

Phase 1 Desk Study and
Preliminary Phase 2 Geo-Environmental
Assessment

For a site at

Trinity Street, Huddersfield

Undertaken for

Rhodes Asset Management Limited

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Revision Status / History

Rev	Date	Issue	Prepared	Reviewed	Authorised
-	30/01/2017	Original	SCS	PGD	PGD

Site Location	The site comprises the former Kirklees College campus to the west of Huddersfield Town Centre. It is centred on approximate Ordnance Survey National Grid Reference 414050E, 416870N with an indicative postcode of HD1 5NN.
Development Proposals	WML Consulting was commissioned by Rhodes Asset Management Limited to undertake a combined Phase 1 Desk Study and Phase 2 Geo-environmental Investigation and Assessment of a site referred to as Trinity Street, Huddersfield.
Site History	In summary, the central section of the site had been developed as Huddersfield Infirmary with a Timber Yard prior to the first available map of 1854. The northern and southern sections of the site underwent residential development sometime prior to 1893. By 1959 the Timber Yard had been replaced with two unspecified Works. In the 1970's the site had been redeveloped as Huddersfield Training College, with the former Infirmary buildings retained and new structures constructed in the southern section of the site.
Ground Conditions	Ground conditions encountered during the intrusive investigation generally confirm those identified in the published literature and previous reports and in summary comprise Made Ground locally underlain by Head Deposits and elsewhere or beneath the Made Ground by Pennine Lower Coal Measures strata (PLCM) which include worked coal seams.
Site Preparation	With the exception of the listed Infirmary building, all existing structures are to be demolished. In this respect, it will be necessary to obtain a formal report from the asbestos removal contractor that all asbestos has been removed prior to demolition commencing. Due to the relatively confined urban nature of the site, demolition works will need to be carefully planned so as not to affect the integrity of surrounding buildings and infrastructure. In view of the anticipated substantial extent of buried foundations and structures, it may be desirable to undertake a site-wide excavation as part of the demolition contract so as to remove obstructions to subsequent groundworks. Due to the general gradient of the site, it is inevitable that a number of retaining walls and embankments will be required to transition levels between building plots and associated hardstanding. Demolition materials, including all asphalt/concrete hardstanding and below ground foundations removed as part of the clearance work, subject to appropriate sorting and crushing, would be suitable for re-use as bulk fill beneath hard cover areas. However, in view of the current building cover, it is anticipated that a large volume of material will be surplus to requirements and provisions will need to be in place at an early stage to dispose of the material sustainably and cost effectively. All earthworks should be carried out in accordance with recommendations and guidance provided in BS6031:2009, Code of Practice for Earthworks.
Shallow Mine Workings	The risk of surface instability resulting from ground movement associated with collapse of abandoned shallow mine workings is considered high beneath Buildings 9 and 10 and low to moderate elsewhere. This should be confirmed by further development specific investigations and preferably once the existing structures have been demolished so as to provide a comprehensive coverage of the site. Notwithstanding the above, it is advised therefore that a programme of drilling and grouting ground stabilisation will be required with probeholes needing to intersect the lowest level of disturbed ground beneath the building footprints until undisturbed rock is encountered. As a minimum, the works should be undertaken with reference to guidance provided in the Construction Industry Research and Information Association (CIRIA) Special Publication 32, 1984, Construction over abandoned mine workings.
Mine Shafts	No indications of a possible mine shaft have been encountered during the ground investigations. Nevertheless the existence of an unrecorded shaft should not be

