRADITIONAL FOUNDATIONS FOLLOWING STABILISATION OF MADE GROUND

LINETYPE DENOTES SUITABILITY OF PILED FOUNDATIONS

LINETYPE DENOTES SUITABILITY OF TRADITIONAL FOUNDATIONS - AREA MAY REQUIRE EARTHWORKS / REPROFILING

P1	09.04.18	FINAL ISSUE		LC	RR
Rev	Date	Details of issue / revision		Drw	Rev

Issues & Revisions

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Project Title
BURNASTON CROSS

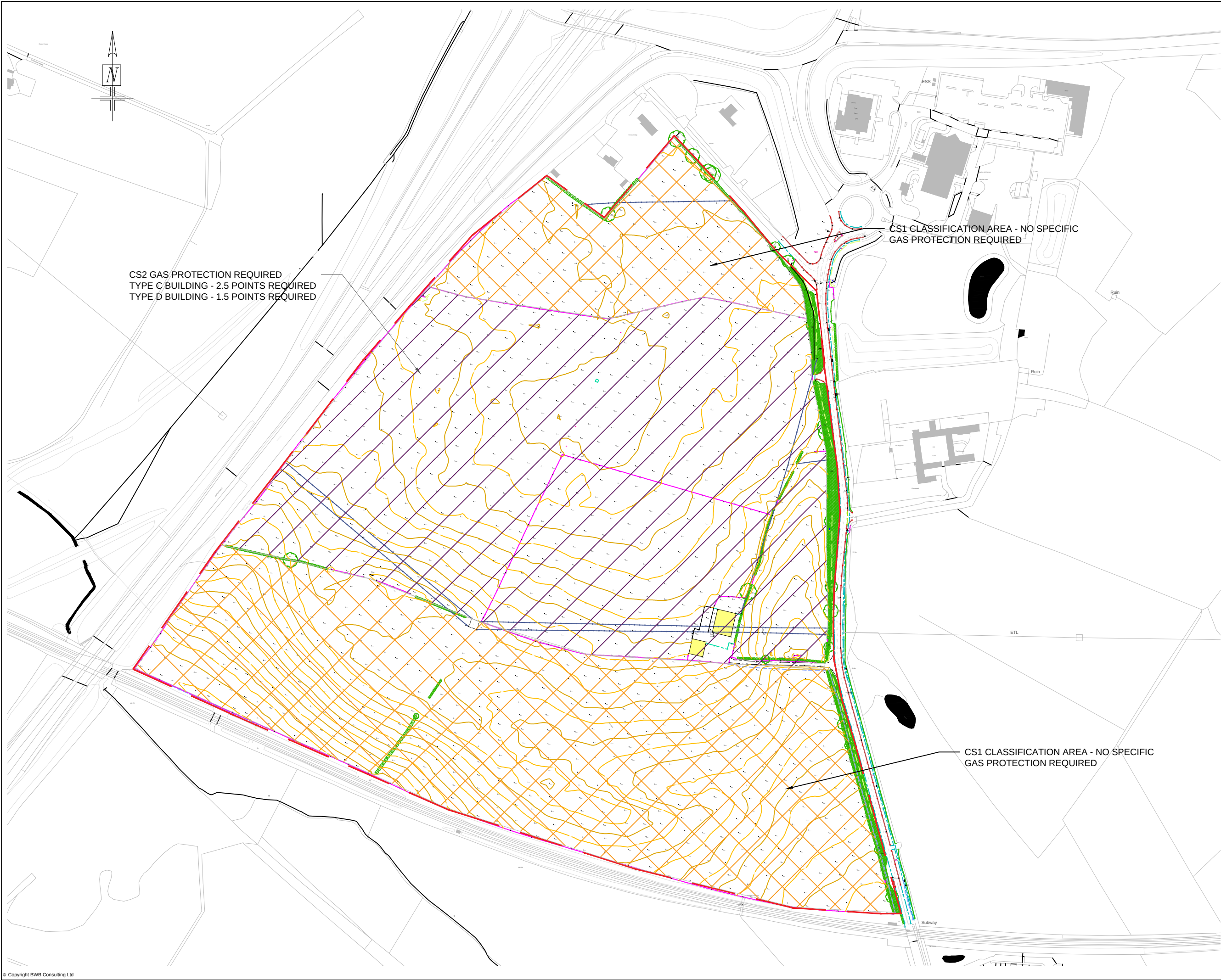
Drawing Title
FOUNDATION ZONING PLAN

Drawn:	L. Cross	Reviewed:	R. Robinson		
BWB Ref:	NTH2364	Date:	09.04.18	Scale@A3:	NTS

Drawing Status
FINAL

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
BUR-BWB-00-XX-YE-DR-0005	P	1

Drawing 6 Foundation Zoning Plan



- Notes**
1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
 2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
 3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
 4. Any discrepancies noted on site are to be reported to the engineer immediately.
 5. Further gas monitoring works are likely required across the site once a finalised materplan is produced.

Key Plan

Legend

 LINETYPE DENOTES LOCATION OF SITE BOUNDARY

P1	07.03.18	FINAL ISSUE	LC	RR
Rev	Date	Details of issue / revision	Drw	Rev

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Client
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Project Title
BURNASTON CROSS

Drawing Title
GROUND GAS PROTECTION MEASURES PLAN

Drawn:	L. Cross	Reviewed:	R. Robinson
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BWB Ref:	NTH2364	Date:	09.04.18	Scale@A3:	NTS
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Drawing Status
FINAL

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
BUR-BWB-00-XX-YE-DR-0006	P	1

APPENDICES

Appendix 1: Proposed Development Plan



Notes:

To be read in conjunction with relevant consultants drawings.

Revision:

A **CD 09/03/2018**
Masterplan Updated.

B **TH 03/05/2018**
Masterplan Updated to BMB final comments.

C **CD 02/07/2018**
Masterplan Updated.

D **CD 12/06/2018**
Masterplan Updated.

E **CD 02/07/2018**
Masterplan Updated.

F **CD 06/07/2018**
Swales and Bunds Updated.

G **CD 01/08/2018**
Landscaping Updated.

H **CD 01/08/2018**
Landscaping Updated.

UNIT 1:		
Warehouse	55,140 sqft	5122.7sqm
Office (2 Storey)	4,320 sqft	401.3 sqm
Total	59,460 sqft	5524.0 sqm
NDA		3.7 acres
UNIT 2:		
Warehouse	195,850 sqft	18195.1 sqm
Office (2 Storey)	882.5 sqm	
Total	205,350 sqft	19077.6 sqm
NDA		8.3 acres
UNIT 3:		
Warehouse	134,800 sqft	12523.3 sqm
Office (2 Storey)	9,000 sqft	836.1 sqm
Total	143,800 sqft	13359.4 sqm
NDA		6.3 acres
UNIT 4:		
Warehouse	245,125 sqft	22772.8 sqm
Office (2 Storey)	10,450 sqft	970.9 sqm
Total	255,575 sqft	23743.7 sqm
NDA		11.2 acres
UNIT 5:		
Warehouse	17,653 sqft	1640.0 sqm
Office (1 Storey)	1,622 sqft	150.7 sqm
Total	19,275 sqft	1790.7 sqm
NDA		1.2 acres
UNIT 6:		
Warehouse	14,394 sqft	1337.2 sqm
Office (1 Storey)	1,640 sqft	152.4 sqm
Total	16,034 sqft	1489.6 sqm
NDA		1.1 acres
UNIT 7:		
Warehouse	22,370 sqft	2078.2 sqm
Office (1 Storey)	1,410 sqft	131.0 sqm
Total	23,780 sqft	2209.2 sqm
NDA		1.4 acres
UNIT 8:		
Warehouse	16,079 sqft	1493.8 sqm
Office (1 Storey)	1,410 sqft	131.0 sqm
Total	17,489 sqft	1624.8 sqm
NDA		1.2 acres
UNIT 9:		
Warehouse	70,551 sqft	6554.4 sqm
Office (2 Storey)	4,086 sqft	379.6 sqm
Total	74,637 sqft	6934.0 sqm
NDA		3.5 acres
UNIT 10:		
Warehouse	63,287 sqft	5879.5 sqm
Office (2 Storey)	5,260 sqft	488.7 sqm
Total	68,547 sqft	6368.2 sqm
NDA		3.4 acres
UNIT 11:		
Warehouse	67,581 sqft	6278.5 sqm
Office (2 Storey)	5,616 sqft	521.7 sqm
Total	73,197 sqft	6800.2 sqm
NDA		3.3 acres
Total GIA:	957,144 sqft	88921.4 sqm
Gross Site Plan:		77.9 acres
Net Developable Total Areas:		44.6 acres

Architects | Masterplanners

STEPHEN GEORGE & PARTNERS LLP

170 London Road
Leicester LE2 1ND

t: 0116 247 0557 f: 0116 254 1095
www.stephengearge.co.uk

Axis 50, near Willington
Derby
Masterplan

Drawing status: Indicative

Cad reference: 16-078-MP04

Drawn: CD

Team: CD

Date: April 2018

Scale: 1:1250 @ A0

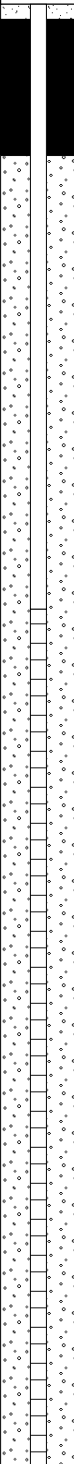
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Dwg no: MP05

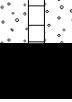
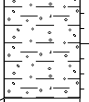
Rev: H

Appendix 2: Exploratory Hole Logs

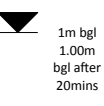
BOREHOLE LOG

LOCATION ID			Project Name: Burnaston Cross						Ground Level (m AOD): 57.12								
BH01			Project Number: NTH2364						Eastings: 429200.61								
			Client: Brackley Property Developments Ltd						Northings: 329548.63								
Hole Type: CP			Rig: Dando 2500			Start & End Date: 01/03/2018 - 05/03/2018			Engineer:			Checker: RTR					
Groundwater			Strata						Samples			In-Situ Tests					
Strike	Strike Details	Well	Level (m AOD) & (Thickness (m))	Description		Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)			
			[0.30]	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil) Pulverised Fuel Ash arising as a very loose slightly gravelly silty fine SAND. (Made Ground)			0.30	B	0.00	1.20							
			56.82 [3.20]					B	1.20	1.65	S	1.20	N=0 (0,0/0,0,0,0)	0.00m (1.00m bgl)			
								B	2.00	3.00	S	2.00	N=0 (0,0/0,0,0,0)	1.80m (NR)			
								B	3.00	4.00	S	3.00	N=0 (0,0/0,0,0,0)	2.80m (NR)			
					53.62 [2.30]	Stiff reddish brown slightly gravelly CLAY. Gravel is sub-angular fine and medium weak mudstone. (Weathered Gunthorpe Member)			3.50	B U (73)	4.00	4.45					
							4.00		5.00								
										S	5.00	N=23 (2,2/5,4,6,8)	4.00m (NR)				
					51.32 [4.56]	Stiff reddish brown occasionally mottled grey and greenish grey gravelly friable CLAY. Gravel is sub-angular fine to coarse weak mudstone. (Gunthorpe Member)			5.80	B D	6.50	6.95	S	6.50	N=32 (4,7/11,6,8,7)	4.00m (NR)	
											6.50	8.00					
											D	9.50	9.78	S	9.50	50 (7,18/50 for 125mm)	8.00m (NR)
Chiseling			Remarks						Legend								
From (m bgl)	To (m bgl)	Time (hh:mm)	Reason for Termination: Terminated in hard ground						Sample Type:		Groundwater:		In-Situ Tests				
7.00	10.00	04:50	Groundwater Remarks: Groundwater encountered at 1.0m, sealed off at 3.5m						B - Bulk C - Core D - Disturbed ES - Environmental Sample U - Undisturbed		 Groundwater Strike  Resting Groundwater NR = Not Recorded		C - Cone Penetration Test HSV - Hand Shear Vane Test PID - Photo Ionisation Detection Screen S - Standard Penetration Test				
Water Added			Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Cased to depth using 150mm casing. 3. Installed with 50mm HDPE well screen, gas tap and raised cover. 3. The casing became breached during removal leading to the borehole partially backfilling prior to installation. Backfill information is may not be accurate.						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com P: 0115 9241100 E: nottingham@bwbconsulting.com		 CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS				
From (m bgl)	To (m bgl)	Volume (l)															

BOREHOLE LOG

LOCATION ID		Project Name: Burnaston Cross					Ground Level (m AOD): 57.12						
BH01		Project Number: NTH2364					Eastings: 429200.61						
		Client: Brackley Property Developments Ltd					Northings: 329548.63						
Hole Type: CP		Rig: Dando 2500		Start & End Date: 01/03/2018 - 05/03/2018			Engineer:		Checker: RTR				
Groundwater			Strata					Samples		In-Situ Tests			
Strike	Strike Details	Well	Level (m AOD) & Thickness (m)	Description	Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
			46.76	Stiff reddish brown occasionally mottled grey and greenish grey gravelly friable CLAY. Gravel is sub-angular fine to coarse weak mudstone. (Gunthorpe Member) Hole Terminated at 10.36m bgl.		10.36	D	10.00	10.36	S	10.00	50 (25 for 140mm/50 for 215mm)	9.00m (NR)
Chiselling			Remarks					Legend					
From (m bgl)	To (m bgl)	Time (hh:mm)	Reason for Termination: Terminated in hard ground Groundwater Remarks: Groundwater encountered at 1.0m, sealed off at 3.5m Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Cased to depth using 150mm casing. 3. Installed with 50mm HDPE well screen, gas tap and raised cover. 3. The casing became breached during removal leading to the borehole partially backfilling prior to installation. Backfill information is may not be accurate.					Sample Type:		Groundwater:		In-Situ Tests	
7.00	10.00	04:50						B - Bulk C - Core D - Disturbed ES - Environmental Sample U - Undisturbed		 Groundwater Strike  Resting Groundwater NR = Not Recorded		C - Cone Penetration Test HSV - Hand Shear Vane Test PID - Photo Ionisation Detection Screen S - Standard Penetration Test	
Water Added								BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com P: 0115 9241100 E: nottingham@bwbconsulting.com			
From (m bgl)	To (m bgl)	Volume (l)											

BOREHOLE LOG

LOCATION ID			Project Name: Burnaston Cross					Ground Level (m AOD): 56.99							
BH02			Project Number: NTH2364					Eastings: 429106.68							
			Client: Brackley Property Developments Ltd					Northings: 329536.55							
Hole Type: CP			Rig: Dando 2500		Start & End Date: 27/02/2018 - 28/02/2018					Engineer:		Checker: RTR			
Groundwater			Strata					Samples			In-Situ Tests				
Strike	Strike Details	Well	Level (m AOD) & Thickness (m)	Description		Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)	
			[0.20] 56.79 [3.40]	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)			0.20	B	0.00	1.20					
				PFA arising as a very loose grey sandy GRAVEL. Gravel is sub-angular fine and medium PFA. Sand is fine. (Made Ground)				B	1.20	2.00	S	1.20	N=0 (0,0/0,0,0,0)	0.00m (1.00m bgl)	
											S	2.00	N=0 (0,0/0,0,0,0)	1.80m (1.00m bgl)	
									B	3.00	4.00	S	3.00	N=0 (0,0/0,0,0,0)	2.80m (1.00m bgl)
				53.39 [2.40]	Stiff red occasionally mottled greenish grey medium laminated CLAY. (Weathered Gunthorpe Member)			3.60	B D	4.00 4.00	4.45 5.00	S	4.00	N=19 (3,4/5,5,5,4)	3.80m (NR)
			50.99 [3.20]	Very stiff reddish brown occasionally mottled grey gravelly friable CLAY. Gravel is fine and medium mudstone. (Weathered Gunthorpe Member)			6.00	B D	6.50 6.50	6.88 7.50	S	6.50	51 (4,11/51 for 230mm)	4.50m (NR)	
								D	8.00	8.21	S	8.00	50 (15,10/50 for 55mm)	4.50m (NR)	
								D	9.00	9.20	S	9.00	50 (12,13/50 for 45mm)	4.00m (NR)	
			47.79	Hole Terminated at 9.20m bgl.			9.20								
Chiseling			Remarks					Legend							
From (m bgl)	To (m bgl)	Time (hh:mm)	Reason for Termination:					Sample Type:		Groundwater:		In-Situ Tests			
8.00	9.00	02:00	Terminated in hard ground					B - Bulk C - Core D - Disturbed ES - Environmental Sample U - Undisturbed		   Groundwater NR = Not Recorded		C - Cone Penetration Test HSV - Hand Shear Vane Test PID - Photo Ionisation Detection Screen S - Standard Penetration Test			
Water Added			Groundwater Remarks:					BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com P: 0115 9241100 E: nottingham@bwbconsulting.com		 CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS			
From (m bgl)	To (m bgl)	Volume (l)	Other Remarks:												
			1. No olfactory or visual evidence of contamination noted. 2. Installed with dual 50mm & 19mm HDPE well screen, gas taps and raised cover.												

BOREHOLE LOG

Scale 1:50

Sheet 1 of 2

LOCATION ID		Project Name: Burnaston Cross						Ground Level (m AOD): 56.74							
BH03		Project Number: NTH2364						Eastings: 429024.09							
		Client: Brackley Property Developments Ltd						Northings: 329389.95							
Hole Type: CP		Rig: Dando 2500			Start & End Date: 26/02/2018 - 27/02/2018			Engineer:			Checker: RTR				
Groundwater			Strata						Samples			In-Situ Tests			
Strike	Strike Details	Well	Level (m AOD) & (Thickness (m))	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)		
			[0.20] 56.54 [0.70]	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)		0.20	B	0.20	1.20						
			55.84 [1.55]	Pulverised Fuel Ash arising as a grey gravelly fine and medium SAND. Gravel is angular to sub-rounded fine to coarse quartzite, brick, ash and PFA with occasional glass. (Made Ground)		0.90	B D	1.20 1.20	1.65 2.00	S	1.20	N=23 (2,7/7,6,5,5)	1.00m (NR)		
				Pulverised Fuel Ash arising as a medium dense grey to dark grey sandy GRAVEL of sub-angular fine to coarse PFA. Occasional coal fragments. (Made Ground)			B D	2.00 2.00	2.45 3.00	S	2.00	N=9 (1,1/1,1,2,5)	2.00m (NR)		
			54.29 [4.55]	2.4m - 2.45m: Suspected asbestos material.		2.45	ES	2.40	2.45						
				Very loose dark grey to black slightly silty gravelly fine and medium SAND. Gravel is angular to sub-angular fine to coarse brick, ash, clinker, slag and with occasional cloth, timber and glass. (Made Ground)			B D	3.00 3.00	3.45 4.00	S	3.00	N=4 (1,1/1,0,1,2)	2.80m (NR)		
							D	4.00	4.45	S	4.00	N=0 (0,0/0,0,0,0)	3.80m (4.00m bgl)		
							B	5.00	6.50	S	5.00	N=0 (0,0/0,0,0,0)	4.80m (4.00m bgl)		
							D	6.50	6.95	S	6.50	N=32 (2,9/6,8,6,12)	6.30m (NR)		
			49.74 [1.20]	Firm orangish brown slightly sandy CLAY. Sand is fine and medium. (Glacial Till)		7.00	B	7.00	8.00						
			48.54 [3.10]	Medium dense orangish brown fine and medium SAND. (Glacial Till)		8.20	B D	8.00 8.00	8.45 9.00	S	8.00	N=26 (3,4/4,6,7,9)	7.80m (NR)		
							B D	9.50 9.50	11.00 9.95	S	9.50	N=33 (3,6/7,9,10,7)	9.30m (NR)		
Chiseling				Remarks						Legend					
From (m bgl)	To (m bgl)	Time (hh:mm)													
			Reason for Termination: Sufficient depth reached						Sample Type: B - Bulk C - Core D - Disturbed ES - Environmental Sample U - Undisturbed						
Groundwater Remarks: Groundwater encountered at 4.0m									Groundwater: Groundwater Strike Resting Groundwater NR = Not Recorded						
Water Added			Other Remarks: 1. Suspected asbestos material noted between 2.4m and 2.45m. 2. Installed with 50mm HDPE well screen, gas tap and raised cover.						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ						
From (m bgl)	To (m bgl)	Volume (l)													
									Web: bwbconsulting.com P: 0115 9241100 E: nottingham@bwbconsulting.com						
									BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDING						

BOREHOLE LOG

Scale 1:50

Sheet 2 of 2

[illegible]

BOREHOLE LOG

LOCATION ID			Project Name: Burnaston Cross						Ground Level (m AOD): 58.20								
BH04			Project Number: NTH2364						Eastings: 429149.78								
			Client: Brackley Property Developments Ltd						Northings: 329381.01								
Hole Type: CP			Rig: Dando 2500			Start & End Date: 22/02/2018 - 26/02/2018			Engineer:			Checker: RTR					
Groundwater			Strata						Samples			In-Situ Tests					
Strike	Strike Details	Well	Level (m AOD) & (Thickness (m))	Description		Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)			
			[0.20] 58.00 [3.40]	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)			0.20	B	0.20	1.20							
				Pulverised Fuel Ash arising as a very loose to medium dense sandy GRAVEL with low to moderate cobble content. Gravel is sub sub-angular fine to coarse PFA. Cobbles of sub-angular PFA. Occasional inclusion of sandstone, coal and clinker. (Made Ground)				B D	1.20 1.20	1.65 2.00	S	1.20	N=45 (7,10/11,12,11,11)	0.00m (NR)			
								B D	2.00 2.00	2.45 3.00	S	2.00	N=0 (1,1/0,0,0,0)	1.80m (NR)			
								B D	3.00 3.00	3.45 4.00	S	3.00	N=24 (4,5/6,6,6,6)	2.80m (NR)			
			54.60 [3.25]	Loose dark grey to black sandy GRAVEL with low cobble content. Gravel is angular to sub-angular fine to coarse brick, concrete, ash, clinker and PFA. Cobbles of angular to sub-angular brick. Occasional inclusion of ceramic, cloth, timber and metal. (Made Ground)			3.60	B D	4.00 4.00	4.45 5.00	S	4.00	N=4 (4,2/1,1,1,1)	3.00m (NR)			
				3.6m: Polythene membrane recorded.				D	5.00	5.45	S	5.00	N=6 (2,2/2,0,2,2)	4.80m (NR)			
								D	6.50	6.95	S	6.50	N=12 (1,0/2,3,3,4)	6.30m (NR)			
			51.35 [1.60]	Firm orangish brown slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine and medium quartzite and weak mudstone. (Glacial Till)			6.85	B	7.00	8.00							
								U (51)	8.00	8.45							
			49.75 [1.55]	Dense orangish brown to light brown fine and medium SAND. (Glacial Till)			8.45	D	9.50	9.95	S	9.50	N=33 (4,9/10,8,8,7)	9.50m (NR)			
Chiseling			Remarks						Legend								
From (m bgl)	To (m bgl)	Time (hh:mm)	Reason for Termination: Obstruction encountered at 9.5m (suspected cobble / boulder), unable to break through.						Sample Type:		Groundwater:		In-Situ Tests				
9.50	10.00	01:00							B - Bulk C - Core D - Disturbed ES - Environmental Sample U - Undisturbed		Groundwater Strike Resting Groundwater NR = Not Recorded		C - Cone Penetration Test HSV - Hand Shear Vane Test PID - Photo Ionisation Detection Screen S - Standard Penetration Test				
Water Added			Groundwater Remarks: No groundwater encountered.														
From (m bgl)	To (m bgl)	Volume (l)	Other Remarks:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com P: 0115 9241100 E: nottingham@bwbconsulting.com		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDING				
			1. No olfactory or visual evidence of contamination noted. 2. Cased to depth using 150mm casing. 3. Installed with 50mm HDPE well screen, gas tap and raised cover.														

BOREHOLE LOG

Scale 1:50

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[illegible]

BOREHOLE LOG

Scale 1:50

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LOCATION ID		Project Name: Burnaston Cross						Ground Level (m AOD): 54.51							
BH05		Project Number: NTH2364						Eastings: 429216.98							
		Client: Brackley Property Developments Ltd						Northings: 329206.55							
Hole Type: CP		Rig: Dando 2500			Start & End Date: 20/01/2018 - 21/02/2018			Engineer:			Checker: RTR				
Groundwater			Strata						Samples			In-Situ Tests			
Strike	Strike Details	Well	Level (m AOD) & (Thickness (m))	Description	Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)		
	0.9m bgl 0.90m bgl after 20mins		[0.25]	Grass over soft brown to dark brown slightly gravelly sandy CLAY with rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.25	B	0.00	1.00						
			54.26 [0.65]	Orangish brown slightly clayey gravelly SAND. Gravel is angular to sub-rounded fine to coarse quartzite. Sand is fine to coarse. (Egginton Common Sand And Gravel Member)		0.90	B D	1.00 1.00	1.45 2.00	S	1.00	N=11 (1,1/2,3,3,3)	0.00m (0.90m bgl)		
	9.1m bgl 9.10m bgl after 20mins		53.61 [0.70]	Firm orangish brown slightly gravelly laminated CLAY. Gravel is sub-angular to sub-rounded fine and medium quartzite. (Glacial Till)		1.60	D	1.50	1.60						
			52.91 [7.50]	Firm brown to dark brown CLAY with occasional thin laminations. Occasional sub-angular fine weak gypsum. (Glacial Till)			D	2.00	2.45	S	2.00	N=9 (1,0/2,2,2,3)	2.00m (NR)		
				3.0m - 9.1m: Becomes stiff.			D	3.00	3.45	S	3.00	N=20 (2,2/3,4,6,7)	3.00m (NR)		
							U (52)	4.00	4.45						
							D	4.50	4.60						
							D	5.00	5.45	S	5.00	N=21 (2,3/4,4,6,7)	4.00m (NR)		
							D	5.50	5.60						
							U (99)	6.50	6.95						
							D	7.00	7.10						
							D	8.00	8.45	S	8.00	N=44 (7,8/9,11,11,13)	4.00m (NR)		
				8.6m - 9.1m: Occasional bands of grey and light brown. Occasional subangular fine gravel of quartz and fine to coarse sand.											
			45.41 [6.35]	Medium dense orangish brown silty fine SAND with occasional bands of firm grey laminated clay (5mm - 10mm thick).		9.10	D	9.50	9.95	S	9.50	N=18 (3,3/4,4,4,6)	4.00m (9.10m bgl)		
Chiseling				Remarks				Legend							
From (m bgl)	To (m bgl)	Time (hh:mm)	Sample Type: Groundwater: In-Situ Tests												
			Reason for Termination:				B - Bulk				C - Cone Penetration Test				
			Sufficient depth reached				C - Core				HSV - Hand Shear Vane Test				
			Groundwater Remarks:				D - Disturbed				PID - Photo Ionisation				
			Groundwater seepage encountered at 0.9m, sealed off at 1.0m. Second groundwater strike encountered at 9.1m.				ES - Environmental		NR = Not Recorded		Detection Screen				
							Sample				S - Standard Penetration Test				
							U - Undisturbed								
Water Added							BWB Consulting Ltd		Web:						
From (m bgl)	To (m bgl)	Volume (l)	Other Remarks:				Waterfront House		bwbconsulting.com						
			1. No olfactory or visual evidence of contamination noted. 2. Cased to depth using 150mm casing. 3. Installed with 50mm HDPE well screen, gas tap and flush cover.				Station Street		P: 0115 9241100						
							Nottingham		E: nottingham						
							NG2 3DQ		@bwbconsulting.com						

BOREHOLE LOG

LOCATION ID		Project Name: Burnaston Cross					Ground Level (m AOD): 54.51							
BH05		Project Number: NTH2364					Eastings: 429216.98							
		Client: Brackley Property Developments Ltd					Northings: 329206.55							
Hole Type: CP		Rig: Dando 2500			Start & End Date: 20/01/2018 - 21/02/2018			Engineer:		Checker: RTR				
Groundwater			Strata					Samples			In-Situ Tests			
Strike	Strike Details	Well	Level (m AOD) & Thickness (m)	Description	Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)	
				(Glacial Till)										
				12.0m - 15.45m: Blowing sands noted.			D	12.00	12.45	S	12.00	N=13 (1,1/2,2,3,6)	4.00m (9.10m bgl)	
							D	13.50	13.95	S	13.50	N=27 (3,4/5,7,7,8)	13.50m (8.50m bgl)	
							D	15.00	15.45	S	15.00	N=38 (4,7/7,7,10,14)	15.00m (8.50m bgl)	
			39.06	Hole Terminated at 15.45m bgl.		15.45								
Chiseling			Remarks					Legend						
From (m bgl)	To (m bgl)	Time (hh:mm)	Reason for Termination:					Sample Type:		Groundwater:		In-Situ Tests		
			Sufficient depth reached					B - Bulk		Groundwater		C - Cone Penetration Test		
Water Added			Groundwater Remarks:					C - Core		Strike		HSV - Hand Shear Vane Test		
								D - Disturbed		Resting		PID - Photo Ionisation		
								ES - Environmental		Groundwater		Detection Screen		
								Sample		NR = Not Recorded		S - Standard Penetration Test		
From (m bgl)	To (m bgl)	Volume (l)	Other Remarks:					BWB Consulting Ltd		Web:				
			1. No olfactory or visual evidence of contamination noted. 2. Cased to depth using 150mm casing. 3. Installed with 50mm HDPE well screen, gas tap and flush cover.					Waterfront House		P: 0115 9241100				
								Station Street		E: nottingham				
								Nottingham		@bwbconsulting.com				
								NG2 3DQ						

TRIAL PIT LOG

Scale: 1:25

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LOCATION ID:		Project Name: Burnaston Cross				3.50 0.70 Pit Dimensions (m) 90 Degrees							
TP01		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
		Plant: JS220 LC		Start & End Date: 26/02/2018									
Hole Type: TP						Stability: Unstable between 2.5m and 3.1m							
Ground Level (m AOD): 57.25		Eastings & Northings: 429176E 329617N				Engineer: LC		Checker: RTR					
Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			56.95	0.30m	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)		0.30	ES	0.60	0.70			
				2.60m	Light brown becoming orangish brown from 0.55m slightly clayey sandy GRAVEL of sub-angular to well rounded fine to coarse quartzite, sandstone and flint. Rare sub-rounded cobble of quartzite. (Etwell Sand And Gravel Member)								
			54.35		1.85m - 2.9m: Pockets of stiff orangish brown gravelly clay.								
					Stiff reddish brown slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse quartzite, sandstone and weak mudstone. Rare fragments of coal. (Glacial Till)		2.90	D B	3.20 3.30	3.30 3.80	HSV	3.20	>130, >130, >130 kPa
				0.90m	3.4m - 3.8m: Clay becomes very friable, arising more as a sandy gravel.								
			53.45		Hole Terminated at 3.80m bgl.		3.80				HSV	3.70	(87, 85, 85)kPa
Remarks								Legend					
Reason for Termination:								Samples:		Groundwater Strikes:		In-Situ Tests:	
Sufficient depth reached								B - Bulk D - Disturbed ES - Environmental Sample		Groundwater Strike Resting Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test	
Groundwater Notes:													
No groundwater encountered													
Other Remarks:													
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.								BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS	

TRIAL PIT LOG

Scale: 1:25

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LOCATION ID: TP02

Hole Type: TP

Project Name: Burnaston Cross

Project Number: NTH2364

Client: Brackley Property Developments Ltd

Plant: JS220 LC

Start & End Date: 26/02/2018

Ground Level (m AOD): 56.90

Eastings & Northings: 429263E 329561N

Engineer: LC

Checker: RTR

3.50

0.70

Pit Dimensions (m)

180 Degrees

Stability: Remained stable throughout

Groundwater

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

Type

From (m)

To (m)

Type

Depth (m)

Result

▼

1.5m bgl

1.50m bgl after 20mins

0.45m

56.45

0.35m

56.10

1.25m

54.85

1.05m

53.80

0.80m

53.00

3.90m

Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)

Orangish brown sandy GRAVEL with low cobble content. Gravel is angular to well rounded fine to coarse quartzite with occasional slag. Cobbles of angular to sub-angular slag. (Made Ground)

Orangish brown occasionally grey sandy GRAVEL. Gravel is angular to well rounded fine to coarse flint, quartzite, limestone and sandstone. (Etwell Sand And Gravel Member)

1.6m - 2.05m: Occassional pockets of firm reddish brown gravelly clay.

Dark orange SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse flint, quartzite, limestone and occasional sandstone. (Etwell Sand And Gravel Member)

Stiff reddish brown occasionally mottled grey slightly gravelly CLAY. Gravel is sub-angular to well rounded fine and medium quartzite, sandstone and weak mudstone. (Glacial Till)

3.3m - 3.65m: Clay becomes very friable, arising more as a sandy gravel.

Hole Terminated at 3.90m bgl.

ES

0.10

0.20

B

ES

0.50

0.80

B

ES

1.00

1.50

ES

2.10

2.20

D

3.20

3.30

HSV

3.20

HSV

3.80

(>130, >130, >130) kPa

(120, 83, 111)kPa

Remarks

Reason for Termination: Sufficient depth reached

Groundwater Notes: Seepage noted from 1.5m

Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.

Samples:

Groundwater Strikes:

In-Situ Tests:

B - Bulk

D - Disturbed

ES - Environmental Sample

Groundwater Strike

Resting

Groundwater Level

HSV - Hand Shear

Vane Test

PID - Photo Ionisation

Detector Test

BWB Consulting Ltd

Waterfront House

Station Street

Nottingham

NG2 3DQ

Web:

bwbconsulting.com

E: nottingham

@bwbconsulting.com

P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25

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LOCATION ID: TP03	Project Name: Burnaston Cross		3.90 0.70 Pit Dimensions (m) 270 Degrees	
	Project Number: NTH2364			
	Client: Brackley Property Developments Ltd			
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 26/02/2018	Stability: Remained stable throughout
Ground Level (m AOD): 57.20		Eastings & Northings: 429144E 329556N	Engineer: LC	Checker: RTR

[illegible]

Remarks		Legend		
Reason for Termination: Sufficient depth reached		Samples: B - Bulk D - Disturbed ES - Environmental Sample	Groundwater Strikes:  Groundwater Strike  Resting Groundwater Level	In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test
Groundwater Notes: Seepage noted from 1.65m				
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.		BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ	Web: bwbcconsulting.com E: nottingham@bwbcconsulting.com P: 0115 9241100	

TRIAL PIT LOG

Scale: 1:25

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LOCATION ID: TP04	Project Name: Burnaston Cross		3.60		
	Project Number: NTH2364				
	Client: Brackley Property Developments Ltd				
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 26/02/2018	Stability: Remained stable throughout	
Ground Level (m AOD): 57.26		Eastings & Northings: 429093E 329624N		Engineer: LC	Checker: RTR

Groundwater		Strata				Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
				0.35m	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)		0.35				HSV	0.40	(73, 73, 84)kPa
			56.91	0.25m	Stiff light brown and orangish brown slightly sandy very gravelly CLAY. Gravel is sub-rounded to well rounded to coarse quartzite. (Glacial Till)		0.60						
			56.66	0.90m	Orangish brown slightly clayey slightly sandy GRAVEL with low cobble content. Gravel is sub-angular to well rounded fine to coarse quartzite. Cobbles of sub-rounded quartzite. (Etwall Sand And Gravel Member)								
			55.76		Stiff reddish brown occasionally mottled grey and orange slightly sandy gravelly CLAY with low cobble content. Gravel is sub-angular to well rounded fine to coarse sandstone, quartzite and mudstone. Cobbles of sub-angular to sub-rounded quartzite. (Glacial Till)		1.50				HSV	2.00	(107, 110, 110)kPa
			54.46	1.30m									
				1.00m	Stiff brown mottled grey gravelly CLAY. Gravel is angular to sub-rounded fine to coarse weak mudstone with occasional sandstone and quartzite. (Glacial Till)		2.80				HSV	2.70	(87, 87, 87)kPa
					3.0m - 3.8m: Clay becomes very friable, arising more as a sandy gravel.								
			53.46		Hole Terminated at 3.80m bgl.		3.80						

Remarks		Legend	
Reason for Termination: Sufficient depth reached		Samples: B - Bulk D - Disturbed ES - Environmental Sample	
Groundwater Notes: No groundwater encountered		Groundwater Strikes:  Groundwater Strike  Resting  Groundwater Level	
In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test			
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion. 3. Location excavated to assess ground conditions only.		BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100	
			

TRIAL PIT LOG													Scale: 1:25		Sheet 1 of 2				
LOCATION ID: TP05		Project Name: Burnaston Cross										3.90 0.75 Pit Dimensions (m) 90 Degrees							
		Project Number: NTH2364																	
		Client: Brackley Property Developments Ltd																	
		Plant: JS220 LC		Start & End Date: 27/02/2018								Stability: Remained stable throughout							
Hole Type: TP																			
Ground Level (m AOD): 57.60				Eastings & Northings: 429129E 329432N								Engineer: LC			Checker: RTR				
Groundwater		Strata										Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description				Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result			
	3.6m bgl 3.60m bgl after 20mins		57.45	0.15m	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)					0.15	ES	0.30	0.40						
				0.60m													0.75		
				56.85		Grey and dark grey slightly sandy GRAVEL of angular to sub-angular fine to coarse brick, concrete, ash, sandstone, mudstone and coal with occasional inclusions of metal, plant debris and household waste. (Made Ground)						ES	0.80	0.90					
						Pulverised Fuel Ash arising as a light brown becoming grey from 0.9m slightly sandy GRAVEL of angular to sub-angular fine to coarse PFA with occasional coal. (Made Ground)													
						2.85m		2.1m - 2.5m: Band of dark grey to black gravel of sub-angular fine to coarse carbonaceous mudstone with rare metal and plastic inclusions.											
			54.00		Pulverised Fuel Ash arising as a slightly silty gravelly fine SAND. Gravel is angular to sub-angular fine and medium PFA, carbonaceous mudstone and coal. Rare inclusion of metal and rubber tubing. (Made Ground)					3.60	ES	3.70	3.80						
				0.90m							B	4.00	4.50						
Remarks													Legend						
Reason for Termination:													Samples:		Groundwater Strikes:		In-Situ Tests:		
Location ceased due to water ingress													B - Bulk D - Disturbed ES - Environmental Sample		 Groundwater Strike  Resting  Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test		
Groundwater Notes:																			
Slow ingress noted from 3.6m																			
Other Remarks:													BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100				
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.																			

TRIAL PIT LOG

Scale: 1:25

Sheet 2 of 2

LOCATION ID:		Project Name: Burnaston Cross				3.90 0.75 Pit Dimensions (m) 90 Degrees							
TP05		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
		Plant: JS220 LC		Start & End Date: 27/02/2018									
Hole Type: TP		Stability: Remained stable throughout											
Ground Level (m AOD): 57.60		Eastings & Northings: 429129E 329432N				Engineer: LC		Checker: RTR					
Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			53.10		Pulverised Fuel Ash arising as a slightly silty gravelly fine SAND. Gravel is angular to sub-angular fine and medium PFA, carbonaceous mudstone and coal. Rare inclusion of metal and rubber tubing. (Made Ground) Hole Terminated at 4.60m bgl.		4.50						
Remarks						Legend							
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:			
Location ceased due to water ingress						B - Bulk D - Disturbed ES - Environmental Sample		Groundwater Strike Resting Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test			
Groundwater Notes:													
Slow ingress noted from 3.6m													
Other Remarks:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS			
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.													

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID: TP06		Project Name: Burnaston Cross			Project Number: NTH2364			Client: Brackley Property Developments Ltd			Plant: JS220 LC			Start & End Date: 26/02/2018			Stability: Unstable between 1.75m to 2.55m							
Ground Level (m AOD): 56.76		Eastings & Northings: 429006E 329569N			Engineer: LC			Checker: RTR			Pit Dimensions (m) 3.80 x 0.70			0 Degrees										
Groundwater		Strata										Samples			In-Situ Tests									
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description			Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result									
			56.46	0.30m	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite.				0.30	ES	0.40	0.50												
			55.91	0.55m	(Topsoil) Light brown sandy GRAVEL slightly sub-angular to well rounded fine to coarse quartzite. (Etwall Sand And Gravel Member)																			
			55.91		Dark orange SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. (Etwall Sand And Gravel Member)				0.85	ES	1.00	1.10												
					1.5m - 2.0m: Pocket of stiff orange and grey gravelly clay.																			
			54.21	1.70m																				
			54.21		Stiff greyish brown occasionally mottled and grey gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse weak mudstone with occasional sandstone and quartzite. (Glacial Till)				2.55				HSV	2.70	(120, 122, >130) kPa									
													HSV	3.50	(110, 103, 96)kPa									
			52.66	1.55m																				
					Hole Terminated at 4.10m bgl.				4.10															
Remarks																Legend								
Reason for Termination:																Samples:			Groundwater Strikes:			In-Situ Tests:		
Sufficient depth reached																B - Bulk D - Disturbed ES - Environmental Sample			 Groundwater Strike  Resting  Groundwater Level			HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test		
Groundwater Notes:																								
Seepage noted from 1.85m																								
Other Remarks:																								
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.																BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ			Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100					

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID:TP07

Hole Type: TP

Project Name:Burnaston Cross

Project Number:NTH2364

Client:Brackley Property Developments Ltd

Plant:JS220 LC

Start & End Date:26/02/2018

Ground Level (m AOD):57.19

3.40

Pit Dimensions (m)

0 Degrees

Stability: Unstable from 1.3m

Eastings & Northings:429183E 329513N

Engineer: LC

Checker: RTR

Groundwater

Strata

Samples

In-Situ Tests

Strike

Strike Details

Backfill

Level (m AOD)

Thickness

Description

Legend

Depth (m bgl)

2.4m bgl

2.40m bgl after 20mins

56.99

0.20m

Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)

0.20

ES

0.30

0.40

56.29

0.70m

Grey to dark grey sandy GRAVEL with low cobble content. Gravel is angular to sub-angular fine to coarse brick, ash and PFA with inclusions of cloth, plastic, timber and glass. Rare inclusion of expanding foam. Cobbles of sub-angular brick. (Made Ground)

0.90

ES

1.00

1.10

55.09

1.20m

Pulverised Fuel Ash arising as a grey gravelly fine and medium SAND. Gravel is sub-angular fine to coarse PFA with occasional coal and brick. (Made Ground)

2.10

ES

2.20

2.30

54.39

0.70m

Dark grey and black gravelly fine to coarse SAND with occasional cobbles and boulders. Gravel is angular to sub-angular fine to coarse brick, ash, concrete, clinker and PFA with inclusions of metal and plastic. Cobbles and boulders of sub-angular concrete. (Made Ground)

2.80

Hole Terminated at 2.80m bgl.

Remarks

Reason for Termination:
Location ceased due to water ingress

Groundwater Notes:
Slow ingress noted from 2.4m

Other Remarks:
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.