	wholly discounted at this stage. Therefore, a thorough inspection should be undertaken following the site strip and also during foundation construction to confirm that no voids, marked changes in ground conditions, buried structures or any other signs which could signify the presence of a mine shaft beneath the development footprints.
Foundations and Floor Slabs	Foundations for small, lightly loaded retaining walls could be constructed on Made Ground provided net allowable bearing pressures did not exceed 50kN/m². For relatively lightly loaded structures, shallow spread foundations may be constructed on firm or stronger Head Deposits at a depth of no less than 1.00mbgl assuming a net allowable bearing pressure of no greater than 100kN/m². For heavier structures, foundations will need to be taken down to competent solid strata where a net allowable bearing pressure of 200kN/m² is considered appropriate where it is highly weathered at shallow depth. For less weathered mudstone at depth a net allowable bearing pressure of 400kN/m² may be appropriate but this would need to be confirmed by development specific ground investigations at the appropriate time. Foundations should be sufficiently rigid to ideally span any ground which has subsided and for preliminary purposes a span length of 3.00m and cantilever length of 1.50m may be appropriate to account for any loss of support. Multi-storey structures may therefore need to be supported on a slab and beam or cellular reinforced raft foundation. Consideration may also need to be given to incorporating sufficient flexible joints to compensate for continued movement. Basement foundations may need to be designed to withstand possible hydraulic uplift forces where they are constructed at depths below the groundwater table. Assessment of the clay shrinkage/heave potential should be undertaken in accordance with Appendix 4.2-A of NHBC Standards 2010, Foundations, Chapter 4.2, Building Near Trees. Floor slabs for the new structures should be suspended and sufficiently reinforced to withstand potential horizontal forces, unless a fully reinforced raft foundation is adopted.
Excavations and Groundwater	Excavations beneath the majority of the site should be feasible using an appropriate scale of hydraulic plant. However, deep excavations for the basement structures for Buildings 9 and 10 will extend into moderately strong mudstone, requiring the use of hydraulic breakers and ripping techniques. No significant groundwater inflow is anticipated into excavations although shallow perched groundwater conditions may occur locally. Conventional 'sump and pump' dewatering measures are however considered adequate to keep excavations dry.
Pavements and Hardstanding	New pavements should be designed on a CBR value for formation soils of no more than 3.0%, to be confirmed by in situ testing prior to construction.
Concrete Classification	The typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the site would be DS-1 and AC-1 respectively. However, in view of the potential for sulphate to be present in the PLCM strata, it may be prudent to increase the design class to DS-2 and the ACEC class to AC-2z. This should be confirmed where necessary by further chemical analysis of formation soils.
Soakaways	In consideration of the thickness of Made Ground and cohesive nature of the natural soils beneath the site, soakaways are not considered a feasible drainage option for the site.
Ground Gas	The site is indicated to classify as Characteristic Gas Situation (CS) 1 – Very Low Gas Risk' in accordance with BS8485:2015. Therefore, no specific gas protection measures are considered necessary for the proposed residential development,

	subject to confirmation with the Local Authority.
Contamination Assessment	The localised contamination encountered, within the shallow Made Ground is not considered to pose a significant risk to human health in the context of the proposed development although further development specific ground investigations and analysis will be required at the appropriate time. Furthermore, where Made Ground is surfaced with buildings and hardstanding, there will be no mechanism for a direct contact pollution linkage. Therefore the risk to the end-user and to the general public will be negligible in such areas. However, as a direct contact pollution linkage is plausible in proposed landscaped areas, it is recommended that any suspect Made Ground exposed at the surface is removed or is covered by clean sub-soil and topsoil thus removing the pollution linkage. This will normally comprise a 300mm clean cover over the existing Made Ground. However, where the Made Ground is currently less than 600mm thick, it may be more appropriate to excavate and remove it to expose the underlying natural soils prior to placement of a suitable thickness of sub-soil/topsoil. It may also be prudent to allow for encountering unrecorded contamination, particularly beneath existing floor slab and areas of hardstanding, including Asbestos Containing Material (ACM) during the groundwork operations.
Waste Disposal	On the basis of the current information it is likely that the majority of excavated soil would be classified as Non-hazardous or even Inert with natural deposits classified as Inert for landfill disposal. This would need to be confirmed by further analysis of bulk soils destined for disposal under consultation with the landfill operator. However the soil exhibiting slightly elevated concentrations of hydrocarbons in WS101 in the north of the site would therefore classify as Hazardous for disposal purposes.
Potable Water Supplies	The requirement for specific materials and measures to protect the water supply from ground contamination is not envisaged, but would need to be confirmed with the utilities provider.
Colliery Spoil	Although not anticipated in significant quantities, any colliery spoil encountered during inspection following the site strip should be removed where it will potentially interact with new building foundations and floor slabs.

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1.0 INTRODUCTION

Appointment

- 1.1 WML Consulting was commissioned by Rhodes Asset Management Limited to undertake a combined Phase 1 Desk Study and Phase 2 Geo-environmental Investigation and Assessment of a site referred to as Trinity Street, Huddersfield.

Proposed Development

- 1.2 This report has been prepared to provide information as part of due diligence for potential site purchase purposes. At this stage, development plans are considered to be preliminary although it is understood that, with the exception of the old Huddersfield College listed structure, all buildings will be demolished to make way for redevelopment.
- 1.3 Current proposals comprises the construction of twelve structures for mixed use, as indicated on Enjoy Design architects drawing number 16,047-00-001, dated November 2016 in Appendix 01. The structures are indicated to include:

Building 1	Existing Grade II Listed Building refurbished for residential use.
Buildings 2 & 3	Five-storey residential extensions to the Building 1.
Building 4	Five-storey residential.
Buildings 5 & 6	Five-storey mixed commercial use and residential apartments to upper storeys and undercroft parking.
Building 7	Four-storey commercial unit.
Building 8	Two-storey retail unit.
Building 9	Sixteen-storey hotel with residential apartments to upper storeys and a two-storey basement for parking.
Building 10	Nineteen-storey hotel with residential apartments to upper storeys and a three-storey basement for parking.
Building 11	Single storey retail unit.
Building 12	Two-storey retail unit.