Samples:
B - Bulk
D - Disturbed
ES - Environmental Sample

Groundwater Strikes:
Groundwater Strike
Resting
Groundwater Level

In-Situ Tests:
HSV - Hand Shear
Vane Test
PID - Photo Ionisation
Detector Test

BWB Consulting Ltd
Waterfront House
Station Street
Nottingham
NG2 3DQ

Web:
bwbconsulting.com
E: nottingham
@bwbconsulting.com
P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID: TP08	Project Name: Burnaston Cross		3.50 0.80 Pit Dimensions (m) 180 Degrees	
	Project Number: NTH2364			
	Client: Brackley Property Developments Ltd			
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 26/02/2018	Stability: Unstable from 0.8m
Ground Level (m AOD): 57.24		Eastings & Northings: 429300E 329517N	Engineer: LC	Checker: RTR

[illegible]

Remarks		Legend		
Reason for Termination: Frequent collapse hindering progress		Samples: B - Bulk D - Disturbed ES - Environmental Sample	Groundwater Strikes:  Groundwater Strike  Resting  Groundwater Level	In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test
Groundwater Notes: Groundwater encountered at 1.85m				
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.		BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ	Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100	 CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID:TP09

Hole Type: TP

Project Name: Burnaston Cross

Project Number: NTH2364

Client: Brackley Property Developments Ltd

Plant: JS220 LC

Start & End Date: 27/02/2018

Ground Level (m AOD): 56.38

Eastings & Northings: 429258E 329448N

Engineer: LC

Checker: RTR

3.70

0.70

Pit Dimensions (m)

90 Degrees

Stability: Unstable from 2.5m

Groundwater

Strata

Samples

In-Situ Tests

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)

Pulverised Fuel Ash arising as a grey sandy GRAVEL of sub-angular fine to coarse PFA. Sand is fine. (Made Ground)

56.18

0.20m

55.43

0.15m

55.28

2.00m

53.28

Hole Terminated at 3.10m bgl.

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0.75m

0.95

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2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

2.45m bgl

0.20

0.40

1.00

2.00

2.20

2.30

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID: TP10

Project Name: Burnaston Cross

Project Number: NTH2364

Client: Brackley Property Developments Ltd

Hole Type: TP

Plant: JS220 LC

Start & End Date: 22/02/2018

3.80

0.70

Pit Dimensions (m)

180 Degrees

Stability: Remained stable throughout

Ground Level (m AOD): 52.46

Eastings & Northings: 429291E 329283N

Engineer: LC

Checker: RTR

Groundwater

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

Samples

Type

From (m)

To (m)

In-Situ Tests

Type

Depth (m)

Result

▼

0.9m bgl

0.90m bgl

after 20mins

52.01

0.45m

Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)

ES

0.20

0.30

51.01

1.00m

Grey becoming orange from 0.75m SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. Sand is fine to coarse. (Etwall Sand And Gravel Member)

0.9m - 1.0m: Clay land drain.

ES

0.60

0.70

51.01

0.55m

Firm reddish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is sub-angular to well rounded fine to coarse quartzite. Occasional small pocket of coarse grey sand. (Etwall Sand And Gravel Member)

1.8m - 2.0m: Becomes very sandy.

ES

1.50

1.60

HSV

1.60

(72, 45, 75)kPa

50.46

1.35m

Stiff brown to dark brown slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine and medium weak mudstone and gypsum. (Weathered Gunthorpe Member)

HSV

2.10

(105, 105, 110)kPa

49.11

Hole Terminated at 3.35m bgl.

HSV

3.00

(113, 113, 110)kPa

Remarks

Reason for Termination:

Sufficient depth reached

Groundwater Notes:

steady ingress noted from 0.9m

Other Remarks:

1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.

Samples:

B - Bulk

D - Disturbed

ES - Environmental Sample

Groundwater Strikes:

Groundwater Strike

Resting

Groundwater Level

In-Situ Tests:

HSV - Hand Shear Vane Test

PID - Photo Ionisation Detector Test

BWB Consulting Ltd

Waterfront House

Station Street

Nottingham

NG2 3DQ

Web:

bwbconsulting.com

E: nottingham

@bwbconsulting.com

P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID: TP12	Project Name: Burnaston Cross		3.60 0.75 Pit Dimensions (m) 270 Degrees										
	Project Number: NTH2364												
	Client: Brackley Property Developments Ltd												
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 27/02/2018		Stability: Unstable throughout								
Ground Level (m AOD): 56.15		Eastings & Northings: 429248E 329318N			Engineer: LC		Checker: RTR						
Groundwater		Strata				Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
				1.05m	Grass over brown gravelly fine and medium SAND with frequent rootlets to 0.2m. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)			ES	0.30	0.40			
			55.10		Black occasionally brown sandy GRAVEL with medium cobble content. Gravel is angular to well rounded fine to coarse brick, clinker, ash, slag and quartzite. Cobbles of angular to sub-angular brick, clinker and slag. Inclusions of glass bottles and metal. (Made Ground)		1.05	B ES	1.10 1.10	1.20 1.50			
				1.65m	2.05m - 2.7m: Strong hydrocarbon odour noted from groundwater with visible sheen and possible product.			ES	2.10	2.20			
					2.4m - 2.7m: Suspected asbestos cement sheeting within arisings.			ES	2.40	2.70			
			53.45		Hole Terminated at 2.70m bgl.		2.70						
Remarks						Legend							
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:			
Suspected asbestos containing material encountered						B - Bulk D - Disturbed ES - Environmental Sample		 Groundwater Strike Resting Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test			
Groundwater Notes:													
Rapid ingress noted from 2.05m													
Other Remarks:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100					
1. Strong hydrocarbon odour noted when groundwater was disturbed with visible sheen and possible product observed. Suspected asbestos cement sheeting recorded from 2.4m. 2. Backfilled with airings upon completion.													

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

Sheet 1 of 1

LOCATION ID: TP13	Project Name: Burnaston Cross		3.40 0.70 Pit Dimensions (m) 90 Degrees	
	Project Number: NTH2364			
	Client: Brackley Property Developments Ltd			
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 26/02/2018	Stability: Remained stable throughout
Ground Level (m AOD): 57.18		Eastings & Northings: 429107E 329494N	Engineer: LC	Checker: RTR

Groundwater		Strata						Samples			In-Situ Tests		
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			57.03	0.15m	Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)		0.15	B	0.20	0.60			
			0.75m	Pulverised Fuel Ash arising as a gravelly fine and medium SAND. Grave is sub-angular fine to coarse PFA with occasional quartzite. (Made Ground)	0.90								
			56.28	Pulverised Fuel Ash arising as a dark grey gravelly fine and medium SAND. Gravel is sub-angular fine to coarse PFA with occasional coal fragments. (Made Ground) <i>0.9m - 2.4m: Arising noted as damp.</i>	2.60		B	1.00	1.50				
			1.70m										
			54.58		Hole Terminated at 2.60m bgl.								

Remarks		Legend		
Reason for Termination: Location ceased due to water ingress		Samples: B - Bulk D - Disturbed ES - Environmental Sample		
Groundwater Notes: Slow ingress noted from 2.4m		Groundwater Strikes:  Groundwater Strike  Resting  Groundwater Level		
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.		In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test		
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TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 2

Sheet 1 of 2

LOCATION ID: TP14	Project Name: Burnaston Cross		3.70 0.70 Pit Dimensions (m) 90 Degrees	
	Project Number: NTH2364			
	Client: Brackley Property Developments Ltd			
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 27/02/2018	Stability: Remained stable throughout
Ground Level (m AOD): 57.31		Eastings & Northings: 429047E 329432N	Engineer: LC	Checker: RTR

[illegible]

Remarks		Legend		
Reason for Termination: Sufficient depth reached	Samples: B - Bulk D - Disturbed ES - Environmental Sample	Groundwater Strikes:  Groundwater Strike  Resting Groundwater Level	In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test	
Groundwater Notes: Seepage noted from 4.2m				
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.	BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ	Web: bwbcconsulting.com E: nottingham@bwbcconsulting.com P: 0115 9241100		

TRIAL PIT LOG

Scale: 1:25

Sheet 2 of 2

LOCATION ID:		Project Name: Burnaston Cross				3.70 0.70 Pit Dimensions (m) 90 Degrees							
TP14		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
		Plant: JS220 LC		Start & End Date: 27/02/2018									
Hole Type: TP		Stability: Remained stable throughout											
Ground Level (m AOD): 57.31		Eastings & Northings: 429047E 329432N				Engineer: LC		Checker: RTR					
Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
	4.20m bgl after 20mins		52.71		Pulverised Fuel Ash arising as a grey sandy GRAVEL with low to moderate cobble content. Gravel is angular to sub-angular fine to coarse PFA. Cobbles of angular to sub-angular PFA. Occasional coal fragments. (Made Ground) Hole Terminated at 4.60m bgl.		4.60						
Remarks													
Reason for Termination:						Legend							
Sufficient depth reached						Samples:		Groundwater Strikes:		In-Situ Tests:			
Groundwater Notes:						B - Bulk				Groundwater Strike		HSV - Hand Shear	
						D - Disturbed		Resting		Vane Test			
Other Remarks:						ES - Environmental Sample				Groundwater Level		PID - Photo Ionisation Detector Test	
						1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ	

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 2

LOCATION ID: TP15		Project Name: Burnaston Cross			3.80 0.75 Pit Dimensions (m) 0 Degrees								
		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
Hole Type: TP		Plant: JS220 LC	Start & End Date: 27/02/2018					Stability: Remained stable throughout					
Ground Level (m AOD): 56.33		Eastings & Northings: 428963E 329542N			Engineer: LC		Checker: RTR						
Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickness	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			56.03	0.30m	Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite.		0.30						
					(Topsoil)								
				1.00m	Pulverised Fuel Ash arising as a dark grey sandy GRAVEL of sub-angular fine to coarse PFA. Sand is fine.								
					(Made Ground)								
			55.03		Orange SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse sandstone , limestone and quartzite. Sand is fine to coarse.		1.30	B ES	1.40	1.50			
				1.65m	(Etwall Sand And Gravel Member)				1.40	1.80			
								B	2.20	2.50			
			53.38		Stiff reddish brown occasionally mottled grey gravelly CLAY. Gravel is sub-angular fine to coarse weak mudstone and occasional sandstone.		2.95	D	3.00	3.10	HSV	3.00	(>130, >130, >130) kPa
					(Weathered Gunthorpe Member)								
					3.5m - 4.6m: Becomes friable. Arising more as a gravel.								
				1.65m				B	4.00	4.60	HSV	3.80	(122, 105, 100)kPa
Remarks								Legend					
Reason for Termination:								Samples:		Groundwater Strikes:		In-Situ Tests:	
Sufficient depth reached								B - Bulk		Groundwater Strike		HSV - Hand Shear	
								D - Disturbed		Resting		Vane Test	
Groundwater Notes:								ES - Environmental Sample		Groundwater Level		PID - Photo Ionisation	
Seepage noted from 2.5m												Detector Test	
Other Remarks:													
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.								BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS	

TRIAL PIT LOG

Scale: 1:25Sheet 2 of 2

LOCATION ID: TP15		Project Name: Burnaston Cross			3.80 0.75 Pit Dimensions (m) 0 Degrees								
		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
Hole Type: TP		Plant: JS220 LC	Start & End Date: 27/02/2018			Stability: Remained stable throughout							
Ground Level (m AOD): 56.33		Eastings & Northings: 428963E 329542N			Engineer: LC		Checker: RTR						
Groundwater		Strata				Samples		In-Situ Tests					
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			51.73		Stiff reddish brown occasionally mottled grey gravelly CLAY. Gravel is sub-angular fine to coarse weak mudstone and occasional sandstone. (Weathered Gunthorpe Member) Hole Terminated at 4.60m bgl.		4.60						
Remarks													
Reason for Termination: Sufficient depth reached						Samples: B - Bulk D - Disturbed ES - Environmental Sample							
Groundwater Notes: Seepage noted from 2.5m						Groundwater Strikes:  Groundwater Strike  Resting Groundwater Level							
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.						In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test							
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TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID: TP17		Project Name: Burnaston Cross			3.60 0.75 Pit Dimensions (m) 90 Degrees								
		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
Hole Type: TP		Plant: JS220 LC	Start & End Date: 26/03/2018		Stability: Remained stable throughout								
Ground Level (m AOD): 56.91		Eastings & Northings: 429044E 329494N			Engineer: LC		Checker: RTR						
Groundwater		Strata				Samples		In-Situ Tests					
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			56.71	0.20m	Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)		0.20						
			56.31	0.40m	Pulverised Fuel Ash arising as a grey sandy GRAVEL of angular to well rounded fine to coarse brick, ash, quartzite with occasional inclusion of plastic and metal. Cobbles of angular to sub-angular brick. (Made Ground)		0.60	ES	0.50	0.60			
					Pulverised Fuel Ash arising as a dark grey sandy GRAVEL of sub-angular fine to coarse PFA. Sand is fine. (Made Ground)			ES	0.80	0.90			
				2.50m									
					2.1m - 2.9m: Arisings noted as damp.								
			53.81		Hole Terminated at 3.10m bgl.		3.10						
Remarks						Legend							
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:			
Location ceased due to water ingress						B - Bulk D - Disturbed ES - Environmental Sample		 Strike  Resting  Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test			
Groundwater Notes:													
Moderate ingress noted from 2.9m													
Other Remarks:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100					
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.													

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID:		Project Name: Burnaston Cross				3.70 2.00 Pit Dimensions (m) 180 Stability: Very unstable from ground level to 2.2m								
TP18		Project Number: NTH2364												
		Client: Brackley Property Developments Ltd												
		Plant: JS220 LC		Start & End Date: 22/03/2018										
Hole Type: TP						Engineer: LC		Checker: RTR						
Ground Level (m AOD): 53.89		Eastings & Northings: 429289E 329345N												
Groundwater		Strata				Samples			In-Situ Tests					
Strike	Strike Details	Backfill	Level (m AOD)	Thickness	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
▼1.95m bgl1.95m bgl after 20mins			53.69	0.20m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.20	B	0.20	0.80				
				0.65m	Orange mottled grey slightly gravelly clayey fine to coarse SAND. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Etwall Sand And Gravel Member)									
			53.04		Grey becoming orange from 1.0m SAND and GRAVEL. Gravel is sub-rounded to well rounded fine to coarse quartzite. Sand is fine to coarse. (Etwall Sand And Gravel Member)		0.85	B	1.00	1.30				
				1.35m										
			51.69		Brown gravelly fine to coarse SAND. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Etwall Sand And Gravel Member)		2.20	B	2.20	2.50				
				0.90m										
			50.79		Hole Terminated at 3.10m bgl.		3.10							
Remarks														
Reason for Termination: Frequent collapse hindering progress								Samples: B - Bulk, D - Disturbed, ES - Environmental Sample						
Groundwater Notes: Seepage noted from 1.95m								Groundwater Strikes: Groundwater Strike, Resting, Groundwater Level						
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.								In-Situ Tests: HSV - Hand Shear Vane Test, PID - Photo Ionisation Detector Test						
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TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID:

TP19

Hole Type: TP

Project Name:

Burnaston Cross

Project Number:

NTH2364

Client:

Brackley Property Developments Ltd

Plant:

JS220 LC

Start & End Date:

27/02/2018

Ground Level (m AOD):

55.36

Eastings & Northings:

428897E 329435N

Engineer:

LC

Checker:

RTR

4.00

1.10

Pit Dimensions (m)

0

Degrees

Stability: Very unstable from ground level

Groundwater

Strata

Samples

In-Situ Tests

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

Type

From (m)

To (m)

Type

Depth (m)

Result

▼

3.2m bgl

3.20m bgl after 20mins

Grass over orangish brown gravelly fine and medium SAND with frequent rootlets to 0.3m. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)

Orangish brown sandy GRAVEL of sub-angular to well rounded fine to coarse quartzite. Sand is fine to coarse. (Reworked Natural Ground)

Soft brownish grey slightly sandy gravelly CLAY with occasional organic matter. Gravel is sub-angular to sub-rounded fine to coarse quartzite with rare sandstone and mudstone. Organic odour noted. (Reworked Natural Ground)

Orange SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. Sand is fine to coarse. (Etwall Sand And Gravel Member)

Hole Terminated at 4.00m bgl.

0.45m

0.75m

0.55m

2.25m

4.00

54.91

54.16

53.61

51.36

B

ES

ES

B

0.50

0.50

1.30

2.00

0.60

1.00

1.40

2.50

Remarks

Reason for Termination:
Frequent collapse hindering progress

Groundwater Notes:
Seepage noted from 3.2m

Other Remarks:
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion. 3. Final depth estimated due to water ingress and collapse of pit.

Samples:
B - Bulk
D - Disturbed
ES - Environmental Sample

Groundwater Strikes:
Groundwater Strike
Resting
Groundwater Level

In-Situ Tests:
HSV - Hand Shear
Vane Test
PID - Photo Ionisation
Detector Test

BWB Consulting Ltd
Waterfront House
Station Street
Nottingham
NG2 3DQ

Web:
bwbconsulting.com
E: nottingham
@bwbconsulting.com
P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 2

LOCATION ID: TP20

Hole Type: TP

Project Name: Burnaston Cross

Project Number: NTH2364

Client: Brackley Property Developments Ltd

Plant: JS220 LC

Start & End Date: 22/02/2018

Eastings & Northings: 429106E 329280N

3.90

0.85

Pit Dimensions (m)

270 Degrees

Stability: Unstable from 2.2m

Ground Level (m AOD): 56.42

Engineer: LC

Checker: RTR

Groundwater

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

2.4m bgl

2.40m bgl after 20mins

56.22

0.20m

Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)

0.20

0.90m

55.32

0.60m

54.72

2.70m

ES

0.10

0.20

ES

0.80

0.90

B

1.20

1.30

ES

1.20

1.70

B

1.80

2.00

Type

From (m)

To (m)

Type

Depth (m)

Result

Remarks

Reason for Termination: Sufficient depth reached

Groundwater Notes: Steady ingress noted from 2.4m

Other Remarks: 1. Suspected asbestos lagging recorded between 0.6m and 1.0m. 2. Backfilled with arising's upon completion. 3. Final depth estimated due to water ingress and collapse of pit.

Samples

Groundwater Strikes

In-Situ Tests

B - Bulk

D - Disturbed

ES - Environmental Sample

Groundwater Strike

Resting

Groundwater Level

HSV - Hand Shear

Vane Test

PID - Photo Ionisation

Detector Test

BWB Consulting Ltd

Waterfront House

Station Street

Nottingham

NG2 3DQ

Web: bwbconsulting.com

E: nottingham

@bwbconsulting.com

P: 0115 9241100

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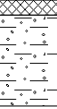
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TRIAL PIT LOG

Scale: 1:25

Sheet 2 of 2

LOCATION ID:		Project Name: Burnaston Cross				3.90 0.85 Pit Dimensions (m) 270 Degrees							
TP20		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
		Plant: JS220 LC		Start & End Date: 22/02/2018									
Hole Type: TP		Stability: Unstable from 2.2m											
Ground Level (m AOD): 56.42		Eastings & Northings: 429106E 329280N				Engineer: LC		Checker: RTR					
Groundwater		Strata				Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickness	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			52.02	0.30m	Pulverised Fuel Ash arising as a grey slightly gravelly fine and medium SAND with frequent inclusions of household wastes including glass bottles, plastic and paper. Gravel is sub-angular fine to coarse PFA, brick and quartzite. Rare inclusion of metal, clothing and shoes. (Made Ground)		4.40	D	4.50	4.60	HSV	4.60	(80, 87, 79)kPa
			51.72										
					Stiff reddish brown slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse quartzite and weak mudstone. (Weathered Gunthorpe Member)								
					4.4m - 4.7m: Depth to clay estimated due to water and collapse of pit walls.								
					Hole Terminated at 4.70m bgl.								
Remarks						Legend							
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:			
Sufficient depth reached						B - Bulk		Groundwater		HSV - Hand Shear			
						D - Disturbed		Strike		Vane Test			
						ES - Environmental		Resting		PID - Photo Ionisation			
						Sample		Groundwater		Detector Test			
								Level					
Groundwater Notes:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100					
Steady ingress noted from 2.4m													
Other Remarks:													
1. Suspected asbestos lagging recorded between 0.6m and 1.0m. 2. Backfilled with arising's upon completion. 3. Final depth estimated due to water ingress and collapse of pit.													

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 2

LOCATION ID:

TP21

Hole Type: TP

Project Name:

Burnaston Cross

Project Number:

NTH2364

Client:

Brackley Property Developments Ltd

Plant:

JS220 LC

Start & End Date:

22/02/2018

Ground Level (m AOD):

56.57

Eastings & Northings:

429201E 329285N

Engineer:

LC

Checker:

RTR

5.10

0.95

Pit Dimensions (m)

270

Degrees

Groundwater

Strata

Samples

In-Situ Tests

Strike

Strike Details

Backfill

Level (m AOD)

Thickn ess

Description

Legend

Depth (m bgl)

Type

From (m)

To (m)

Type

Depth (m)

Result

1.2m bgl

1.20m bgl

after 20mins

3.1m bgl

3.10m bgl

after 20mins

56.37

0.20m

Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)

0.20

B

0.40

0.50

ES

0.40

0.60

55.97

0.40m

Pulverised Fuel Ash arising as a sandy GRAVEL with low to moderate cobble content. Gravel is sub sub-angular fine to coarse PFA. Cobbles of sub-angular PFA. Occasional inclusion of sandstone and clinker. (Made Ground)

0.60

ES

0.70

0.80

1.05m

Black and grey sandy GRAVEL with low cobble content. Gravel is angular to sub-angular fine to coarse brick, ash, clinker and PFA. Cobbles of sub-angular brick. Occasional inclusion of coal, cloth, metal, glass and timber. (Made Ground)

1.65

ES

1.20

1.30

54.92

1.05m

0.6m - 1.0m: Possible asbestos lagging.

1.1m - 1.5m: Becomes orange occasionally grey.

1.2m - 1.5m: boulders of concrete and PFA.

1.2m - 1.65m: Hard to dig.

1.70

1.80

B

1.80

2.10

3.45m

Black gravelly SAND with low to moderate cobble content. Gravel is angular to well rounded fine to coarse brick, ash, clinker, concrete, coal and quartzite. Occasional inclusion of paper, metal and timber. (Made Ground)

3.9m - 5.1m: Very high cobble content. Occasional pockets of firm orange clay.

Remarks

Reason for Termination:

Frequent collapse hindering progress

Groundwater Notes:

Seepage noted from 1.2m. Steady ingress noted from 3.1 becoming rapid ingress from 3.4m

Other Remarks:

1. Suspected asbestos lagging recorded between 0.6m and 1.0m. 2. Backfilled with arising's upon completion. 3. Final depth estimated due to water ingress and collapse of pit.

Samples:

B - Bulk

D - Disturbed

ES - Environmental Sample

Groundwater Strikes:

Groundwater Strike

Resting

Groundwater Level

In-Situ Tests:

HSV - Hand Shear

Vane Test

PID - Photo Ionisation

Detector Test

BWB Consulting Ltd

Waterfront House

Station Street

Nottingham

NG2 3DQ

Web:

bwbconsulting.com

E: nottingham

@bwbconsulting.com

P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25

Sheet 2 of 2

LOCATION ID:		Project Name: Burnaston Cross				5.10 0.95 Pit Dimensions (m) 270 Degrees							
TP21		Project Number: NTH2364											
		Client: Brackley Property Developments Ltd											
		Plant: JS220 LC		Start & End Date: 22/02/2018									
Hole Type: TP						Stability: Very unstable throughout							
Ground Level (m AOD): 56.57		Eastings & Northings: 429201E 329285N				Engineer: LC		Checker: RTR					
Groundwater		Strata						Samples			In-Situ Tests		
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			51.47		Black gravelly SAND with low to moderate cobble content. Gravel is angular to well rounded fine to coarse brick, ash, clinker, concrete, coal and quartzite. Occasional inclusion of paper, metal and timber. (Made Ground)		5.10						
					Hole Terminated at 5.10m bgl.								
Remarks								Legend					
Reason for Termination:								Samples:		Groundwater Strikes:		In-Situ Tests:	
Frequent collapse hindering progress								B - Bulk		Groundwater		HSV - Hand Shear	
								D - Disturbed		Strike		Vane Test	
								ES - Environmental		Resting		PID - Photo Ionisation	
Groundwater Notes:								Sample		Groundwater		Detector Test	
Seepage noted from 1.2m. Steady ingress noted from 3.1 becoming rapid ingress from 3.4m										Level			
Other Remarks:													
1. Suspected asbestos lagging recorded between 0.6m and 1.0m. 2. Backfilled with arising's upon completion. 3. Final depth estimated due to water ingress and collapse of pit.								BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS	

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID:

TP22

Hole Type: TP

Project Name:

Burnaston Cross

Project Number:

NTH2364

Client:

Brackley Property Developments Ltd

Plant:

JS220 LC

Start & End Date:

27/02/2018

Ground Level (m AOD):

53.51

Eastings & Northings:

428985E 329318N

Engineer:

LC

Checker:

RTR

3.60

0.75

Pit Dimensions (m)

270

Degrees

Stability: Unstable from 1.6m

Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			53.26	0.25m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.25	ES	0.40	0.50			
			52.71	0.55m	Pulverised Fuel Ash arising as a grey sandy GRAVEL with occasional pockets of orangish brown SAND and GRAVEL. Gravel is angular to well rounded fine to coarse quartzite and PFA. Frequent inclusion of plastic bottles, glass bottles, metal and clinker. (Made Ground)		0.80	ES	0.90	1.00			
				2.40m	Pulverised Fuel Ash arising as a dark grey sandy GRAVEL of sub-angular fine to coarse PFA. Sand is fine. (Made Ground)								
			50.31		Hole Terminated at 3.20m bgl.		3.20						

Reason for Termination:

Location ceased due to water ingress

Groundwater Notes:

Seepage noted from 1.0m

Other Remarks:

1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.

Samples:

B - Bulk

D - Disturbed

ES - Environmental Sample

Groundwater Strikes:

Groundwater Strike

Resting

Groundwater Level

In-Situ Tests:

HSV - Hand Shear

Vane Test

PID - Photo Ionisation

Detector Test

BWB Consulting Ltd

Waterfront House

Station Street

Nottingham

NG2 3DQ

Web:

bwbconsulting.com

E: nottingham

@bwbconsulting.com

P: 0115 9241100

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TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID: TP23	Project Name: Burnaston Cross		3.60		
	Project Number: NTH2364				
	Client: Brackley Property Developments Ltd				
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 27/02/2018	Stability: Remained stable throughout	
Ground Level (m AOD): 51.44		Eastings & Northings: 428795E 329339N		Engineer: LC	Checker: RTR

Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			51.09	0.35m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.35	D ES	0.50 0.50	0.60 0.60	HSV	0.50	(80, 51, 53)kPa
			50.49	0.60m	Soft yellow mottled orange slightly sandy gravelly CLAY. Gravel is sub-angular to well rounded fine to coarse quartzite. (Egginton Common Sand And Gravel Member)		0.95						
			49.44	1.05m	Stiff reddish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to coarse quartzite with occasional sandstone. (Egginton Common Sand And Gravel Member)		2.00	D	2.10	2.20	HSV	2.10	(121, 125, 118)kPa
			48.64	0.80m	Stiff dark brown occasionally mottled grey slightly gravelly CLAY. Gravel is sub-angular fine to coarse mudstone with occasional sandstone. (Weathered Gunthorpe Member)		2.80						
			47.84	0.80m	Firm orangish brown occasionally mottled grey gravelly fissured CLAY. Gravel is angular to sub-angular fine to coarse weak mudstone. (Weathered Gunthorpe Member)		3.60	D	3.00	3.10	HSV	3.20	(75, 68, 68)kPa
					Hole Terminated at 3.60m bgl.								

Remarks		Legend		
Reason for Termination:		Samples:	Groundwater Strikes:	In-Situ Tests:
Sufficient depth reached		B - Bulk	Groundwater Strike	HSV - Hand Shear
Groundwater Notes:		D - Disturbed	Resting	Vane Test
No groundwater encountered		ES - Environmental Sample	Groundwater Level	PID - Photo Ionisation Detector Test
Other Remarks:		BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.		Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100		

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TRIAL PIT LOG														Scale: 1:25		Sheet 1 of 1			
LOCATION ID: TP24		Project Name: Burnaston Cross										3.60 0.75 Pit Dimensions (m) 0 Degrees							
		Project Number: NTH2364																	
		Client: Brackley Property Developments Ltd																	
		Plant: JS220 LC		Start & End Date: 21/02/2018															
Hole Type: TP												Stability: Remained stable throughout							
Ground Level (m AOD): 46.74		Eastings & Northings: 428766E 329204N										Engineer: LC		Checker: RTR					
Groundwater		Strata								Samples			In-Situ Tests						
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result						
	0.6m bgl 0.60m bgl after 20mins		46.34	0.40m	Grass over dark brown slightly gravelly clayey fine SAND with rootlets. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.40	ES	0.70	0.80	HSV	0.80	(60, 62, 70)kPa						
				0.25m	Firm orange occasionally mottled reddish brown slightly sandy gravelly CLAY. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Egginton Common Sand And Gravel Member)														
				0.35m	Firm reddish brown occasionally mottled grey and orange slightly gravelly slightly sandy CLAY with low cobble content. Gravel is sub-angular to well rounded fine to coarse siltstone, mudstone, sandstone and quartzite. Cobbles of sub-rounded quartzite. (Egginton Common Sand And Gravel Member)														
	2.1m bgl 2.10m bgl after 20mins		45.74	0.55m	Reddish brown slightly clayey SAND and GRAVEL. Gravel is sub-angular to sub-rounded fine to coarse quartzite and rare sandstone. Sand is fine to coarse. (Egginton Common Sand And Gravel Member)		1.00	ES	1.10	1.20									
				0.30m	Stiff brown occasionally reddish brown mottled grey slightly sandy gravelly CLAY. Gravel is sub-angular to well rounded fine to coarse quartzite, sandstone, mudstone, gypsum and rare coal fragments. (Egginton Common Sand And Gravel Member)														
				0.35m	Stiff brown mottled grey gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse weak mudstone and quartzite with occasional gypsum. (Egginton Common Sand And Gravel Member)														
	3.5m bgl 3.50m bgl after 20mins		44.89	1.60m	Reddish brown occasionally yellowish grey slightly clayey fine SAND. Clear sediment layers visible (Egginton Common Sand And Gravel Member)		1.55	B	2.30	2.70									
					2.7m - 3.8m: Becomes more greyish brown.														
					Hole Terminated at 3.80m bgl.														
Remarks														Legend					
Reason for Termination: Sufficient depth reached														Samples: B - Bulk D - Disturbed ES - Environmental Sample		Groundwater Strikes: Groundwater Strike Resting Groundwater Level		In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test	
Groundwater Notes: Seepage noted from 0.6m. Slow ingress noted from 2.1m and 3.5m																			
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.														BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100			

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID:		Project Name: Burnaston Cross				3.70 0.70 Pit Dimensions (m) 0 Degrees								
TP25		Project Number: NTH2364												
		Client: Brackley Property Developments Ltd												
		Plant: JS220 LC		Start & End Date: 27/02/2018										
Hole Type: TP		Stability: Remained stable throughout												
Ground Level (m AOD): 51.77		Eastings & Northings: 428854E 329320N				Engineer: LC		Checker: RTR						
Groundwater		Strata					Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
			51.57	0.20m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.20	ES	0.40	0.50				
				0.80m	Pulverised Fuel Ash arising as a grey sandy GRAVEL with low cobble content. Gravel is sub-angular fine to coarse PFA. Cobbles of sub-angular PFA. Rare inclusion of plastic and timber. (Made Ground)									
			50.77		Orange SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. Sand is fine and coarse. (Egginton Common Sand And Gravel Member)		1.00	B ES	1.10	1.20	1.80			
				1.05m										
			49.72	0.25m	Stiff orangish brown slightly sandy gravelly CLAY. Gravel is sub-angular to well rounded fine to coarse quartzite, sandstone, flint and occasional mudstone. (Glacial Till)		2.05	D	2.10	2.20	HSV	2.10		(>130, 111, 81)kPa
			49.47		Stiff brown slightly gravelly CLAY. Gravel is sub-angular fine to coarse weak mudstone, sandstone and gypsum. (Weathered Gunthorpe Member)		2.30	D	2.40	2.50	HSV	2.40		(112, 109, 90)kPa
				1.20m				D	3.40	3.50	HSV	3.40	(119, 129, 91)kPa	
			48.27		Hole Terminated at 3.50m bgl.		3.50							
Remarks						Legend								
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:				
Sufficient depth reached						B - Bulk D - Disturbed ES - Environmental Sample		Groundwater Strike Resting Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test				
Groundwater Notes:														
No groundwater encountered														
Other Remarks:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham @bwbconsulting.com P: 0115 9241100		BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS				
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.														

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID: TP26	Project Name: Burnaston Cross			3.70 0.80 Pit Dimensions (m) 270 Degrees									
	Project Number: NTH2364												
	Client: Brackley Property Developments Ltd												
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 21/02/2018		Stability: Remained stable throughout								
Ground Level (m AOD): 51.04		Eastings & Northings: 428912E 329169N			Engineer: LC		Checker: RTR						
Groundwater		Strata				Samples			In-Situ Tests				
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
	0.9m bgl 0.90m bgl after 20mins			0.40m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite. (Topsoil)		0.40	B	0.40	0.50			
			50.64	0.35m	Yellowish brown sandy GRAVEL of sub-angular to well rounded fine to coarse quartzite and occasional sandstone. (Egginton Common Sand And Gravel Member)		0.75						
			50.29	1.30m	Stiff orangish brown sandy gravelly CLAY with low cobble content. Occasional bands of orange sand and gravel. Gravel is sub-angular to well rounded fine to coarse quartzite and occasional sandstone. (Egginton Common Sand And Gravel Member)		2.05						
			48.99	1.35m	Stiff brown mottled grey gravelly CLAY. Gravel is sub-angular to sub-rounded fine and medium weak mudstone, sandstone with occasional quartzite. (Egginton Common Sand And Gravel Member)		3.40						
			47.64		Hole Terminated at 3.40m bgl.						HSV	3.40	(>130, 125, >130) kPa
Remarks						Legend							
Reason for Termination:						Samples:		Groundwater Strikes:		In-Situ Tests:			
Sufficient depth reached						B - Bulk D - Disturbed ES - Environmental Sample		 Groundwater Strike  Resting  Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test			
Groundwater Notes:						BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100					
Seepage noted from 0.9m													
Other Remarks:													
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.													

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID:		Project Name: Burnaston Cross				3.70 0.80 Pit Dimensions (m) 90 Degrees											
TP27		Project Number: NTH2364															
		Client: Brackley Property Developments Ltd															
		Plant: JS220 LC		Start & End Date: 21/02/2018													
Hole Type: TP						Stability: Remained stable throughout											
Ground Level (m AOD): 52.11		Eastings & Northings: 428931E 329230N				Engineer: LC		Checker: RTR									
Groundwater		Strata						Samples			In-Situ Tests						
Strike	Strike Details	Backfill	Level (m AOD)	Thickness	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result				
					Grass over brown very gravelly fine to coarse SAND with frequent rootlets throughout. Gravel is sub-angular to well rounded fine to coarse quartzite. (Topsoil)		0.35	ES	0.10	0.20							
			51.76	0.35m	Orange SAND and GRAVEL with low cobble content. Gravel is sub-angular to well rounded fine to coarse quartzite. Cobbles of sub-angular quartzite. Sand is fine to coarse. (Egginton Common Sand And Gravel Member)			B	0.40	1.00							
				0.95m				ES	0.50	0.60							
			50.81		Stiff reddish brown slightly gravelly CLAY. Gravel is sub-angular fine and medium gypsum, mudstone and rare sandstone. Rare small pockets of black silt. (Weathered Gunthorpe Member)		1.30	D	1.40	1.50	HSV	1.50	(120, 110, 99)kPa				
				0.80m				ES	1.40	1.50							
			50.01		Stiff brown to dark brown very gravelly CLAY. Gravel is sub-angular fine and medium weak mudstone with occasional sub-angular quartzite and gypsum. (Weathered Gunthorpe Member)		2.10	D	2.20	2.30	HSV	2.20	(>130, >130, >130) kPa				
				1.30m													
			48.71		Hole Terminated at 3.40m bgl.		3.40	D	3.30	3.40	HSV	3.40	(>130, >130, >130) kPa				
Remarks														Legend			
Reason for Termination:							Samples:			Groundwater Strikes:		In-Situ Tests:					
Sufficient depth reached							B - Bulk D - Disturbed ES - Environmental Sample			Groundwater Strike Resting Groundwater Level		HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test					
Groundwater Notes:							BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100 BWB CONSULTANCY ENVIRONMENT INFRASTRUCTURE BUILDINGS										
Other Remarks:																	
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.																	

TRIAL PIT LOG										Scale: 1:25		Sheet 1 of 1		
LOCATION ID: TP28		Project Name: Burnaston Cross								3.90 0.70 Pit Dimensions (m) 135 Degrees				
		Project Number: NTH2364												
		Client: Brackley Property Developments Ltd												
		Hole Type: TP		Plant: JS220 LC		Start & End Date: 21/02/2018				Stability: Remained stable throughout				
Ground Level (m AOD): 51.21				Eastings & Northings: 429021E 329170N						Engineer: LC		Checker: RTR		
Groundwater		Strata						Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description		Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
				0.30m	Grass over brown very gravelly SAND with frequent rootlets. Sand is fine and medium. Gravel is sub-rounded to well rounded fine to coarse quartzite.			0.30						
			50.91	0.15m	(Topsoil)			0.45	D	0.50	0.60	HSV	0.60	(118, 113, 117)kPa
			50.76		Reddish brown SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. Sand is fine and medium.				ES	0.50	0.60			
				0.65m	(Egginton Common Sand And Gravel Member)									
			50.11		Stiff brown to reddish brown slightly gravelly laminated CLAY. Gravel is sub-angular to well rounded fine to coarse quartzite and very weak mudstone.			1.10	D	1.20	1.30			
					(Glacial Till)							HSV	1.60	(>130, >130, >130) kPa
				1.65m	Stiff brown to dark brown very gravelly CLAY. Gravel is sub-angular fine and medium weak mudstone.				B	1.90	2.50			
					(Weathered Gunthorpe Member)							HSV	2.50	(>130, >130, >130) kPa
			48.46		Hole Terminated at 2.75m bgl.			2.75						

TRIAL PIT LOG

Scale: 1:25Sheet 1 of 1

LOCATION ID: TP29	Project Name: Burnaston Cross		3.90 0.70Pit Dimensions (m)90 Degrees											
	Project Number: NTH2364													
	Client: Brackley Property Developments Ltd													
	Hole Type: TP	Plant: JS220 LC	Start & End Date: 21/02/2018		Stability: Very unstable from ground level to 1.85m									
Ground Level (m AOD): 51.75		Eastings & Northings: 429054E 329092N			Engineer: LC		Checker: RTR							
Groundwater		Strata				Samples			In-Situ Tests					
Strike	Strike Details	Backfill	Level (m AOD)	Thickness	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
▼1m bgl1.00m bgl after 20mins			51.40	0.35m	Grass over brown gravelly fine and medium SAND with frequent rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)		0.35	ES	0.10	0.20				
			50.35	1.05m	Yellow, orange and grey SAND and GRAVEL. Gravel is sub-angular to well rounded fine to coarse quartzite. Sand is fine to coarse. (Egginton Common Sand And Gravel Member)			1.40	B ES	0.40 0.40				0.50 1.00
			49.90	0.45m	Reddish brown slightly sandy GRAVEL of sub-rounded to well rounded fine to coarse quartzite. Sand is fine medium. (Egginton Common Sand And Gravel Member) <i>1.7m - 1.85m: Becomes slightly clayey.</i>			1.85	ES D	2.00 2.10				2.10 2.20
48.45	1.45m	Stiff brown to dark brown slightly gravelly CLAY with occasional fine gypsum fragments. Gravel is sub-angular fine very weak mudstone. (Weathered Gunthorpe Member) <i>2.9m - 3.3m: Becomes more gravelly.</i>												
			Hole Terminated at 3.30m bgl.					3.30						
Remarks								Legend						
Reason for Termination: Sufficient depth reached								Samples: B - Bulk D - Disturbed ES - Environmental Sample		Groundwater Strikes: Groundwater Strike Resting Groundwater Level		In-Situ Tests: HSV - Hand Shear Vane Test PID - Photo Ionisation Detector Test		
Groundwater Notes: Seepage noted from 1.0m														
Other Remarks: 1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.								BWB Consulting Ltd Waterfront House Station Street Nottingham NG2 3DQ		Web: bwbconsulting.com E: nottingham@bwbconsulting.com P: 0115 9241100				

TRIAL PIT LOG

Scale: 1:25

Sheet 1 of 1

LOCATION ID: TP30

Project Name: Burnaston Cross

Project Number: NTH2364

Client: Brackley Property Developments Ltd

Hole Type: TP

Plant: JS220 LC

Start & End Date: 21/01/2018

Pit Dimensions (m)

0 Degrees

Stability: Remained stable throughout

Ground Level (m AOD): 48.11

Eastings & Northings: 429261E 329054N

Engineer: LC

Checker: RTR

Groundwater		Strata					Samples			In-Situ Tests			
Strike	Strike Details	Backfill	Level (m AOD)	Thickn ess	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			47.81	0.30m	Grass over soft dark brown slightly gravelly sandy CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse quartzite. (Topsoil)		0.30						
				1.70m	Firm orange mottled light grey and occasionally bluish grey slightly sandy gravelly CLAY with occasional pockets of fine to coarse sand. Gravel is sub-angular to well rounded fine to coarse quartzite. (Glacial Till) 1.1m - 2.0m: Becomes more orangish brown. Occasional subrounded cobbles of quartz noted. 1.5m - 1.85m: Pocket of orange sand and gravel. Sand is fine to coarse. Gravel of subrounded fine to coarse quartz.						HSV	0.50	(44, 45, 51)kPa
			46.11										
				1.40m	Stiff dark brown mottled dark grey slightly gravelly thickly laminated CLAY with occasional fine gypsum fragments. Gravel is sub-angular fine and medium very weak mudstone. (Weathered Gunthorpe Member)		2.00				HSV	2.10	(107, 110, 99)kPa
											HSV	2.50	(110, >130, 127) kPa
			44.71		Hole Terminated at 3.40m bgl.		3.40				HSV	3.40	(120, >130, >130) kPa

Remarks

Reason for Termination:
Sufficient depth reached

Groundwater Notes:
No groundwater encountered

Other Remarks:
1. No olfactory or visual evidence of contamination noted. 2. Backfilled with arising's upon completion.

Samples:
B - Bulk
D - Disturbed
ES - Environmental
Sample

Groundwater Strikes:
Groundwater Strike
Resting
Groundwater Level

In-Situ Tests:
HSV - Hand Shear
Vane Test
PID - Photo Ionisation
Detector Test

BWB Consulting Ltd
Waterfront House
Station Street
Nottingham
NG2 3DQ

Web:
bwbconsulting.com
E: nottingham
@bwbconsulting.com
P: 0115 9241100

BWB
CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

Appendix 3: Drillers Logs

Geotron UK			DRILLING LOG			Rig crew		NB+LG			Borehole Reference			BH 5						
						Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk						Sheet of		Weather						
Job Ref: 51718		Site Location: Derby			Client: BWR			Day: Wed		Date: 21-2-18			Borehole Diameter(s) 150mm							
Depth (mbgl)	Strata Description				Test Type	From (m)	To (m)	SPT						N Value or KPA	U100/ Piston blows	Recovery (%)	Casing Depth (m)	Water level (m)	Liner size	Installation Details
								0-75	75-150	150-225	225-300	300-375	375-450							
GL	grass over gravelly top soil				B1	0.0	1.00													
0.25	sand + gravel				S2	1.00	1.45	1	2	3	3	3	11							
1.00	light brown clay				D3	1.50														
1.8	firm dark brown clay				B4	1.00	2.00													
9.10	light brown sand				S5	2.00	2.45	1	2	2	2	3	9			1.80				
					D6	2.45														
					S7	3.00	3.45	2	2	3	4	6	7	20		280				
					B8	4.00	4.45									52/30	5.80			
					D9	4.45														
					S10	5.00	5.45	2	3	4	4	6	7	21		3.00				
					D11	5.45														
					V12	6.50	6.95									49/	3.00			
					D13	6.95														
					S14	8.00	8.45	7	8	9	11	11	13	44		3.00				
					S15	9.50	9.95	3	3	4	4	4	6	18		2.00	4.10			
					S16	12.00	12.45	1	1	2	2	3	6	13		3.00	9.10			
BH Cont	Y N		Casing (depth m)	300	BH Complete (depth)	12.45 M														

Remarks: (Standing time, dayworks, in situ testing, visitors etc.)				Dayworks/Standing		Chiselling/Slow Drilling		Water Strikes							
Rig Set Up	up to 1 hour	Y N		Time taken over 1 hour (dayworks)		From (m) to (m)	Time (mins)	Time	Depth (m)	Rate of Rise	Rising to (mins)				Total
Service Pit	up to 1 hour	Y N		Time taken over 1 hour (dayworks)							5	10	15	20	
Casing Reduced from	to			at	metres										
From	To	Description													
		1 hr induction 2 hr getting rig + landrover out 30 min waiting to get on site													
						Well Diameter		Other Materials Used (e.g. lost cones/shoes etc.)							
						Plain	Screen	to							
						Well Materials Used		Gravel	Bento						
						Quantity (bags)									
						Sample quantities									
Rig Type	Pando	Time on Site	7.30 AM		SPT/CPT	U/UT	D/SD	B	W	Foreman's Name	Engineer's Name				
Name	N. Bianchi	Time off site	5.30 PM		7	2	5	2		Foreman's Signature	Engineer's Signature L. com				

The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.

Geotron UK						DRILLING LOG							Rig crewNB + LG								Borehole ReferenceBM 4																								
																				Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk										Sheetof		WeatherDry													
Job Ref:		J1718		Site Location:		Perry										Client:BWB				Day:Friday		Date:23-2-18		Borehole Diameter(s)250mm																					
Depth (mbgl)		Strata Description																		Test Type		From (m)		To (m)		SPT						N Value or KPA		U100/Piston Blows		Recovery (%)		Casing Depth (m)		Water level (m)		Liner size		Installation Details	
6L		grass over top soil																		BI		6L		1.20																					
0.20		PFA																		S2		1.20		1.65		71011121111						45													
3.60		made ground																		B3		1.20		2.00																					
6.80		light brown sand clay																		S4		2.00		2.15		11										1.80									
																				BS		2.00		3.00																					
																				S6		3.00		3.65		456666						24				2.80									
																				B7		3.00		4.00																					
																				S8		4.00		4.45		421111						4				3.80									
																				B9		4.00		5.00																					
																				S10		5.00		5.45		222-226										4.80									
																				B11		5.00		6.50																					
																				S12		6.50		6.95		1223411										5.80		500							
BH Cont		Y / N		Casing (depth m)		7M		BH Complete (depth)		7M																																			
Remarks: (Standing time, dayworks, in situ testing, visitors etc.)																				Dayworks/Standing		Chiselling/Slow Drilling						Water Strikes																	
Rig Set Up		up to 1 hour		DN		Time taken over 1 hour (dayworks)														From (m) to (m)		Time (mins)		Time		Depth (m)		Rate of Rise		Rising to (mins)						Total									
Service Pit		up to 1 hour		YO		Time taken over 1 hour (dayworks)																				SM slow		5101520																	
Casing Reduced from		to				at		metres		Time taken (dayworks)																																			
From		To		Description																		Well Diameter		Plain		Screen		to		Other Materials Used (e.g. lost cones/shoes etc.)										Well Tag					
				30 mins moving rig with digger																																									
				30 mins getting water																																									
Rig Type		Dando		Time on Site		7.30AM		SPT/CPT		U/UT		D/SD		B		W		Foreman's Name				Engineer's Name																							
Name		N-Binnal		Time off site				6		/		/		6		/		Foreman's Signature				Engineer's Signature		L. Cope																					
The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.																																													

Geotron UK			DRILLING LOG			Rig crew		NB+GR				Borehole Reference		BH 4																					
						Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk										Sheet of	Weather																		
Job Ref:	J1718		Site Location:			Derby			Client:		BWB		Day:		Monday		Date:		26-2-18		Borehole Diameter(s)		150mm												
Depth (mbgl)	Strata Description										Test Type	From (m)	To (m)	SPT					N Value or KPA	U100/ Piston blows	Recovery (%)	Casing Depth (m)	Water level (m)	Liner size	Installation Details										
	8 1/2 light brown sand										R2	8.00	8.45								8.1/4							1m plain 2 bent 8 bags gravel geo soak raised cover							
											R13	6.50	8.00																						
											D14	8.00	8.45																						
											D	8.45																							
											S15	9.50	9.95	4	9	10	8	8	7	33															
BH Cont	Y	N	Casing (depth m)	10m		BH Complete (depth)	10m																												

Remarks: (Standing time, dayworks, in situ testing, visitors etc.)						Dayworks/Standing		Chiselling/Slow Drilling		Water Strikes													
								From (m) to (m)		Time (mins)		Time	Depth (m)	Rate of Rise	Rising to (mins)				Total				
Rig Set Up						up to 1 hour		Y/N		Time taken over 1 hour (dayworks)													
Service Pit						up to 1 hour		Y/N		Time taken over 1 hour (dayworks)													
Casing Reduced from						to		at		metres		Time taken (dayworks)											
From	To	Description																					
		Hit obstruction at 9.50m 2hr install + pull casing																					
							Well Diameter				Other Materials Used (e.g. lost cones/shoes etc.)												
							Plain	1m	Screen	65 to 100													
							Well Materials Used		Gravel	Bento													
							Quantity (bags)		85														
							Sample quantities																
Rig Type	Pando		Time on Site		9am		SPT/CPT	U/UT	D/SD	B	W	Foreman's Name		Engineer's Name									
Name	N. Binnall		Time off site		5.30pm		1	1	1	1	1	Foreman's Signature		Engineer's Signature		L. CON							

The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.

Geotron UK				DRILLING LOG				Rig crew				NB + ER				Borehole Reference				BH#3			
Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk				Sheet				of				Weather				PRY							
Job Ref:		J1718		Site Location:		Derby		Client:		BW 6		Day:		Monday		Date:		26-3-18		Borehole Diameter(s)		150m	
Depth (m)		Strata Description		Test Type		From (m)		To (m)		SPT		N Value or RPA		U100/ Piston blows		Recovery (%)		Casing Depth (m)		Water level (m)		Liner size	
6L		grass over top Soil		B1		6L		1.20		0-75		75-150		150-225		225-300		300-375		375-450			
0.15		PFA		S2		1.20		1.65		2		7		7		6		5		5		23	
2.25		Coal		B3		1.20		2.00														1.00	
2.45		Asbestos		S4		2.00		2.45		1		1		1		1		1		2		5	
																						1.80	

Geotron UK

DRILLING LOG

Rig crew

NB + GR

Borehole Reference

BH 3

Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY;
Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk

Sheet of

Weather SNOW

Job Ref: J1718

Site Location:

Derby

Client: BWB

Day:

Tuesday

Date:

27-2-18

Borehole Diameter(s)

150mm

Depth (m)

Strata Description

Test Type

From (m)

To (m)

SPT

0-75

75-150

150-225

225-300

300-375

375-450

N Value or KPA

U100/ Piston blows

Recovery (%)

Casing Depth (m)

Water level (m)

Liner size

Installation Details

2.45 Made ground (wood plastic glass)
 6.80 very gravelly made ground
 7.00 orange sandy clay
 8.20 Orange/brown sand
 11.00 orange/brown sand with gravel
 11.25 orange/brown clay
 12.50 Red sandy gravelly clay
 13.20 very stiff red clay

BS 200 300

SE 300 3.45

B7 300 4.00

S8 4.00 4.65

~~B9 4.00 5.00~~

S10 5.00 5.45

B10 5.00 6.50

S11 6.50 6.95

B12 7.00 8.00

S13 8.00 8.45

B14 8.00 9.00

S15 9.50 9.95

B16 9.50 11.00

S17 11.00 11.45

B18 12.00 12.45

B19 12.50 14.00

S20 14.00 14.45

BH Cont

Y

N

Casing (depth m)

12M

BH Complete (depth)

14.45M

Remarks: (Standing time, dayworks, in situ testing, visitors etc.)

Dayworks/Standing

Chiselling/Slow Drilling

Water Strikes

Rig Set Up up to 1 hour Y/N Time taken over 1 hour (dayworks)
 Service Pit up to 1 hour Y/N Time taken over 1 hour (dayworks)
 Casing Reduced from to at metres Time taken (dayworks)

From To Description
 2 1/2 hrs install + pulling casing
 1 hr filling bower

From (m) to (m)

Time (mins)

Time

Depth (m)

Rate of Rise

Rising to (mins)

5

10

15

20

Total

13.55-14.00 60 min

4.00 slow

Well Diameter

Plain

1M

Screen

7m to 1m

Well Materials Used

Gravel

Bento

Quantity (bags)

8

9

Other Materials Used (e.g. lost cones/shoes etc.)

Sample quantities

Rig Type Deinko Time on Site 7.30
 Name N. Binnall Time off site 6PM

SPT/CPT

U/UT

D/SD

B

W

Foreman's Name

Engineer's Name

L. Cross

Foreman's Signature

Engineer's Signature

L. Cross

The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.

7m started
 8 gravel
 8 bento
 14.45m - 8m

raised cover

geo sock on install

Geotron UK		DRILLING LOG		Rig crew NB + GR		Borehole Reference BH2	
				Unit E201B, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk			
Job Ref: J1718	Site Location: Derby	Client: BWB	Day: Wed	Date: 28-2-18	Sheet of		Weather SNOW
Depth (mbgl)	Strata Description	Test Type	From (m)	To (m)	SPT		Borehole Diameter(s) 150mm
					0-75	75-150	Installation Details
6L	grass over top soil	B1	6L	6.2			
0.20	PFA very soft	S2	1.20	1.65			
3.50	Red stilt clay / mottled	B3	1.20	2.00			
6.00	Mudstone	S4	2.00	2.45			
		S5	3.00	3.45			
		B6	3.00	4.00			
		S7	4.00	4.45	3	4	
		B8	4.00	5.00			
		U9	5.00	5.45			
		B10	5.00	6.50			
		S11	6.50	6.95	4	1	
		B12	6.50	7.50			
		S13	8.00	8.45	15	10	
		S14	9.00	9.45			
BH Cont	Y / N	Casing (depth m)	4.5m		BH Complete (depth)		4.45m

Remarks: (Standing time, dayworks, in situ testing, visitors etc.)				Dayworks/Standing		Chiselling/Slow Drilling		Water Strikes				
Rig Set Up	up to 1 hour			Time taken over 1 hour (dayworks)		From (m) to (m)	Time (mins)	Time	Depth (m)	Rate of Rise	Rising to (mins)	Total
Service Pit	up to 1 hour			Time taken over 1 hour (dayworks)		8.00 - 9.00	60min		1m	slow	5	10
Casing Reduced from	to		at	metres	Time taken (dayworks)						15	20
From	To	Description				Well Diameter		Other Materials Used (e.g. lost cones/shoes etc.)				
		2hr install and pulling casing				Plain	4	Screen	4			
						Well Materials Used	Gravel	Bento				
						Quantity (bags)	8	2				
Sample quantities						Foreman's Name		Engineer's Name				
Rig Type	Dando	Time on Site	7.30AM		SPT/CPT	U/UT	D/SD	B	W	Foreman's Signature		
Name	N. Binnall	Time off site	6 PM		7	1	6			Engineer's Signature		

The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.

Geotron UK			DRILLING LOG			Rig crew		NB + GR				Borehole Reference		B H 1				
						Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk										Sheet of	Weather	SNOW
Job Ref: J1718		Site Location: Derby			Client: BWB			Day: Thurs		Date: 1-3-18		Borehole Diameter(s) 150mm		Installation Details				
Depth (mbgl)	Strata Description				Test Type	From (m)	To (m)	SPT								N Value or KPA	U100/ Piston blows	Recovery (%)

Geotron UK				DRILLING LOG				Rig crew NB+GR				Borehole Reference BH1						
Unit E2018, Warmco Industry Park, Manchester Road, Mossley, OL5 9AY; Tel: 01457 833910, Fax: 01457 833920, Email: info@geotronuk.co.uk, www.geotronuk.co.uk								Sheet of		Weather SNOW								
Job Ref: 51718		Site Location: Perby		Client: BWB		Day: Friday		Date: 27-2-18		Borehole Diameter(s) 150M								
Depth (m)	Strata Description			Test Type	From (m)	To (m)	SPT					N Value or KPA	U100/ Piston blows	Recovery (%)	Casing Depth (m)	Water level (m)	Liner size	Installation Details
							0-75	75-150	150-225	225-300	300-375	375-450						
GL	grass over top soil			B1	GL	1.20												
0.30	gray silty sand			B2	1.20	1.65							0			✓	100	
				B3	1.65	2.00												
3.30	CLAY			B4	2.00	2.45							0			1.80	✓	
				B5	2.00	3.00												
				B6	3.00	3.45							0			2.80	✓	
				B7	3.45	4.00												
				B8	4.00	4.45								7 3/4	9.80	✓		
				B9	4.45	5.00												
				B10	5.00	5.45	2	2	5	4	6	8	23			4.00	✓	
				B11	5.45	6.50												
				B12	6.50	6.45	4	8	11	6	8	7	33			4.00	✓	
BH Cont Y/N				Casing (depth m) 4M				BH Complete (depth) 7M										

Remarks: (Standing time, dayworks, in situ testing, visitors etc.)				Dayworks/Standing	Chiselling/Slow Drilling		Water Strikes									
					From (m) to (m)	Time (mins)	Time	Depth (m)	Rate of Rise	Rising to (mins)				Total		
Rig Set Up	up to 1 hour	Y/N	Time taken over 1 hour (dayworks)									5	10	15	20	
Service Pit	up to 1 hour	Y/N	Time taken over 1 hour (dayworks)													
Casing Reduced from	to		at	metres	Time taken (dayworks)											
From	To	Description				Well Diameter		Other Materials Used (e.g. lost cones/shoes etc.)								
		7.30-9.30 fixing rig				Plain	Screen	To								
						Well Materials Used		Gravel	Bento							
						Quantity (bags)										
					Sample quantities		Foreman's Name		Engineer's Name		Well Tag					
Rig Type	pando	Time on Site		7.30	SPT/CPT	U/UT	D/SD	B	W			L. CROSS				
Name	N. Binnall	Time off site			5	1	✓	6	✓			L. CROSS				

The above are the driller's site descriptions and factual data only and are subject to amendment after checking by or under the supervision of an engineer or geologist.

Appendix 4: SPT Calibration Certificate

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: AR1893
Test Date: 24/08/2017
Report Date: 24/08/2017
File Name: AR1893.spt
Test Operator: SH

Instrumented Rod Data

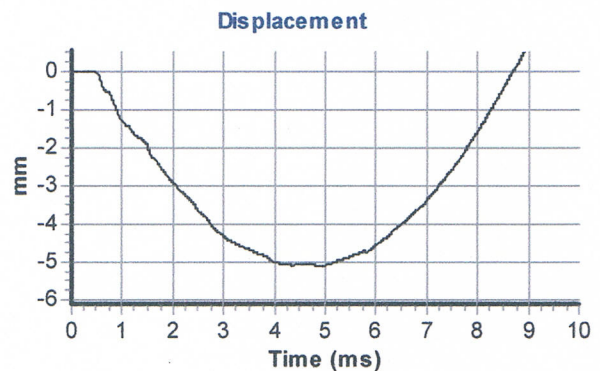
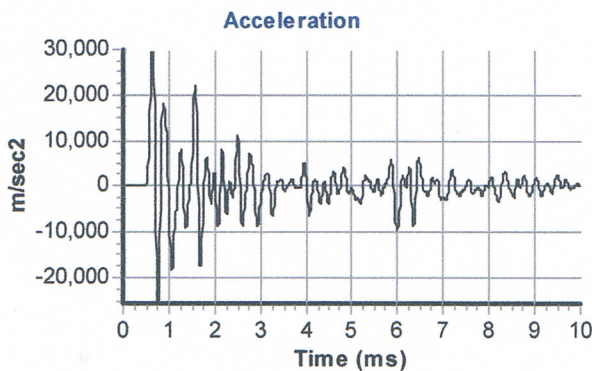
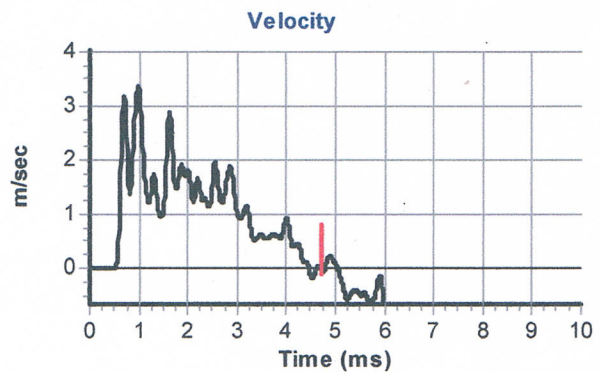
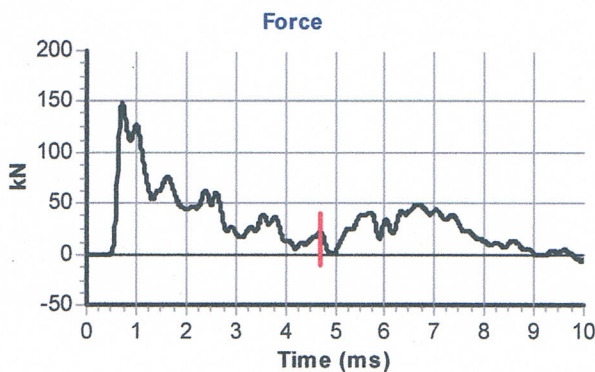
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 7080
Accelerometer No.2: 11609

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CALIBRATION



Calculations

Area of Rod A (mm²): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 345

Energy Ratio E_r (%): **73**

Signed: M.GARDNER
Title: FITTER

The recommended calibration interval is 12 months

Appendix 5: Ground Gas & Groundwater Monitoring Results

BWB GAS AND GROUNDWATER MONITORING

Site:		Burnaston Cross
Client:		
Job No.:		NTH2364
Date:		7th March 2018
Start / End Time:		10:00 - 14:00
Engineer:		ZT
Monitoring Equipment:	Gas Meter ID	BWB00957
	PID ID	BWB00946
	Dip Tape	BWB00999
	Other	

NR = Not Recorded
Dry = No Groundwater



Weather Conditions	Start	End
(Dry / Raining)	Dry	Dry
Cloud Cover (Oktas)	6	5
Wind Strength (m/s)	0.4	0.6
Wind Direction (from)	SE	SE
Temperature (°C)	6.0	6.0
Barometric Pressure (mb)	988	987
(Rising/ Falling)		Falling
PID - Air		
PID - Calibration Gas		

[illegible]

BWB GAS AND GROUNDWATER MONITORING

Site:		Burnaston Cross
Client:		0
Job No.:		NTH2364
Date:		13th February 2018
Start / End Time:		10:30 - 11:45
Engineer:		ZT
Monitoring Equipment:	Gas Meter ID	BWB00957
	PID ID	BWB00946
	Dip Tape	BWB00999
	Other	

NR = Not Recorded
Dry = No Groundwater



CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

Weather Conditions	Start	End
(Dry / Raining)	DRY	DRY
Cloud Cover (Oktas)	8	8
Wind Strength (m/s)	0.3	0.6
Wind Direction (from)	NE	NE
Temperature (°C)	8.0	8.0
Barometric Pressure (mb)	1001	1001
(Rising/ Falling)		STEADY
PID - Air		
PID - Calibration Gas		

[illegible]

BWB GAS AND GROUNDWATER MONITORING

Site:		Burnaston Cross
Client:		0
Job No.:		NTH2364
Date:		20th February 2018
Start / End Time:		11:20 - 12:30
Engineer:		ZT
Monitoring Equipment:	Gas Meter ID	BWB00957
	PID ID	BWB00961
	Dip Tape	BWB00999
	Other	

NR = Not Recorded
Dry = No Groundwater



Weather Conditions	Start	End
(Dry / Raining)	DRY	DRY
Cloud Cover (Oktas)	8	8
Wind Strength (m/s)	0.6	0.7
Wind Direction (from)	SE	SE
Temperature (°C)	7.0	7.0
Barometric Pressure (mb)	1024	1024
(Rising/ Falling)		STEADY
PID - Air		
PID - Calibration Gas		

[illegible]

BWB GAS AND GROUNDWATER MONITORING

Site:		Burnaston Cross
Client:		0
Job No.:		NTH2364
Date:		3rd April 2018
Start / End Time:		09:00 - 10:00
Engineer:		ZT
Monitoring Equipment:	Gas Meter ID	BWB00957
	PID ID	BWB00961
	Dip Tape	BWB00999
	Other	

NR = Not Recorded
Dry = No Groundwater



Weather Conditions	Start	End
(Dry / Raining)	DRY	DRY
Cloud Cover (Oktas)	8	8
Wind Strength (m/s)	0.8	0.9
Wind Direction (from)	SE	SE
Temperature (°C)	12.0	12.0
Barometric Pressure (mb)	983	984
(Rising/ Falling)		RISING
PID - Air		
PID - Calibration Gas		

[illegible]

Appendix 6: Soil Chemical Analysis Results

**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

e: luke.cross@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 18-77411

Project / Site name:	Burnaston Cross	Samples received on:	26/02/2018
Your job number:	NTH2364	Samples instructed on:	26/02/2018
Your order number:		Analysis completed by:	05/03/2018
Report Issue Number:	1	Report issued on:	05/03/2018
Samples Analysed:	3 leachate samples - 9 soil samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916237	916238	916239	916240	916241
Sample Reference				TP29	TP28	TP24	TP21	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken				am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	19	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	15	13	20	22
Total mass of sample received	kg	0.001	NONE	1.9	1.6	1.8	1.9	1.9

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile, Amosite, Crocidolite- Loose Fibrous Debris	Chrysotile, Amosite- Loose Fibrous Debris
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.2	7.7	7.9	8.2	6.5
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.045	0.13	0.044	0.20	1.7
Total Sulphur	mg/kg	50	MCERTS	390	180	130	2200	3900
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.024	0.0032	0.0029	0.025	0.030

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.3	1.7
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.79	0.73
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	3.07	2.42
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.8	11	14	69	94
Barium (aqua regia extractable)	mg/kg	1	MCERTS	180	350	290	440	320
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.90	1.7	2.1	2.8	3.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.6	1.0	5.7	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	48	39	46	53
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	27	26	150	160
Lead (aqua regia extractable)	mg/kg	1	MCERTS	54	24	21	70	79
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	68	54	70	91
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	22	53	50	79	100
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64	100	71	390	610

Iss No 18-77411-1 Burnaston Cross NTH2364

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916237	916238	916239	916240	916241
Sample Reference				TP29	TP28	TP24	TP21	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken				am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916237	916238	916239	916240	916241
Sample Reference				TP29	TP28	TP24	TP21	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken				am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	220	300
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TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	9.1	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	26	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	98	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	130	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	2.6	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	3.1	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	43	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	54	-

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number	916237	916238	916239	916240	916241
Sample Reference	TP29	TP28	TP24	TP21	TP21
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled	21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken	am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tri bromomethane	µg/kg	1	NONE	-	-	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916237	916238	916239	916240	916241
Sample Reference				TP29	TP28	TP24	TP21	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken				am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	2.3	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	2.5	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	0.4	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	0.79	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916237	916238	916239	916240	916241
Sample Reference				TP29	TP28	TP24	TP21	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.70-0.80	0.70-0.80	1.20-1.30
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	21/02/2018
Time Taken				am	am	pm	pm	pm
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	< 0.007	-



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Environmental Science

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	62	< 0.1	49	
Moisture Content	%	N/A	NONE	-	9.6	22	8.3	
Total mass of sample received	kg	0.001	NONE	-	1.6	1.5	2.0	

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile, Amosite- Loose Fibrous Debris	-	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	-	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.8	8.2	7.7	
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	
Complex Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	
Free Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.038	0.28	0.021	
Total Sulphur	mg/kg	50	MCERTS	-	440	2600	88	
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	-	0.026	0.027	0.0029	

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	0.29	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	2.1	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	0.69	< 0.05	
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	1.7	< 0.05	
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	1.5	< 0.05	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	1.2	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	0.99	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	< 0.80	8.46	< 0.80	
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	40	82	4.3	
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	200	510	48	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	1.3	5.4	0.33	
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.8	17	1.9	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	22	37	11	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	31	110	4.6	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	36	90	15	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	27	65	10	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	39	100	15	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	51	96	29	

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The results included within the report are representative of the samples submitted for analysis.

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Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	-	-	< 1.0	-	
Toluene	ug/kg	1	MCERTS	-	-	< 1.0	-	
Ethylbenzene	ug/kg	1	MCERTS	-	-	< 1.0	-	
p & m-xylene	ug/kg	1	MCERTS	-	-	< 1.0	-	
o-xylene	ug/kg	1	MCERTS	-	-	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	< 1.0	-	

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	-	< 10	< 10	< 10	
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TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	< 8.0	-	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	< 8.0	-	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	-	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	< 10	-	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	< 10	-	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	-	

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	-	
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	-	
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	-	
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Bromodichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tri bromomethane	µg/kg	1	NONE	-	-	< 1.0	-	
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Isopropylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	



Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Fluorene	mg/kg	0.05	MCERTS	-	-	0.29	-	
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Phenanthrene	mg/kg	0.05	MCERTS	-	-	2.1	-	
Anthracene	mg/kg	0.05	MCERTS	-	-	0.69	-	
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Anthraquinone	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Fluoranthene	mg/kg	0.05	MCERTS	-	-	1.7	-	
Pyrene	mg/kg	0.05	MCERTS	-	-	1.5	-	
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	1.2	-	
Chrysene	mg/kg	0.05	MCERTS	-	-	0.99	-	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	

Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916242	916243	916244	916245	
Sample Reference				TP21	TP20	TP20	TP10	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.70-1.80	0.10-0.20	1.20-1.30	0.60-0.70	
Date Sampled				21/02/2018	21/02/2018	21/02/2018	21/02/2018	
Time Taken				pm	pm	pm	pm	
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
PCBs by GC-MS								
PCB Congener 28				mg/kg	0.001	MCERTS	-	-
PCB Congener 52				mg/kg	0.001	MCERTS	-	-
PCB Congener 101				mg/kg	0.001	MCERTS	-	-
PCB Congener 118				mg/kg	0.001	MCERTS	-	-
PCB Congener 138				mg/kg	0.001	MCERTS	-	-
PCB Congener 153				mg/kg	0.001	MCERTS	-	-
PCB Congener 180				mg/kg	0.001	MCERTS	-	-
Total PCBs by GC-MS								
Total PCBs				mg/kg	0.007	MCERTS	-	-



Analytical Report Number: 18-77411

Project / Site name: Burnaston Cross

Lab Sample Number				916246	916247	916248		
Sample Reference				TP21	TP21	TP20		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.70-0.80	1.70-1.80	1.20-1.30		
Date Sampled				21/02/2018	21/02/2018	21/02/2018		
Time Taken				pm	pm	pm		
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.7	7.5	8.3		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO ₄	mg/l	0.1	ISO 17025	25.0	532	49.7		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	9.1	1.4	24		
Barium (dissolved)	µg/l	0.05	ISO 17025	31	42	110		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	220	760	2000		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.6	< 0.4	0.5		
Copper (dissolved)	µg/l	0.7	ISO 17025	11	11	18		
Lead (dissolved)	µg/l	1	ISO 17025	1.9	1.3	2.8		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.2	1.9	4.7		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	5.2	< 1.7	3.9		
Zinc (dissolved)	µg/l	0.4	ISO 17025	24	12	12		



Analytical Report Number : 18-77411

Project / Site name: Burnaston Cross

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
916237	TP29	None Supplied	0.10-0.20	Brown loam and sand with vegetation and stones.
916238	TP28	None Supplied	0.50-0.60	Brown clay.
916239	TP24	None Supplied	0.70-0.80	Brown clay and sand with gravel.
916240	TP21	None Supplied	0.70-0.80	Grey clay and sand with rubble and gravel.
916241	TP21	None Supplied	1.20-1.30	Grey clay and sand with gravel.
916242	TP21	None Supplied	1.70-1.80	-
916243	TP20	None Supplied	0.10-0.20	Brown loam and sand with vegetation and stones.
916244	TP20	None Supplied	1.20-1.30	Grey clay and sand with gravel and glass.
916245	TP10	None Supplied	0.60-0.70	Light brown gravelly sand with stones.

Analytical Report Number : 18-77411

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Iss No 18-77411-1 Burnaston Cross NTH2364

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 18-77411

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

e: luke.cross@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 18-77615

Project / Site name:	Burnaston Cross	Samples received on:	27/02/2018
Your job number:	NTH2364	Samples instructed on:	27/02/2018
Your order number:	POR016609	Analysis completed by:	06/03/2018
Report Issue Number:	1	Report issued on:	06/03/2018
Samples Analysed:	1 bulk sample - 2 leachate samples - 6 soil samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number	917340	917341	917342	917343	917344
Sample Reference	TP02	TP02	TP06	TP07	TP07
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10-0.20	0.50-0.60	0.40-0.50	0.30-0.40	2.20-2.30
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	4.0
Total mass of sample received	kg	0.001	NONE	8.7	9.6
				2.0	1.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Amosite- Loose Fibrous Debris	Amosite- Loose Fibrous Debris
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	7.8	7.6	5.6	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.012	0.022	0.046	1.2	0.43
Total Sulphur	mg/kg	50	MCERTS	400	200	280	9900	11000
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.029	0.0066	0.0062	0.071	0.022

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	3.0	1.2
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.19	0.16
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.6	0.57
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.39	0.16
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.40	0.17
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.20	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.33	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	6.09	2.26
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.8	9.7	11	140	59
Barium (aqua regia extractable)	mg/kg	1	MCERTS	96	72	57	200	180
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.59	0.62	0.57	1.2	1.4
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.5	0.6	1.2	12
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	20	18	26	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	11	14	59	62
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	16	22	91	37
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	29	16	38	51
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24	26	22	48	41
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	85	46	33	41	90

Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number	917340	917341	917342	917343	917344
Sample Reference	TP02	TP02	TP06	TP07	TP07
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10-0.20	0.50-0.60	0.40-0.50	0.30-0.40	2.20-2.30
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Toluene	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-xylene	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
o-xylene	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	< 1.0	-	-	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	16	< 10	< 10	610	1000
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	1.1
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	6.4
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-	23
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	-	210
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	240
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	5.7
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	17
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-	50
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-	470
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	540



Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917340	917341	917342	917343	917344
Sample Reference				TP02	TP02	TP06	TP07	TP07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.20	0.50-0.60	0.40-0.50	0.30-0.40	2.20-2.30
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0

Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number	917340	917341	917342	917343	917344
Sample Reference	TP02	TP02	TP06	TP07	TP07
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10-0.20	0.50-0.60	0.40-0.50	0.30-0.40	2.20-2.30
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs					
Aniline	mg/kg	0.1	NONE	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	1.2
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	1.9
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	0.16
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	0.57
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	0.16
Pyrene	mg/kg	0.05	MCERTS	-	0.17
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05

Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number	917340	917341	917342	917343	917344
Sample Reference	TP02	TP02	TP06	TP07	TP07
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10-0.20	0.50-0.60	0.40-0.50	0.30-0.40	2.20-2.30
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	< 0.007	-	-	< 0.007
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Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917345				
Sample Reference				TS17				
Sample Number				None Supplied				
Depth (m)				0.80-0.90				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	19				
Total mass of sample received	kg	0.001	NONE	1.4				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-				
Asbestos in Soil	Type	N/A	ISO 17025	-				

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Complex Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.039				
Total Sulphur	mg/kg	50	MCERTS	460				
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.018				

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80				
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	150				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	530				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	4.8				
Boron (water soluble)	mg/kg	0.2	MCERTS	5.8				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	54				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	93				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	80				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	70				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	120				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120				

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Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917345				
Sample Reference				TS17				
Sample Number				None Supplied				
Depth (m)				0.80-0.90				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	ug/kg	1	MCERTS	-				
Toluene	ug/kg	1	MCERTS	-				
Ethylbenzene	ug/kg	1	MCERTS	-				
p & m-xylene	ug/kg	1	MCERTS	-				
o-xylene	ug/kg	1	MCERTS	-				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-				

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10				
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TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1				
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-				

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-				

Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917345				
Sample Reference				TS17				
Sample Number				None Supplied				
Depth (m)				0.80-0.90				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-				
Chloroethane	µg/kg	1	NONE	-				
Bromomethane	µg/kg	1	ISO 17025	-				
Vinyl Chloride	µg/kg	1	NONE	-				
Trichlorofluoromethane	µg/kg	1	NONE	-				
1,1-Dichloroethene	µg/kg	1	NONE	-				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-				
1,1-Dichloroethane	µg/kg	1	MCERTS	-				
2,2-Dichloropropane	µg/kg	1	MCERTS	-				
Trichloromethane	µg/kg	1	MCERTS	-				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-				
1,2-Dichloroethane	µg/kg	1	MCERTS	-				
1,1-Dichloropropene	µg/kg	1	MCERTS	-				
Trans-1,2-dichloroethene	µg/kg	1	NONE	-				
Benzene	µg/kg	1	MCERTS	-				
Tetrachloromethane	µg/kg	1	MCERTS	-				
1,2-Dichloropropane	µg/kg	1	MCERTS	-				
Trichloroethene	µg/kg	1	MCERTS	-				
Dibromomethane	µg/kg	1	MCERTS	-				
Bromodichloromethane	µg/kg	1	MCERTS	-				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-				
Toluene	µg/kg	1	MCERTS	-				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-				
1,3-Dichloropropane	µg/kg	1	ISO 17025	-				
Dibromochloromethane	µg/kg	1	ISO 17025	-				
Tetrachloroethene	µg/kg	1	NONE	-				
1,2-Dibromoethane	µg/kg	1	ISO 17025	-				
Chlorobenzene	µg/kg	1	MCERTS	-				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-				
Ethylbenzene	µg/kg	1	MCERTS	-				
p & m-Xylene	µg/kg	1	MCERTS	-				
Styrene	µg/kg	1	MCERTS	-				
Tribromomethane	µg/kg	1	NONE	-				
o-Xylene	µg/kg	1	MCERTS	-				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-				
Isopropylbenzene	µg/kg	1	MCERTS	-				
Bromobenzene	µg/kg	1	MCERTS	-				
n-Propylbenzene	µg/kg	1	ISO 17025	-				
2-Chlorotoluene	µg/kg	1	MCERTS	-				
4-Chlorotoluene	µg/kg	1	MCERTS	-				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-				
tert-Butylbenzene	µg/kg	1	MCERTS	-				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-				
sec-Butylbenzene	µg/kg	1	MCERTS	-				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-				
p-Isopropyltoluene	µg/kg	1	ISO 17025	-				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-				
Butylbenzene	µg/kg	1	MCERTS	-				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-				
Hexachlorobutadiene	µg/kg	1	MCERTS	-				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-				

Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917345				
Sample Reference				TS17				
Sample Number				None Supplied				
Depth (m)				0.80-0.90				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0.2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0.3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0.3	MCERTS	-				
4-Methylphenol	mg/kg	0.2	NONE	-				
Isophorone	mg/kg	0.2	MCERTS	-				
2-Nitrophenol	mg/kg	0.3	MCERTS	-				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-				
Chrysene	mg/kg	0.05	MCERTS	-				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-				



Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917345				
Sample Reference				TS17				
Sample Number				None Supplied				
Depth (m)				0.80-0.90				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-				
PCB Congener 52	mg/kg	0.001	MCERTS	-				
PCB Congener 101	mg/kg	0.001	MCERTS	-				
PCB Congener 118	mg/kg	0.001	MCERTS	-				
PCB Congener 138	mg/kg	0.001	MCERTS	-				
PCB Congener 153	mg/kg	0.001	MCERTS	-				
PCB Congener 180	mg/kg	0.001	MCERTS	-				
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-				



Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Your Order No: POR016609

Lab Sample Number				917347	917348			
Sample Reference				TP02	TP07			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50-0.60	2.20-2.30			
Date Sampled				27/02/2018	27/02/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.4	7.4			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO ₄	mg/l	0.1	ISO 17025	2.7	78.9			

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	15			
Barium (dissolved)	µg/l	0.05	ISO 17025	5.0	42			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	< 10	1000			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.7	0.4			
Copper (dissolved)	µg/l	0.7	ISO 17025	17	8.4			
Lead (dissolved)	µg/l	1	ISO 17025	1.7	< 1.0			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.0	1.7			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	2.5	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	8.8	16			



Analytical Report Number: 18-77615

Project / Site name: Burnaston Cross

Lab Sample Number				917346				
Sample Reference				BH03				
Sample Number				None Supplied				
Depth (m)				2.40-2.50				
Date Sampled				27/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Bulk Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos Identification Name				Type	N/A	ISO 17025	No Asbestos Detected	



Analytical Report Number : 18-77615

Project / Site name: Burnaston Cross

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
917340	TP02	None Supplied	0.10-0.20	Brown loam and clay with gravel and vegetation.
917341	TP02	None Supplied	0.50-0.60	Brown loam and clay with gravel.
917342	TP06	None Supplied	0.40-0.50	Brown clay and sand with gravel.
917343	TP07	None Supplied	0.30-0.40	Grey loam and sand with gravel.
917344	TP07	None Supplied	2.20-2.30	Grey clay and sand with gravel.
917345	TS17	None Supplied	0.80-0.90	Grey clay and sand with gravel.

Analytical Report Number : 18-77615

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Iss No 18-77615-1 Burnaston Cross NTH2364

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 18-77615

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

e: luke.cross@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 18-77683

Project / Site name:	Burnaston Cross	Samples received on:	01/03/2018
Your job number:	NTH2364	Samples instructed on:	01/03/2018
Your order number:	POR016629	Analysis completed by:	07/03/2018
Report Issue Number:	1	Report issued on:	07/03/2018
Samples Analysed:	5 leachate samples - 11 soil samples - 1 bulk sample		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number	917700	917701	917702	917703	917704
Sample Reference	TP09	TP05	TP05	TP14	TP15
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.50	0.30-0.40	0.80-0.90	1.00-1.10	1.40-1.50
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	AM	AM	AM	AM	AM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	9.6
Total mass of sample received	kg	0.001	NONE	1.7	1.5
				1.6	2.0
				2.0	2.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite- Loose Fibrous Debris; Chrysotile, Amosite- Loose Fibres	-	Amosite- Loose Fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Detected	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	3.9	6.4	6.8	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.057	1.8	1.9	1.6	0.080
Total Sulphur	mg/kg	50	MCERTS	330	29000	4500	2300	130
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0078	0.068	0.010	0.0081	< 0.0010

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	2.3	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.33	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	3.0	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.21	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.49	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.51	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.41	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	7.63	< 0.80	< 0.80	< 0.80
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Heavy Metals / Metalloids

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917700	917701	917702	917703	917704
Sample Reference				TP09	TP05	TP05	TP14	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.50	0.30-0.40	0.80-0.90	1.00-1.10	1.40-1.50
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				AM	AM	AM	AM	AM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	100	81	110	32	7.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	260	110	320	150	65
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	3.7	0.74	3.5	1.5	0.65
Boron (water soluble)	mg/kg	0.2	MCERTS	3.9	3.4	19	1.7	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.4	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	42	12	52	17	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	88	55	96	54	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	51	70	60	53	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	60	22	60	30	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	94	34	100	32	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56	31	99	130	48

Monoaromatics

Benzene	ug/kg	1	MCERTS	-	-	-	-	-
Toluene	ug/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	ug/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	ug/kg	1	MCERTS	-	-	-	-	-
o-xylene	ug/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	91	< 10	27	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917700	917701	917702	917703	917704
Sample Reference				TP09	TP05	TP05	TP14	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.50	0.30-0.40	0.80-0.90	1.00-1.10	1.40-1.50
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				AM	AM	AM	AM	AM
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number	917700	917701	917702	917703	917704
Sample Reference	TP09	TP05	TP05	TP14	TP15
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.50	0.30-0.40	0.80-0.90	1.00-1.10	1.40-1.50
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	AM	AM	AM	AM	AM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs					
Aniline	mg/kg	0.1	NONE	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number	917700	917701	917702	917703	917704
Sample Reference	TP09	TP05	TP05	TP14	TP15
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.50	0.30-0.40	0.80-0.90	1.00-1.10	1.40-1.50
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	AM	AM	AM	AM	AM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-
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Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number	917705	917706	917707	917708	917709
Sample Reference	TP19	TP25	TP25	TP22	TP12
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.30-1.40	0.40-0.50	1.10-1.20	0.40-0.50	1.10-1.20
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	PM	PM	PM	PM	PM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	14
Total mass of sample received	kg	0.001	NONE	1.8	1.6
				1.8	1.7
					2.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite- Loose Fibrous Debris; Chrysotile, Amosite- Loose Fibres	-	-	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	-	Not-detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	7.6	8.0	7.9	6.5
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.023	0.040	0.023	0.15	0.090
Total Sulphur	mg/kg	50	MCERTS	380	390	74	340	920
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.025	0.015	0.0010	0.0068	0.012

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.57	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.48	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.34	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.40	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.33	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.83	< 0.80	< 0.80	< 0.80	< 0.80
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Heavy Metals / Metalloids

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917705	917706	917707	917708	917709
Sample Reference				TP19	TP25	TP25	TP22	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.40	0.40-0.50	1.10-1.20	0.40-0.50	1.10-1.20
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				PM	PM	PM	PM	PM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	70	7.0	29	7.5
Barium (aqua regia extractable)	mg/kg	1	MCERTS	56	360	90	210	69
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.33	3.2	0.73	1.7	0.28
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	3.6	3.9	1.6	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	37	14	23	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	82	22	48	43
Lead (aqua regia extractable)	mg/kg	1	MCERTS	31	50	15	51	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	55	17	29	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20	75	20	33	45
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	90	36	88	25

Monoaromatics

Benzene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	18	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917705	917706	917707	917708	917709
Sample Reference				TP19	TP25	TP25	TP22	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.40	0.40-0.50	1.10-1.20	0.40-0.50	1.10-1.20
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				PM	PM	PM	PM	PM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917705	917706	917707	917708	917709
Sample Reference				TP19	TP25	TP25	TP22	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.40	0.40-0.50	1.10-1.20	0.40-0.50	1.10-1.20
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				PM	PM	PM	PM	PM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-



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Project / Site name: Burnaston Cross

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Lab Sample Number				917705	917706	917707	917708	917709
Sample Reference				TP19	TP25	TP25	TP22	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.40	0.40-0.50	1.10-1.20	0.40-0.50	1.10-1.20
Date Sampled				27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken				PM	PM	PM	PM	PM
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917710				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.10-2.20				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	16				
Total mass of sample received	kg	0.001	NONE	2.0				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose Fibres				
Asbestos in Soil	Type	N/A	ISO 17025	Detected				

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Complex Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.099				
Total Sulphur	mg/kg	50	MCERTS	810				
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.013				

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.37				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	0.43				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	0.33				
Pyrene	mg/kg	0.05	MCERTS	0.21				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1.34				
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Heavy Metals / Metalloids

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Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917710				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.10-2.20				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.4				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	99				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.39				
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	45				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	29				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	41				

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	ug/kg	1	MCERTS	< 1.0				
Ethylbenzene	ug/kg	1	MCERTS	< 1.0				
p & m-xylene	ug/kg	1	MCERTS	< 1.0				
o-xylene	ug/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0				

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	43				
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	28				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	29				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Lab Sample Number				917710				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.10-2.20				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	NONE	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	NONE	< 1.0				
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0				
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	NONE	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	NONE	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0				

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Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917710				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.10-2.20				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	0.37				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.05	MCERTS	0.43				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.05	MCERTS	0.33				
Pyrene	mg/kg	0.05	MCERTS	0.21				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number				917710				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.10-2.20				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
PCBs by GC-MS								
PCB Congener 28				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 52				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 101				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 118				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 138				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 153				mg/kg	0.001	MCERTS	< 0.001	
PCB Congener 180				mg/kg	0.001	MCERTS	< 0.001	
Total PCBs by GC-MS								
Total PCBs				mg/kg	0.007	MCERTS	< 0.007	



Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Your Order No: POR016629

Lab Sample Number	917712	917713	917714	917715	917716
Sample Reference	TP09	TP05	TP25	TP22	TP12
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	2.20-2.30	3.70-3.80	0.40-0.50	0.40-0.50	2.10-2.20
Date Sampled	27/02/2018	27/02/2018	27/02/2018	27/02/2018	27/02/2018
Time Taken	AM	AM	PM	PM	PM
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	9.2	8.2	8.0	7.8	7.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	mg/l	0.1	ISO 17025	123	670	15.0	74.5	22.0

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	34	21	7.0	2.2	< 1.1
Barium (dissolved)	µg/l	0.05	ISO 17025	49	48	120	61	34
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	2500	2000	220	65	400
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.5	< 0.4	1.4	0.6	< 0.4
Copper (dissolved)	µg/l	0.7	ISO 17025	6.9	10	9.1	11	9.6
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	3.1	2.9	3.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.4	1.0	1.4	0.8	1.7
Selenium (dissolved)	µg/l	4	ISO 17025	15	21	< 4.0	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	30	16	6.6	8.2	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.5	16	6.8	7.6	9.5



Analytical Report Number: 18-77683

Project / Site name: Burnaston Cross

Lab Sample Number				917711				
Sample Reference				TP12				
Sample Number				None Supplied				
Depth (m)				2.40-2.70				
Date Sampled				27/02/2018				
Time Taken				PM				
Analytical Parameter (Bulk Analysis)								
Asbestos Identification Name	Type	Limit of detection	Accreditation Status	Chrysotile-Hard/Cement Type Material				



Analytical Report Number : 18-77683

Project / Site name: Burnaston Cross

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
917700	TP09	None Supplied	0.40-0.50	Grey clay and sand with gravel.
917701	TP05	None Supplied	0.30-0.40	Grey clay and sand with gravel.
917702	TP05	None Supplied	0.80-0.90	Grey clay and sand with gravel.
917703	TP14	None Supplied	1.00-1.10	Brown loam and clay with gravel.
917704	TP15	None Supplied	1.40-1.50	Brown clay and sand with gravel.
917705	TP19	None Supplied	1.30-1.40	Brown loam and clay with gravel and vegetation.
917706	TP25	None Supplied	0.40-0.50	Grey clay and sand with gravel.
917707	TP25	None Supplied	1.10-1.20	Brown sandy clay with gravel.
917708	TP22	None Supplied	0.40-0.50	Brown clay and sand with stones.
917709	TP12	None Supplied	1.10-1.20	Brown clay and sand with gravel and vegetation.
917710	TP12	None Supplied	2.10-2.20	Brown clay and sand with gravel.