- 1.4 It is presumed that external areas will include access roadways, car parking and landscaping.

Objective

- 1.5 The objective of the Ground Investigation and Assessment was to provide geotechnical recommendations for construction design purposes together with a geo-environmental risk assessment in terms of possible ground contamination.
- 1.6 To achieve the objective, the following tasks were undertaken:
- Establish, through undertaking a Phase 1 Desk Study, the geological, hydrogeological and environmental setting of the site so as to identify any potential ground constraints to development through a site specific conceptual model and to design an appropriate Phase 2 Ground Investigation in accordance with the Environment Agency (2004) Model Procedures for the Management of Land Contamination, CLR11.
 - Undertake an appropriate Generic Quantitative Risk Assessment (GQRA) in terms of ground contamination and ground gas.
 - Characterise the ground conditions in terms of geology, soil geotechnical parameters, mining and ground contamination from information provided by an appropriate Ground Investigation.

- Provide recommendations regarding suitable foundations, floor slabs and new pavement construction, together with any other geotechnical considerations that could affect possible future development.

Scope

- 1.7 The Phase I Desk Study comprised a site reconnaissance visit and a review of the following information sources:
- British Geological Survey (1:50,000) Sheet 77 'Huddersfield' (Solid Edition).
 - British Geological Survey Digital Geological Map of Great Britain (DiGMapGB-50; available as a Web Map Service).
 - Coal Authority interactive map viewer (available as a Web Map Service) and Coal Authority Report (Appendix 04).
 - Environment Agency 'What's in my back yard?' website.
 - The site and surrounding area's environmental compliance history from data presented in the site specific GroundSure Environmental Insight Report (Appendix 02).
 - Historical Ordnance Survey maps as provided by GroundSure (Appendix 02).
 - Previous ground investigations undertaken at the site by others.
- 1.8 This report includes the findings of the Phase 1 Desk Study along with information from a Phase 2 Ground Investigation designed on the basis of the desk study findings.
- 1.9 The investigation comprised the formation of 8no mixed rotary cored and open-hole boreholes and 5no window sample probeholes, undertaken at accessible areas taking into consideration constraints provided by existing site conditions.
- 1.10 The Ground Investigation has been undertaken in general accordance with BS5930:2015 *Code of Practice for Ground Investigation* and BS10175:2011 and A1:2013, *Investigation of Potentially Contaminated Sites - Code of Practice* except where superseded by EN ISO 22475-1 "Geotechnical Investigation and Assessment – Sampling by Drilling and Excavation and Groundwater Measurements".
- 1.11 The rotary drilling to determine the presence of suspected abandoned mine workings was undertaken under the Coal Authority Permit number 13335 in accordance with the HSE Guidance on Managing the Risk of Hazardous Gases when "Drilling or Piling Near Coal" and CIRIA Special Publication 32:2002 "Construction Over Abandoned Mine Workings".
- 1.12 Geotechnical soil testing has not been undertaken as part of this current investigation due to time constraints.
- 1.13 Samples for chemical analysis were obtained and handled generally in accordance with the current guidelines (BS10175: 2011 and A1:2013) relating to the anticipated nature of possible contamination sources and the intended end use.
- 1.14 The ground investigation has also been undertaken in general accordance with BS8576:2013, Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs).

2.0 SITE LOCATION AND DESCRIPTION

Site Location

- 2.1 The site comprises the former Kirklees College campus to the west of Huddersfield Town Centre. It is centred on approximate Ordnance Survey National Grid Reference 414050E, 416870N with an indicative postcode of HD1 5NN.
- 2.2 The site is bounded to the north by Fitzwilliam Street, to the north-east by New North Road and south-east by Castlegate. It is bounded to the south and south-west by Trinity Street and to the west by Portland Street.
- 2.3 A location plan is presented in Appendix 01.

Site Description

- 2.4 The site is irregular in shape and is approximately 2.4 hectares in plan area.
- 2.5 The majority of the site is developed with structures of varying ages, heights and construction associated with their former use as Huddersfield Technical College.
- 2.6 At the time of the inspection in December 2016 the structures were all disused with the majority in a poor state of repair. Doors and windows to the lower and more accessible levels had been secured with the majority boarded.
- 2.7 The oldest structure comprises a two-storey Grade II listed stone building located in the central section of the site. The structure was originally constructed as part of a hospital which occupied the central section of the site until around 1975, when it was also refurbished for use by the college. A statue of King Edward VII is located within the car park to the east of the building.
- 2.8 At the time of the investigation in January 2017, the north-eastern section of the site was in use as a monitored car park. Unfenced areas of hardstanding off Portland Street, to the west, were also being used for general parking, although this did not form part of the formal car parking facility.
- 2.9 Localised areas of landscaping are located within the eastern and southern sections of the site and comprise mainly grass and low-lying vegetation with localised trees of varying species.
- 2.10 An above ground gas tank is located in the central western section of the site behind an area of security fencing.
- 2.11 At the time of the ground investigations, the south-western and western sections of the site were secured with wooden fencing and topped with additional metal panels and razor wire due to ongoing issues associated with vandalism. Anecdotal information indicates that several of the structures within the south-western areas of the site had also suffered from fire damage resulting from trespassing.
- 2.12 The former access road off Trinity Street is further secured with a vehicle barrier and lengths of steel which have been independently welded.
- 2.13 Surrounding land is predominantly occupied by mixed commercial and residential development. A pedestrian subway provide access beneath Castlegate immediately south-east of the site boundary.
- 2.14 Photographs of the site and immediately surrounding areas are provided in Appendix 02.

Topography

- 2.15 The site slopes to the south-west with site elevations reducing from around 114.90m Above Ordnance Datum (AOD) in the north-west to around 104.70m AOD close to the south-eastern site boundary, adjacent to the access to the Castlegate pedestrian subway.
- 2.16 The changes in elevation are accommodated by a series of retaining walls of varying construction, concrete steps or gentle grassed and hardstanding slopes.
- 2.17 The topographical survey undertaken by Survey Systems and referenced SSL:9905:200:1 is presented in two sections within Appendix 01.

3.0 ENVIRONMENTAL SETTING

- 3.1 The following sections relating to the environmental setting of the site are summarised from the GroundSure Enviro Insight Report in Appendix 03 and supplemented by information from the Environment Agency web based 'What's in my backyard' service.
- 3.2 The geology of the site is covered by the British Geological Survey (BGS) Sheet 77 'Huddersfield' (1:50,000 scale Solid and Drift editions) and the site specific GroundSure GeoInsight report supplemented by the BGS Digital Geological Map of Great Britain (DiGMapGB-50; available as a Web Map Service).

Environmental Setting

Description	Comments
Geology	No Made Ground is recorded beneath the site although is likely to be present at least in part due to the previous development history. The BGS plans indicated that drift deposits are absent beneath the majority of the site area with the exception of Head Deposits which are inferred to exist beneath the eastern and south-eastern sections. The Head Deposits are indicated to generally comprise interbedded silt, clay, sand and gravel. Elsewhere and beneath the Head deposits the site is underlain by the Carboniferous Middle Bank Rock of the Lower Pennine Coal Measures (PLCM). This is indicated to comprise thinly bedded rubbly sandstone. This is underlain by undifferentiated PLCM strata mainly comprising interbedded grey mudstone, siltstone and pale grey sandstone with numerous coal seams. The Soft Bed Coal is inferred to sub-crop to the north, east and south of the site approximately 500m west at its closest point. The BGS plans infer that the Soft Bed Coal is around 0.80m in thickness within the general site area. Therefore, as the solid strata are indicated to dip to the east at an angle of approximately 2°, the seam could occur at a relatively shallow depth beneath the subject site. BGS archive borehole record SE11NW476 located some 10m south-west of the site encountered Made Ground to a depth of 1.45 metres below ground level (mbgl) underlain by 'stiff, brown clay' to a depth of 5.31mbgl and in turn by 'dark grey shale' with the borehole terminating at 7.00mbgl. In the wider area, records indicate potential mine workings / voids of approximately 0.95m in thickness at depths of around 19.00mbgl. Ground conditions encountered during historical investigations are further discussed in Section 5 of this report.
Radon	The property is not in a Radon Affected Area as defined by the Health Protection Agency as less than 1% of properties are above the Action Level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211 by the Building Research Establishment.
Mining and Subsidence	A Coal Authority report presented in Appendix 04 states that the property is not within the likely zone of influence from recorded past underground workings. However, the Authority also states that the property is in an area where coal is at or close to the surface and that this coal may have been worked at some time in the past. This has been confirmed to a degree by the BGS records and historical ground investigation discussed further in Section 5. Notwithstanding this, no notice of the risk of the land being affected by subsidence has been given under the Coal Mining Subsidence Act 1991 and the Authority has not received a damage notice or claim for the subject property, or other property within 50m, since records began in 1994. The property has not been subject to remedial works, by or on behalf of the Authority,