Analytical Report Number : 18-77683

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Bulks	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 18-77683

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix 7: Groundwater Chemical Analysis Results

**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

e: luke.cross@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 18-78435

Project / Site name:	Burnaston Cross	Samples received on:	09/03/2018
Your job number:	NTN2364	Samples instructed on:	09/03/2018
Your order number:	POR016803	Analysis completed by:	15/03/2018
Report Issue Number:	1	Report issued on:	15/03/2018
Samples Analysed:	6 water samples		

Signed:

Rexona Rahman
Head of Customer Services
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921806	921807	921808	921809	921810
Sample Reference				BH01	BH02 (S)	BH02 (D)	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.7	7.4	7.7	7.9	8.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1800	1000	1600	2400	2000
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	µg/l	45	ISO 17025	461000	89600	487000	771000	907000
Sulphate as SO ₄	mg/l	0.045	ISO 17025	461	89.6	487	771	907
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	40	< 15	230	44000	7300
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.18	3.72	3.13	5.40	1.45

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	73.5	20.2	0.76	48.5	44.7
Barium (dissolved)	µg/l	0.06	ISO 17025	29	100	31	79	32
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron (dissolved)	µg/l	10	ISO 17025	6700	1200	2100	19000	11000
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.19	0.04	0.11	0.09	0.19
Calcium (dissolved)	mg/l	0.012	ISO 17025	220	140	160	230	310
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	29	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.7	30	0.3	< 0.2	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.9	1.3	2.0	1.8	1.3
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	< 0.2	< 0.2	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.21	0.07	< 0.05	0.14	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.3	1.5	3.2	2.7	3.4
Selenium (dissolved)	µg/l	0.6	ISO 17025	140	130	46	5.8	9.5
Vanadium (dissolved)	µg/l	0.2	ISO 17025	21	14	0.5	1.9	1.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	0.8	2.4	3.4	1.4	0.9



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921806	921807	921808	921809	921810
Sample Reference				BH01	BH02 (S)	BH02 (D)	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH1 (C10 - C40)	µg/l	10	NONE	370	< 10	< 10	170	91
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TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	-	< 10	< 10	170	91
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	-	< 10	< 10	170	91

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	-	< 10	< 10	< 10	< 10



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921806	921807	921808	921809	921810
Sample Reference				BH01	BH02 (S)	BH02 (D)	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

VOCs

Chloromethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	-	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	-	< 1.0	8.3	< 1.0	3.4
2,2-Dichloropropane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	-	19.6	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	-	< 1.0	1.8	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	-	< 1.0	< 1.0	< 1.0	< 1.0



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921806	921807	921808	921809	921810
Sample Reference				BH01	BH02 (S)	BH02 (D)	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs

Aniline	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	-	< 0.05	3.4	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	-	< 0.05	0.79	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	-	< 0.01	< 0.01	< 0.01	< 0.01

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921811				
Sample Reference				BH05				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				07/03/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.7				
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	590				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO ₄	µg/l	45	ISO 17025	79000				
Sulphate as SO ₄	mg/l	0.045	ISO 17025	79.0				
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	690				
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.21				

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16				
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.32				
Barium (dissolved)	µg/l	0.06	ISO 17025	140				
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1				
Boron (dissolved)	µg/l	10	ISO 17025	290				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02				
Calcium (dissolved)	mg/l	0.012	ISO 17025	88				
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0				
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Copper (dissolved)	µg/l	0.5	ISO 17025	1.2				
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05				
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.0				
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.4				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.6				



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

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Lab Sample Number				921811				
Sample Reference				BH05				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				07/03/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH1 (C10 - C40)	µg/l	10	NONE	< 10				
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TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10				
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

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Lab Sample Number				921811					
Sample Reference				BH05					
Sample Number				None Supplied					
Depth (m)				None Supplied					
Date Sampled				07/03/2018					
Time Taken				None Supplied					
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0					
Chloroethane	µg/l	1	ISO 17025	< 1.0					
Bromomethane	µg/l	1	ISO 17025	< 1.0					
Vinyl Chloride	µg/l	1	NONE	< 1.0					
Trichlorofluoromethane	µg/l	1	NONE	< 1.0					
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0					
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0					
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0					
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0					
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0					
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0					
Trichloromethane	µg/l	1	ISO 17025	< 1.0					
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0					
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0					
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0					
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0					
Benzene	µg/l	1	ISO 17025	< 1.0					
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0					
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0					
Trichloroethene	µg/l	1	ISO 17025	< 1.0					
Dibromomethane	µg/l	1	ISO 17025	< 1.0					
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0					
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0					
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0					
Toluene	µg/l	1	ISO 17025	< 1.0					
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0					
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0					
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0					
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0					
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0					
Chlorobenzene	µg/l	1	ISO 17025	< 1.0					
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0					
Ethylbenzene	µg/l	1	ISO 17025	< 1.0					
p & m-Xylene	µg/l	1	ISO 17025	< 1.0					
Styrene	µg/l	1	ISO 17025	< 1.0					
Tribromomethane	µg/l	1	ISO 17025	< 1.0					
o-Xylene	µg/l	1	ISO 17025	< 1.0					
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0					
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0					
Bromobenzene	µg/l	1	ISO 17025	< 1.0					
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0					
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0					
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0					
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0					
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0					
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0					
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0					
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0					
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0					
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0					
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0					
Butylbenzene	µg/l	1	ISO 17025	< 1.0					
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0					
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0					
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0					
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0					



Analytical Report Number: 18-78435

Project / Site name: Burnaston Cross

Your Order No: POR016803

Lab Sample Number				921811				
Sample Reference				BH05				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				07/03/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05				
Phenol	µg/l	0.05	NONE	< 0.05				
2-Chlorophenol	µg/l	0.05	NONE	< 0.05				
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05				
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05				
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05				
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05				
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05				
2-Methylphenol	µg/l	0.05	NONE	< 0.05				
Hexachloroethane	µg/l	0.05	NONE	< 0.05				
Nitrobenzene	µg/l	0.05	NONE	< 0.05				
4-Methylphenol	µg/l	0.05	NONE	< 0.05				
Isophorone	µg/l	0.05	NONE	< 0.05				
2-Nitrophenol	µg/l	0.05	NONE	< 0.05				
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05				
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05				
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05				
4-Chloroaniline	µg/l	0.05	NONE	< 0.05				
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05				
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05				
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05				
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05				
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05				
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05				
Dimethylphthalate	µg/l	0.05	NONE	< 0.05				
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05				
Dibenzofuran	µg/l	0.05	NONE	< 0.05				
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05				
Diethyl phthalate	µg/l	0.05	NONE	< 0.05				
4-Nitroaniline	µg/l	0.05	NONE	< 0.05				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Azobenzene	µg/l	0.05	NONE	< 0.05				
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05				
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Carbazole	µg/l	0.05	NONE	< 0.05				
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05				
Anthraquinone	µg/l	0.05	NONE	< 0.05				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

U/S = Unsuitable Sample I/S = Insufficient Sample

Iss No 18-78435-1 Burnaston Cross NTN2364

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Page 9 of 11



Analytical Report Number : 18-78435

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPH2 (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

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Page 10 of 11



Analytical Report Number : 18-78435

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix 8: Geotechnical Laboratory Testing Results



TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

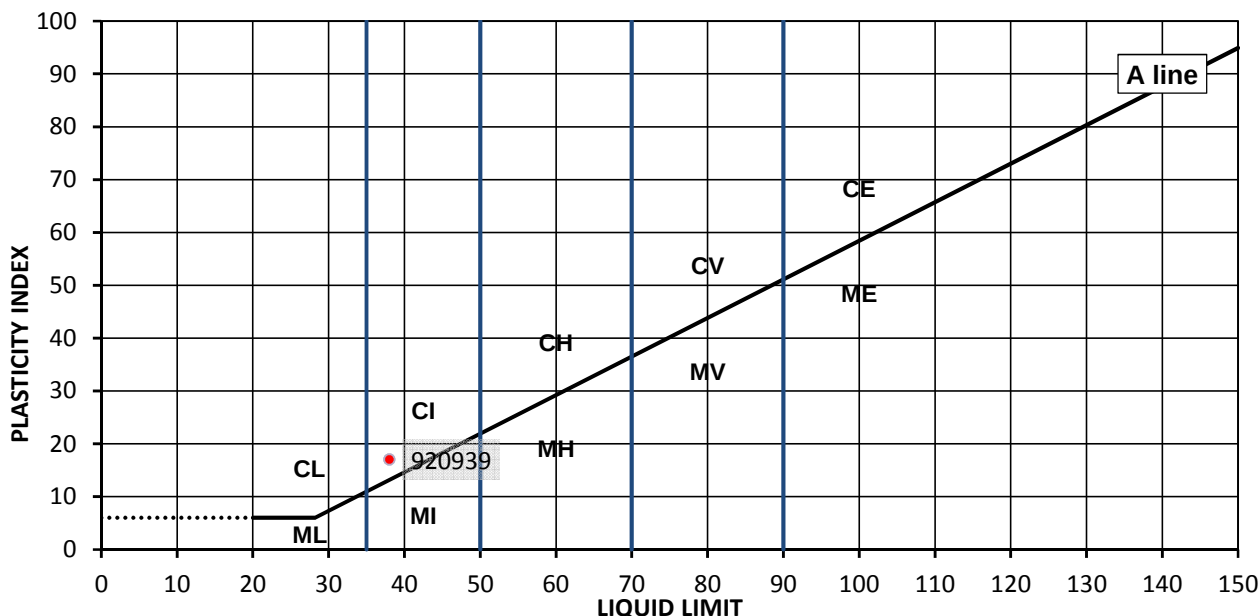
TEST RESULTS

Laboratory Reference: 920939
Sample Reference: Not Given

Description: Red sandy CLAY
Location: BH01
Sample Preparation: Tested in natural condition

Sample Type: B
Depth Top [m]: 4.00
Depth Base [m]: 5.00

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
25	38	21	17	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
		50 to 70
		70 to 90
		exceeding 90
	Organic	
	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
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Sampled By: Not Given

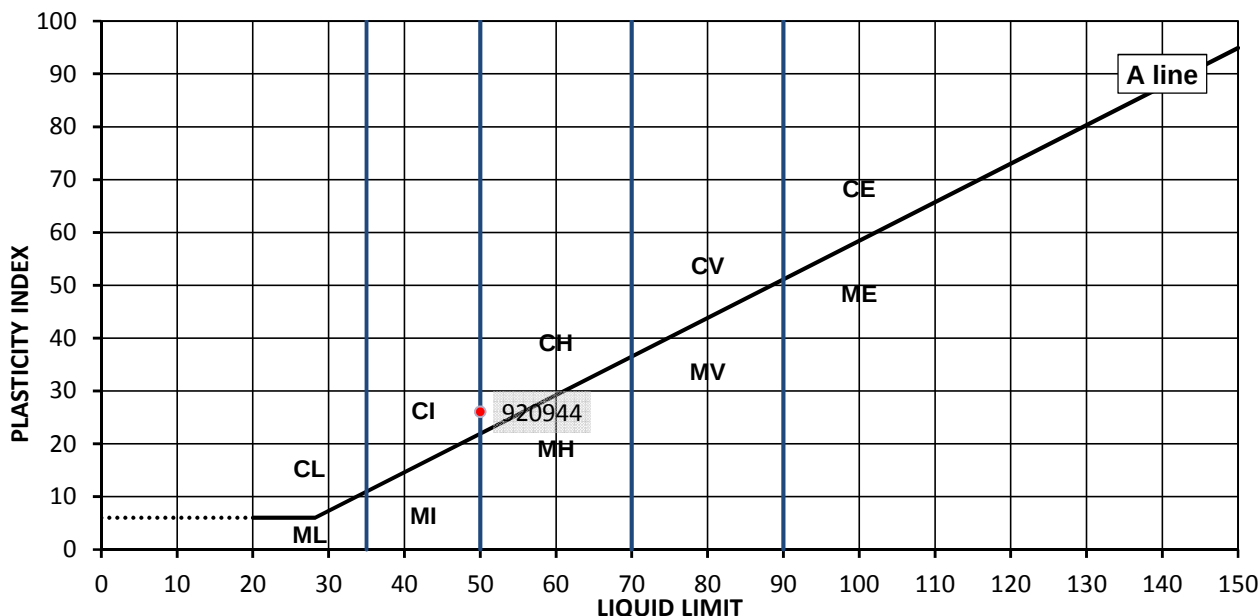
TEST RESULTS

Laboratory Reference: 920944
Sample Reference: Not Given

Description: Red slightly sandy CLAY
Location: BH02
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 4.00
Depth Base [m]: 4.45

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	50	24	26	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
		exceeding 90
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

Date Reported: 20/03/2018

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Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

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Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

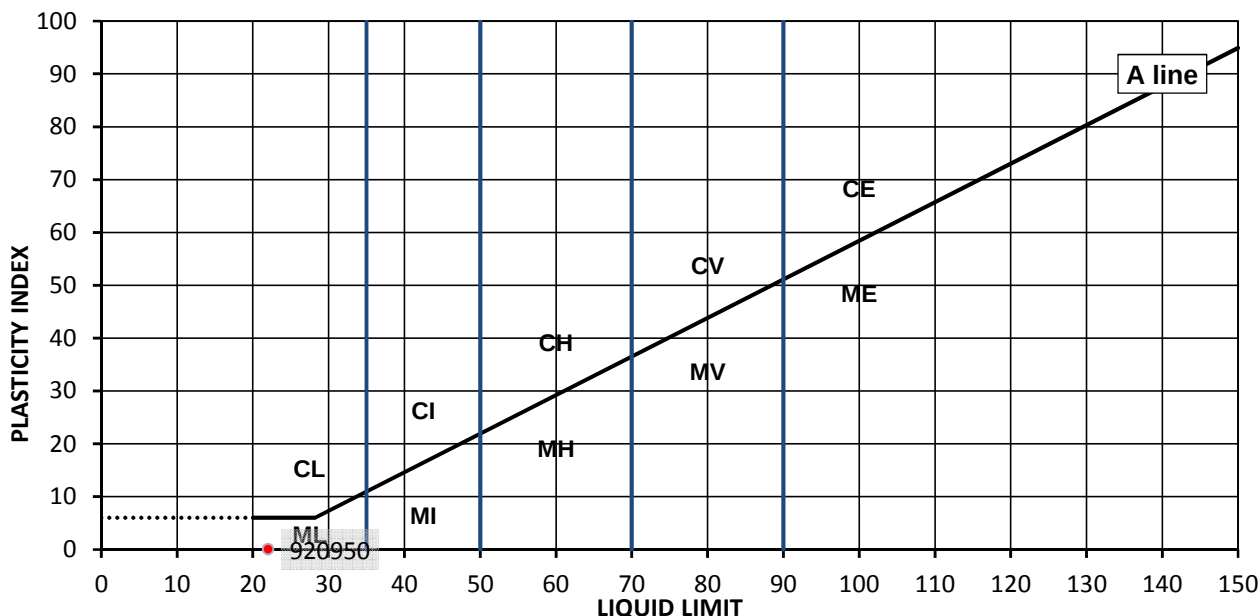
TEST RESULTS

Laboratory Reference: 920950
Sample Reference: Not Given

Description: Organish brown clayey SAND
Location: BH03
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 8.00
Depth Base [m]: 8.45

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
12	22	NP	NP	100



Remarks NP – non plastic

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

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Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

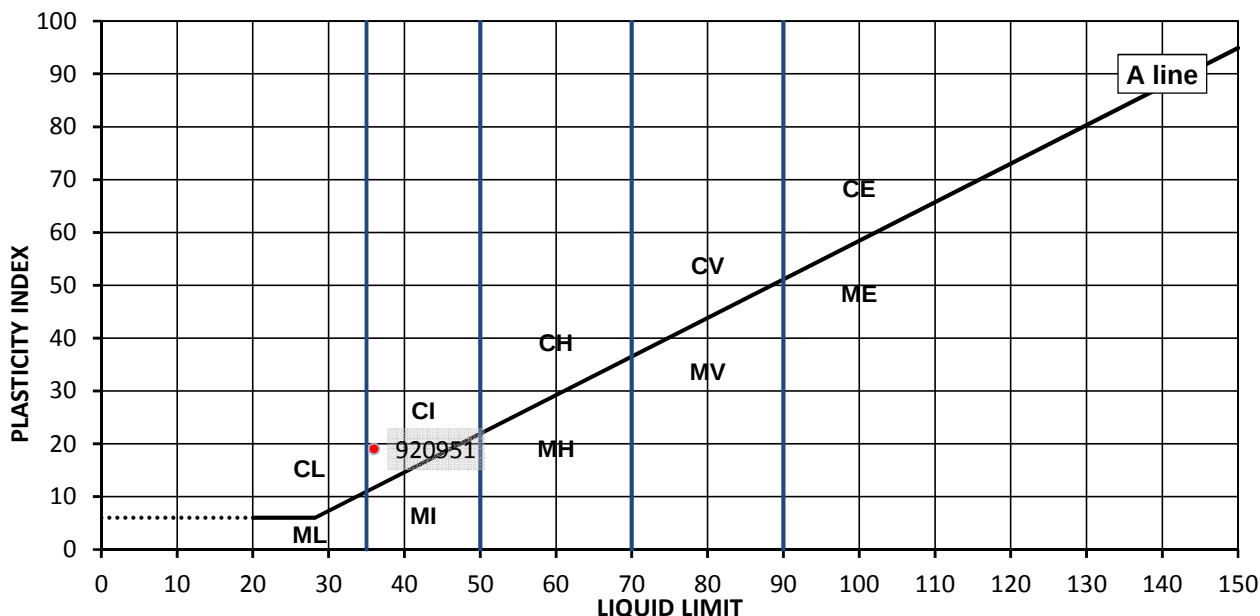
TEST RESULTS

Laboratory Reference: 920951
Sample Reference: Not Given

Description: Organish brown sandy CLAY
Location: BH03
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 11.00
Depth Base [m]: 11.45

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
23	36	17	19	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L Low	50 to 70
	I Medium	70 to 90
	H High	exceeding 90
	V Very high	
	E Extremely high	
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

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Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

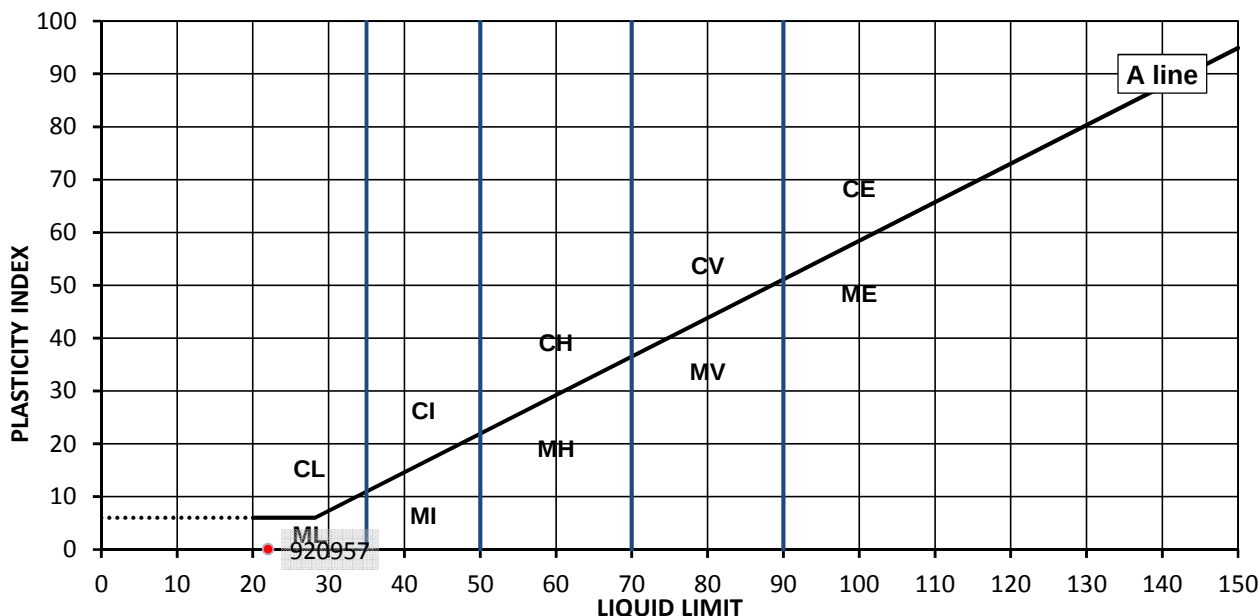
TEST RESULTS

Laboratory Reference: 920957
Sample Reference: Not Given

Description: Organish brown clayey SAND
Location: BH04
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 9.50
Depth Base [m]: 9.95

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
10	22	NP	NP	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L Low	50 to 70
	I Medium	70 to 90
	H High	exceeding 90
	V Very high	
	E Extremely high	
Organic	O	append to classification for organic material (eg CHO)

Remarks NP – non plastic

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

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Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

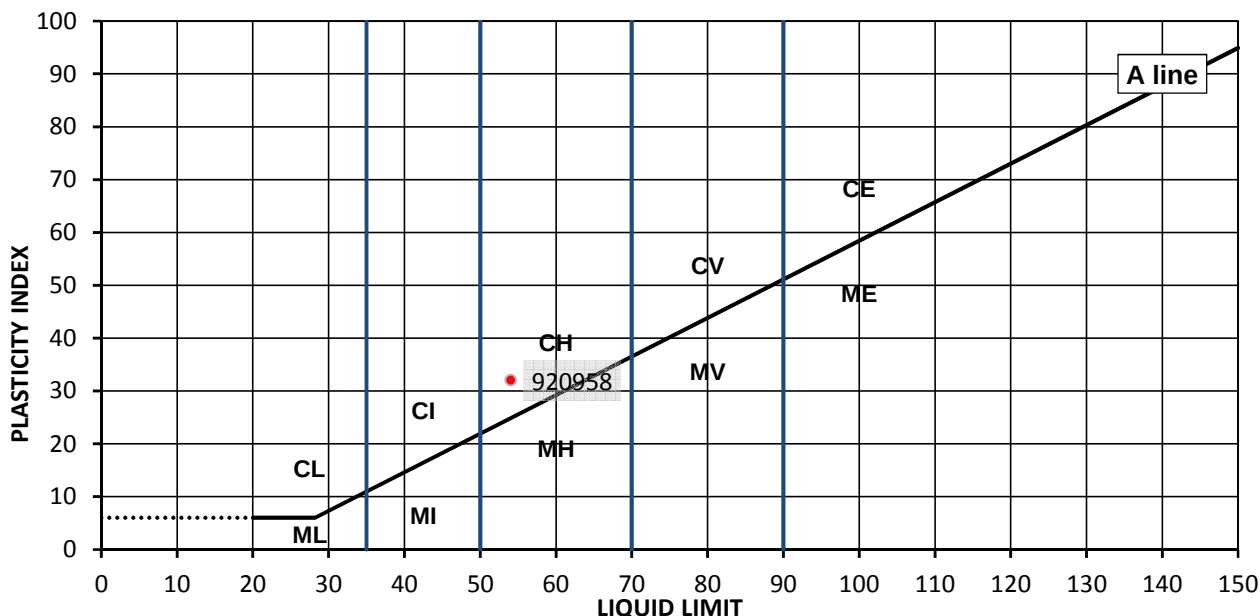
TEST RESULTS

Laboratory Reference: 920958
Sample Reference: Not Given

Description: Brown slightly sandy CLAY
Location: BH05
Sample Preparation: Tested after >425um removed by hand

Sample Type: D
Depth Top [m]: 1.00
Depth Base [m]: 1.45

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
22	54	22	32	99



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L Low	50 to 70
	I Medium	70 to 90
	H High	exceeding 90
	V Very high	
	E Extremely high	
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

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Determination of Liquid and Plastic Limits

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4041

Client: BWB Consulting Limited
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Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

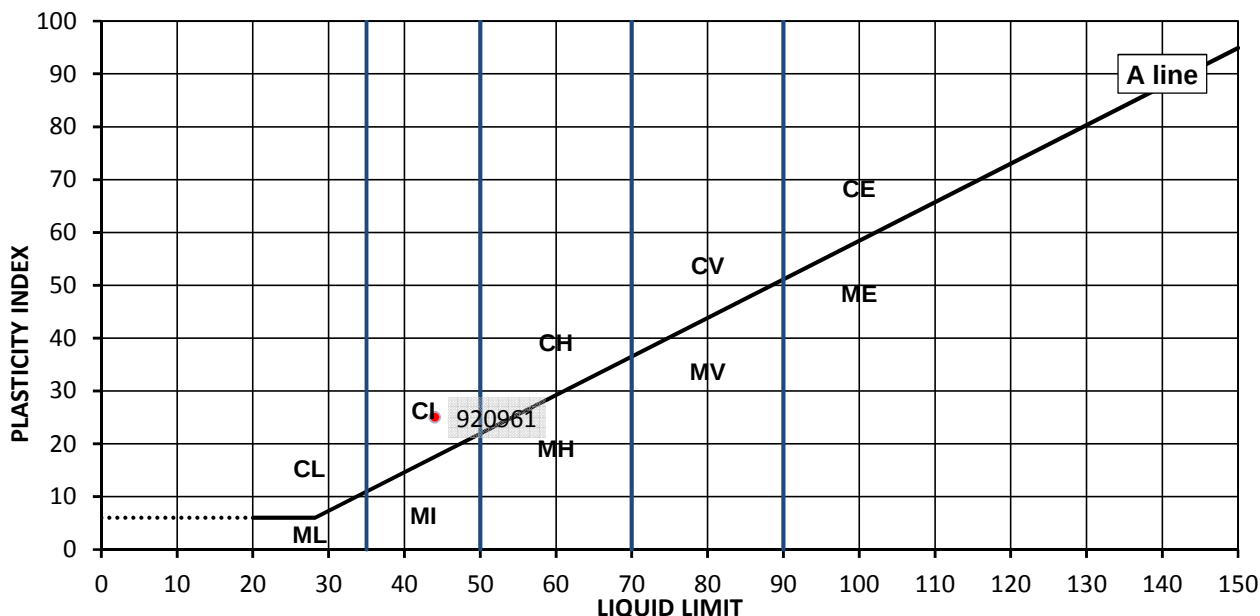
TEST RESULTS

Laboratory Reference: 920961
Sample Reference: Not Given

Description: Organish brown slightly gravelly sandy CLAY
Location: TP01
Sample Preparation: Tested after washing to remove >425um

Sample Type: D
Depth Top [m]: 3.20
Depth Base [m]: 3.30

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
18	44	19	25	93



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
		exceeding 90
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

Date Reported: 20/03/2018

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Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

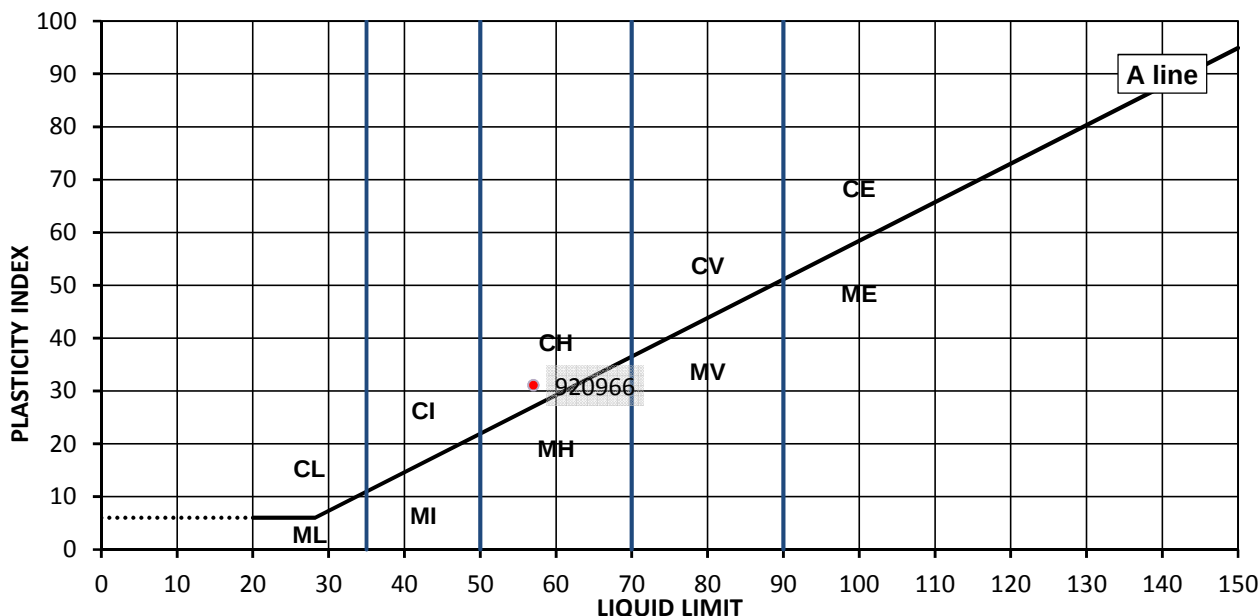
TEST RESULTS

Laboratory Reference: 920966
Sample Reference: Not Given

Description: Reddish brown slightly sandy CLAY
Location: TP20
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 4.50
Depth Base [m]: 4.60

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
28	57	26	31	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C Clay	L Low	below 35
M Silt	I Medium	35 to 50
	H High	50 to 70
	V Very high	70 to 90
	E Extremely high	exceeding 90
Organic	O append to classification for organic material (eg CHO)	

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

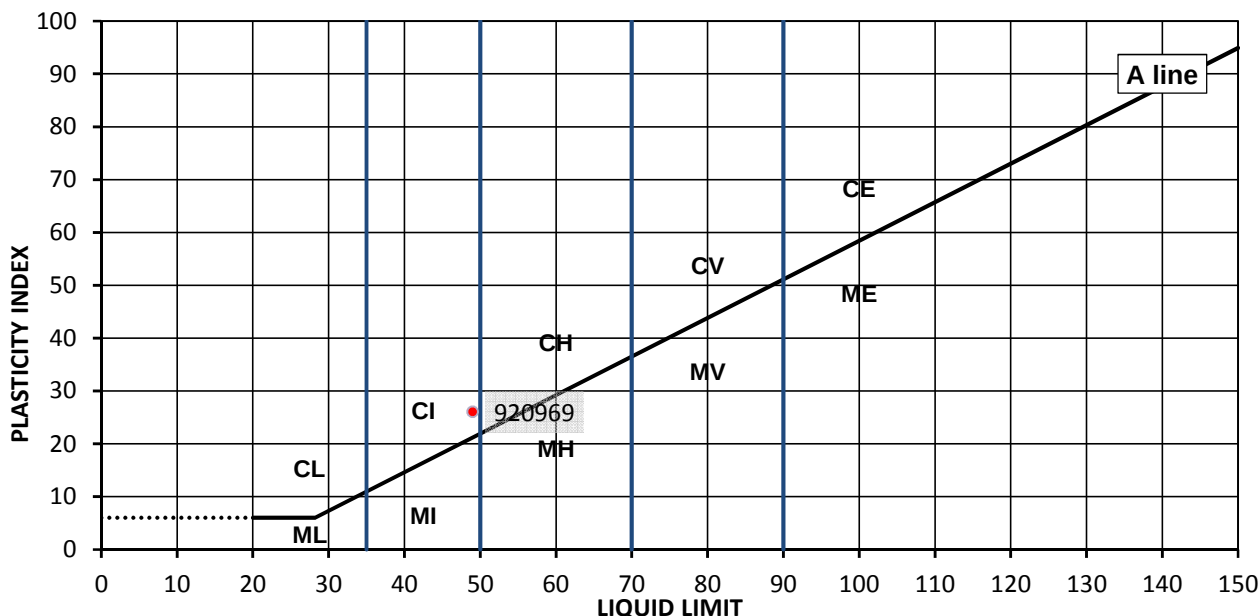
TEST RESULTS

Laboratory Reference: 920969
Sample Reference: Not Given

Description: Organish brown slightly sandy CLAY
Location: TP25
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 2.10
Depth Base [m]: 2.20

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	49	23	26	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L Low	50 to 70
	I Medium	70 to 90
	H High	exceeding 90
	V Very high	
	E Extremely high	
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
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Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

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Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

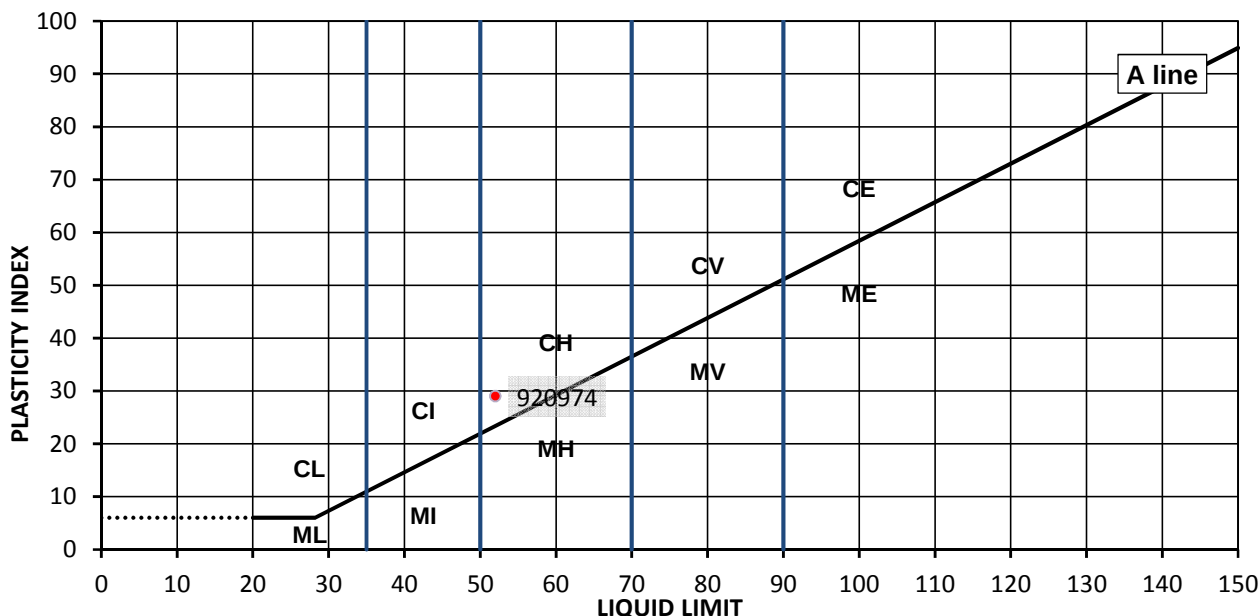
TEST RESULTS

Laboratory Reference: 920974
Sample Reference: Not Given

Description: Brown slightly sandy CLAY
Location: TP28
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 1.20
Depth Base [m]: 1.30

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	52	23	29	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C Clay	L Low	below 35
M Silt	I Medium	35 to 50
	H High	50 to 70
	V Very high	70 to 90
	E Extremely high	exceeding 90
Organic	O append to classification for organic material (eg CHO)	

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

4041

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

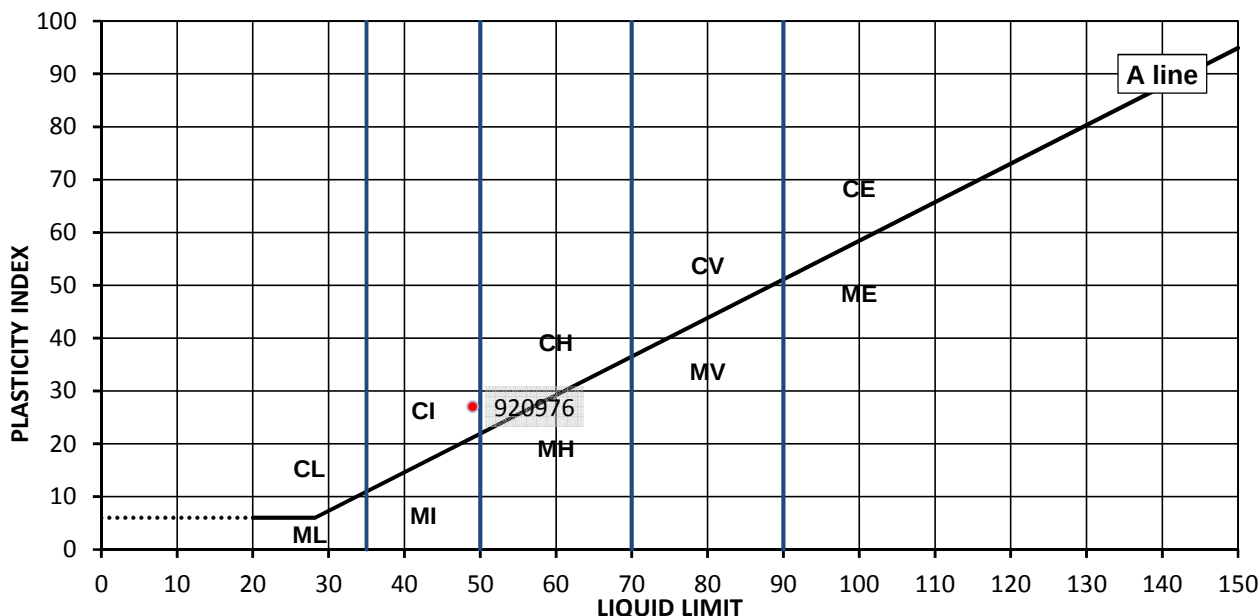
TEST RESULTS

Laboratory Reference: 920976
Sample Reference: Not Given

Description: Brown slightly sandy CLAY
Location: TP29
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 2.10
Depth Base [m]: 2.20

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	49	22	27	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
		exceeding 90
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory
Manager Geotechnical
Section

Piotrowski

Darren Berrill
Geotechnical General
Manager

D. Berrill

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	Density		M/C	Atterberg				PD
		Reference	Top depth [m]	Base depth [m]	Type		bulk	dry		% Passing 425um	LL	PL	PI	
							Mg/m3	Mg/m3		%	%	%	%	%
920938	BH01	Not Given	1.20	1.65	B	Dark grey slightly gravelly CLAY			44					2.25
920939	BH01	Not Given	4.00	5.00	B	Red sandy CLAY			25	100	38	21	17	
920941	BH01	Not Given	6.50	6.95	D	Red CLAY			21					
920944	BH02	Not Given	4.00	4.45	D	Red slightly sandy CLAY			26	100	50	24	26	
920947	BH03	Not Given	1.20	1.65	D	Dark grey gravelly SAND			17					
920948	BH03	Not Given	2.00	3.00	B	Greyish brown sandy gravelly CLAY								2.51
920949	BH03	Not Given	3.00	3.45	D	Dark grey gravelly clayey SAND			27					
920950	BH03	Not Given	8.00	8.45	D	Organish brown clayey SAND			12	100	22	NP	NP.*	
920951	BH03	Not Given	11.00	11.45	D	Organish brown sandy CLAY			23	100	36	17	19	
920953	BH04	Not Given	2.00	2.45	D	Grey slightly clayey SAND			38					

Comments: * NP – non plastic

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Summary of Classification Test Results**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	Density		M/C	Atterberg				PD
		Reference	Top depth [m]	Base depth [m]	Type		bulk Mg/m3	dry Mg/m3		% Passing 425um %	LL %	PL %	PI %	
920954	BH04	Not Given	3.00	4.00	B	Greyish brown slightly gravelly sandy CLAY								2.14
920957	BH04	Not Given	9.50	9.95	D	Organish brown clayey SAND			10	100	22	NP	NP.*	
920958	BH05	Not Given	1.00	1.45	D	Brown slightly sandy CLAY			22	99	54	22	32	
920961	TP01	Not Given	3.20	3.30	D	Organish brown slightly gravelly sandy CLAY			18	93	44	19	25	
920965	TP20	Not Given	1.20	1.70	B	Dark grey gravelly sandy CLAY			41					2.33
920966	TP20	Not Given	4.50	4.60	D	Reddish brown slightly sandy CLAY			28	100	57	26	31	
920967	TP21	Not Given	0.40	0.60	B	Grey slightly gravelly sandy CLAY			33					
920968	TP21	Not Given	1.80	2.10	B	Black slightly gravelly sandy CLAY								2.27
920969	TP25	Not Given	2.10	2.20	D	Organish brown slightly sandy CLAY			21	100	49	23	26	
920972	TP27	Not Given	2.20	2.30	D	Brown slightly sandy CLAY			20					

Comments: * NP – non plastic

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
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Client: BWB Consulting Limited
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NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	Density		M/C	Atterberg				PD
		Reference	Top depth [m]	Base depth [m]	Type		bulk	dry		% Passing 425um	LL	PL	PI	
							Mg/m3	Mg/m3		%	%	%	%	%
920973	TP28	Not Given	0.50	0.60	D	Orangish brown slightly sandy CLAY			22					
920974	TP28	Not Given	1.20	1.30	D	Brown slightly sandy CLAY			21	100	52	23	29	
920976	TP29	Not Given	2.10	2.20	D	Brown slightly sandy CLAY			21	100	49	22	27	

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



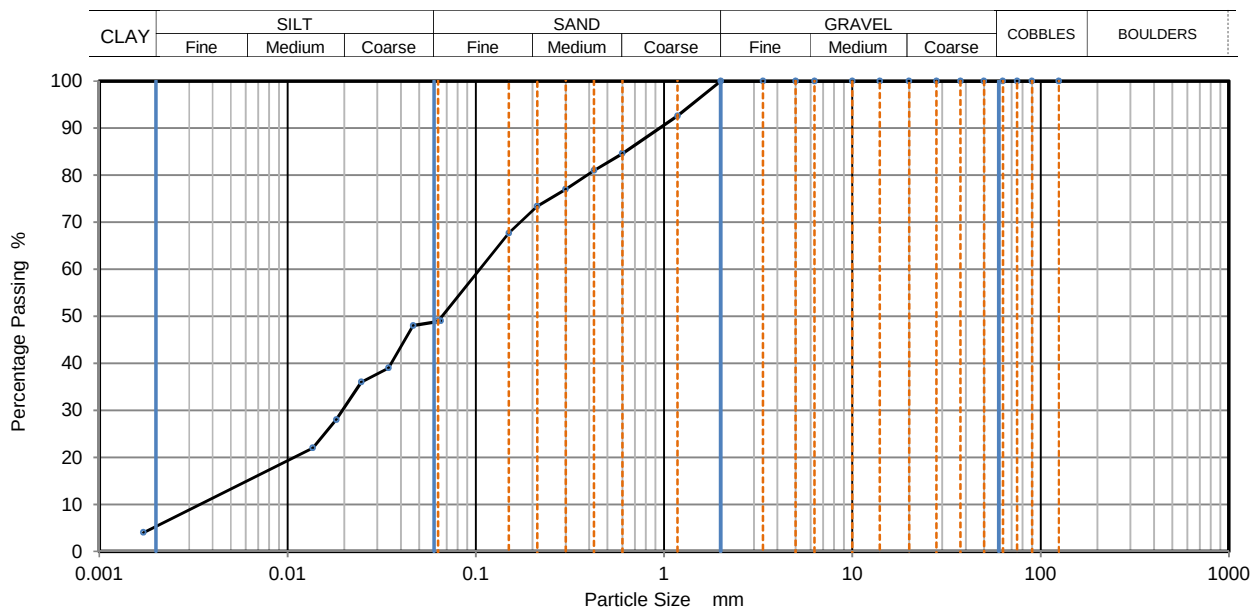
Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920942
Sample description: Dark grey clayey silty SAND
Location: BH02
Supplier: Not Given

Sample Reference: Not Given
Sample Type: B
Depth Top [m]: 1.20
Depth Base [m]: 2.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0652	49
90	100	0.0465	48
75	100	0.0344	39
63	100	0.0247	36
50	100	0.0182	28
37.5	100	0.0136	22
28	100	0.0017	4
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	93		
0.6	85	Particle density (assumed) 2.65 Mg/m3	
0.425	81		
0.3	77		
0.212	73		
0.15	68		
0.063	49		

Dry Mass of sample [g]: 123

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	51.00
Silt	43.50
Clay	5.50

Grading Analysis	
D100	mm 2
D60	mm 0.106
D30	mm 0.0195
D10	mm 0.00332
Uniformity Coefficient	32
Curvature Coefficient	1.1

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE**Determination of Particle Size Distribution**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

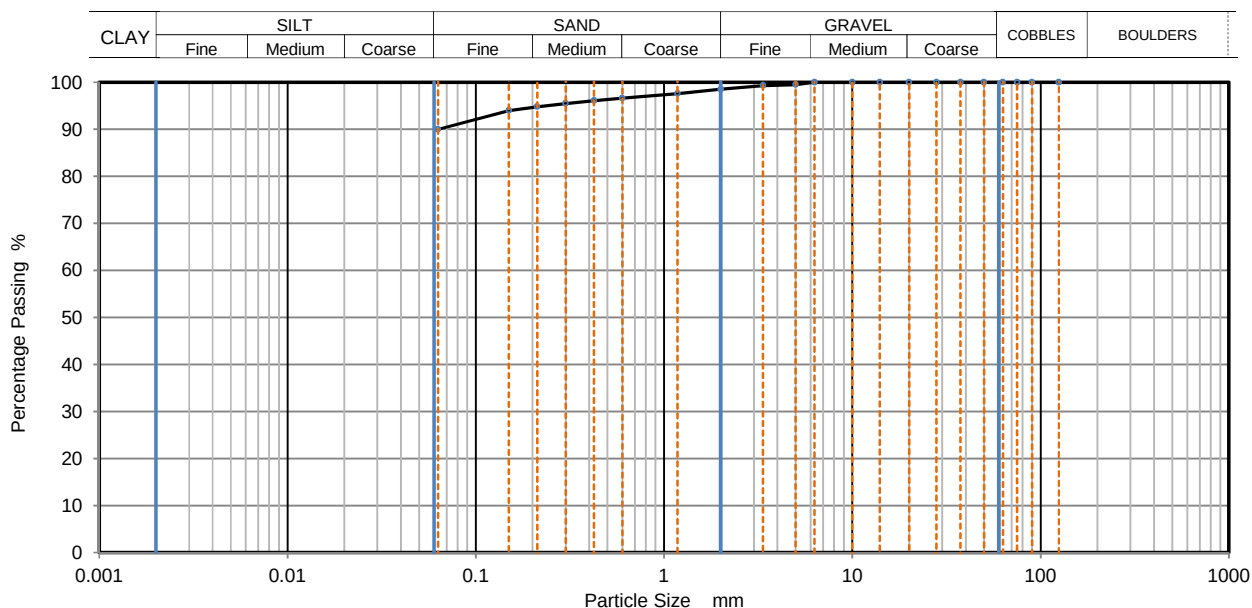
TEST RESULTS

Laboratory Reference: 920943
Sample description: Reddish brown slightly gravelly slightly sandy
CLAY

Sample Reference: Not Given

Location: BH02
Supplier: Not Given

Sample Type: B
Depth Top [m]: 4.00
Depth Base [m]: 5.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	96		
0.3	96		
0.212	95		
0.15	94		
0.063	91		

Dry Mass of sample [g]: 192

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	1.50
Sand	7.70
Fines <0.063mm	90.80

Grading Analysis	
D100 mm	6.3
D60 mm	
D30 mm	
D10 mm	
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General
Manager

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Determination of Particle Size Distribution

Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

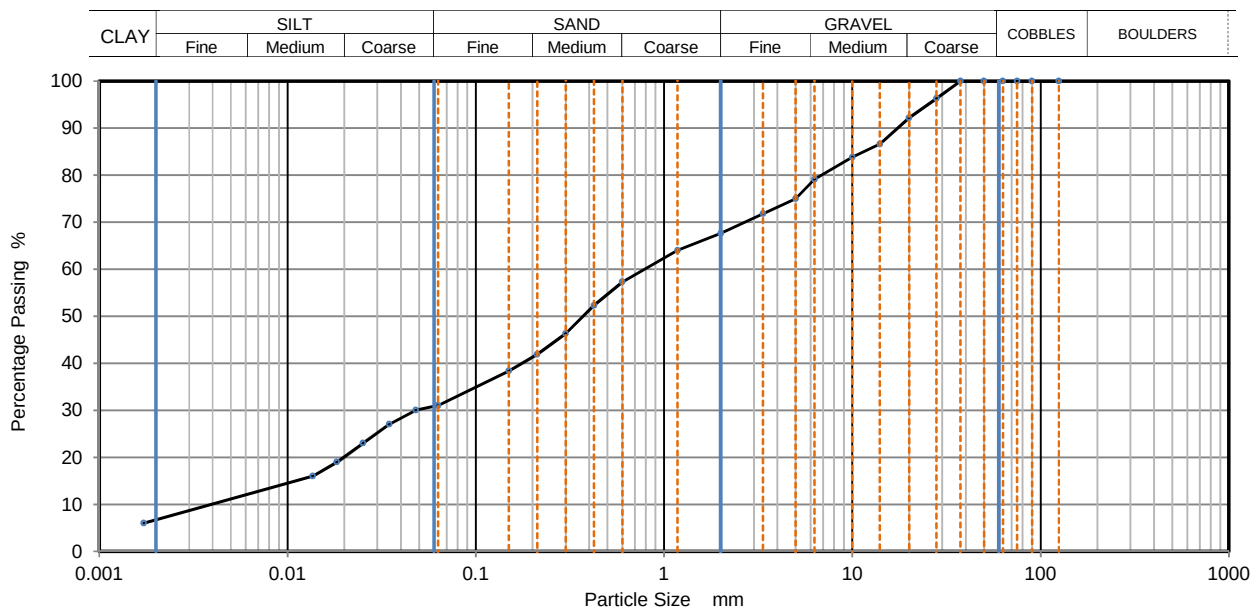
Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Sample description: Dark grey clayey silty very gravelly SAND
Location: BH03
Supplier: Not Given

Sample Reference: Not Given
Sample Type: B
Depth Top [m]: 1.20
Depth Base [m]: 2.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	31
90	100	0.0479	30
75	100	0.0346	27
63	100	0.0252	23
50	100	0.0183	19
37.5	100	0.0136	16
28	96	0.0017	6
20	92		
14	87		
10	84		
6.3	79		
5	75		
3.35	72		
2	68		
1.18	64		
0.6	57	Particle density (assumed) 2.65 Mg/m3	
0.425	52		
0.3	46		
0.212	42		
0.15	38		
0.063	31		

Dry Mass of sample [g]: 7692

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	32.40
Sand	36.80
Silt	24.10
Clay	6.70

Grading Analysis		
D100	mm	37.5
D60	mm	0.786
D30	mm	0.0493
D10	mm	0.00396
Uniformity Coefficient		200
Curvature Coefficient		0.78

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Postuli

Signed:

Darren Berrill
Geotechnical General
Manager

[Signature]

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920952

Sample Reference: Not Given

Sample description: Dark grey slightly gravelly sandy CLAY

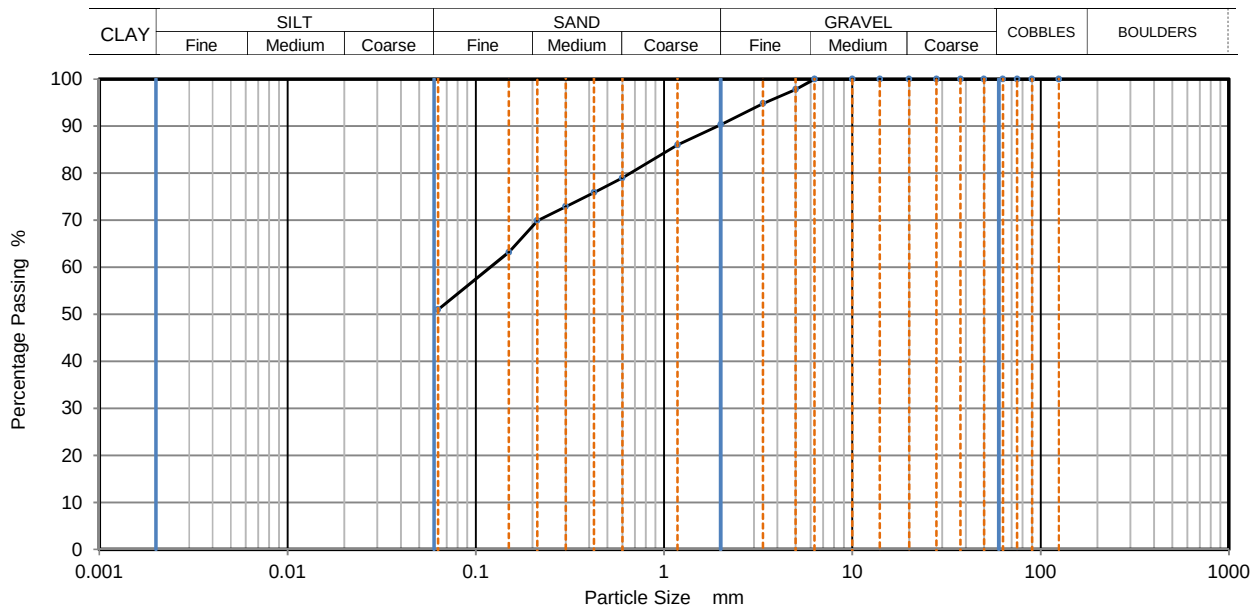
Sample Type: B

Location: BH04

Depth Top [m]: 1.20

Supplier: Not Given

Depth Base [m]: 2.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	98		
3.35	95		
2	90		
1.18	86		
0.6	79		
0.425	76		
0.3	73		
0.212	70		
0.15	63		
0.063	51		

Dry Mass of sample [g]: 203

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	9.70
Sand	39.30
Fines <0.063mm	51.00

Grading Analysis	
D100	mm 6.3
D60	mm 0.119
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

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4041

TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



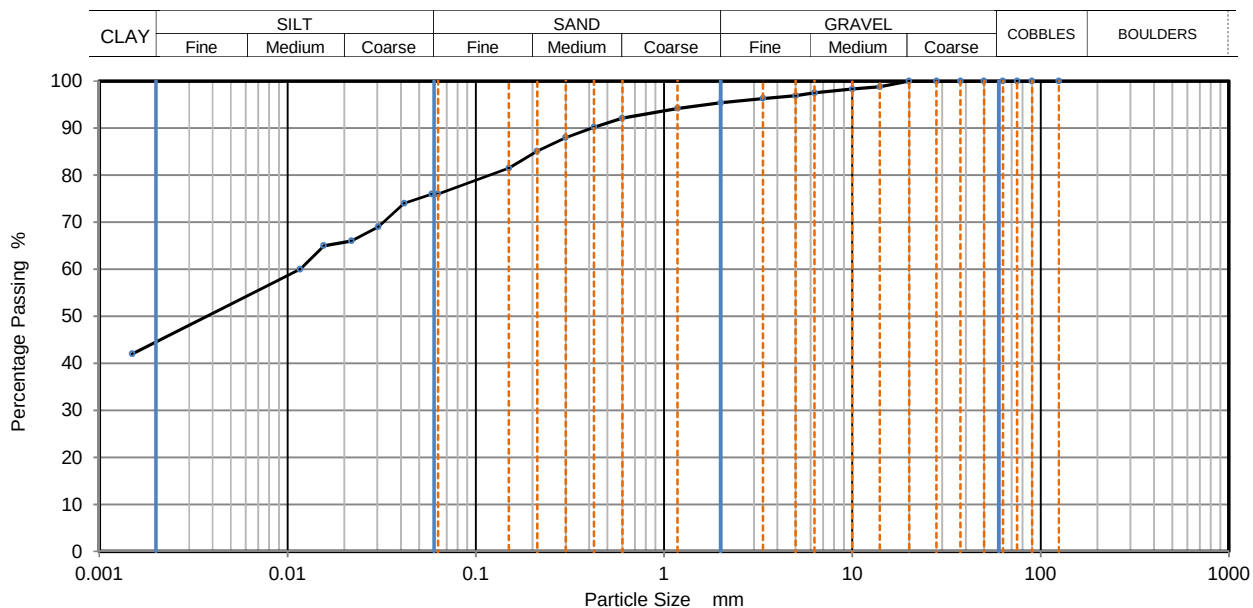
Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920955
Sample description: Brown slightly gravelly slightly sandy silty CLAY
Location: BH04
Supplier: Not Given

Sample Reference: Not Given
Sample Type: B
Depth Top [m]: 7.00
Depth Base [m]: 8.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0584	76
90	100	0.0417	74
75	100	0.0303	69
63	100	0.0218	66
50	100	0.0156	65
37.5	100	0.0117	60
28	100	0.0015	42
20	100		
14	99		
10	98		
6.3	98		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	92	Particle density (assumed) 2.65 Mg/m ³	
0.425	90		
0.3	88		
0.212	85		
0.15	82		
0.063	76		

Dry Mass of sample [g]: 635

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	4.60
Sand	19.60
Silt	31.40
Clay	44.40

Grading Analysis	
D100	mm 20
D60	mm 0.0119
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."



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TEST CERTIFICATE**Determination of Particle Size Distribution**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

TEST RESULTS

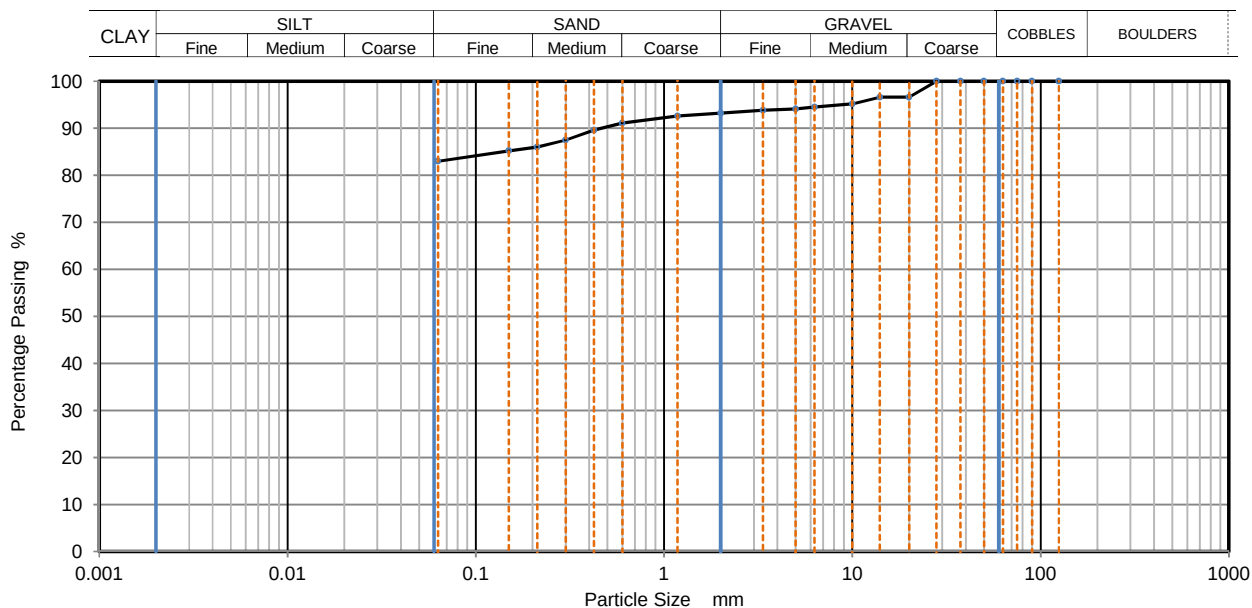
Laboratory Reference: 920959
Sample description: Dark brown slightly gravelly slightly sandy CLAY with rootlets

Sample Reference: Not Given

Location: BH05
Supplier: Not Given

Sample Type: B

Depth Top [m]: 1.00
Depth Base [m]: 2.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	97		
10	95		
6.3	95		
5	94		
3.35	94		
2	93		
1.18	93		
0.6	91		
0.425	90		
0.3	88		
0.212	86		
0.15	85		
0.063	84		

Dry Mass of sample [g]: 512

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	6.80
Sand	9.60
Fines <0.063mm	83.60

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920962

Sample Reference: Not Given

Sample description: Orangish brown clayey very sandy GRAVEL

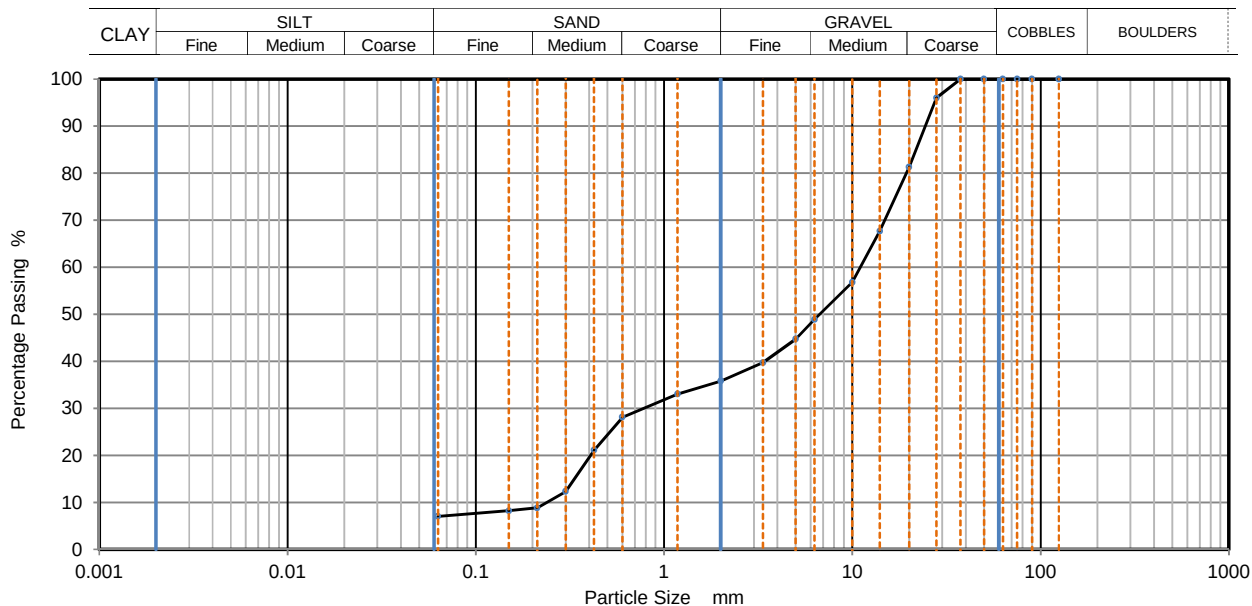
Sample Type: B

Location: TP03

Depth Top [m]: 0.50

Supplier: Not Given

Depth Base [m]: 1.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	96		
20	81		
14	68		
10	57		
6.3	49		
5	45		
3.35	40		
2	36		
1.18	33		
0.6	28		
0.425	21		
0.3	12		
0.212	9		
0.15	8		
0.063	7		

Dry Mass of sample [g]: 15768

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	64.20
Sand	28.60
Fines <0.063mm	7.20

Grading Analysis	
D100	mm 37.5
D60	mm 11
D30	mm 0.777
D10	mm 0.238
Uniformity Coefficient	46
Curvature Coefficient	0.23

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



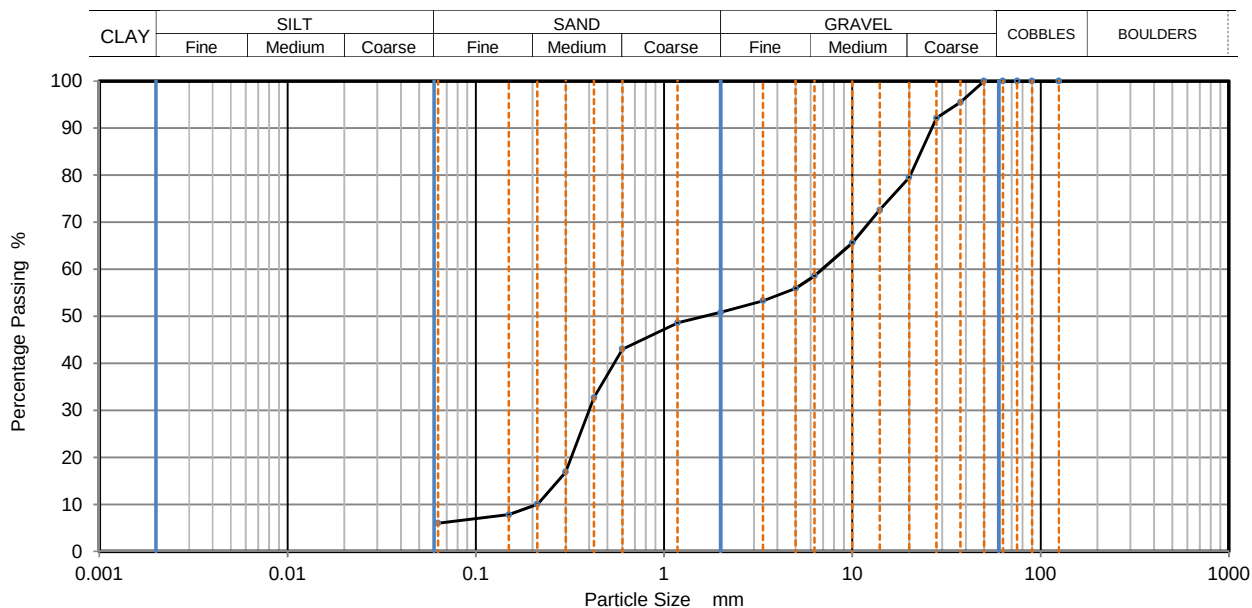
Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920963
Sample description: Yellowish brown clayey very sandy GRAVEL
Location: TP18
Supplier: Not Given

Sample Reference: Not Given
Sample Type: B
Depth Top [m]: 1.00
Depth Base [m]: 1.30



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	96		
28	92		
20	80		
14	73		
10	66		
6.3	59		
5	56		
3.35	53		
2	51		
1.18	49		
0.6	43		
0.425	33		
0.3	17		
0.212	10		
0.15	8		
0.063	6		

Dry Mass of sample [g]: 5402

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	49.20
Sand	44.40
Fines <0.063mm	6.30

Grading Analysis	
D100	mm 50
D60	mm 6.91
D30	mm 0.401
D10	mm 0.212
Uniformity Coefficient	33
Curvature Coefficient	0.11

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

TEST RESULTS

Laboratory Reference: 920964

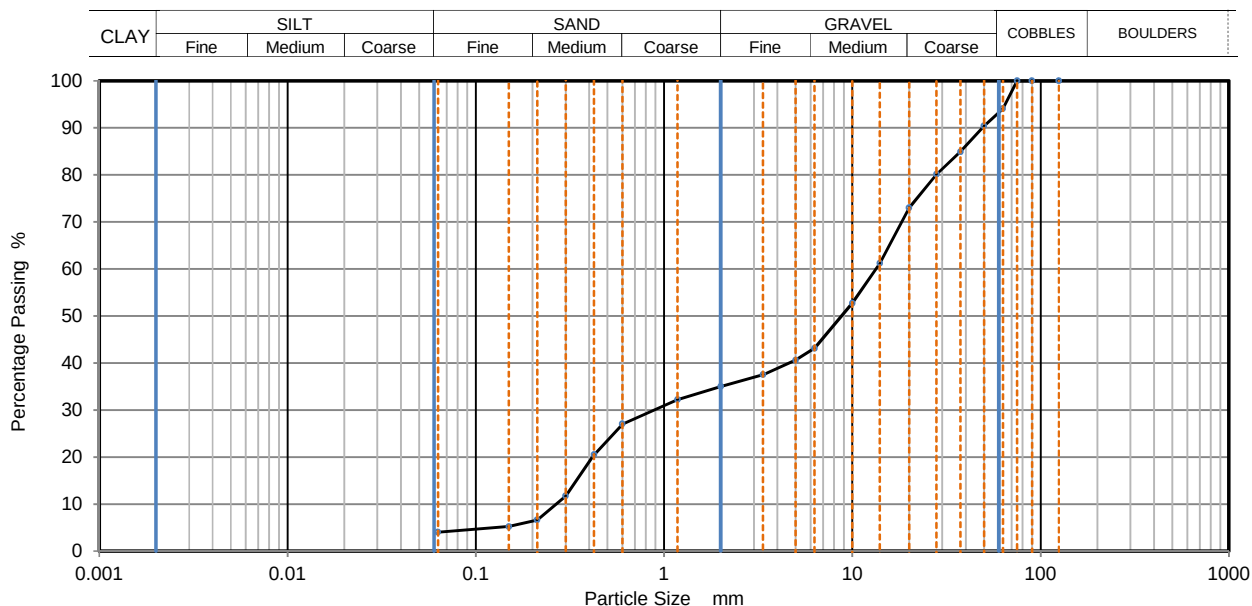
Sample Reference: Not Given

Sample description: Yellowish brown slightly clayey very sandy
GRAVEL

Sample Type: B

Location: TP19
Supplier: Not Given

Depth Top [m]: 2.00
Depth Base [m]: 2.50



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	94		
50	90		
37.5	85		
28	80		
20	73		
14	61		
10	53		
6.3	43		
5	41		
3.35	38		
2	35		
1.18	32		
0.6	27		
0.425	21		
0.3	12		
0.212	7		
0.15	5		
0.063	4		

Dry Mass of sample [g]: 11040

Sample Proportions	% dry mass
Very coarse	5.90
Gravel	59.20
Sand	30.70
Fines <0.063mm	4.30

Grading Analysis	
D100	mm 75
D60	mm 13.4
D30	mm 0.887
D10	mm 0.267
Uniformity Coefficient	50
Curvature Coefficient	0.22

Remarks

Preparation and testing in accordance with BS1377 unless noted below
The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920970

Sample Reference: Not Given

Sample description: Yellowish brown slightly gravelly slightly sandy silty
CLAY

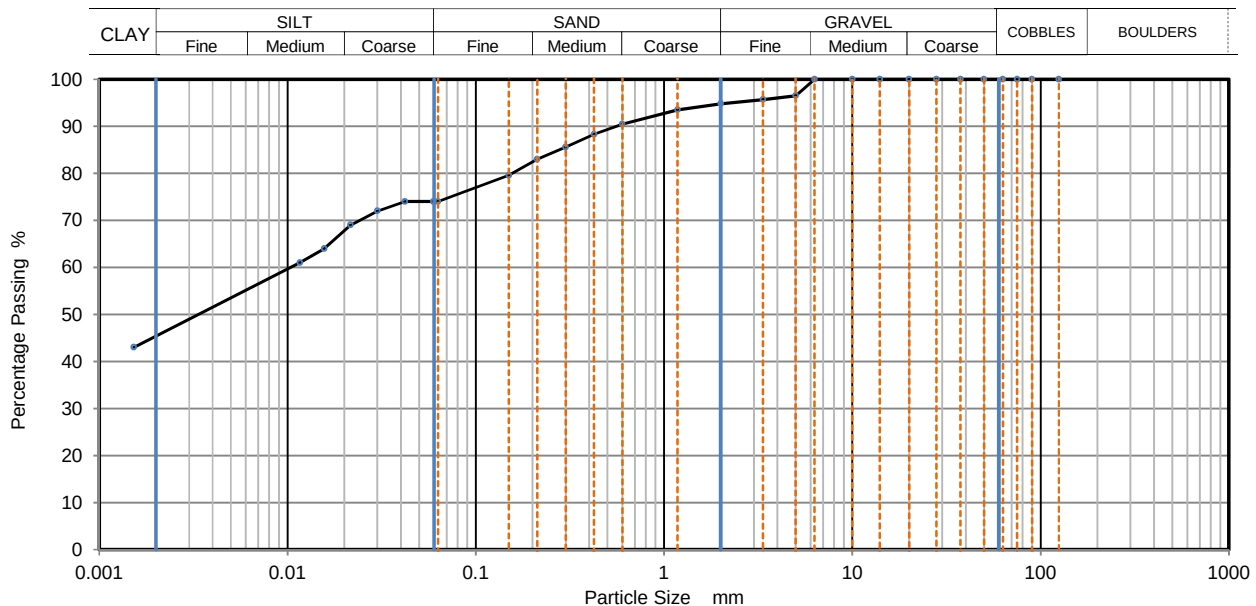
Sample Type: B

Location: TP26

Depth Top [m]: 0.80

Supplier: Not Given

Depth Base [m]: 1.20



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0595	74
90	100	0.0421	74
75	100	0.0300	72
63	100	0.0216	69
50	100	0.0157	64
37.5	100	0.0116	61
28	100	0.0015	43
20	100		
14	100		
10	100		
6.3	100		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	91	Particle density (assumed) 2.65 Mg/m ³	
0.425	88		
0.3	86		
0.212	83		
0.15	80		
0.063	74		

Dry Mass of sample [g]: 403

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	5.20
Sand	20.90
Silt	28.90
Clay	45.00

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920971

Sample Reference: Not Given

Sample description: Yellowish brown clayey very sandy GRAVEL

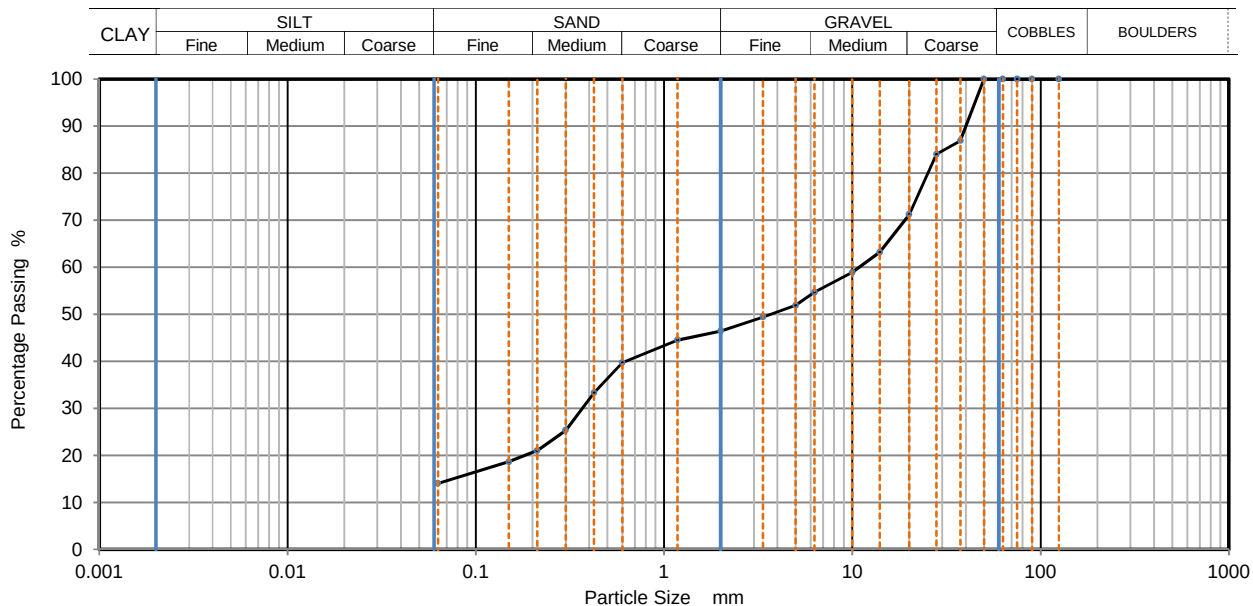
Sample Type: B

Location: TP27

Depth Top [m]: 0.40

Supplier: Not Given

Depth Base [m]: 1.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	87		
28	84		
20	71		
14	63		
10	59		
6.3	55		
5	52		
3.35	49		
2	46		
1.18	45		
0.6	40		
0.425	33		
0.3	25		
0.212	21		
0.15	19		
0.063	15		

Dry Mass of sample [g]: 4435

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	53.60
Sand	31.70
Fines <0.063mm	14.70

Grading Analysis	
D100	mm 50
D60	mm 10.9
D30	mm 0.368
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below
The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 14/03/2018
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 920975

Sample Reference: Not Given

Sample description: Yellowish brown clayey very sandy GRAVEL

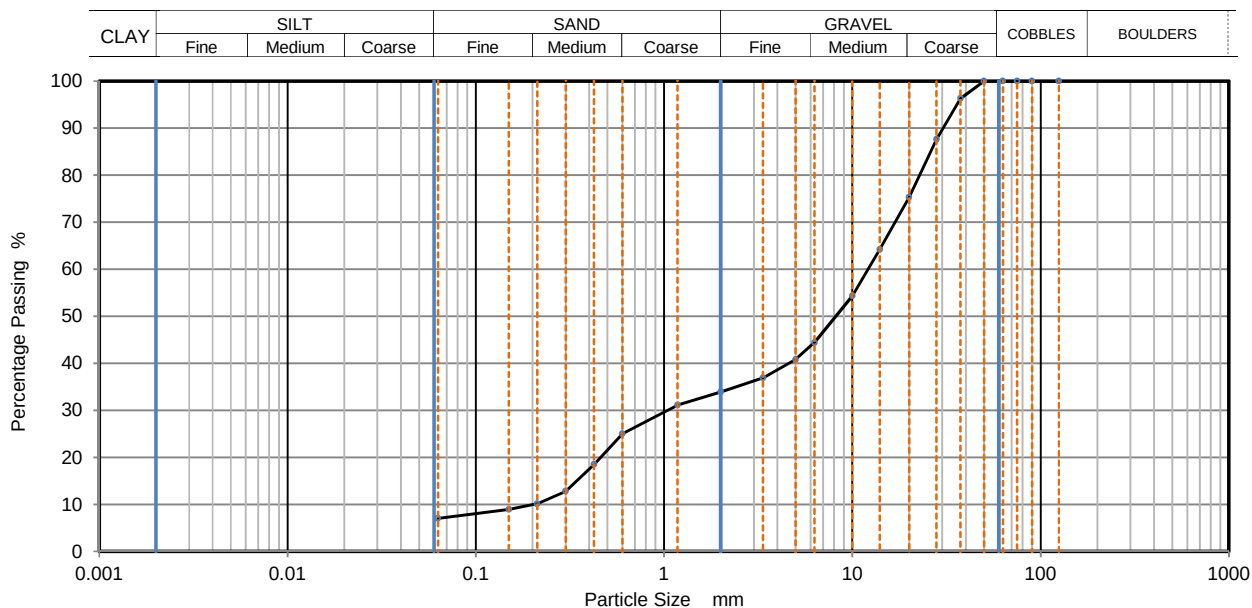
Sample Type: B

Location: TP29

Depth Top [m]: 0.40

Supplier: Not Given

Depth Base [m]: 1.00



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	96		
28	88		
20	75		
14	64		
10	54		
6.3	44		
5	41		
3.35	37		
2	34		
1.18	31		
0.6	25		
0.425	19		
0.3	13		
0.212	10		
0.15	9		
0.063	7		

Dry Mass of sample [g]: 6794

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	66.10
Sand	26.50
Fines <0.063mm	7.40

Grading Analysis	
D100	mm 50
D60	mm 12.1
D30	mm 1.05
D10	mm 0.208
Uniformity Coefficient	58
Curvature Coefficient	0.43

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/03/2018

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression

Tested in Accordance with BS1377: Part 7: 1990, clause 8, single specimen

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: BWB Consulting Limited
Client Address: 5th Floor
Waterfront House
Nottingham
NG2 3DQ
Contact: Luke Cross
Site Name: Burnaston Cross
Site Address: Not Given

Client Reference: NTH2364
Job Number: 18-78291
Date Sampled: Not Given
Date Received: 27/02/2018
Date Tested: 15/03/2018
Sampled By: Not Given

Test Result

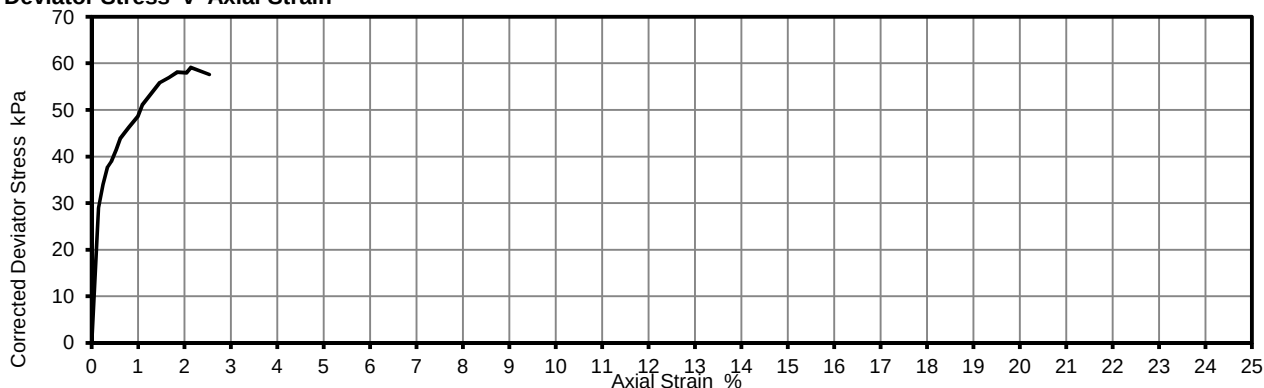
Laboratory Reference: 920960
Hole No.: BH05
Sample Reference: Not Given
Sample Description: Reddish brown CLAY

Depth Top [m]: 6.50
Depth Base [m]: 6.95
Sample Type: U

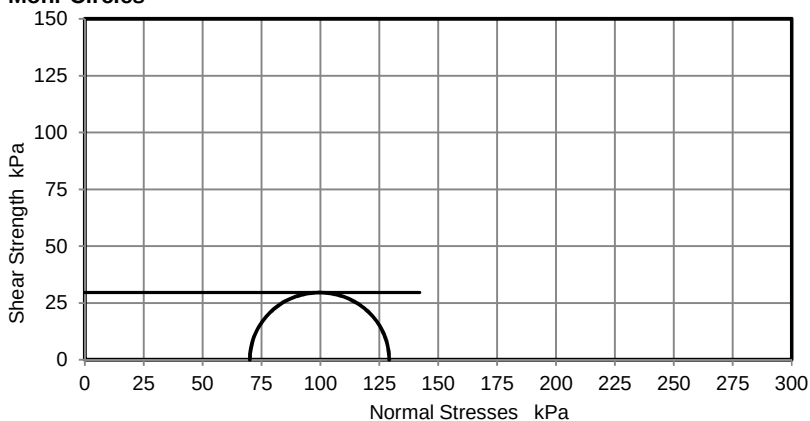
Test Number	1
Length	206.47 mm
Diameter	100.45 mm
Bulk Density	2.40 Mg/m ³
Moisture Content	25 %
Dry Density	1.91 Mg/m ³
Membrane Correction	0.14 kPa

Rate of Strain	1.94 %/min
Cell Pressure	70 kPa
Axial Strain at failure	2.1 %
Deviator Stress, $(\sigma_1 - \sigma_3)_f$	59 kPa
Undrained Shear Strength, c_u	30 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Brittle
Membrane thickness	0.24 mm

Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Brittle failure - reported as single stage

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression - multistage test

BS1377: Part 7: 1990, clause 9, multistage test on a single specimen

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client: BWB Consulting Limited
 Client Address: 5th Floor
 Waterfront House
 Nottingham
 NG2 3DQ
 Contact: Luke Cross
 Site Name: Burnaston Cross
 Site Address: Not Given

Client Reference: NTH2364
 Job Number: 18-78291
 Date Sampled: Not Given
 Date Received: 27/02/2018
 Date Tested: 15/03/2018
 Sampled By: Not Given

Test Result

Laboratory Reference: 920940
 Hole No.: BH01
 Sample Reference: Not Given
 Sample Description: Reddish brown CLAY

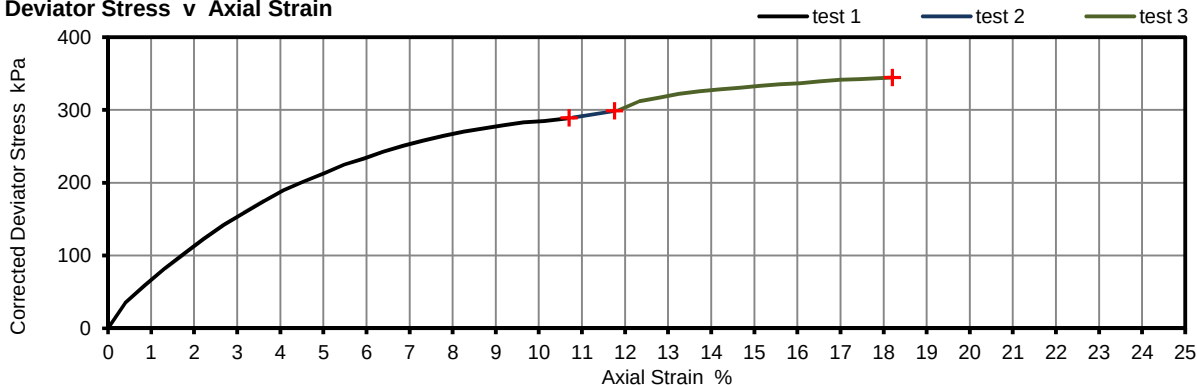
Depth Top [m]: 4.00
 Depth Base [m]: 4.45
 Sample Type: U

Length	211.60	mm
Diameter	100.50	mm
Bulk Density	2.12	Mg/m ³
Moisture Content	22	%
Dry Density	1.74	Mg/m ³
Membrane thickness	0.24	mm

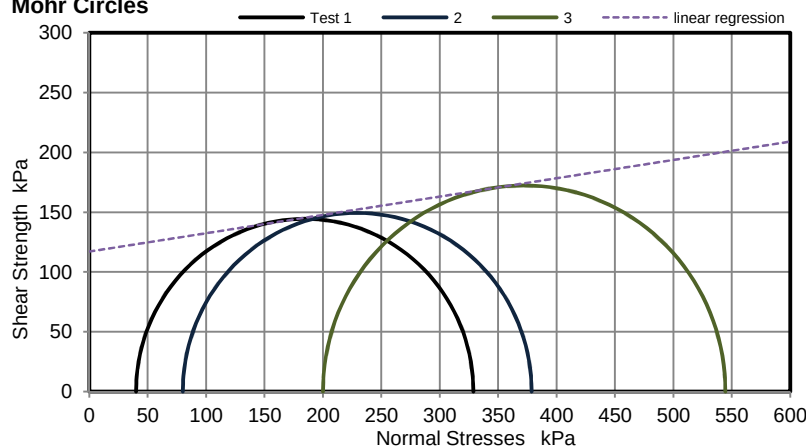
Rate of Strain
 Stage Number
 Cell Pressure
 Axial Strain at failure
 Deviator Stress, ($\sigma_1 - \sigma_3$)_f
 Shear strength, c_u
 Mode of failure
 Membrane Correction

1.89			%/min
1	2	3	
40	80	200	kPa
10.7	11.8	18.2	%
289	299	345	kPa
144	149	172	kPa
Compound			
0.56	0.60	0.85	kPa

Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Linear Regression

ϕ_u 8.7 °
 c_u 117 kPa

Remarks

Correction values: 40kPa = 10N, 80kPa = 30N, 200kPa = 90N

Comments:

Approved:

Dariusz Piotrowski
 PL Laboratory Manager
 Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
 Geotechnical General
 Manager

for and on behalf of i2 Analytical Ltd

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 The results included within the report are representative of the samples submitted for analysis.
 The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."