Description	Comments
	under its Emergency Surface Hazard Call Out Procedure. The Coal Authority Interactive viewer has indicated that the site is within a 'Development High Risk' area and in an area of 'probable shallow mine workings'. The Coal Authority does not indicate that there are any mine shafts on site or within 20m of the site. Therefore, published information suggests the likely presence of unrecorded shallow, abandoned mine workings and to a lesser extent untreated mine shafts beneath the site is possible.
Hydrology	There are no Detailed River Network Features within 500m of the site. The nearest surface water feature is a pond located some 227m to the north and therefore beyond the influence of the site. There are no active Surface Water Abstraction Licences recorded within 500m of the site. Those at greater distance are not considered to be within influencing distance of the site.
Hydrogeology	The Head Deposits indicated to be present in the south-eastern section of the site are classified as a Secondary (Undifferentiated) Aquifer. The underlying Middle Band Rock is classified as a Secondary (A) Aquifer (formerly Minor Aquifer). These include permeable layers capable of supporting water supplies at a local rather than at a strategic scale, and in some cases forming an important source of base flow to rivers. There are no Environment Agency Source Protection Zones within 500m of the site. There are no Groundwater Abstraction Licences within 250m of the site. The closest are located approximately 479m and 482m east and both operated by Kirklees Council for non-evaporative cooling and a heat pump respectively,
Landfill and Waste Management Activity	There are no historical or active landfills within 500m of the site. There are no licensed Waste Sites within 250m of the site. The nearest is located around 407m east and relates to household, commercial and industrial waste types.
Industrial Land Use Information	There are 17no potentially contaminative industrial sites within 250m of the subject site. The nearest ones relate to shop fitting manufactures around 36m north-east, a printers some 50m south-west and a chemical engineers premises some 50m east. There is no active Petrol Fuel Sites recorded within 250m of the site boundary. There are no Underground High Pressure Pipelines or High Voltage Underground Cables recorded within 500m of the site boundary.
Environmental Permits, Incidents and Registers	There are no records of Part A(1) and IPPC Authorised Activities within 250m of the site. Facilities at greater distances are considered to be sufficiently remote from the site as not to be of influence. There are no records of Part A(2) or Part B Authorised Activities within 250m of the site. Facilities at greater distances are considered to be sufficiently remote from the site as not to be of influence. There are no List 1 and List 2 Dangerous Substances Inventory Sites or sites holding a Radioactive Substance Authorisation recorded within 500m of the subject site. There are no current COMAH Dangerous or Hazardous sites within 500m of the subject site. There are no recorded Environment Agency Pollution Incidents within 250m of the site. The closest relates to atmospheric pollution from smoke some 478m south-east which

Description	Comments
	recorded a minor impact to air and water. There are no sites that have been determined as Potentially Contaminated Land under Section 78R of the Environmental Protection Act 1990 within 500m of the study site.
Potential Flood Risks	Detailed assessment of flood risk is outside the scope of this report. However, reference to the Environment Agency website and the Groundsure report indicates that the site is within an area designated as having a 'Very Low' Risk of Flooding from Rivers and the Sea (RoFRaS). The site is indicated on British Geological Survey (BGS) records to be within an area which is considered to have a 'Potential at Surface' susceptibility to groundwater flooding associated with the superficial deposits. The BGS confidence rating for this assessment is considered 'Low'.
Designated Environmentally Sensitive Sites	There are no Designated Environmentally Sensitive Sites within 500m of the study site. The nearest is located around 675m west and relates to Gledholt Woods, a Local Nature Reserve. However, an ecological assessment of the site falls outside of the brief of this report and an ecological specialist should be consulted in this respect.
Archaeological Information	No archaeological information has been obtained for the purpose of this report. Where considered appropriate, reference should be made to an archaeological consultant in this respect.

4.0 SITE HISTORY

- 4.1 The historical development of the site has been determined by reference to archive Ordnance Survey (OS) map extracts obtained from the GroundSure EnviroInsight Report in Appendix 03.
- 4.2 It should be noted that historical plans with no mapping information at or around the immediate site area have been omitted from the Map Dates.

Historical Development

Map Dates	Scale	Comments	
		On Site	Surrounding Area
1854	1:10,560	Huddersfield Infirmary was located in the central section with a building later indicated to be a Timber Yard in the south-eastern section. York Place extended east to west from the New North Road to the Infirmary. New North Road formed the north-eastern site boundary with West Parade forming the south-western site boundary.	The surrounding area comprised a mix of residential and more localised industrial development. Industrial development in the surrounding area included Huddersfield Station some 80m east and a Water Works 200m south-west of the site, which included a reservoir. Tramways ran along New North Road and Trinity Street immediately to the north-east and south-west of the site respectively. A Railway Tunnel extended roughly south-west to north-east some 120m south-east of the site at its closest point.
1890	1:500	The northern and southern sections of the site were occupied by residential properties. Portland Street formed the western site boundary with Fitzwilliam Street West forming the north-western site boundary.	A Goods Shed had been constructed at Huddersfield Station some 80m east and a Mill some 130m south. A number of ponds were located within a park some 160m west. Holy Trinity Church, containing a graveyard, was located some 210m north-west. Extensive residential development had occurred immediately surrounding the site.
1891	1:10,560	No significant changes apparent.	No significant changes apparent.
1893	1:2,500	No significant changes apparent.	No significant changes apparent.
1907	1:2,500	No significant changes apparent.	A further Goods Shed had been constructed at Huddersfield Station some 80m east.
1905	1:10,560	No significant changes apparent.	No significant changes apparent.
1918	1:2,500	The Timber Yard in the southern section of the site was no longer depicted. A Baths with a Chimney had been added to the northern section of the Royal Infirmary. The area immediately east of the	No significant changes apparent.