4041

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression - multistage test

BS1377: Part 7: 1990, clause 9, multistage test on a single specimen

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client: BWB Consulting Limited
 Client Address: 5th Floor
 Waterfront House
 Nottingham
 NG2 3DQ
 Contact: Luke Cross
 Site Name: Burnaston Cross
 Site Address: Not Given

Client Reference: NTH2364
 Job Number: 18-78291
 Date Sampled: Not Given
 Date Received: 27/02/2018
 Date Tested: 15/03/2018
 Sampled By: Not Given

Test Result

Laboratory Reference: 920945
 Hole No.: BH02
 Sample Reference: Not Given
 Sample Description: Reddish brown CLAY

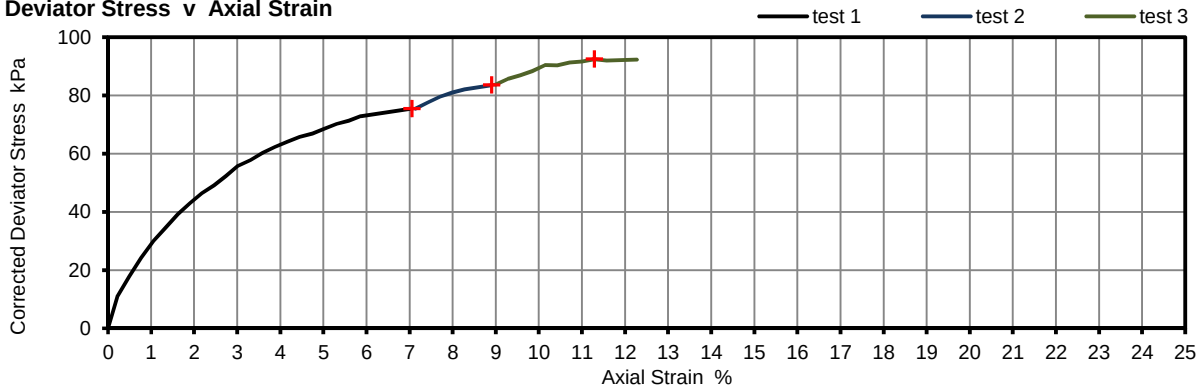
Depth Top [m]: 5.00
 Depth Base [m]: 5.45
 Sample Type: D

Length	208.50	mm
Diameter	103.50	mm
Bulk Density	1.96	Mg/m ³
Moisture Content	29	%
Dry Density	1.52	Mg/m ³
Membrane thickness	0.25	mm

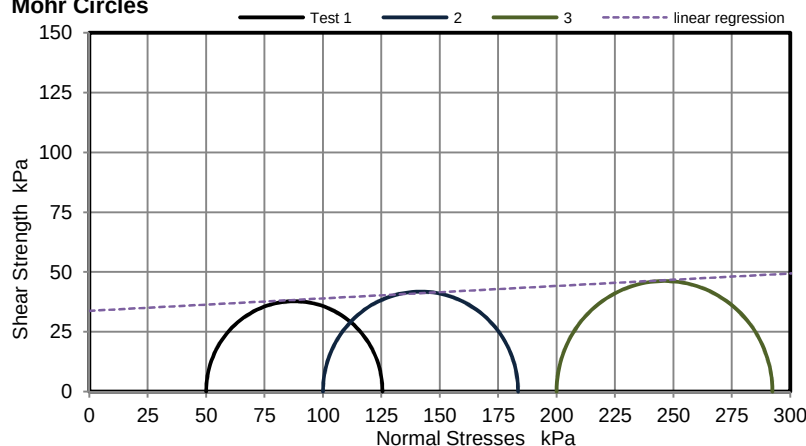
Rate of Strain
 Stage Number
 Cell Pressure
 Axial Strain at failure
 Deviator Stress, ($\sigma_1 - \sigma_3$)_f
 Shear strength, c_u
 Mode of failure
 Membrane Correction

1.92			%/min
1	2	3	
50	100	200	kPa
7.1	8.9	11.3	%
75	84	92	kPa
38	42	46	kPa
Compound			
0.42	0.50	0.59	kPa

Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Linear Regression

ϕ_u 3.0 °
 c_u 34 kPa

Remarks

Correction values: 50kPa = 10N, 100kPa = 40N, 200kPa = 90N

Comments:

Approved:

Dariusz Piotrowski
 PL Laboratory Manager
 Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
 Geotechnical General
 Manager

for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression - multistage test

BS1377: Part 7: 1990, clause 9, multistage test on a single specimen

i2 Analytical Ltd
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Watford Herts WD18 8YS

Client: BWB Consulting Limited
 Client Address: 5th Floor
 Waterfront House
 Nottingham
 NG2 3DQ
 Contact: Luke Cross
 Site Name: Burnaston Cross
 Site Address: Not Given

Client Reference: NTH2364
 Job Number: 18-78291
 Date Sampled: Not Given
 Date Received: 27/02/2018
 Date Tested: 15/03/2018
 Sampled By: Not Given

Test Result

Laboratory Reference: 920956
 Hole No.: BH04
 Sample Reference: Not Given
 Sample Description: Brown clayey SAND

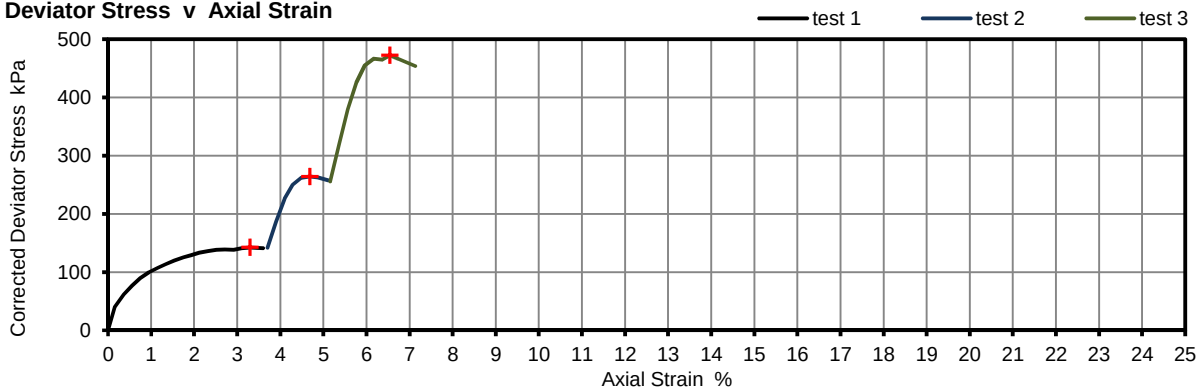
Depth Top [m]: 8.00
 Depth Base [m]: 8.45
 Sample Type: U

Length	130.30	mm
Diameter	72.40	mm
Bulk Density	1.99	Mg/m ³
Moisture Content	21	%
Dry Density	1.64	Mg/m ³
Membrane thickness	0.24	mm

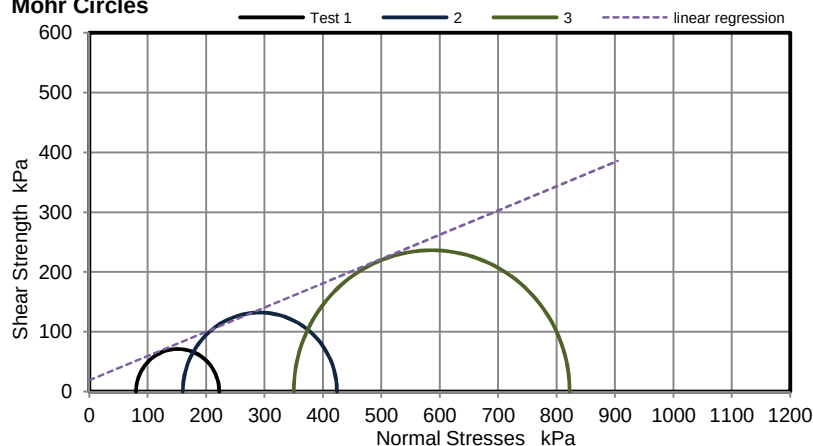
Rate of Strain
 Stage Number
 Cell Pressure
 Axial Strain at failure
 Deviator Stress, ($\sigma_1 - \sigma_3$)_f
 Shear strength, c_u
 Mode of failure
 Membrane Correction

2.00			%/min
1	2	3	
80	160	350	kPa
3.3	4.7	6.5	%
142	264	472	kPa
71	132	236	kPa
Plastic			
0.30	0.43	0.55	kPa

Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Linear Regression

ϕ_u 22.1 °
 c_u 19 kPa

Remarks

Correction values: 80kPa = 36N, 160kPa = 78N, 350kPa = 170N

Comments:

Approved:

Dariusz Piotrowski
 PL Laboratory Manager
 Geotechnical Section

Date Reported: 20/03/2018

Signed:

Darren Berrill
 Geotechnical General
 Manager

for and on behalf of i2 Analytical Ltd

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**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

e: luke.cross@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 18-78484

Project / Site name:	Burnaston Cross	Samples received on:	27/02/2018
Your job number:	NTH2364	Samples instructed on:	07/03/2018
Your order number:	POR016822	Analysis completed by:	16/03/2018
Report Issue Number:	1	Report issued on:	16/03/2018
Samples Analysed:	14 soil samples		

Signed:

Rexona Rahman
Head of Customer Services
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 18-78484

Project / Site name: Burnaston Cross

Your Order No: POR016822

Lab Sample Number				922127	922128	922129	922130	922131
Sample Reference				BH01	BH01	BH02	BH03	BH03
Sample Number				2	6	4	5	14
Depth (m)				1.20-1.65	4.00-5.00	4.00-4.45	2.00-2.45	8.00-9.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	31	19	20	12	18
Total mass of sample received	kg	0.001	NONE	0.44	0.33	0.31	0.23	0.44

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.5	8.0	7.0	7.7	8.2
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.22	0.29	0.14	0.54	0.23

Analytical Report Number: 18-78484

Project / Site name: Burnaston Cross

Your Order No: POR016822

Lab Sample Number				922132	922133	922134	922135	922136
Sample Reference				BH04	BH04	BH04	BH05	BH05
Sample Number				3	10	12	4	14
Depth (m)				1.20-2.00	5.00-5.45	7.00-8.00	1.00-2.00	9.50-9.95
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	23	22	20	15	18
Total mass of sample received	kg	0.001	NONE	0.38	0.84	0.38	0.32	0.96

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.0	11.4	8.4	7.8	8.5
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.58	0.39	0.15	0.36	0.087



Analytical Report Number: 18-78484

Project / Site name: Burnaston Cross

Your Order No: POR016822

Lab Sample Number				922137	922138	922139	922140	
Sample Reference				TP18	TP20	TP21	TP26	
Sample Number				2	4	2	2	
Depth (m)				1.00-1.30	1.20-1.70	0.40-0.60	0.80-1.20	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	26	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	8.1	26	24	18	
Total mass of sample received	kg	0.001	NONE	0.50	0.35	0.36	0.34	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	7.8	8.3	8.0	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.011	1.4	0.025	0.031	

Analytical Report Number : 18-78484

Project / Site name: Burnaston Cross

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
922127	BH01	2	1.20-1.65	Grey clay and sand with vegetation.
922128	BH01	6	4.00-5.00	Brown clay.
922129	BH02	4	4.00-4.45	Brown clay.
922130	BH03	5	2.00-2.45	Grey clay and sand with coal.
922131	BH03	14	8.00-9.00	Brown sandy clay with gravel.
922132	BH04	3	1.20-2.00	Grey clay and sand with gravel.
922133	BH04	10	5.00-5.45	Grey sandy clay with gravel.
922134	BH04	12	7.00-8.00	Light brown clay and sand with gravel.
922135	BH05	4	1.00-2.00	Brown clay with gravel and vegetation.
922136	BH05	14	9.50-9.95	Brown clay and sand.
922137	TP18	2	1.00-1.30	Brown sand with gravel and stones.
922138	TP20	4	1.20-1.70	Grey clay and sand with gravel.
922139	TP21	2	0.40-0.60	Grey clay and sand.
922140	TP26	2	0.80-1.20	Brown clay and sand.

Analytical Report Number : 18-78484

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH01	2	S	18-78484	922127	a			
BH01	6	S	18-78484	922128	a			
BH02	4	S	18-78484	922129	a			
BH03	14	S	18-78484	922131	a			
BH03	5	S	18-78484	922130	a			
BH04	10	S	18-78484	922133	a			
BH04	12	S	18-78484	922134	a			
BH04	3	S	18-78484	922132	a			
BH05	14	S	18-78484	922136	a			
BH05	4	S	18-78484	922135	a			
TP18	2	S	18-78484	922137	a			
TP20	4	S	18-78484	922138	a			
TP21	2	S	18-78484	922139	a			
TP26	2	S	18-78484	922140	a			

**Luke Cross**

BWB Consulting Limited
5th Floor
Waterfront House
Nottingham
NG2 3DQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: luke.cross@bwbconsulting.com

Analytical Report Number : 18-78779

Project / Site name:	Burnaston Cross	Samples received on:	12/03/2018
Your job number:	NTH2364	Samples instructed on:	12/03/2018
Your order number:	POR016822	Analysis completed by:	23/03/2018
Report Issue Number:	1	Report issued on:	23/03/2018
Samples Analysed:	1 soil sample		

Signed:

Rexona Rahman
Head of Customer Services
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 18-78779

Project / Site name: Burnaston Cross

Your Order No: POR016822

Lab Sample Number				923788				
Sample Reference				BH03				
Sample Number				8				
Depth (m)				3.00-4.00				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	25				
Total mass of sample received	kg	0.001	NONE	0.31				

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.5				
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.40				



Analytical Report Number : 18-78779

Project / Site name: Burnaston Cross

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
923788	BH03	8	3.00-4.00	Grey clay and sand with gravel and vegetation.

Analytical Report Number : 18-78779

Project / Site name: Burnaston Cross

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH03	8	S	18-78779	923788	a			

Appendix 9: Derivation of GSACs

BWB HUMAN HEALTH GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA)

Human Health Generic Screening Criteria

The Environment Agency published the revised CLEA framework for assessing the risk to human health from soil contamination in January 2009. The framework comprises a technical background document (EA, 2009a), toxicological assessment EA 2009b and CLEA spreadsheet model (EA 2009c). The new framework supersedes the 2002 CLEA model and subsequent briefing notes. The 2002 CLEA software and CLEA 2005 have also been withdrawn and all previously published Soil Guideline Values (SGV) have been withdrawn. The EA have issued revised SGVs for the following substances.

- Arsenic
- selenium
- ethylbenzene
- cadmium
- benzene
- xylene
- nickel
- toluene
- dioxins and dioxin like PCBS
- Phenol
- Mercury

In the absence of an SGV for a particular contaminant Generic assessment criteria have been generated by BWB using the CLEA framework. This is a similar approach to Generic screening criteria published by LQM/CIEH and CLAIRE/EIC.

The Statutory Guidance on Part 11a of the Environment Act was revised in 2012 and introduced the concept of characterising Land into 4 categories. Categories 1 and 2 were classed as "Contaminated Land" and Categories 3 and 4 as "not Contaminated Land". DEFRA commissioned a research project to develop Category 4 Screening Levels (C4SLs) which would be used to rapidly screen sites as not contaminated land. These values would be less conservative than SGVs or equivalent GSACs but still be strongly precautionary. In 2014 DEFRA published the framework for deriving C4SLs and C4SLs for six substances:

Arsenic
Cadmium
Chromium VI
Lead
Benzo(a)pyrene
Benzene

The framework recommended changes to exposure parameters as well as introducing a new Health Criteria Value known as a "Low level of Toxicological Concern" (LLTC). This would be less conservative than the minimal risk approach used to derive TDIs and IDs under the 2009b CLEA framework.

In response LQM/CIEH published their third edition of Generic screening criteria for human health in January 2015. These were known as "Suitable for Use Levels" (S4ULs) and adopted the changes to exposure parameters that were developed under the Category 4 Screening Level methodology. The report also reviewed toxicity information but adopted the minimal risk approach as set out in EA 2009b. This report presented revised data for some substances for which an SGV had been developed, therefore some of the existing SGVs have been superseded.

BWB have updated their GSACs to take into account the LQM/CIEH S4ULs and DEFRA C4SLs but have retained the CLEA exposure assumptions, the BWB GSACs represent the most conservative minimal risk approach.

The screening approach comprises tiered assessment of contaminant data against BWB GSACs in the first instance, then S4ULs and finally C4SLs if available.

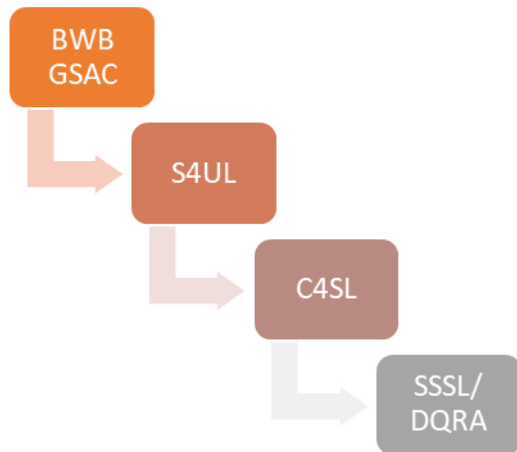


Figure 1 GSAC Hierarchy

Conceptual Site Model

The standard exposure pathways and Conceptual Models for human exposure to contaminants for different site uses are set out in the updated technical background to the CLEA model (Environment Agency 2009a).

Descriptive Conceptual Models (From Environment Agency 2009a)

Residential

This generic scenario assumes a typical residential property consisting of a two-storey house built on a ground bearing slab with a private garden consisting of lawn, flower beds and a small fruit and vegetable patch. The occupants are assumed to be parents with young children, who make regular use of the garden area.

The key assumptions for BWB GSACs are

Critical receptor is a young female child (aged zero to six years old)

Exposure duration is six years

Exposure pathways include direct soil and indoor dust ingestion, consumption of homegrown produce, consumption of soil attached to home grown produce, skin contact with soils and indoor dusts, and inhalation of indoor and outdoor dust and vapours.

Soil type is a Sandy Loam with 1% organic matter

Building type is a two storey small terraced house

Commercial/industrial

There are many different kinds of workplace and work-related activities. This generic scenario assumes a typical commercial or light industrial property consisting of a three storey building at which employees spend most time indoors and are involved in office based or relatively light physical work.

The key assumptions for BWB GSACs are

Critical receptor is a working female adult (aged 16 to 65 years)

Exposure duration is a working lifetime of 49 years

Exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and dusts, and inhalation of dust and vapours.

Soil type is a Sandy Loam with 1% organic matter

Building type is a three storey office (post 1970) (Representative of new buildings)

The 2009a report identifies 10 potential exposure pathways by which contaminated soils may impact human health and also sets out which pathways are applicable for four standard land uses. The pathways for the residential and commercial end uses are shown below.

Screening Criteria Modelling

The CLEA model version 1.071 has been used to calculate BWB GSACs. BWB have used the model to calculate Individual criteria for each relevant pathway so, for example, in a residential with vegetable uptake scenario we would need six individual criteria:-

- Ingestion of soil and dust
- Ingestion of contaminated vegetables and soil attached to vegetables
- Dermal contact indoors and outdoors
- Particulate dust inhalation indoors and outdoors
- Vapour inhalation indoors
- Vapour inhalation outdoors

The final overall assessment criteria is calculated by adding together the reciprocal of the individual criteria for each pathway, therefore if several of the individual criteria are of similar magnitude the final criteria may be substantially lower than the lowest individual criteria so that total exposure is below the respective health threshold.

$$1/\text{GSAC} = \sum 1/\text{ASC}_{\text{ingestion}} + 1/\text{ASC}_{\text{inhalation}} + 1/\text{ASC}_{\text{dermal}}$$

By adopting this methodology BWB are able to provide a more flexible site specific approach to generic human health risk assessment.

Pathway Selection - Generic Site Assessment Criteria

Pathway	Residential	Commercial / Industrial
Ingestion of Soil	Yes	Yes
Ingestion of site derived household dust	Yes	Yes
Ingestion of contaminated homegrown produce	Optional	No
Ingestion of soil attached to homegrown produce	Optional	No
Dermal contact with Soil	Yes	Yes
Dermal contact with site derived household dust	Yes	Yes
Inhalation of fugitive soil dust	Yes	Yes
Inhalation of fugitive site derived household dust	Yes	Yes
Inhalation of vapours outside	Yes	Yes
Inhalation of vapours inside	Yes	Yes

Health Criteria Values

The general hierarchy for selecting health criteria values is as follows:

1. EA / DEFRA TOX report
2. Other UK authoritative body e.g. Committee on toxicity, Food Standards Agency
3. EU authoritative body
4. Other EU body e.g. RIVM
5. Other US/International Body

In the absence of updated TOX reports which take into account the recommendations of EA report (2009b) TOX reports produced under the old regime have been used and GSACs will be updated accordingly as further authoritative information is issued.

References

Environment Agency, 2009a, Updated Technical Background to the CLEA Model, Science Report SC050021/SR3 ISBN 978-1-84432-856-7

Environment Agency, 2009b, Human health Toxicological Assessment of Contaminants in Soil, Science Report SC050021/SR2 ISBN 978-1-84432-858-1

Environment Agency 2009c, CLEA Software Handbook (version 1.06) Science Report SC050021/SR4, ISBN 978-1-84432-857-4

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Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	3.43E+02	4.21E+05	6.56E+02	1.55E+02	3.22E+05	9.18E+01	4.16E+04
Benzene	2.69E-01	5.63E+03	2.58E+01	1.13E-01	5.95E+04	7.93E-02	1.22E+03
Toluene	6.38E+02	8.78E+06	1.98E+04	1.48E+02	5.92E+07	1.19E+02	8.69E+02
Ethylbenzene	5.86E+01	6.17E+05	8.88E+03	1.07E+02	3.11E+06	3.77E+01	5.18E+02
Total Xylene	5.57E+01	5.15E+05	1.60E+04	1.87E+02	2.28E+06	4.28E+01	4.78E+02
TPH (EC5-6) aliphatic	2.88E+01	2.41E+06	2.23E+05	4.90E+03	1.06E+08	2.86E+01	3.04E+02
TPH (>EC6-8) aliphatic	7.02E+01	3.76E+06	2.23E+05	1.53E+04	1.06E+08	6.99E+01	1.44E+02
TPH (>EC8-10) aliphatic	1.82E+01	4.61E+05	4.45E+03	2.17E+03	6.16E+06	1.80E+01	7.77E+01
TPH (>EC10-12) aliphatic	9.02E+01	1.03E+06	4.45E+03	1.67E+04	6.16E+06	8.79E+01	4.75E+01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	7.55E+02	2.97E+06	4.45E+03	2.32E+05	6.16E+06	6.43E+02	2.37E+01
TPH (>EC16-35) aliphatic	8.91E+04	8.47E+07	8.91E+04	1.15E+07	4.25E+07	4.43E+04	8.48E+00
TPH (>EC35-44) aliphatic	8.91E+04	8.47E+07	8.91E+04	1.15E+07	4.25E+07	4.43E+04	8.48E+00
TPH (>EC6-7) aromatic (benzene)	2.69E-01	5.63E+03	2.58E+01	1.13E-01	5.95E+04	7.93E-02	1.22E+03
TPH (>EC7-8) aromatic (toluene)	6.26E+02	8.62E+06	1.98E+04	1.48E+02	5.81E+07	1.19E+02	8.69E+02
TPH (>EC8-10) aromatic	3.22E+01	2.79E+05	1.78E+03	5.73E+01	1.28E+06	2.04E+01	6.13E+02
TPH (>EC10-12) aromatic	1.75E+02	6.50E+05	1.78E+03	8.34E+01	1.28E+06	5.47E+01	3.64E+02
TPH (>EC12-16) aromatic	1.94E+03	2.15E+06	1.78E+03	1.52E+02	1.28E+06	1.31E+02	2.37E+01
TPH (>EC16-21) aromatic	3.54E+04	5.95E+06	1.34E+03	3.06E+02	6.38E+05	2.47E+02	5.37E+01
TPH (>EC21-35) aromatic	3.99E+06	2.67E+07	1.34E+03	2.66E+03	6.38E+05	8.90E+02	4.83E+00
TPH (>EC35-44) aromatic	3.99E+06	2.67E+07	1.34E+03	2.66E+03	6.38E+05	8.90E+02	4.83E+00
Naphthalene	1.64E+00	3.17E+04	1.58E+03	2.72E+01	2.93E+04	1.55E+00	7.64E+01
Acenaphthylene	3.27E+03	1.26E+07	4.85E+03	1.84E+02	2.55E+06	1.68E+02	8.61E+01
Acenaphthene	3.47E+03	1.32E+07	4.85E+03	2.28E+02	2.55E+06	2.05E+02	5.70E+01
Fluorene	4.37E+03	1.17E+07	3.23E+03	1.79E+02	1.70E+06	1.63E+02	3.09E+01
Phenanthrene	5.09E+03	6.29E+06	1.00E+03	1.03E+02	5.30E+05	9.17E+01	3.60E+01
Anthracene	1.09E+05	1.48E+08	2.43E+04	2.55E+03	1.27E+07	2.26E+03	1.17E+00
Fluoranthene	2.84E+04	1.26E+07	1.01E+03	3.49E+02	5.31E+05	2.57E+02	1.89E+01
Pyrene	6.50E+04	2.87E+07	2.42E+03	7.43E+02	1.27E+06	5.63E+02	2.20E+00
Benzo(a)anthracene	2.40E+01	3.37E+03	1.25E+01	2.11E+01	6.37E+01	5.41E+00	1.71E+00
Chrysene	2.53E+02	5.87E+03	2.51E+01	2.90E+01	1.27E+02	1.16E+01	4.40E-01
Benzo(b)fluoranthene	9.32E+01	1.05E+03	3.15E+00	7.43E+00	1.61E+01	1.90E+00	1.22E+00
Benzo(k)fluoranthene	4.04E+03	3.28E+04	8.33E+01	2.85E+02	4.25E+02	5.51E+01	6.87E-01
Benzo(a)pyrene	1.04E+02	9.12E+02	2.51E+00	7.36E+00	1.27E+01	1.60E+00	9.11E-01
Indeno(123-cd)pyrene	8.78E+02	1.10E+04	3.58E+01	6.93E+01	1.83E+02	2.04E+01	6.14E-02
Dibenzo(ah)anthracene	5.23E+00	1.13E+02	2.51E-01	1.11E+00	1.27E+00	1.70E-01	3.93E-03

Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Benzo(g,h,i)perylene	2.34E+04	1.83E+05	2.78E+02	2.77E+03	1.40E+03	2.12E+02	1.54E-02
Tetrachloroethene (PCE)	1.26E-01	2.48E+04	4.92E+02	4.36E+00	2.34E+05	1.22E-01	4.24E+02
Trichloroethene (TCE)	1.21E-02	2.44E+03	4.45E+01	2.74E-01	2.42E+04	1.15E-02	1.54E+03
cis-1,2-Dichloroethene	1.20E-01	2.33E+04	4.82E+02	1.75E+00	2.30E+05	1.12E-01	3.94E+03
Vinyl Chloride (VC)	5.43E-04	3.59E+02	1.25E+00	3.70E-03	1.27E+04	4.73E-04	1.36E+03
1,1,2,2-Tetrachloroethane (PCA)	2.76E+00	1.17E+05	5.07E+02	2.72E+00	2.41E+05	1.37E+00	2.67E+03
1,1,1-Trichloroethane (TCA)	6.33E+00	1.79E+06	5.34E+04	3.22E+02	2.46E+07	6.21E+00	1.43E+03
1,2-Dichloroethane	6.46E-03	8.09E+02	1.07E+01	3.07E-02	5.10E+03	5.33E-03	3.41E+03
Carbon Tetrachloride	1.81E-02	5.07E+03	5.38E+02	3.00E+00	6.93E+04	1.80E-02	1.52E+03
Carbon disulphide	1.01E-01	3.42E+04	3.55E+02	3.20E+01	6.08E+05	1.01E-01	2.11E+03

ASC exceeds soil saturation limit

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	5.39E+02	5.28E+05	6.56E+02	2.88E+02	3.22E+05	1.46E+02	8.15E+04
Benzene	4.99E-01	7.68E+03	2.58E+01	2.30E-01	5.95E+04	1.57E-01	2.26E+03
Toluene	1.41E+03	1.30E+07	1.98E+04	3.41E+02	5.92E+07	2.71E+02	1.92E+03
Ethylbenzene	1.37E+02	9.44E+05	8.88E+03	2.58E+02	3.11E+06	8.88E+01	1.22E+03
Total Xylene	1.31E+02	7.89E+05	1.60E+04	4.50E+02	2.28E+06	1.01E+02	1.12E+03
TPH (EC5-6) aliphatic	5.28E+01	3.26E+06	2.23E+05	1.14E+04	1.06E+08	5.25E+01	5.58E+02
TPH (>EC6-8) aliphatic	1.57E+02	5.62E+06	2.23E+05	3.75E+04	1.06E+08	1.56E+02	3.22E+02
TPH (>EC8-10) aliphatic	4.44E+01	7.20E+05	4.45E+03	5.38E+03	6.16E+06	4.36E+01	1.90E+02

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC10-12) aliphatic	2.24E+02	1.62E+06	4.45E+03	4.00E+04	6.16E+06	2.12E+02	1.18E+02
TPH (>EC12-16) aliphatic	1.89E+03	4.69E+06	4.45E+03	3.64E+05	6.16E+06	1.32E+03	5.91E+01
TPH (>EC16-35) aliphatic	2.23E+05	1.34E+08	8.91E+04	1.16E+07	4.25E+07	6.32E+04	2.12E+01
TPH (>EC35-44) aliphatic	2.23E+05	1.34E+08	8.91E+04	1.16E+07	4.25E+07	6.32E+04	2.12E+01
TPH (>EC6-7) aromatic (benzene)	4.99E-01	7.68E+03	2.58E+01	2.30E-01	5.95E+04	1.56E-01	2.26E+03
TPH (>EC7-8) aromatic (toluene)	1.38E+03	1.28E+07	1.98E+04	3.41E+02	5.81E+07	2.70E+02	1.92E+03
TPH (>EC8-10) aromatic	7.88E+01	4.36E+05	1.78E+03	1.42E+02	1.28E+06	4.93E+01	1.50E+03
TPH (>EC10-12) aromatic	4.34E+02	1.02E+06	1.78E+03	2.07E+02	1.28E+06	1.30E+02	8.99E+02
TPH (>EC12-16) aromatic	4.83E+03	3.39E+06	1.78E+03	3.79E+02	1.28E+06	2.93E+02	5.91E+01
TPH (>EC16-21) aromatic	8.83E+04	9.40E+06	1.34E+03	7.61E+02	6.38E+05	4.82E+02	1.34E+02
TPH (>EC21-35) aromatic	9.98E+06	4.23E+07	1.34E+03	6.50E+03	6.38E+05	1.11E+03	1.21E+01
TPH (>EC35-44) aromatic	9.98E+06	4.23E+07	1.34E+03	6.50E+03	6.38E+05	1.11E+03	1.21E+01
Naphthalene	3.93E+00	4.91E+04	1.58E+03	6.63E+01	2.93E+04	3.70E+00	1.83E+02
Acenaphthylene	8.06E+03	1.97E+07	4.85E+03	4.56E+02	2.55E+06	3.96E+02	2.12E+02
Acenaphthene	8.57E+03	2.07E+07	4.85E+03	5.67E+02	2.55E+06	4.79E+02	1.41E+02
Fluorene	1.08E+04	1.84E+07	3.23E+03	4.45E+02	1.70E+06	3.77E+02	7.65E+01
Phenanthrene	1.27E+04	9.91E+06	1.00E+03	2.57E+02	5.30E+05	2.01E+02	8.96E+01
Anthracene	2.70E+05	2.33E+08	2.43E+04	6.34E+03	1.27E+07	4.93E+03	2.91E+00
Fluoranthene	7.08E+04	2.00E+07	1.01E+03	8.68E+02	5.31E+05	4.63E+02	4.73E+01
Pyrene	1.62E+05	4.54E+07	2.42E+03	1.85E+03	1.27E+06	1.04E+03	5.49E+00
Benzo(a)anthracene	6.00E+01	5.32E+03	1.25E+01	5.18E+01	6.37E+01	7.60E+00	4.28E+00
Chrysene	6.32E+02	9.28E+03	2.51E+01	7.15E+01	1.27E+02	1.58E+01	1.10E+00
Benzo(b)fluoranthene	2.33E+02	1.66E+03	3.15E+00	1.81E+01	1.61E+01	2.28E+00	3.04E+00
Benzo(k)fluoranthene	1.01E+04	5.19E+04	8.33E+01	6.87E+02	4.25E+02	6.27E+01	1.72E+00
Benzo(a)pyrene	2.61E+02	1.44E+03	2.51E+00	1.78E+01	1.27E+01	1.86E+00	2.28E+00
Indeno(123-cd)pyrene	2.20E+03	1.74E+04	3.58E+01	1.70E+02	1.83E+02	2.51E+01	5.30E-01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Dibenzo(ah)anthracene	1.31E+01	1.79E+02	2.51E-01	2.65E+00	1.27E+00	1.91E-01	9.82E-03
Benzo(g,h,i)perylene	5.85E+04	2.89E+05	2.78E+02	6.27E+03	1.40E+03	2.23E+02	3.85E-02
Tetrachloroethene (PCE)	2.82E-01	3.71E+04	4.92E+02	1.02E+01	2.34E+05	2.74E-01	9.51E+02
Trichloroethene (TCE)	2.52E-02	3.53E+03	4.45E+01	6.09E-01	2.42E+04	2.42E-02	3.22E+03
cis-1,2-Dichloroethene	2.02E-01	3.02E+04	4.82E+02	3.35E+00	2.30E+05	1.90E-01	6.61E+03
Vinyl Chloride (VC)	7.02E-04	4.08E+02	1.25E+00	6.67E-03	1.27E+04	6.35E-04	1.76E+03
1,1,2,2-Tetrachloroethane (PCA)	5.65E+00	1.68E+05	5.07E+02	5.92E+00	2.41E+05	2.87E+00	5.46E+03
1,1,1-Trichloroethane (TCA)	1.29E+01	2.55E+06	5.34E+04	7.06E+02	2.46E+07	1.27E+01	2.92E+03
1,2-Dichloroethane	9.32E-03	9.72E+02	1.07E+01	5.56E-02	5.10E+03	7.98E-03	4.91E+03
Carbon Tetrachloride	3.97E-02	7.50E+03	5.38E+02	6.95E+00	6.93E+04	3.95E-02	3.32E+03
Carbon disulphide	2.02E-01	4.83E+04	3.55E+02	6.84E+01	6.08E+05	2.01E-01	4.21E+03

ASC exceeds soil saturation limit

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	9.95E+02	7.17E+05	6.56E+02	5.72E+02	3.22E+05	2.34E+02	1.74E+05
Benzene	1.04E+00	1.11E+04	2.58E+01	4.98E-01	5.95E+04	3.32E-01	4.71E+03
Toluene	3.20E+03	1.97E+07	1.98E+04	7.89E+02	5.92E+07	6.13E+02	4.36E+03
Ethylbenzene	3.22E+02	1.44E+06	8.88E+03	6.09E+02	3.11E+06	2.06E+02	2.84E+03
Total Xylene	3.06E+02	1.21E+06	1.60E+04	1.06E+03	2.28E+06	2.34E+02	2.62E+03
TPH (EC5-6) aliphatic	1.09E+02	4.68E+06	2.23E+05	2.62E+04	1.06E+08	1.08E+02	1.15E+03
TPH (>EC6-8) aliphatic	3.59E+02	8.49E+06	2.23E+05	8.91E+04	1.06E+08	3.57E+02	7.36E+02
TPH (>EC8-10) aliphatic	1.06E+02	1.11E+06	4.45E+03	1.27E+04	6.16E+06	1.03E+02	4.51E+02

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC10-12) aliphatic	5.38E+02	2.51E+06	4.45E+03	8.76E+04	6.16E+06	4.77E+02	2.83E+02
TPH (>EC12-16) aliphatic	4.53E+03	7.27E+06	4.45E+03	4.67E+05	6.16E+06	2.23E+03	1.42E+02
TPH (>EC16-35) aliphatic	5.34E+05	2.07E+08	8.91E+04	1.17E+07	4.25E+07	7.57E+04	5.09E+01
TPH (>EC35-44) aliphatic	5.34E+05	2.07E+08	8.91E+04	1.17E+07	4.25E+07	7.57E+04	5.09E+01
TPH (>EC6-7) aromatic (benzene)	1.04E+00	1.11E+04	2.58E+01	4.98E-01	5.95E+04	3.32E-01	4.71E+03
TPH (>EC7-8) aromatic (toluene)	3.14E+03	1.93E+07	1.98E+04	7.89E+02	5.81E+07	6.11E+02	4.36E+03
TPH (>EC8-10) aromatic	1.88E+02	6.73E+05	1.78E+03	3.38E+02	1.28E+06	1.13E+02	3.58E+03
TPH (>EC10-12) aromatic	1.04E+03	1.58E+06	1.78E+03	4.95E+02	1.28E+06	2.82E+02	2.15E+03
TPH (>EC12-16) aromatic	1.16E+04	5.25E+06	1.78E+03	9.07E+02	1.28E+06	5.71E+02	1.42E+02
TPH (>EC16-21) aromatic	2.12E+05	1.46E+07	1.34E+03	1.81E+03	6.38E+05	7.66E+02	3.21E+02
TPH (>EC21-35) aromatic	2.39E+07	6.54E+07	1.34E+03	1.48E+04	6.38E+05	1.23E+03	2.90E+01
TPH (>EC35-44) aromatic	2.39E+07	6.54E+07	1.34E+03	1.48E+04	6.38E+05	1.23E+03	2.90E+01
Naphthalene	9.28E+00	7.55E+04	1.58E+03	1.57E+02	2.93E+04	8.71E+00	4.32E+02
Acenaphthylene	1.92E+04	3.05E+07	4.85E+03	1.09E+03	2.55E+06	8.50E+02	5.06E+02
Acenaphthene	2.05E+04	3.20E+07	4.85E+03	1.36E+03	2.55E+06	1.01E+03	3.36E+02
Fluorene	2.58E+04	2.85E+07	3.23E+03	1.06E+03	1.70E+06	7.74E+02	1.83E+02
Phenanthrene	3.03E+04	1.53E+07	1.00E+03	6.14E+02	5.30E+05	3.75E+02	2.14E+02
Anthracene	6.48E+05	3.60E+08	2.43E+04	1.52E+04	1.27E+07	9.21E+03	6.96E+00
Fluoranthene	1.70E+05	3.09E+07	1.01E+03	2.07E+03	5.31E+05	6.75E+02	1.12E+02
Pyrene	3.89E+05	7.03E+07	2.42E+03	4.40E+03	1.27E+06	1.55E+03	1.32E+01
Benzo(a)anthracene	1.44E+02	8.24E+03	1.25E+01	1.20E+02	6.37E+01	9.01E+00	1.03E+01
Chrysene	1.52E+03	1.44E+04	2.51E+01	1.67E+02	1.27E+02	1.84E+01	2.64E+00
Benzo(b)fluoranthene	5.59E+02	2.57E+03	3.15E+00	4.12E+01	1.61E+01	2.47E+00	7.29E+00
Benzo(k)fluoranthene	2.43E+04	8.03E+04	8.33E+01	1.53E+03	4.25E+02	6.63E+01	4.12E+00
Benzo(a)pyrene	6.27E+02	2.23E+03	2.51E+00	4.01E+01	1.27E+01	1.98E+00	5.46E+00
Indeno(123-cd)pyrene	5.27E+03	2.69E+04	3.58E+01	3.90E+02	1.83E+02	2.76E+01	3.68E-01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Dibenzo(ah)anthracene	3.14E+01	2.78E+02	2.51E-01	5.77E+00	1.27E+00	2.01E-01	2.36E-02
Benzo(g,h,i)perylene	1.41E+05	4.48E+05	2.78E+02	1.24E+04	1.40E+03	2.27E+02	9.23E-02
Tetrachloroethene (PCE)	6.47E-01	5.61E+04	4.92E+02	2.38E+01	2.34E+05	6.29E-01	2.18E+03
Trichloroethene (TCE)	5.60E-02	5.25E+03	4.45E+01	1.39E+00	2.42E+04	5.38E-02	7.14E+03
cis-1,2-Dichloroethene	3.93E-01	4.22E+04	4.82E+02	6.91E+00	2.30E+05	3.72E-01	1.29E+04
Vinyl Chloride (VC)	1.07E-03	5.05E+02	1.25E+00	1.22E-02	1.27E+04	9.83E-04	2.69E+03
1,1,2,2-Tetrachloroethane (PCA)	1.24E+01	2.49E+05	5.07E+02	1.33E+01	2.41E+05	6.34E+00	1.20E+04
1,1,1-Trichloroethane (TCA)	2.84E+01	3.78E+06	5.34E+04	1.59E+03	2.46E+07	2.79E+01	6.39E+03
1,2-Dichloroethane	1.60E-02	1.27E+03	1.07E+01	1.06E-01	5.10E+03	1.39E-02	8.43E+03
Carbon Tetrachloride	8.99E-02	1.13E+04	5.38E+02	1.61E+01	6.93E+04	8.94E-02	7.54E+03
Carbon disulphide	4.37E-01	7.10E+04	3.55E+02	1.52E+02	6.08E+05	4.35E-01	9.11E+03

ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	8.34E+04	1.09E+06	4.07E+04	3.28E+06	2.65E+04	4.16E+04
Benzene	2.97E+01	1.17E+04	5.53E+02	4.87E+05	2.81E+01	1.22E+03
Toluene	6.91E+04	1.83E+07	4.25E+05	4.86E+08	5.92E+04	8.69E+02
Ethylbenzene	6.28E+03	1.30E+06	1.91E+05	2.57E+07	6.05E+03	5.18E+02
Total Xylene	6.43E+03	1.17E+06	3.43E+05	2.03E+07	6.28E+03	4.78E+02
TPH (EC5-6) aliphatic	3.31E+03	5.01E+06	4.77E+06	8.69E+08	3.31E+03	3.04E+02
TPH (>EC6-8) aliphatic	8.06E+03	7.82E+06	4.77E+06	8.69E+08	8.04E+03	1.44E+02
TPH (>EC8-10) aliphatic	2.09E+03	9.59E+05	9.53E+04	5.04E+07	2.04E+03	7.77E+01
TPH (>EC10-12) aliphatic	1.04E+04	2.13E+06	9.53E+04	5.04E+07	9.33E+03	4.75E+01

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	8.68E+04	6.18E+06	9.53E+04	5.04E+07	4.51E+04	2.37E+01
TPH (>EC16-35) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08	1.59E+06	8.48E+00
TPH (>EC35-44) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08	1.59E+06	8.48E+00
TPH (>EC6-7) aromatic (benzene)	4.75E+01	1.17E+04	5.53E+02	4.87E+05	4.36E+01	1.22E+03
TPH (>EC7-8) aromatic (toluene)	6.88E+04	1.83E+07	4.25E+05	4.84E+08	5.90E+04	8.69E+02
TPH (>EC8-10) aromatic	3.70E+03	5.80E+05	3.81E+04	1.04E+07	3.35E+03	6.13E+02
TPH (>EC10-12) aromatic	2.02E+04	1.35E+06	3.81E+04	1.04E+07	1.31E+04	3.64E+02
TPH (>EC12-16) aromatic	2.25E+05	4.48E+06	3.81E+04	1.04E+07	3.22E+04	2.37E+01
TPH (>EC16-21) aromatic	4.59E+06	1.24E+07	2.86E+04	5.22E+06	2.82E+04	5.37E+01
TPH (>EC21-35) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06	2.84E+04	4.83E+00
TPH (>EC35-44) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06	2.84E+04	4.83E+00
Naphthalene	2.06E+02	7.85E+04	3.64E+04	2.85E+05	2.04E+02	7.64E+01
Acenaphthylene	3.76E+05	2.62E+07	1.10E+05	2.09E+07	8.45E+04	8.61E+01
Acenaphthene	3.87E+05	2.74E+07	1.10E+05	2.09E+07	8.50E+04	5.70E+01
Fluorene	5.10E+05	2.44E+07	7.31E+04	1.39E+07	6.35E+04	3.09E+01
Phenanthrene	6.87E+05	1.31E+07	2.28E+04	4.34E+06	2.19E+04	3.60E+01
Anthracene	1.41E+07	3.07E+08	5.49E+05	1.04E+08	5.25E+05	1.17E+00
Fluoranthene	4.36E+06	2.63E+07	2.29E+04	4.34E+06	2.26E+04	1.89E+01
Pyrene	1.02E+07	5.98E+07	5.49E+04	1.04E+07	5.43E+04	2.20E+00
Benzo(a)anthracene	4.04E+03	7.01E+03	2.84E+02	5.21E+02	1.71E+02	1.71E+00
Chrysene	5.01E+04	1.22E+04	5.67E+02	1.04E+03	3.54E+02	4.40E-01
Benzo(b)fluoranthene	1.86E+04	2.18E+03	7.13E+01	1.32E+02	4.52E+01	1.22E+00
Benzo(k)fluoranthene	8.14E+05	6.83E+04	1.88E+03	3.48E+03	1.20E+03	6.87E-01
Benzo(a)pyrene	2.10E+04	1.90E+03	5.67E+01	1.04E+02	3.60E+01	9.11E-01
Indeno(123-cd)pyrene	1.75E+05	2.29E+04	8.10E+02	1.49E+03	5.12E+02	6.14E-02
Dibenzo(ah)anthracene	1.01E+03	2.36E+02	5.67E+00	1.04E+01	3.60E+00	3.93E-03
Benzo(g,h,i)perylene	4.64E+06	3.81E+05	6.29E+03	1.15E+04	4.02E+03	1.54E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	1.98E+01	7.63E+04	1.12E+04	2.83E+06	1.97E+01	4.24E+02
Trichloroethene (TCE)	1.31E+00	5.07E+03	9.53E+02	1.98E+05	1.30E+00	1.54E+03
cis-1,2-Dichloroethene	1.45E+01	5.26E+04	1.12E+04	2.04E+06	1.45E+01	3.94E+03
Vinyl Chloride (VC)	6.31E-02	7.47E+02	2.67E+01	1.04E+05	6.29E-02	1.36E+03
1,1,2,2-Tetrachloroethane (PCA)	2.98E+02	2.49E+05	1.10E+04	2.01E+06	2.90E+02	2.67E+03
1,1,1-Trichloroethane (TCA)	7.01E+02	3.81E+06	1.14E+06	2.07E+08	7.00E+02	1.43E+03
1,2-Dichloroethane	7.14E-01	1.68E+03	2.29E+02	4.17E+04	7.11E-01	3.41E+03
Carbon Tetrachloride	3.04E+00	1.65E+04	7.62E+03	8.85E+05	3.04E+00	1.52E+03
Carbon disulphide	1.16E+01	7.12E+04	9.53E+04	4.97E+06	1.16E+01	2.11E+03

 ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	1.31E+05	1.37E+06	4.07E+04	3.28E+06	3.01E+04	8.15E+04
Benzene	5.53E+01	1.60E+04	5.53E+02	4.87E+05	5.01E+01	2.26E+03
Toluene	1.52E+05	2.72E+07	4.25E+05	4.86E+08	1.12E+05	1.92E+03
Ethylbenzene	1.47E+04	1.99E+06	1.91E+05	2.57E+07	1.36E+04	1.22E+03
Total Xylene	1.51E+04	1.79E+06	3.43E+05	2.03E+07	1.43E+04	1.12E+03
TPH (EC5-6) aliphatic	6.07E+03	6.79E+06	4.77E+06	8.69E+08	6.06E+03	5.58E+02
TPH (>EC6-8) aliphatic	1.80E+04	1.17E+07	4.77E+06	8.69E+08	1.79E+04	3.22E+02
TPH (>EC8-10) aliphatic	5.11E+03	1.50E+06	9.53E+04	5.04E+07	4.83E+03	1.90E+02
TPH (>EC10-12) aliphatic	2.58E+04	3.37E+06	9.53E+04	5.04E+07	2.02E+04	1.18E+02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	2.17E+05	9.77E+06	9.53E+04	5.04E+07	6.57E+04	5.91E+01
TPH (>EC16-35) aliphatic	2.56E+07	2.79E+08	1.91E+06	3.48E+08	1.76E+06	2.12E+01
TPH (>EC35-44) aliphatic	2.56E+07	2.79E+08	1.91E+06	3.48E+08	1.76E+06	2.12E+01
TPH (>EC6-7) aromatic (benzene)	5.53E+01	1.60E+04	5.53E+02	4.87E+05	5.01E+01	2.26E+03
TPH (>EC7-8) aromatic (toluene)	1.52E+05	2.71E+07	4.25E+05	4.84E+08	1.11E+05	1.92E+03
TPH (>EC8-10) aromatic	9.06E+03	9.08E+05	3.81E+04	1.04E+07	7.26E+03	1.50E+03
TPH (>EC10-12) aromatic	4.99E+04	2.13E+06	3.81E+04	1.04E+07	2.13E+04	8.99E+02
TPH (>EC12-16) aromatic	5.59E+05	7.06E+06	3.81E+04	1.04E+07	3.54E+04	5.91E+01
TPH (>EC16-21) aromatic	1.15E+07	1.96E+07	2.86E+04	5.22E+06	2.83E+04	1.34E+02
TPH (>EC21-35) aromatic	1.89E+09	8.79E+07	2.86E+04	5.22E+06	2.84E+04	1.21E+01
TPH (>EC35-44) aromatic	1.89E+09	8.79E+07	2.86E+04	5.22E+06	2.84E+04	1.21E+01
Naphthalene	4.93E+02	1.21E+05	3.64E+04	2.85E+05	4.84E+02	1.83E+02
Acenaphthylene	9.26E+05	4.11E+07	1.10E+05	2.09E+07	9.76E+04	2.12E+02
Acenaphthene	9.56E+05	4.31E+07	1.10E+05	2.09E+07	9.80E+04	1.41E+02
Fluorene	1.26E+06	3.84E+07	7.31E+04	1.39E+07	6.86E+04	7.65E+01
Phenanthrene	1.71E+06	2.07E+07	2.28E+04	4.34E+06	2.24E+04	8.96E+01
Anthracene	3.51E+07	4.84E+08	5.49E+05	1.04E+08	5.37E+05	2.91E+00
Fluoranthene	1.09E+07	4.16E+07	2.29E+04	4.34E+06	2.27E+04	4.73E+01
Pyrene	2.54E+07	9.45E+07	5.49E+04	1.04E+07	5.45E+04	5.49E+00
Benzo(a)anthracene	1.01E+04	1.11E+04	2.84E+02	5.21E+02	1.77E+02	4.28E+00
Chrysene	1.25E+05	1.93E+04	5.67E+02	1.04E+03	3.59E+02	1.10E+00
Benzo(b)fluoranthene	4.66E+04	3.45E+03	7.13E+01	1.32E+02	4.57E+01	3.04E+00
Benzo(k)fluoranthene	2.03E+06	1.08E+05	1.88E+03	3.48E+03	1.21E+03	1.72E+00
Benzo(a)pyrene	5.26E+04	3.00E+03	5.67E+01	1.04E+02	3.63E+01	2.28E+00
Indeno(123-cd)pyrene	4.38E+05	3.62E+04	8.10E+02	1.49E+03	5.17E+02	5.30E-01
Dibenzo(ah)anthracene	2.53E+03	3.73E+02	5.67E+00	1.04E+01	3.63E+00	9.82E-03
Benzo(g,h,i)perylene	1.16E+07	6.02E+05	6.29E+03	1.15E+04	4.03E+03	3.85E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	4.43E+01	1.14E+05	1.12E+04	2.83E+06	4.41E+01	9.51E+02
Trichloroethene (TCE)	2.74E+00	7.34E+03	9.53E+02	1.98E+05	2.73E+00	3.22E+03
cis-1,2-Dichloroethene	2.43E+01	6.81E+04	1.12E+04	2.04E+06	2.42E+01	6.61E+03
Vinyl Chloride (VC)	8.16E-02	8.50E+02	2.67E+01	1.04E+05	8.13E-02	1.76E+03
1,1,2,2-Tetrachloroethane (PCA)	6.11E+02	3.56E+05	1.10E+04	2.01E+06	5.78E+02	5.46E+03
1,1,1-Trichloroethane (TCA)	1.43E+03	5.46E+06	1.14E+06	2.07E+08	1.43E+03	2.92E+03
1,2-Dichloroethane	1.03E+00	2.02E+03	2.29E+02	4.17E+04	1.02E+00	4.91E+03
Carbon Tetrachloride	6.67E+00	2.44E+04	7.62E+03	8.85E+05	6.66E+00	3.32E+03
Carbon disulphide	2.32E+01	1.00E+05	9.53E+04	4.97E+06	2.32E+01	4.21E+03

 ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	2.42E+05	1.86E+06	4.07E+04	3.28E+06	3.39E+04	1.74E+05
Benzene	1.15E+02	2.30E+04	5.53E+02	4.87E+05	9.47E+01	4.71E+03
Toluene	3.46E+05	4.11E+07	4.25E+05	4.86E+08	1.90E+05	4.36E+03
Ethylbenzene	3.45E+04	3.04E+06	1.91E+05	2.57E+07	2.89E+04	2.84E+03
Total Xylene	3.53E+04	2.74E+06	3.43E+05	2.03E+07	3.16E+04	2.62E+03
TPH (EC5-6) aliphatic	1.25E+04	9.74E+06	4.77E+06	8.69E+08	1.25E+04	1.15E+03
TPH (>EC6-8) aliphatic	4.12E+04	1.77E+07	4.77E+06	8.69E+08	4.08E+04	7.36E+02
TPH (>EC8-10) aliphatic	1.21E+04	2.31E+06	9.53E+04	5.04E+07	1.07E+04	4.51E+02
TPH (>EC10-12) aliphatic	6.18E+04	5.22E+06	9.53E+04	5.04E+07	3.72E+04	2.83E+02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	5.20E+05	1.51E+07	9.53E+04	5.04E+07	8.00E+04	1.42E+02
TPH (>EC16-35) aliphatic	6.14E+07	4.32E+08	1.91E+06	3.48E+08	1.83E+06	5.09E+01
TPH (>EC35-44) aliphatic	6.14E+07	4.32E+08	1.91E+06	3.48E+08	1.83E+06	5.09E+01
TPH (>EC6-7) aromatic (benzene)	1.15E+02	2.30E+04	5.53E+02	4.87E+05	9.48E+01	4.71E+03
TPH (>EC7-8) aromatic (toluene)	3.45E+05	4.09E+07	4.25E+05	4.84E+08	1.89E+05	4.36E+03
TPH (>EC8-10) aromatic	2.16E+04	1.40E+06	3.81E+04	1.04E+07	1.36E+04	3.58E+03
TPH (>EC10-12) aromatic	1.19E+05	3.29E+06	3.81E+04	1.04E+07	2.85E+04	2.15E+03
TPH (>EC12-16) aromatic	1.34E+06	1.09E+07	3.81E+04	1.04E+07	3.68E+04	1.42E+02
TPH (>EC16-21) aromatic	2.75E+07	3.03E+07	2.86E+04	5.22E+06	2.84E+04	3.21E+02
TPH (>EC21-35) aromatic	4.54E+09	1.36E+08	2.86E+04	5.22E+06	2.84E+04	2.90E+01
TPH (>EC35-44) aromatic	4.54E+09	1.36E+08	2.86E+04	5.22E+06	2.84E+04	2.90E+01
Naphthalene	1.16E+03	1.87E+05	3.64E+04	2.85E+05	1.11E+03	4.32E+02
Acenaphthylene	2.21E+06	6.35E+07	1.10E+05	2.09E+07	1.04E+05	5.06E+02
Acenaphthene	2.28E+06	6.67E+07	1.10E+05	2.09E+07	1.04E+05	3.36E+02
Fluorene	3.02E+06	5.94E+07	7.31E+04	1.39E+07	7.09E+04	1.83E+02
Phenanthrene	4.09E+06	3.20E+07	2.28E+04	4.34E+06	2.25E+04	2.14E+02
Anthracene	8.41E+07	7.50E+08	5.49E+05	1.04E+08	5.42E+05	6.96E+00
Fluoranthene	2.61E+07	6.44E+07	2.29E+04	4.34E+06	2.28E+04	1.12E+02
Pyrene	6.09E+07	1.46E+08	5.49E+04	1.04E+07	5.45E+04	1.32E+01
Benzo(a)anthracene	2.42E+04	1.72E+04	2.84E+02	5.21E+02	1.80E+02	1.03E+01
Chrysene	3.00E+05	2.99E+04	5.67E+02	1.04E+03	3.62E+02	2.64E+00
Benzo(b)fluoranthene	1.12E+05	5.34E+03	7.13E+01	1.32E+02	4.59E+01	7.29E+00
Benzo(k)fluoranthene	4.88E+06	1.67E+05	1.88E+03	3.48E+03	1.21E+03	4.12E+00
Benzo(a)pyrene	1.26E+05	4.65E+03	5.67E+01	1.04E+02	3.64E+01	5.46E+00
Indeno(123-cd)pyrene	1.05E+06	5.60E+04	8.10E+02	1.49E+03	5.20E+02	3.68E-01
Dibenzo(ah)anthracene	6.07E+03	5.78E+02	5.67E+00	1.04E+01	3.65E+00	2.36E-02
Benzo(g,h,i)perylene	2.78E+07	9.33E+05	6.29E+03	1.15E+04	4.04E+03	9.23E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	1.02E+02	1.73E+05	1.12E+04	2.83E+06	1.01E+02	2.18E+03
Trichloroethene (TCE)	6.07E+00	1.09E+04	9.53E+02	1.98E+05	6.03E+00	7.14E+03
cis-1,2-Dichloroethene	4.73E+01	9.50E+04	1.12E+04	2.04E+06	4.71E+01	1.29E+04
Vinyl Chloride (VC)	1.25E-01	1.05E+03	2.67E+01	1.04E+05	1.24E-01	2.69E+03
1,1,2,2-Tetrachloroethane (PCA)	1.34E+03	5.27E+05	1.10E+04	2.01E+06	1.19E+03	1.20E+04
1,1,1-Trichloroethane (TCA)	3.14E+03	8.08E+06	1.14E+06	2.07E+08	3.13E+03	6.39E+03
1,2-Dichloroethane	1.77E+00	2.65E+03	2.29E+02	4.17E+04	1.76E+00	8.43E+03
Carbon Tetrachloride	1.51E+01	3.67E+04	7.62E+03	8.85E+05	1.51E+01	7.54E+03
Carbon disulphide	5.01E+01	1.48E+05	9.53E+04	4.97E+06	5.01E+01	9.11E+03

 ASC exceeds soil saturation limit

Appendix 10: CLEA Flow Chart & Worksheets

STATISTICAL APPROACH FOR ASSESSING RISK TO HUMAN
HEALTH FROM CONTAMINATED LAND 2008

CIEH/CLAIRE Guidance on Comparing Soil Contamination
Data with a Critical Concentration May 2008

STAGE 1
QA CHECK

Are data of acceptable quality
Lab sampling errors / erroneous results
Are data sufficient to characterise area
of interest

No

Review CSM, update
sampling and
analytical strategy

yes

STAGE 2
DATA SCREENING

Compare all data against GSAC
Do any values exceed GSAC?

No

True mean is less than
critical concentration
No action required

Yes

STAGE 3
ZONING AND
OUTLIER CHECK

Plot data on bubble chart
Plot histogram
Identify and deal with non
detects

Outliers

Assess Outliers
directly against
GSAC

Non detects to DL or DL/2
Remove outliers

STAGE 4
UPPER CONFIDENCE
LIMIT

With outliers removed
do any values exceed GSAC ?

No

True mean is less than
critical concentration
No action required

Yes

With outliers removed are data normally Distributed
Histogram
Shapiro Wilkes test, q-q plot

Normal

Non-
normal

Normal Distributed data
UCL from
Students t-test

Non-normal Distributed data
UCL from
Chebychev theorem

Compare UCL to GSAC
Does UCL exceed GSAC?

No

True mean is less than
critical concentration
No action required

Yes

true mean is greater than
critical concentration
Further action required

Human Health Generic QRA Worksheet

Burnaston Cross	NTH2364
All samples will be assessed as one averaging area.	

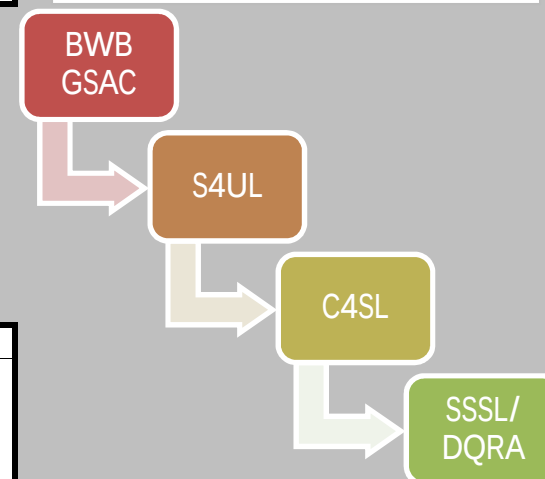
Define CSM – Is site represented by a standard land use?

Residential with / without homegrown produce
Commercial / Industrial
Public Open Space - Residential (S4UL/C4SL only)
Public Open Space - Park (S4UL/C4SL only)

GSAC Type (BWB, LQM S4UL, C4SL, Bespoke)	BWB_GSAC
Key Receptor/CSM (Residential/Commercial/POS)	Commercial
Organic Matter % (If unknown use 1%)	1

Exposure Pathway Selection for BWB GSAC (Residential/Commercial scenarios only)	
Soil Ingestion, dermal contact, particulate inhalation	TRUE
Ingestion of site grown vegetables and soil attached to vegetables	FALSE
Inhalation of vapours Indoors	TRUE
Inhalation of vapours Outdoors	TRUE

GSAC Hierarchy



Default pathways	
Residential	Commercial
TRUE	TRUE
Optional	FALSE
TRUE	TRUE
TRUE	TRUE

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V6, January 2018

Generic Assessment Criteria

Burnaston Cross
NTH2364Commercial
mg/kg

Source

Arsenic	6.40E+02	BWB_GSAC
Barium	2.21E+04	BWB_GSAC
Beryllium	1.24E+01	BWB_GSAC
Boron	2.36E+05	BWB_GSAC
Cadmium	2.30E+02	BWB_GSAC
Chromium VI	3.41E+01	BWB_GSAC
Chromium III	9.09E+03	BWB_GSAC
Copper	6.33E+04	BWB_GSAC
Lead*	2.33E+03	DEFRA_C4SL
Inorganic Mercury	3.60E+03	BWB_GSAC
Nickel	1.04E+03	BWB_GSAC
Selenium	1.30E+04	BWB_GSAC
Vanadium	6.63E+03	BWB_GSAC
Zinc	7.33E+05	BWB_GSAC
Cyanide (Free)	4.30E+01	BWB_GSAC
Cyanide (Complex)	2.13E+02	BWB_GSAC
Phenols (Total)	2.65E+04	BWB_GSAC
Benzene	2.81E+01	BWB_GSAC
Toluene	5.92E+04	BWB_GSAC
Ethyl benzene	6.05E+03	BWB_GSAC
Total Xylene	6.28E+03	BWB_GSAC
TPH (EC5-6) aliphatic	3.31E+03	BWB_GSAC
TPH (>EC6-8) aliphatic	8.04E+03	BWB_GSAC
TPH (>EC8-10) aliphatic	2.04E+03	BWB_GSAC
TPH (>EC10-12) aliphatic	9.33E+03	BWB_GSAC
TPH (>EC12-16) aliphatic	4.51E+04	BWB_GSAC
TPH (>EC16-21) aliphatic	1.59E+06	BWB_GSAC
TPH (>EC21-35) aliphatic	1.59E+06	BWB_GSAC
TPH (>EC35-44) aliphatic	1.59E+06	BWB_GSAC
TPH (>EC6-7) aromatic (benzene)	4.36E+01	BWB_GSAC
TPH (>EC7-8) aromatic (toluene)	5.90E+04	BWB_GSAC
TPH (>EC8-10) aromatic	3.35E+03	BWB_GSAC
TPH (>EC10-12) aromatic	1.31E+04	BWB_GSAC
TPH (>EC12-16) aromatic	3.22E+04	BWB_GSAC
TPH (>EC16-21) aromatic	2.82E+04	BWB_GSAC
TPH (>EC21-35) aromatic	2.84E+04	BWB_GSAC
TPH (>EC35-44) aromatic	2.84E+04	BWB_GSAC
Total TPH	5.00E+02	BWB_GSAC
Naphthalene	2.04E+02	BWB_GSAC
Acenaphthylene	8.45E+04	BWB_GSAC
Acenaphthene	8.50E+04	BWB_GSAC
Fluorene	6.35E+04	BWB_GSAC
Phenanthrene	2.19E+04	BWB_GSAC
Anthracene	5.25E+05	BWB_GSAC
Fluoranthene	2.26E+04	BWB_GSAC
Pyrene	5.43E+04	BWB_GSAC
Benzo(a)anthracene	1.71E+02	BWB_GSAC
Chrysene	3.54E+02	BWB_GSAC
Benzo(b)fluoranthene	4.52E+01	BWB_GSAC

Generic Assessment Criteria



Burnaston Cross
NTH2364

Commercial
mg/kg

Source

Benzo(k)fluoranthene	1.20E+03	BWB_GSAC
Benzo(a)pyrene	3.60E+01	BWB_GSAC
Indeno(1,2,3-c,d)pyrene	5.12E+02	BWB_GSAC
Dibenzo(a,h)anthracene	3.60E+00	BWB_GSAC
Benzo(g,hi)perylene	4.02E+03	BWB_GSAC
Coal Tar (B(a)P as surrogate marker	1.54E+01	BWB_GSAC
Tetrachloroethene (PCE)	1.97E+01	BWB_GSAC
Trichloroethene (TCE)	1.30E+00	BWB_GSAC
cis -1,2-Dichloroethene	1.45E+01	BWB_GSAC
Vinyl Chloride (VC)	6.29E-02	BWB_GSAC
1,1,2,2-Tetrachloroethane (PCA)	2.90E+02	BWB_GSAC
1,1,1-Trichloroethane (TCA)	7.00E+02	BWB_GSAC
1,2-Dichloroethane	7.11E-01	BWB_GSAC
Carbon Tetrachloride	3.04E+00	BWB_GSAC
Carbon disulphide	1.16E+01	BWB_GSAC

Location	Sample depth	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium VI	Chromium III	Copper	Lead	Inorganic Mercury	Nickel	Selenium	Vanadium	Zinc	Cyanide (Free)	Cyanide (Complex)	Phenols (Total)	Benzene	Toluene
Detection Limit		1	1	0.06	0.2	0.2	4	1	1	1	0.3	1	1	1	1	1	1	1	0.001	0.001
GSAC		6.40E+02	2.21E+04	1.24E+01	2.36E+05	2.30E+02	3.41E+01	9.09E+03	6.33E+04	2.33E+03	3.60E+03	1.04E+03	1.30E+04	6.63E+03	7.33E+05	4.30E+01	2.13E+02	2.65E+04	2.81E+01	5.92E+04
TP29	0.10-0.20	7.8	180	0.9	0.4	0.3	4	17	16	54	0.3	12	1	22	64	1	1	1		
TP28	0.50-0.60	11	350	1.7	0.6	0.3	4	48	27	24	0.3	68	1	53	100	1	1	1		
TP24	0.70-0.80	14	290	2.1	1	0.2	4	39	26	21	0.3	54	1	50	71	1	1	1		
TP21	0.70-0.80	69	440	2.8	5.7	0.2	4	46	150	70	0.3	70	1	79	390	1	1	1	0.001	0.001
TP21	1.20-1.30	94	320	3.8	1.7	0.2	4	53	160	79	0.3	91	1	100	610	1	1	1		
TP20	0.10-0.20	40	200	1.3	1.8	0.2	4	22	31	36	0.3	27	1	39	51	1	1	1		
TP20	1.20-1.30	82	510	5.4	17	0.2	4	37	110	90	0.3	65	1	100	96	1	1	1	0.001	0.001
TP10	0.60-0.70	4.3	48	0.33	1.9	0.2	4	11	4.6	15	0.3	10	1	15	29	1	1	1		
TP02	0.10-0.20	9.8	96	0.59	0.6	0.2	4	19	18	44	0.3	14	1	24	85	1	1	1		
TP02	0.50-0.60	9.7	72	0.62	0.5	0.2	4	20	11	16	0.3	29	1	26	46	1	1	1	0.001	0.001
TP06	0.40-0.50	11	57	0.57	0.6	0.2	4	18	14	22	0.3	16	1	22	33	1	1	1		
TP07	0.30-0.40	140	200	1.2	1.2	0.2	4	26	59	91	0.3	38	1	48	41	1	1	1		
TP07	2.20-2.30	59	180	1.4	12	0.2	4	31	62	37	0.3	51	1	41	90	1	1	1	0.001	0.001
TS17	0.80-0.90	150	530	4.8	5.8	0.2	4	54	93	80	0.3	70	1	120	120	1	1	1		
TP09	0.40-0.50	100	260	3.7	3.9	0.2	4	42	88	51	0.3	60	1	94	56	1	1	1		
TP05	0.30-0.40	81	110	0.74	3.4	0.2	4	12	55	70	0.3	22	1	34	31	1	1	1		
TP05	0.80-0.90	110	320	3.5	19	0.2	4	52	96	60	0.3	60	1	100	99	1	1	1		
TP14	1.00-1.10	32	150	1.5	1.7	0.4	4	17	54	53	0.3	30	1	32	130	1	1	1		
TP15	1.40-1.50	7.6	65	0.65	0.5	0.2	4	17	17	15	0.3	15	1	21	48	1	1	1		
TP19	1.30-1.40	6.4	56	0.33	1.4	0.2	4	14	16	31	0.3	11	1	20	61	1	1	1		
TP25	0.40-0.50	70	360	3.2	3.6	0.2	4	37	82	50	0.3	55	1	75	90	1	1	1		
TP25	1.10-1.20	7	90	0.73	3.9	0.2	4	14	22	15	0.3	17	1	20	36	1	1	1		
TP22	0.40-0.50	29	210	1.7	1.6	0.2	4	23	48	51	0.3	29	1	33	88	1	1	1	0.001	0.001
TP12	1.10-1.20	7.5	69	0.28	0.7	0.2	4	38	43	16	0.3	21	1	45	25	1	1	1		
TP12	2.10-2.20	7.4	99	0.39	2.9	0.2	4	24	45	24	0.3	21	1	29	41	1	1	1	0.001	0.001

Location	Sample depth	Ethyl benzene	Total Xylene	TPH (EC5-6) aliphatic	TPH (>EC6-8) aliphatic	TPH (>EC8-10) aliphatic	TPH (>EC10-12) aliphatic	TPH (>EC12-16) aliphatic	TPH (>EC16-21) aliphatic	TPH (>EC21-35) aliphatic	TPH (>EC35-44) aliphatic	TPH (>EC6-7) aromatic (benzene)	TPH (>EC7-8) aromatic (toluene)	TPH (>EC8-10) aromatic	TPH (>EC10-12) aromatic	TPH (>EC12-16) aromatic	TPH (>EC16-21) aromatic	TPH (>EC21-35) aromatic	TPH (>EC35-44) aromatic	Total TPH
Detection Limit		0.001	0.001	0.001	0.001	0.001	1	2	8	8		0.001	0.001	0.001	1	2	10	10	10	
GSAC		6.05E+03	6.28E+03	3.31E+03	8.04E+03	2.04E+03	9.33E+03	4.51E+04	1.59E+06	1.59E+06	1.59E+06	4.36E+01	5.90E+04	3.35E+03	1.31E+04	3.22E+04	2.82E+04	2.84E+04	2.84E+04	5.00E+02
TP29	0.10-0.20																			10
TP28	0.50-0.60																			10
TP24	0.70-0.80																			10
TP21	0.70-0.80	0.001	0.002	0.001	0.001	0.001	1	9.1	26	98		0.001	0.001	0.001	2.6	3.1	10	43		220
TP21	1.20-1.30																			300
TP20	0.10-0.20																			10
TP20	1.20-1.30	0.001	0.002	0.001	0.001	0.001	1	2	8	8		0.001	0.001	0.001	1	2	10	10		10
TP10	0.60-0.70																			10
TP02	0.10-0.20																			16
TP02	0.50-0.60	0.001	0.002	0.001	0.001	0.001	1	2	8	8		0.001	0.001	0.001	1	2	10	10		10
TP06	0.40-0.50																			10
TP07	0.30-0.40																			410
TP07	2.20-2.30	0.001	0.002	0.001	0.001	0.001	1.1	6.4	23	210		0.001	0.001	0.001	5.7	17	50	470		1060
TS17	0.80-0.90																			10
TP09	0.40-0.50																			10
TP05	0.30-0.40																			91
TP05	0.80-0.90																			10
TP14	1.00-1.10																			27
TP15	1.40-1.50																			10
TP19	1.30-1.40																			18
TP25	0.40-0.50																			10
TP25	1.10-1.20																			10
TP22	0.40-0.50	0.001	0.002	0.001	0.001	0.001	1	2	8	8		0.001	0.001	0.001	1	2	10	10		10
TP12	1.10-1.20																			10
TP12	2.10-2.20	0.001	0.002	0.001	0.001	0.001	1	2	8	28		0.001	0.001	0.001	1	2	10	10		43

Location	Sample depth	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene (as surrogate marker)
Detection Limit		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
GSAC		2.04E+02	8.45E+04	8.50E+04	6.35E+04	2.19E+04	5.25E+05	2.26E+04	5.43E+04	1.71E+02	3.54E+02	4.52E+01	1.20E+03	3.60E+01	5.12E+02	3.60E+00	4.02E+03	1.54E+01
TP29	0.10-0.20	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP28	0.50-0.60	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP24	0.70-0.80	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP21	0.70-0.80	2.3	0.05	0.05	0.05	0.79	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP21	1.20-1.30	1.7	0.05	0.05	0.05	0.73	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP20	0.10-0.20	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP20	1.20-1.30	0.05	0.05	0.05	0.29	2.1	0.69	1.7	1.5	1.2	0.99	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP10	0.60-0.70	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP02	0.10-0.20	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP02	0.50-0.60	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP06	0.40-0.50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP07	0.30-0.40	3	0.05	0.05	0.19	1.6	0.05	0.39	0.4	0.2	0.33	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP07	2.20-2.30	1.2	0.05	0.05	0.16	0.57	0.05	0.16	0.17	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TS17	0.80-0.90	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP09	0.40-0.50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP05	0.30-0.40	2.3	0.05	0.05	0.33	3	0.21	0.49	0.51	0.3	0.41	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP05	0.80-0.90	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP14	1.00-1.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP15	1.40-1.50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP19	1.30-1.40	0.05	0.05	0.05	0.05	0.26	0.05	0.57	0.48	0.25	0.34	0.4	0.2	0.33	0.05	0.05	0.05	0.33
TP25	0.40-0.50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP25	1.10-1.20	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP22	0.40-0.50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP12	1.10-1.20	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP12	2.10-2.20	0.37	0.05	0.05	0.05	0.43	0.05	0.33	0.21	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	SGV	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02		6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06		2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01		1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07		2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02		2.30E+02	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01		3.41E+01	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03		9.09E+03	N/A
Copper	NR	NR	1.89E+05	9.50E+04		6.33E+04	N/A
Lead						2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04		3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03		1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06		1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03		6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08		7.33E+05	N/A
Cyanide (free)					4.30E+01	4.30E+01	N/A
Cyanide (Complex)					2.13E+02	2.13E+02	N/A
Phenol	8.34E+04	1.09E+06	4.07E+04	3.28E+06		2.65E+04	4.16E+04
Benzene	2.97E+01	1.17E+04	5.53E+02	4.87E+05		2.81E+01	1.22E+03
Toluene	6.91E+04	1.83E+07	4.25E+05	4.86E+08		5.92E+04	8.69E+02
Ethylbenzene	6.28E+03	1.30E+06	1.91E+05	2.57E+07		6.05E+03	5.18E+02
Total Xylene	6.43E+03	1.17E+06	3.43E+05	2.03E+07		6.28E+03	4.78E+02
TPH (EC5-6) aliphatic	3.31E+03	5.01E+06	4.77E+06	8.69E+08		3.31E+03	3.04E+02
TPH (>EC6-8) aliphatic	8.06E+03	7.82E+06	4.77E+06	8.69E+08		8.04E+03	1.44E+02
TPH (>EC8-10) aliphatic	2.09E+03	9.59E+05	9.53E+04	5.04E+07		2.04E+03	7.77E+01
TPH (>EC10-12) aliphatic	1.04E+04	2.13E+06	9.53E+04	5.04E+07		9.33E+03	4.75E+01
TPH (>EC12-16) aliphatic	8.68E+04	6.18E+06	9.53E+04	5.04E+07		4.51E+04	2.37E+01
TPH (>EC16-21) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08		1.59E+06	8.48E+00
TPH (>EC21-35) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08		1.59E+06	8.48E+00
TPH (>EC35-44) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08		1.59E+06	8.48E+00
TPH (>EC6-7) aromatic (benzene)	4.75E+01	1.17E+04	5.53E+02	4.87E+05		4.36E+01	1.22E+03
TPH (>EC7-8) aromatic (toluene)	6.88E+04	1.83E+07	4.25E+05	4.84E+08		5.90E+04	8.69E+02
TPH (>EC8-10) aromatic	3.70E+03	5.80E+05	3.81E+04	1.04E+07		3.35E+03	6.13E+02
TPH (>EC10-12) aromatic	2.02E+04	1.35E+06	3.81E+04	1.04E+07		1.31E+04	3.64E+02
TPH (>EC12-16) aromatic	2.25E+05	4.48E+06	3.81E+04	1.04E+07		3.22E+04	2.37E+01
TPH (>EC16-21) aromatic	4.59E+06	1.24E+07	2.86E+04	5.22E+06		2.82E+04	5.37E+01
TPH (>EC21-35) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06		2.84E+04	4.83E+00
TPH (>EC35-44) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06		2.84E+04	4.83E+00
Total TPH						5.00E+02	N/A
Naphthalene	2.06E+02	7.85E+04	3.64E+04	2.85E+05		2.04E+02	7.64E+01
Acenaphthylene	3.76E+05	2.62E+07	1.10E+05	2.09E+07		8.45E+04	8.61E+01
Acenaphthene	3.87E+05	2.74E+07	1.10E+05	2.09E+07		8.50E+04	5.70E+01
Fluorene	5.10E+05	2.44E+07	7.31E+04	1.39E+07		6.35E+04	3.09E+01
Phenanthrene	6.87E+05	1.31E+07	2.28E+04	4.34E+06		2.19E+04	3.60E+01
Anthracene	1.41E+07	3.07E+08	5.49E+05	1.04E+08		5.25E+05	1.17E+00
Fluoranthene	4.36E+06	2.63E+07	2.29E+04	4.34E+06		2.26E+04	1.89E+01
Pyrene	1.02E+07	5.98E+07	5.49E+04	1.04E+07		5.43E+04	2.20E+00
Benzo(a)anthracene	4.04E+03	7.01E+03	2.84E+02	5.21E+02		1.71E+02	1.71E+00
Chrysene	5.01E+04	1.22E+04	5.67E+02	1.04E+03		3.54E+02	4.40E-01
Benzo(b)fluoranthene	1.86E+04	2.18E+03	7.13E+01	1.32E+02		4.52E+01	1.22E+00
Benzo(k)fluoranthene	8.14E+05	6.83E+04	1.88E+03	3.48E+03		1.20E+03	6.87E-01
Benzo(a)pyrene	2.10E+04	1.90E+03	5.67E+01	1.04E+02		3.60E+01	9.11E-01
Indeno(123-cd)pyrene	1.75E+05	2.29E+04	8.10E+02	1.49E+03		5.12E+02	6.14E-02
Dibenzo(ah)anthracene	1.01E+03	2.36E+02	5.67E+00	1.04E+01		3.60E+00	3.93E-03
Benzo(g,h,i)perylene	4.64E+06	3.81E+05	6.29E+03	1.15E+04		4.02E+03	1.54E-02
Coal Tar (B(a)P as surrogate marker	2.10E+04	1.90E+03	1.83E+01	1.04E+02		1.54E+01	4.24E+02
Tetrachloroethene (PCE)	1.98E+01	7.63E+04	1.12E+04	2.83E+06		1.97E+01	4.24E+02
Trichloroethene (TCE)	1.31E+00	5.07E+03	9.53E+02	1.98E+05		1.30E+00	1.54E+03
cis-1,2-Dichloroethene	1.45E+01	5.26E+04	1.12E+04	2.04E+06		1.45E+01	3.94E+03
Vinyl Chloride (VC)	6.31E-02	7.47E+02	2.67E+01	1.04E+05		6.29E-02	1.36E+03
1,1,2,2-Tetrachloroethane (PCA)	2.98E+02	2.49E+05	1.10E+04	2.01E+06		2.90E+02	2.67E+03
1,1,1-Trichloroethane (TCA)	7.01E+02	3.81E+06	1.14E+06	2.07E+08		7.00E+02	1.43E+03
1,2-Dichloroethane	7.14E-01	1.68E+03	2.29E+02	4.17E+04		7.11E-01	3.41E+03
Carbon Tetrachloride	3.04E+00	1.65E+04	7.62E+03	8.85E+05		3.04E+00	1.52E+03
Carbon disulphide	1.16E+01	7.12E+04	9.53E+04	4.97E+06		1.16E+01	2.11E+03
		ASC exceeds soil saturation limit					

Appendix 11: Leachate Results Worksheets

*EQS Standard: Phenol and Benzene annual average of 300µg/l; Toluene 500µg/l for Freshwater, 400µg/l for Saltwater; 1,1,1-TCA 1,000µg/l.