Map Dates	Scale	Comments	
		On Site	Surrounding Area
		infirmary had been landscaped with the addition of a Statue.	
1931	1:10,560	No significant changes apparent.	No significant changes apparent.
1932	1:2,500	No significant changes apparent.	No significant changes apparent.
1938	1:10,560	No significant changes apparent.	No significant changes apparent.
1948	1:10,560	No significant changes apparent.	No significant changes apparent.
1956	1:10,560	No significant changes apparent.	No significant changes apparent.
1960	1:2,500	An area of residential properties in north-western section of the site had been redeveloped as part of the Huddersfield Royal Infirmary. Two unspecified works have been developed in the southern section of the site in the area of the former Timber Yard.	A number of Works and Warehouses had been developed in the area surrounding the site including some 30m west and 60m south-east.
1966	1:10,000	The Infirmary building appeared to have been extended across the north-western section of the site.	No significant changes apparent.
1975	1:10,000	The former Infirmary buildings in the central and northern sections of the site had been modified. The former residential structures and works in the south had been cleared and the area redeveloped with an extension to the former infirmary structures. The site now formed part of the Huddersfield Training College campus.	Castlegate had been constructed along the south-eastern site boundary. A Garage had been constructed some 100m south-east of the site.
1978	1:1,250	No significant changes apparent.	No significant changes apparent.
1981	1:1,250	No significant changes apparent.	No significant changes apparent.
1987	1:1,250	A further area of residential properties in north-eastern corner of the site had been redeveloped as part of an additional structure associated with Huddersfield Technical College. The remaining residential properties in the north-eastern corner of the site had been cleared and the area redeveloped as a car park.	No significant changes apparent.
1988	1:10,000	No significant changes apparent.	No significant changes apparent.
1990	1:1,250	No significant changes apparent.	No significant changes apparent.
1993	1:1,250	No significant changes apparent.	A Garage some 55m south-east had been cleared.

Map Dates	Scale	Comments	
		On Site	Surrounding Area
1994	1:1,250	No significant changes apparent.	No significant changes apparent.
2002	1:10,000	No significant changes apparent.	No significant changes apparent.
2010	1:10,000	No significant changes apparent.	No significant changes apparent.
2014	1:10,000	No significant changes apparent.	No significant changes apparent.

- 4.3 In summary, the central section of the site had been developed as Huddersfield Infirmary with a Timber Yard prior to the first available map of 1854. The northern and southern sections of the site underwent residential development sometime prior to 1893. By 1959 the Timber Yard had been replaced with two unspecified Works. In the 1970's the site had been redeveloped as Huddersfield Training College, with the former Infirmary buildings retained and new structures constructed in the southern section of the site.
- 4.4 The historical use of the site as an Infirmary and a Timber Yard in the southern area is unlikely to have given rise to a significant degree of ground contamination although localised contamination sources are likely to be present as confirmed by previous ground investigations.
- 4.5 This may include Asbestos Containing Material (ACM) resulting from previous demolition activities together with relatively low levels of contamination by organic and inorganic compounds.
- 4.6 Regionally, there are no historic industrial activities which could be considered as having affected the site adversely. In addition, such activities are considered to have been sufficiently remote from the site as not to have had any appreciable impact.
- 4.7 The likelihood of significant historic sources of ground contamination at the site is therefore considered low.

5.0 PREVIOUS GROUND INVESTIGATIONS

5.1 A review of both the WML records and Kirklees Council Planning Portal indicates that two ground investigation reports and a Coal Authority Risk Assessment have previously been undertaken on the site, namely:

- Report on Ground Investigation by Soil Mechanics on behalf of Huddersfield Technical College, reference A6111/1, dated October 2006.
- Phase 1 Geo-Environmental desk Study by Clancy Consulting Engineers on behalf of Wiggett Construction Limited, reference 10/0801/002, dated November 2015.
- Coal Mining Risk Assessment Report by Clancy Consulting Engineers on behalf of Wiggett Construction Limited, reference 10/0801/002, dated December 2015.
- Geo-Environmental Appraisal Report by Clancy Consulting Limited on behalf of Wiggett Construction, reference 10/0801/003, dated April 2016.

5.2 Information contained within the reports has been reviewed so as to supplement the findings of this current report. However, the information has not been reproduced within this report with the exception of relevant excerpts of the factual Soil Mechanics (2006) report undertaken for WML Consulting.

Soil Mechanics - 2006

5.3 The Soil Mechanics investigation comprised the formation of 10no window sample probeholes and 6no rotary core boreholes together with chemical analysis, geotechnical testing and ground gas monitoring.

5.4 In summary, the intrusive investigation indicated the majority of the subject site to be underlain by Made Ground extending to depths of between 0.35m and 4.25mbgl.

5.5 The Made Ground generally comprised asphalt hardstanding, concrete paving or stone cobbles underlain by a granular sub-base, or locally sandy, gravelly topsoil. These surface horizons of Made Ground were underlain by clayey gravelly sand and sandy gravel with cobbles of sandstone and brick. Gravel sized fragments generally comprised sandstone, brick, coal and locally concrete, bitumen, clinker, slag, glass, pottery, metal and wood.

5.6 The Made Ground was generally underlain by strata considered to represent Superficial Deposits extending to depths of between 1.00m and 4.80mbgl. The Superficial Deposits generally comprised variably sandy and gravelly clay, locally with cobbles.

5.7 The Made Ground or Superficial Deposits, where present, were in turn underlain by Pennine Lower Coal Measures (PLCM) at depths of between 0.20m and 4.80mbgl, extending to a maximum proven depth of 21.83mbgl. The PLCM strata comprised interbedded sandstone, siltstone and mudstone.

5.8 An intact coal seam of 0.40m in thickness was encountered beneath the southern section of the site at a depth of 13.70mbgl. However, voids and loose ground were encountered within the central and northern sections of the site at depths of between 16.70m and 18.30mbgl. The voids were generally between 0.10m and 0.40m in thickness. Within BH1 and BH3 the voids were underlain by between 0.90m and 1.80m of 'loose ground' suggesting that possible collapse and upward migration of the workings had occurred.

5.9 Standing groundwater was recorded locally at depths of between 2.50m within the Superficial Deposits and between 13.00m and 20.00mbgl within the underlying PLCM.

5.10 Chemical analysis results indicated elevated concentrations of total Polyaromatic Hydrocarbons (PAH) and Total Petroleum Hydrocarbons (TPH) (500mg/kg of Mineral Oil) within a single sample of shallow Made Ground in the south-eastern section of the site.

5.11 During the investigation, ground gas monitoring recorded slightly elevated concentrations of methane up to 1.1% by volume in air (v/v) and slightly elevated concentrations of carbon dioxide up to 3.8%v/v. No significant gas flow rates were recorded.

5.12 Relevant excerpts of the report are reproduced in Appendix 05.

Clancy Phase 1 Desk Study – November 2015

5.13 In 2015 Clancy undertook a desk study for the subject site in consideration of a mixed use development. At this stage the proposal comprised a supermarket in the south of the site, a medical practice in the central section with residential apartments in the north.

5.14 The report identified potential contamination sources, pathways and receptors and recommended that intrusive investigations be carried out to establish the ground profile and chemical constituents of the soil together with in situ testing to provide adequate recommendations for foundation design.

5.15 The report also recommended that a Coal Mining Risk Assessment be carried out in order to further assess the risk from shallow mine workings and to establish whether an intrusive mining investigation was required.

5.16 The report makes no mention of the Soil Mechanics report suggesting that this was not available for their review at the time.

Clancy Coal Mining Risk Assessment Report – December 2015

5.17 Subsequently Clancy undertook a Coal Mining Risk Assessment which included a review of BGS maps and archive boreholes together with a Coal Authority Mining Report. The report also included a review of local archives together with information provided by a local mining historian.

5.18 The report makes no mention of the Soil Mechanics report suggesting that this was not available for their review at the time.

5.19 The anecdotal information referred to in the report indicated that much of Huddersfield Town Centre, including areas in close proximity to the site, are underlain by unrecorded shallow mine workings.

5.20 Unverified historical boreholes relating to nearby previous developments provided to Clancy indicated shallow bedrock with voids of up to 0.90m in thickness located at depths of approximately 19.00mbgl.

5.21 The report also referred to anecdotal information suggesting that coal/fireclay extraction may have occurred beneath the site together with the possible presence of a '5 yard' (4.6m) deep shaft which was used for disposal of refuse/waste from the hospital. The presence or location of the shaft is, however unsubstantiated.

5.22 The report concluded that the site was at risk from historical mine workings and that a possible shaft could also be present. As a result, detailed intrusive investigation were recommended with the risk assessment being revisited following the results of the investigations.