Project Name:	Burnaston Cross
Project Number:	NTH2364
Assessment for:	Soil Leachate Assessment
Laboratory:	i2
Receptor:	Freshwater
Receptor Water Hardness:	50 to <100

[illegible]

Appendix 12: Groundwater Results Worksheets

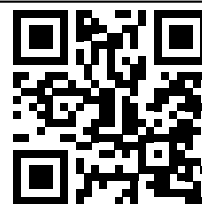
*EQS Standard: Phenol and Benzene annual average of 300µg/l; Toluene 500µg/l for Freshwater, 400µg/l for Saltwater; 1,1,1-TCA 1,000µg/l

Project Name:	Burmaston Cross
Project Number:	NTH2364
Assessment for:	Water Assessment
Laboratory:	12
Receptor:	Freshwater
Receptor Water Hardness:	100 to <200

	Contaminant	Units	Detection Limit	Guideline Concentration	Source	Number of Samples	Min	Max	BH01	BH02 (S)	BH02 (D)	BH03	BH04	BH05
Heavy Metals	Arsenic	µg/l	0.15	50	EQS Freshwater	6	0.76	73.50	73.50	20.20	0.76	48.50	44.70	1.32
	Barium	mg/l	0.06	700	UK DWS	6	29.00	140.00	29.00	100.00	31.00	79.00	32.00	140.00
	Beryllium	µg/l	0.10	None Available		6	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Cadmium	µg/l	0.02	0.09	EQS Freshwater	6	0.02	0.19	0.19	0.04	0.11	0.09	0.19	0.02
	Chromium III	µg/l	5.00	4.7	EQS Freshwater	6	5.00	29.00	5.00	29.00	5.00	5.00	5.00	5.00
	Chromium VI	µg/l	0.20	3.4	EQS Freshwater	6	0.20	30.00	0.70	30.00	0.30	0.20	0.20	0.20
	Copper	µg/l	0.50	1	EQS Freshwater	6	0.90	2.00	0.90	1.30	2.00	1.80	1.30	1.20
	Lead	µg/l	0.20	1.2	EQS Freshwater	6	0.20	0.30	0.20	0.20	0.20	0.20	0.30	0.20
	Mercury	µg/l	0.05	0.07	EQS Freshwater	6	0.05	0.21	0.21	0.07	0.05	0.14	0.05	0.05
	Nickel	µg/l	0.50	4	EQS Freshwater	6	1.30	3.40	1.30	1.50	3.20	2.70	3.40	3.00
	Selenium	µg/l	0.60	10	UK DWS	6	1.40	140.00	140.00	130.00	46.00	5.80	9.50	1.40
	Vanadium	µg/l	0.20	None Available		6	0.20	21.00	21.00	14.00	0.50	1.90	1.90	0.20
	Zinc	µg/l	0.50	10.9	EQS Freshwater	6	0.80	3.60	0.80	2.40	3.40	1.40	0.90	3.60
	Sulphate	mg/l	45	400	EQS Freshwater	6	79.00	907.00	461.00	89.60	487.00	771.00	907.00	79.00
Boron	mg/l	0.01	2000	EQS Freshwater	6	0.29	19.00	6.70	1.20	2.10	19.00	11.00	0.29	
Inorganics	pH					6	7.40	8.20	7.70	7.40	7.70	7.90	8.20	7.70
	Cyanide (total)	µg/l	10	1	EQS Freshwater	6	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Phenol*	µg/l	10	7.7	EQS Freshwater	6	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Benzene*	µg/l	1	10	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Ethylbenzene	µg/l	1	300	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Toluene*	µg/l	1	74	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Xylene	µg/l		30	EQS Freshwater	5	2.00	2.00		2.00	2.00	2.00	2.00	2.00
	Aliphatic C5-C6	µg/l	1	10	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aliphatic C6-C8	µg/l	1	10	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aliphatic C8-C10	µg/l	1	10	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aliphatic C10-C12	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aliphatic C12-C16	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aliphatic C16-C21	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aliphatic C21-C35	µg/l	10	10	UK DWS	5	10.00	170.00		10.00	10.00	170.00	91.00	10.00
Total Petroleum Hydrocarbons	Aromatic EC5-EC7	µg/l	1	10	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aromatic EC7-EC8	µg/l	1	74	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aromatic EC8-EC10	µg/l	1	10	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Aromatic EC10-EC12	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aromatic EC12-EC16	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aromatic EC16-EC21	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Aromatic EC21-EC35	µg/l	10	10	UK DWS	5	10.00	10.00		10.00	10.00	10.00	10.00	10.00
	Total TPH (EC5-EC35)	µg/l		10	EQS Freshwater	0	0.00	0.00						
	Acenaphthene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Acenaphthylene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Anthracene	µg/l	0.01	0.1	EQS Freshwater	6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Benzo(a)anthracene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Benzo(a)pyrene	µg/l	0.01	0.00017	EQS Freshwater	6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Benzo(b)fluoranthene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Benzo(g,h,i)perylene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Chrysene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Dibenzo(a,h)anthracene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Fluoranthene	µg/l	0.01	0.0063	EQS Freshwater	6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Fluorene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Indeno(1,2,3-c,d)pyrene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Naphthalene	µg/l	0.01	2	EQS Freshwater	6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Phenanthrene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Pyrene	µg/l	0.01	None Available		6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Total PAH	µg/l	0.16	0.1	WHO (Health)	6	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
	Tetrachloroethane (PCA)	µg/l	1	140	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,1,1-Trichloroethane (1,1,1-TCA)	µg/l	1	100	EQS Freshwater	5	1.00	19.60		19.60	1.00	1.00	1.00	1.00
	1,1,2-Trichloroethane (1,1,2-TCA)	µg/l	1	400	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
VOCs	1,1-Dichloroethene (1,1-DCE)	µg/l	1	30	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Trichlorobenzenes	µg/l		0.4	EQS Freshwater	5	2.00	2.00		2.00	2.00	2.00	2.00	2.00
	1,2-dibromo-3-chloropropane	µg/l	1	1	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,2-dichlorobenzene	µg/l	1	1000	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,2-Dichloroethane (1,2-DCA)	µg/l	1	10	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,2-dichloropropane	µg/l	1	20	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,3-Dichloropropene	µg/l		20	UK DWS	5	2.00	2.00		2.00	2.00	2.00	2.00	2.00
	1,4-dichlorobenzene	µg/l	1	300	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Benzene	µg/l	1	10	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	cis-1,2-dichloroethylene (Cis-DCE)	µg/l	1	50	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	cis-1,3-dichloropropene	µg/l	1	20	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Ethylbenzene	µg/l	1	300	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Hexachlorobutadiene	µg/l	1	0.6	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Xylene	µg/l		30	EQS Freshwater	5	2.00	2.00		2.00	2.00	2.00	2.00	2.00
SVOCs	Styrene	µg/l	1	50	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Tetrachloroethene (PCE)	µg/l	1	10	EQS Freshwater	5	1.00	1.80		1.00	1.80	1.00	1.00	1.00
	Toluene	µg/l	1	74	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Trans-1,2-dichloroethylene (Trans-DCE)	µg/l	1	50	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Trans-1,3-dichloropropene	µg/l	1	20	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Trichloroethene (TCE)	µg/l	1	10	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Vinyl Chloride	µg/l	1	5	UK DWS	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	Dichloromethane	µg/l	1	20	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	1,2,4-Trichlorobenzene	µg/l	1	0.4	EQS Freshwater	5	1.00	1.00		1.00	1.00	1.00	1.00	1.00
	2,4,6-Trichlorophenol	µg/l	0.05	200	UK DWS	5	0.05	0.05		0.05	0.05	0.05	0.05	0.05
	2,4-Dichlorophenol	µg/l	0.05	4.2	EQS Freshwater	5	0.05	0.05		0.05	0.05	0.05	0.05	0.05
	Hexachlorobenzene	µg/l	0.05	0.05	EQS Freshwater	5	0.05	0.05		0.05	0.05	0.05	0.05	0.05
	Phenol	µg/l	0.05	7.7	EQS Freshwater	5	0.05	0.05		0.05	0.05	0.05	0.05	0.05

Appendix 13: Hazwasteonline Result Sheets

Waste Classification Report



85G6A-DAR3K-F9LU4

Job name

NTH2364 Burnaston Cross

Description/Comments

Project

NTH2364

Site

Burnaston Cross

Waste Stream Template

BWB Contaminated Land Suite WM3

Classified by

Name:
Timothy Hull
Date:
19/03/2018 10:33:12 UTC
Telephone:
0115 924 7331

Company:
BWB Consulting Ltd
5th Floor, Waterfront House
Station Street
Nottingham
NG2 3DQ

Report

Created by: Timothy Hull
Created date: 19/03/2018 10:33 UTC

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP29	0.10-0.20	Non Hazardous		3
2	TP28	0.50-0.60	Non Hazardous		5
3	TP24	0.70-0.80	Non Hazardous		7
4	TP21	0.70-0.80	Non Hazardous		9
5	TP21[1]	1.20-1.30	Non Hazardous		12
6	TP21[2]	1.70-1.80	Non Hazardous		15
7	TP20	0.10-0.20	Non Hazardous		16
8	TP20[1]	1.20-1.30	Non Hazardous		18
9	TP10	0.60-0.70	Non Hazardous		21
10	TP02	0.10-0.20	Non Hazardous		23
11	TP02[1]	0.50-0.60	Non Hazardous		26
12	TP06	0.40-0.50	Non Hazardous		29
13	TP07	0.30-0.40	Non Hazardous		31
14	TP07[1]	2.20-2.30	Non Hazardous		34
15	TS17	0.80-0.90	Non Hazardous		37
16	TP09	0.40-0.50	Non Hazardous		39

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
17	TP05	0.30-0.40	Non Hazardous		41
18	TP05[1]	0.80-0.90	Non Hazardous		44
19	TP14	1.00-1.10	Non Hazardous		46
20	TP15	1.40-1.50	Non Hazardous		49
21	TP19	1.30-1.40	Non Hazardous		51
22	TP25	0.40-0.50	Non Hazardous		54
23	TP25[1]	1.10-1.20	Non Hazardous		56
24	TP22	0.40-0.50	Non Hazardous		58
25	TP12	1.10-1.20	Non Hazardous		61
26	TP12[1]	2.10-2.20	Non Hazardous		63

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	66
Appendix B: Rationale for selection of metal species	68
Appendix C: Version	69

Classification of sample: TP29

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP29	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.10-0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				☒					
2	arsenic { arsenic trioxide }				7.8 mg/kg	1.32	10.299 mg/kg	0.00103 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.9 mg/kg	2.775	2.498 mg/kg	0.00025 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.4 mg/kg	13.43	5.372 mg/kg	0.000537 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				16 mg/kg	1.126	18.014 mg/kg	0.0018 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	54 mg/kg	1.56	84.23 mg/kg	0.0054 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				12 mg/kg	1.579	18.954 mg/kg	0.0019 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				64 mg/kg	2.469	158.035 mg/kg	0.0158 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.2	pH		7.2	pH	7.2 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0309 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP28

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP28	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50-0.60 m		
Moisture content:		
15%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 15% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				1.7 mg/kg	2.775	4.718 mg/kg	0.000472 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				48 mg/kg	1.462	70.155 mg/kg	0.00702 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				27 mg/kg	1.126	30.399 mg/kg	0.00304 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	24 mg/kg	1.56	37.436 mg/kg	0.0024 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				68 mg/kg	1.579	107.406 mg/kg	0.0107 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				100 mg/kg	2.469	246.93 mg/kg	0.0247 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.7	pH		7.7	pH	7.7 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0523 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP24	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.70-0.80 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				2.1 mg/kg	2.775	5.828 mg/kg	0.000583 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				39 mg/kg	1.462	57.001 mg/kg	0.0057 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				26 mg/kg	1.126	29.273 mg/kg	0.00293 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	21 mg/kg	1.56	32.756 mg/kg	0.0021 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				54 mg/kg	1.579	85.293 mg/kg	0.00853 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				71 mg/kg	2.469	175.32 mg/kg	0.0175 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.9	pH		7.9	pH	7.9 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0422 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP21

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP21	LoW Code:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.70-0.80 m	Chapter:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	20%	Entry:	
	(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 20% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				69 mg/kg	1.32	91.102 mg/kg	0.00911 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				2.8 mg/kg	2.775	7.771 mg/kg	0.000777 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				5.7 mg/kg	13.43	76.551 mg/kg	0.00766 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				46 mg/kg	1.462	67.232 mg/kg	0.00672 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				150 mg/kg	1.126	168.883 mg/kg	0.0169 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	70 mg/kg	1.56	109.187 mg/kg	0.007 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				70 mg/kg	1.579	110.565 mg/kg	0.0111 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				390 mg/kg	2.469	963.026 mg/kg	0.0963 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				8.2	pH		8.2	pH	8.2 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				220	mg/kg		220	mg/kg	0.022 %		
			TPH									
16	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
17	ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
18	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	xylene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
21	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
22	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
23	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
24	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
25	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
26	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
27	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
28	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
29	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
30	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
31	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
32	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
33	naphthalene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
	601-052-00-2	202-049-5	91-20-3									
34	phenanthrene				0.79	mg/kg		0.79	mg/kg	0.000079 %		
		201-581-5	85-01-8									
35	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0									
36	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
37	dichloroethane { 1,1-dichloroethane and 1,2-dichloroethane (combined) }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									
38	polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
39	tetrachloroethylene				<1	mg/kg	<1	mg/kg	<0.0001 %	<LOD
	602-028-00-4	204-825-9	127-18-4							
40	tetrachloromethane (carbon tetrachloride)				<1	mg/kg	<1	mg/kg	<0.0001 %	<LOD
	602-008-00-5	200-262-8	56-23-5							
41	trichloroethylene; trichloroethene				<1	mg/kg	<1	mg/kg	<0.0001 %	<LOD
	602-027-00-9	201-167-4	79-01-6							
42	vinyl chloride				<1	mg/kg	<1	mg/kg	<0.0001 %	<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.179 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.022%)

Classification of sample: TP21[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP21[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.20-1.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
22%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	confirm TPH has NOT arisen from diesel or petrol				☒							
2	arsenic { arsenic trioxide }				94	mg/kg	1.32	124.111	mg/kg	0.0124 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				3.8	mg/kg	2.775	10.546	mg/kg	0.00105 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.7	mg/kg	13.43	22.831	mg/kg	0.00228 %		
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide }				53	mg/kg	1.462	77.462	mg/kg	0.00775 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				160	mg/kg	1.126	180.142	mg/kg	0.018 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	79	mg/kg	1.56	123.225	mg/kg	0.0079 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				91	mg/kg	1.579	143.734	mg/kg	0.0144 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	034-002-00-8											
12	zinc { zinc sulphate }				610	mg/kg	2.469	1506.271	mg/kg	0.151 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value		MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number										
13		pH				6.5	pH		6.5	pH	6.5 pH			
14		cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD	
	006-007-00-5													
15		TPH (C6 to C40) petroleum group				300	mg/kg		300	mg/kg	0.03 %			
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	201-469-6	83-32-9												
17		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	205-917-1	208-96-8												
18		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	204-371-1	120-12-7												
19		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-033-00-9	200-280-6	56-55-3											
20		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-032-00-3	200-028-5	50-32-8											
21		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-034-00-4	205-911-9	205-99-2											
22		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	205-883-8	191-24-2												
23		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-036-00-5	205-916-6	207-08-9											
24		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-048-00-0	205-923-4	218-01-9											
25		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	601-041-00-2	200-181-8	53-70-3											
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	205-912-4	206-44-0												
27		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	201-695-5	86-73-7												
28		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD	
	205-893-2	193-39-5												
29		naphthalene				1.7	mg/kg		1.7	mg/kg	0.00017 %			
	601-052-00-2	202-049-5	91-20-3											
30		phenanthrene				0.73	mg/kg		0.73	mg/kg	0.000073 %			
	201-581-5	85-01-8												
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD	
	604-001-00-2	203-632-7	108-95-2											
Total:												0.245 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.03%)

Classification of sample: TP21[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP21[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.70-1.80 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				☒					
Total:								0%		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: TP20

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP20	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.10-0.20 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)	
Moisture content:	9.6%			
	(no correction)			

Hazard properties

None identified

Determinands

Moisture content: 9.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	confirm TPH has NOT arisen from diesel or petrol				☒							
2	arsenic { arsenic trioxide }				40	mg/kg	1.32	52.813	mg/kg	0.00528 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.3	mg/kg	2.775	3.608	mg/kg	0.000361 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.8	mg/kg	13.43	24.174	mg/kg	0.00242 %		
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide }				22	mg/kg	1.462	32.154	mg/kg	0.00322 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				31	mg/kg	1.126	34.903	mg/kg	0.00349 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	36	mg/kg	1.56	56.153	mg/kg	0.0036 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				27	mg/kg	1.579	42.646	mg/kg	0.00426 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	034-002-00-8											
12	zinc { zinc sulphate }				51	mg/kg	2.469	125.934	mg/kg	0.0126 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	pH				6.8 pH		6.8	pH	6.8 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5										
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH								
16	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
17	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
18	anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7								
19	benzo[a]anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3								
20	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8								
21	benzo[b]fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2								
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2								
23	benzo[k]fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9								
24	chrysene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9								
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3								
26	fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0								
27	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5								
29	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
30	phenanthrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8								
31	phenol				<1 mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.0369 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP20[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP20[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.20-1.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
22%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				82 mg/kg	1.32	108.267 mg/kg	0.0108 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				5.4 mg/kg	2.775	14.987 mg/kg	0.0015 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				17 mg/kg	13.43	228.31 mg/kg	0.0228 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				37 mg/kg	1.462	54.078 mg/kg	0.00541 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				110 mg/kg	1.126	123.848 mg/kg	0.0124 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	90 mg/kg	1.56	140.383 mg/kg	0.009 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				65 mg/kg	1.579	102.667 mg/kg	0.0103 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				96 mg/kg	2.469	237.052 mg/kg	0.0237 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH		PH		8.2	pH		8.2	pH	8.2 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
17	ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
18	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	xylene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
21	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
22	anthracene				0.69	mg/kg		0.69	mg/kg	0.000069 %		
		204-371-1	120-12-7									
23	benzo[a]anthracene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
	601-033-00-9	200-280-6	56-55-3									
24	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
25	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
26	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
27	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
28	chrysene				0.99	mg/kg		0.99	mg/kg	0.000099 %		
	601-048-00-0	205-923-4	218-01-9									
29	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
30	fluoranthene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
		205-912-4	206-44-0									
31	fluorene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
		201-695-5	86-73-7									
32	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
33	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
34	phenanthrene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
		201-581-5	85-01-8									
35	pyrene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
		204-927-3	129-00-0									
36	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
37	dichloroethane { 1,1-dichloroethane and 1,2-dichloroethane (combined) }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									
38	polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
39		tetrachloroethylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		602-028-00-4	204-825-9	127-18-4							
40		tetrachloromethane (carbon tetrachloride)				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		602-008-00-5	200-262-8	56-23-5							
41		trichloroethylene; trichloroethene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		602-027-00-9	201-167-4	79-01-6							
42		vinyl chloride				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		602-023-00-7	200-831-0	75-01-4							
Total:									0.0993 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP10

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP10	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.60-0.70 m		
Moisture content:		
8.3%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 8.3% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				4.3 mg/kg	1.32	5.677 mg/kg	0.000568 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.33 mg/kg	2.775	0.916 mg/kg	0.0000916 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.9 mg/kg	13.43	25.517 mg/kg	0.00255 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				4.6 mg/kg	1.126	5.179 mg/kg	0.000518 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	15 mg/kg	1.56	23.397 mg/kg	0.0015 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				10 mg/kg	1.579	15.795 mg/kg	0.00158 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				29 mg/kg	2.469	71.61 mg/kg	0.00716 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.7	pH		7.7	pH	7.7 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0173 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP02

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP02	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.10-0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				9.8 mg/kg	1.32	12.939 mg/kg	0.00129 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				0.59 mg/kg	2.775	1.637 mg/kg	0.000164 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				19 mg/kg	1.462	27.77 mg/kg	0.00278 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	20.266 mg/kg	0.00203 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	44 mg/kg	1.56	68.632 mg/kg	0.0044 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				14 mg/kg	1.579	22.113 mg/kg	0.00221 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				85 mg/kg	2.469	209.89 mg/kg	0.021 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.9	pH		7.9	pH	7.9 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				16	mg/kg		16	mg/kg	0.0016 %		
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0369 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0016%)

Classification of sample: TP02[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP02[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50-0.60 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
4%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 4% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				9.7 mg/kg	1.32	12.807 mg/kg	0.00128 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				0.62 mg/kg	2.775	1.721 mg/kg	0.000172 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				20 mg/kg	1.462	29.231 mg/kg	0.00292 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	12.385 mg/kg	0.00124 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	16 mg/kg	1.56	24.957 mg/kg	0.0016 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				29 mg/kg	1.579	45.805 mg/kg	0.00458 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				46 mg/kg	2.469	113.588 mg/kg	0.0114 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH		PH		7.8	pH		7.8	pH	7.8 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
17	ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
18	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	xylene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
21	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
22	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
23	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
24	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
25	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
26	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
27	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
28	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
29	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
30	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
31	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
32	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
33	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
34	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
35	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0									
36	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
37	dichloroethane { 1,1-dichloroethane and 1,2-dichloroethane (combined) }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									
38	polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
39	tetrachloroethylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
40	tetrachloromethane (carbon tetrachloride)				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
41	trichloroethylene; trichloroethene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
42	vinyl chloride				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.0264 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP06

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP06	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.40-0.50 m		
Moisture content:		
8.7%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 8.7% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.57 mg/kg	2.775	1.582 mg/kg	0.000158 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				18 mg/kg	1.462	26.308 mg/kg	0.00263 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				14 mg/kg	1.126	15.762 mg/kg	0.00158 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	22 mg/kg	1.56	34.316 mg/kg	0.0022 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				16 mg/kg	1.579	25.272 mg/kg	0.00253 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				33 mg/kg	2.469	81.487 mg/kg	0.00815 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				7.6	pH		7.6	pH	7.6 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0212 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP07

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP07	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30-0.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.6%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				✔						
2	arsenic { arsenic trioxide }				140 mg/kg	1.32	184.846 mg/kg	0.0185 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				1.2 mg/kg	2.775	3.33 mg/kg	0.000333 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				26 mg/kg	1.462	38 mg/kg	0.0038 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				59 mg/kg	1.126	66.427 mg/kg	0.00664 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	91 mg/kg	1.56	141.943 mg/kg	0.0091 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				38 mg/kg	1.579	60.021 mg/kg	0.006 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				41 mg/kg	2.469	101.241 mg/kg	0.0101 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	● pH		PH		5.6	pH		5.6	pH	5.6 pH		
14	● cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	● TPH (C6 to C40) petroleum group		TPH		610	mg/kg		610	mg/kg	0.061 %		
16	● acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
17	● acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
19	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.2	mg/kg		0.2	mg/kg	0.00002 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24	chrysene	601-048-00-0	205-923-4	218-01-9	0.33	mg/kg		0.33	mg/kg	0.000033 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	● fluoranthene	205-912-4	206-44-0		0.39	mg/kg		0.39	mg/kg	0.000039 %		
27	● fluorene	201-695-5	86-73-7		0.19	mg/kg		0.19	mg/kg	0.000019 %		
28	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	naphthalene	601-052-00-2	202-049-5	91-20-3	3	mg/kg		3	mg/kg	0.0003 %		
30	● phenanthrene	201-581-5	85-01-8		1.6	mg/kg		1.6	mg/kg	0.00016 %		
31	phenol	604-001-00-2	203-632-7	108-95-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
Total:										0.118 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.061%)

Classification of sample: TP07[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP07[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2.20-2.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **16% No Moisture Correction applied (MC)**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1		confirm TPH has NOT arisen from diesel or petrol				☒					
2		arsenic { arsenic trioxide }			59	mg/kg	1.32	77.899 mg/kg	0.00779 %		
		033-003-00-0	215-481-4	1327-53-3							
3		beryllium { beryllium oxide }			1.4	mg/kg	2.775	3.885 mg/kg	0.000389 %		
		004-003-00-8	215-133-1	1304-56-9							
4		boron {  boron tribromide/trichloride/trifluoride (combined) }			12	mg/kg	13.43	161.16 mg/kg	0.0161 %		
				10294-33-4, 10294-34-5, 7637-07-2							
5		cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
		048-010-00-4	215-147-8	1306-23-6							
6		chromium {  chromium(III) oxide }			31	mg/kg	1.462	45.308 mg/kg	0.00453 %		
			215-160-9	1308-38-9							
7		copper {  dicopper oxide; copper (I) oxide }			62	mg/kg	1.126	69.805 mg/kg	0.00698 %		
		029-002-00-X	215-270-7	1317-39-1							
8		lead { lead chromate }			1	37 mg/kg	1.56	57.713 mg/kg	0.0037 %		
		082-004-00-2	231-846-0	7758-97-6							
9		mercury { mercury dichloride }			<0.3	mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
10		nickel { nickel dihydroxide }			51	mg/kg	1.579	80.554 mg/kg	0.00806 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }			<1	mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8									
12		zinc { zinc sulphate }			90	mg/kg	2.469	222.237 mg/kg	0.0222 %		
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH		PH		7.7	pH		7.7	pH	7.7 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				1000	mg/kg		1000	mg/kg	0.1 %		
			TPH									
16	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
17	ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
18	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	xylene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
21	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
22	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
23	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
24	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
25	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
26	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
27	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
28	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
29	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
30	fluoranthene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		205-912-4	206-44-0									
31	fluorene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		201-695-5	86-73-7									
32	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
33	naphthalene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
	601-052-00-2	202-049-5	91-20-3									
34	phenanthrene				0.57	mg/kg		0.57	mg/kg	0.000057 %		
		201-581-5	85-01-8									
35	pyrene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
		204-927-3	129-00-0									
36	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
37	dichloroethane { 1,1-dichloroethane and 1,2-dichloroethane (combined) }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									
38	polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
39	tetrachloroethylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
40	tetrachloromethane (carbon tetrachloride)				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
41	trichloroethylene; trichloroethene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
42	vinyl chloride				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.172 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.1%)

Classification of sample: TS17

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TS17	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.80-0.90 m		
Moisture content:		
19%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				☒					
2	arsenic { arsenic trioxide }				150 mg/kg	1.32	198.049 mg/kg	0.0198 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				4.8 mg/kg	2.775	13.322 mg/kg	0.00133 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				5.8 mg/kg	13.43	77.894 mg/kg	0.00779 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				54 mg/kg	1.462	78.924 mg/kg	0.00789 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				93 mg/kg	1.126	104.708 mg/kg	0.0105 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	80 mg/kg	1.56	124.785 mg/kg	0.008 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				70 mg/kg	1.579	110.565 mg/kg	0.0111 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				120 mg/kg	2.469	296.316 mg/kg	0.0296 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				8.4	pH		8.4	pH	8.4 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0977 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP09

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP09	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40-0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				✔						
2	arsenic { arsenic trioxide }				100 mg/kg	1.32	132.033 mg/kg	0.0132 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				3.7 mg/kg	2.775	10.269 mg/kg	0.00103 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				3.9 mg/kg	13.43	52.377 mg/kg	0.00524 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				42 mg/kg	1.462	61.385 mg/kg	0.00614 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				88 mg/kg	1.126	99.078 mg/kg	0.00991 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	51 mg/kg	1.56	79.551 mg/kg	0.0051 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				60 mg/kg	1.579	94.77 mg/kg	0.00948 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				56 mg/kg	2.469	138.281 mg/kg	0.0138 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	● pH		PH		8.4	pH		8.4	pH	8.4 pH		
14	● cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	● TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
16	● acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
17	● acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
19	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	● fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27	● fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30	● phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31	phenol	604-001-00-2	203-632-7	108-95-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
Total:										0.0656 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP05

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP05	LoW Code:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.30-0.40 m	Chapter:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	9.6%	Entry:	
	(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 9.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				81 mg/kg	1.32	106.946 mg/kg	0.0107 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.74 mg/kg	2.775	2.054 mg/kg	0.000205 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				3.4 mg/kg	13.43	45.662 mg/kg	0.00457 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				55 mg/kg	1.126	61.924 mg/kg	0.00619 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	70 mg/kg	1.56	109.187 mg/kg	0.007 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				22 mg/kg	1.579	34.749 mg/kg	0.00347 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				31 mg/kg	2.469	76.548 mg/kg	0.00765 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				3.9	pH		3.9	pH	3.9 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				91	mg/kg		91	mg/kg	0.0091 %		
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		204-371-1	120-12-7									
19	benzo[a]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
		205-912-4	206-44-0									
27	fluorene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				3	mg/kg		3	mg/kg	0.0003 %		
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.052 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0091%)

Classification of sample: TP05[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP05[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.80-0.90 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **10% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				110 mg/kg	1.32	145.236 mg/kg	0.0145 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				3.5 mg/kg	2.775	9.714 mg/kg	0.000971 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				19 mg/kg	13.43	255.17 mg/kg	0.0255 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				52 mg/kg	1.462	76.001 mg/kg	0.0076 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				96 mg/kg	1.126	108.085 mg/kg	0.0108 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	60 mg/kg	1.56	93.589 mg/kg	0.006 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				60 mg/kg	1.579	94.77 mg/kg	0.00948 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				99 mg/kg	2.469	244.46 mg/kg	0.0244 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	● pH		PH		6.4 pH		6.4 pH	6.4 pH			
14	● cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	● TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
16	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
17	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
19	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
24	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
26	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
27	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
28	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
29	naphthalene	601-052-00-2	202-049-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
30	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
31	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.101 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP14

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP14	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	1.00-1.10 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	7.6%			
	(no correction)			

Hazard properties

None identified

Determinands

Moisture content: 7.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				32 mg/kg	1.32	42.25 mg/kg		0.00423 %		
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				1.5 mg/kg	2.775	4.163 mg/kg		0.000416 %		
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.7 mg/kg	13.43	22.831 mg/kg		0.00228 %		
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg		0.00004 %		
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				17 mg/kg	1.462	24.846 mg/kg		0.00248 %		
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				54 mg/kg	1.126	60.798 mg/kg		0.00608 %		
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	53 mg/kg	1.56	82.67 mg/kg		0.0053 %		
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				30 mg/kg	1.579	47.385 mg/kg		0.00474 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				130 mg/kg	2.469	321.009 mg/kg		0.0321 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				6.8	pH		6.8	pH	6.8 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				27	mg/kg		27	mg/kg	0.0027 %		
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.061 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0027%)

Classification of sample: TP15

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP15	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.40-1.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
4.3%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 4.3% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				7.6 mg/kg	1.32	10.034 mg/kg	0.001 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.65 mg/kg	2.775	1.804 mg/kg	0.00018 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	19.14 mg/kg	0.00191 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	15 mg/kg	1.56	23.397 mg/kg	0.0015 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				15 mg/kg	1.579	23.692 mg/kg	0.00237 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				48 mg/kg	2.469	118.526 mg/kg	0.0119 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				6.8	pH		6.8	pH	6.8 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0237 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP19

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP19	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.30-1.40 m		
Moisture content:		
18%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				6.4 mg/kg	1.32	8.45 mg/kg	0.000845 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				0.33 mg/kg	2.775	0.916 mg/kg	0.0000916 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.4 mg/kg	13.43	18.802 mg/kg	0.00188 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				14 mg/kg	1.462	20.462 mg/kg	0.00205 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				16 mg/kg	1.126	18.014 mg/kg	0.0018 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	31 mg/kg	1.56	48.354 mg/kg	0.0031 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				11 mg/kg	1.579	17.374 mg/kg	0.00174 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				61 mg/kg	2.469	150.627 mg/kg	0.0151 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	● pH		PH		6.4	pH		6.4	pH	6.4 pH		
14	● cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	● TPH (C6 to C40) petroleum group		TPH		18	mg/kg		18	mg/kg	0.0018 %		
16	● acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
17	● acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
19	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.25	mg/kg		0.25	mg/kg	0.000025 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.33	mg/kg		0.33	mg/kg	0.000033 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.4	mg/kg		0.4	mg/kg	0.00004 %		
22	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.2	mg/kg		0.2	mg/kg	0.00002 %		
24	chrysene	601-048-00-0	205-923-4	218-01-9	0.34	mg/kg		0.34	mg/kg	0.000034 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	● fluoranthene	205-912-4	206-44-0		0.57	mg/kg		0.57	mg/kg	0.000057 %		
27	● fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30	● phenanthrene	201-581-5	85-01-8		0.26	mg/kg		0.26	mg/kg	0.000026 %		
31	phenol	604-001-00-2	203-632-7	108-95-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
Total:										0.0292 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0018%)

Classification of sample: TP25

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP25	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.40-0.50 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	14%			
	(no correction)			

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number								
1		confirm TPH has NOT arisen from diesel or petrol				☒						
2		arsenic { arsenic trioxide }			70	mg/kg	1.32	92.423	mg/kg	0.00924 %		
		033-003-00-0	215-481-4	1327-53-3								
3		beryllium { beryllium oxide }			3.2	mg/kg	2.775	8.881	mg/kg	0.000888 %		
		004-003-00-8	215-133-1	1304-56-9								
4		boron {  boron tribromide/trichloride/trifluoride (combined) }			3.6	mg/kg	13.43	48.348	mg/kg	0.00483 %		
				10294-33-4, 10294-34-5, 7637-07-2								
5		cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %	<LOD
		048-010-00-4	215-147-8	1306-23-6								
6		chromium {  chromium(III) oxide }			37	mg/kg	1.462	54.078	mg/kg	0.00541 %		
			215-160-9	1308-38-9								
7		copper {  dicopper oxide; copper (I) oxide }			82	mg/kg	1.126	92.323	mg/kg	0.00923 %		
		029-002-00-X	215-270-7	1317-39-1								
8		lead { lead chromate }			1	50	mg/kg	1.56	77.991	mg/kg	0.005 %	
		082-004-00-2	231-846-0	7758-97-6								
9		mercury { mercury dichloride }			<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %	<LOD	
		080-010-00-X	231-299-8	7487-94-7								
10		nickel { nickel dihydroxide }			55	mg/kg	1.579	86.872	mg/kg	0.00869 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }			<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8										
12		zinc { zinc sulphate }			90	mg/kg	2.469	222.237	mg/kg	0.0222 %		
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	pH				7.6 pH		7.6	pH	7.6 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5										
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH								
16	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
17	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
18	anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7								
19	benzo[a]anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3								
20	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8								
21	benzo[b]fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2								
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2								
23	benzo[k]fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9								
24	chrysene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9								
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3								
26	fluoranthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0								
27	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5								
29	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
30	phenanthrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8								
31	phenol				<1 mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.0672 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP25[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP25[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.10-1.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.6%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				☑						
2	arsenic { arsenic trioxide }				7 mg/kg	1.32	9.242 mg/kg	0.000924 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				0.73 mg/kg	2.775	2.026 mg/kg	0.000203 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				3.9 mg/kg	13.43	52.377 mg/kg	0.00524 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				14 mg/kg	1.462	20.462 mg/kg	0.00205 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	24.77 mg/kg	0.00248 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	15 mg/kg	1.56	23.397 mg/kg	0.0015 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				17 mg/kg	1.579	26.851 mg/kg	0.00269 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				36 mg/kg	2.469	88.895 mg/kg	0.00889 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	● pH		PH		8 pH		8 pH	8pH			
14	● cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	● TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
16	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
17	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
19	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
24	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
26	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
27	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
28	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
29	naphthalene	601-052-00-2	202-049-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
30	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
31	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.0256 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP22

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	TP22	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.40-0.50 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	8.3%			
	(no correction)			

Hazard properties

None identified

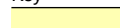
Determinands

Moisture content: 8.3% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	confirm TPH has NOT arisen from diesel or petrol				☒							
2	arsenic { arsenic trioxide }				29	mg/kg	1.32	38.289	mg/kg	0.00383 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.7	mg/kg	2.775	4.718	mg/kg	0.000472 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.6	mg/kg	13.43	21.488	mg/kg	0.00215 %		
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide }				23	mg/kg	1.462	33.616	mg/kg	0.00336 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				48	mg/kg	1.126	54.043	mg/kg	0.0054 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	51	mg/kg	1.56	79.551	mg/kg	0.0051 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				29	mg/kg	1.579	45.805	mg/kg	0.00458 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	034-002-00-8											
12	zinc { zinc sulphate }				88	mg/kg	2.469	217.298	mg/kg	0.0217 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
13	pH		PH		7.9 pH		7.9 pH	7.9 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
16	benzene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
17	ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	toluene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	xylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
20	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
21	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
22	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
23	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
24	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
25	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
26	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
27	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
29	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
30	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
31	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
34	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
35	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0487 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP12

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP12	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.10-1.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.1%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.1% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	confirm TPH has NOT arisen from diesel or petrol				✔					
2	arsenic { arsenic trioxide }				7.5 mg/kg	1.32	9.902 mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				0.28 mg/kg	2.775	0.777 mg/kg	0.0000777 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.7 mg/kg	13.43	9.401 mg/kg	0.00094 %		
			10294-33-4, 10294-34-5, 7637-07-2							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium { chromium(III) oxide }				38 mg/kg	1.462	55.539 mg/kg	0.00555 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				43 mg/kg	1.126	48.413 mg/kg	0.00484 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	16 mg/kg	1.56	24.957 mg/kg	0.0016 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel dihydroxide }				21 mg/kg	1.579	33.169 mg/kg	0.00332 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc sulphate }				25 mg/kg	2.469	61.732 mg/kg	0.00617 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	pH				6.5	pH		6.5	pH	6.5 pH		
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
16	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
19	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
27	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
31	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0252 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP12[1]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP12[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2.10-2.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	confirm TPH has NOT arisen from diesel or petrol				✔						
2	arsenic { arsenic trioxide }				7.4 mg/kg	1.32	9.77 mg/kg	0.000977 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				0.39 mg/kg	2.775	1.082 mg/kg	0.000108 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { boron tribromide/trichloride/trifluoride (combined) }				2.9 mg/kg	13.43	38.947 mg/kg	0.00389 %			
			10294-33-4, 10294-34-5, 7637-07-2								
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
6	chromium { chromium(III) oxide }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %			
		215-160-9	1308-38-9								
7	copper { dicopper oxide; copper (I) oxide }				45 mg/kg	1.126	50.665 mg/kg	0.00507 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	24 mg/kg	1.56	37.436 mg/kg	0.0024 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel dihydroxide }				21 mg/kg	1.579	33.169 mg/kg	0.00332 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc sulphate }				41 mg/kg	2.469	101.241 mg/kg	0.0101 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	● pH		PH		7.1	pH		7.1	pH	7.1 pH		
14	● cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	● TPH (C6 to C40) petroleum group		TPH		43	mg/kg		43	mg/kg	0.0043 %		
16	benzene	601-020-00-8	200-753-7	71-43-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
17	● ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
18	toluene	601-021-00-3	203-625-9	108-88-3	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
19	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
20	● acenaphthene		201-469-6	83-32-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21	● acenaphthylene		205-917-1	208-96-8	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22	● anthracene		204-371-1	120-12-7	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	● benzo[ghi]perylene		205-883-8	191-24-2	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30	● fluoranthene		205-912-4	206-44-0	0.33	mg/kg		0.33	mg/kg	0.000033 %		
31	● fluorene		201-695-5	86-73-7	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32	● indeno[123-cd]pyrene		205-893-2	193-39-5	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33	naphthalene	601-052-00-2	202-049-5	91-20-3	0.37	mg/kg		0.37	mg/kg	0.000037 %		
34	● phenanthrene		201-581-5	85-01-8	0.43	mg/kg		0.43	mg/kg	0.000043 %		
35	● pyrene		204-927-3	129-00-0	0.21	mg/kg		0.21	mg/kg	0.000021 %		
36	phenol	604-001-00-2	203-632-7	108-95-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
37	● dichloroethane { ● 1,1-dichloroethane and 1,2-dichloroethane (combined) }		203-458-1, 200-863-5	107-06-2, 75-34-3	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
38	● polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
39	tetrachloroethylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
40	tetrachloromethane (carbon tetrachloride)				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
41	trichloroethylene; trichloroethene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
42	vinyl chloride				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.0354 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Low concentrations of low volatility hydrocarbons. Flash point assumed to be >100C

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0043%)

Appendix A: Classifier defined and non CLP determinands

confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: None.
Hazard Statements: None.

boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Conversion factor: 13.43
Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06/08/2015
Risk Phrases: C R35 , C R34 , T+ R26/28 , R14
Hazard Statements: Skin Corr. 1B H314 , Skin Corr. 1A H314 , Acute Tox. 2 H300 , Acute Tox. 2 H330 , EUH014

chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17/07/2015
Risk Phrases: R61 , R60 , R50/53 , R43 , R42 , R38 , R37 , R36 , R22 , R20
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

dicopper oxide; copper (I) oxide (EC Number: 215-270-7, CAS Number: 1317-39-1)

CLP index number: 029-002-00-X
Description/Comments: M-factor for long-term aquatic hazard not included as per paragraph (5), ATP9
Data source: Regulation (EU) 2016/1179 of 19 July 2016 (ATP9)
Additional Risk Phrases: N R50/53 >= 0.25 % , N R50/53
Additional Hazard Statement(s): None.
Reason for additional Hazards Statement(s)/Risk Phrase(s):
10/10/2016 - N R50/53 >= 0.25 % risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases
10/10/2016 - N R50/53 risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: None.
Hazard Statements: None.

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Risk Phrases: None.
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s)/Risk Phrase(s):
14/12/2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: R65 , R63 , R51/53 , R46 , R45 , R10
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

▪ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4

Description/Comments:

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

Additional Risk Phrases: None.

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s)/Risk Phrase(s):

03/06/2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

▪ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17/07/2015

Risk Phrases: N R51/53 , N R50/53 , R38 , R37 , R36

Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

▪ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17/07/2015

Risk Phrases: R38 , R37 , R36 , R27 , R26 , R22

Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

▪ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17/07/2015

Risk Phrases: N R50/53 , R43 , R38 , R37 , R36

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

▪ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23/07/2015

Risk Phrases: N R50/53

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

▪ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21/08/2015

Risk Phrases: N R50/53 , Xn R22

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

▪ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06/08/2015

Risk Phrases: N R50/53

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

▪ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06/08/2015

Risk Phrases: R40

Hazard Statements: Carc. 2 H351

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06/08/2015

Risk Phrases: N R50/53 , R43 , R40 , R38 , R37 , R36 , R22

Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21/08/2015

Risk Phrases: N R50/53 , Xi R36/37/38

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

■ **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane

Data source: N/a

Data source date: 14/10/2016

Risk Phrases: R52/53 , Carc Cat 2 R45 , Xi R36/37/38 , Xn R22 , F R11

Hazard Statements: Aquatic Chronic 3 H412 , Carc. 1B H350 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Acute Tox. 4 H302 , Flam. Liq. 2 H225

■ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

CLP index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Risk Phrases: None.

Additional Hazard Statement(s): Carc. 1A H350

Reason for additional Hazards Statement(s)/Risk Phrase(s):

29/09/2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

beryllium {beryllium oxide}

Worst case species based on risk phrases

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(III) oxide}

Chromium VI not detected

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead chromate}

Worst case species based on risk phrases

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on risk phrases

zinc {zinc sulphate}

Chromium VI not detected

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Worst case species

dichloroethane {1,1-dichloroethane and 1,2-dichloroethane (combined)}

Worst case species based on risk phrases

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition, May 2015**

HazWasteOnline Classification Engine Version: 2018.72.3514.7177 (15 Mar 2018)

HazWasteOnline Database: 2018.72.3514.7177 (15 Mar 2018)

This classification utilises the following guidance and legislation:

WM3 - Waste Classification - May 2015

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010

2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