Clancy Geo-environmental Appraisal Report April 2016

5.23 This report presented and assessed the results of a site investigation within the site area which comprised the formation of 18no window sample probeholes to a maximum depth of 5.45mbgl. No further mining investigations were undertaken as part of the investigation.

5.24 In summary, the intrusive investigation indicated the majority of the subject site to be underlain by Made Ground extending to depths of between 0.10m and 4.10mbgl. The Made Ground was locally underlain by Superficial Deposits to depths of up to 3.20mbgl.

- 5.25 However, the Made Ground within the northern and eastern sections of the site was underlain directly by weathered sandstone of the Middle Band Rock. This was recovered as very dense sandy gravel and cobbles of sandstone. Across the rest of the site the weathered Pennine Lower Coal Measures mainly comprised weathered mudstone to a maximum proven depth of 5.45mbgl.
- 5.26 Standing groundwater was recorded within a single exploratory hole at a depth of 5.20mbgl within the Superficial Deposits.
- 5.27 Chemical analysis results indicated concentrations of benzo(a)pyrene exceeding the relevant screening values for the respective site end-uses namely mixed residential and retail. Additionally, one sample in the north-eastern section of the site recorded a concentration of lead exceeding the screening values for a residential end-use. Eight samples were also tested for asbestos identification, with one testing positive for loose fibres of chrysotile asbestos. Subsequent quantification analysis recorded a concentration of less than 0.001% by weight (w/w).
- 5.28 Limited ground gas monitoring recorded no methane and slightly elevated concentrations of carbon dioxide, up to 1.1%v/v. No significant flow rates were recorded.

6.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT

Introduction

- 6.1 The following paragraphs outline a Preliminary Risk Assessment (PRA) for the site as defined by DEFRA and the EA Model Procedures for the Management of Land Contamination, CLR11 (2004).
- 6.2 The table in Paragraph 6.4 provides a Preliminary Conceptual Model (PCM) which defines the site in terms of a potential pollution linkage, that is, whether a pathway exists between a contamination source and a sensitive environmental receptor (Source-Pathway-Receptor relationship).
- 6.3 The table considers whether a pollution linkage is potentially present or not and provides a preliminary qualitative assessment of risk, based on the information currently available and in accordance with guidance provided in the CIRIA document C552 (2001) Contaminated Land Risk Assessment – A guide to good practice. The risk evaluation process is described further in Appendix 10.
- 6.4 Where a possible linkage is identified, it does not necessarily mean that a significant risk exists, but indicates that further information is required through appropriate site investigation to substantiate the conceptual model.

Preliminary Conceptual Model

- 6.5 The PCM/PRA is based on anticipated mixed commercial, retail and residential apartment end use with associated areas of landscaping and hardstanding for parking.

Source	Pathway	Receptor	Likelihood of Linkage	Comment
The likelihood of significant ground contamination sources being present across the majority of the site is considered low although more localised contamination sources, including asbestos, could occur particularly beneath the southern area of the site. This has been confirmed to a degree by previous ground investigations.	Direct contact, ingestion of soil, dermal contact, dust exposure pathways.	Current Site Users	Unlikely	The site is at present mainly surfaced with buildings and hardstanding, most of which is disused and isolated from the general public with the exception of the north-eastern section which is in use as a car-park. Therefore no direct contact pollution linkage exists with the risk to current site users considered VERY LOW.
		Site End Users	Low	Significant areas of the site will remain covered by hardstanding thus breaking the pollution pathway. However, the possibility of direct exposure to potential contaminants will remain in any proposed landscaped areas. The perceived risk to future site users is however considered, on the whole to be LOW.

Source	Pathway	Receptor	Likelihood of Linkage	Comment
		Construction Workers	Low	Although construction workers could potentially be exposed to contaminated soils during earthworks and foundation construction, any perceived contamination risks will be mitigated by adopting good site working practices including appropriate Health and Safety measures during the works, thus providing a LOW preliminary risk.
		Adjacent land users	Unlikely	Contact via wind-blown dust/ debris, particularly during the development phase is possible. The current risk is considered VERY LOW although this could increase during construction works. Appropriate control measures may therefore be required as part of good site working practices during construction.
The likelihood of significant potentially soluble and/or liquid and therefore mobile contaminants occurring at the site due to its past use is considered low. However, localised sources cannot be discounted as confirmed to an extent by previous ground investigations.	Direct downward migration through leaching and/or mobile liquids.	Groundwater	Low	The site is underlain by a Secondary A (bedrock) Aquifer with no significant impermeable (drift) cover envisaged. Therefore, a direct pollution linkage is plausible although the preliminary risk is assessed as no more than LOW due to the anticipated limited residual contamination source.
	Off-site migration in groundwater or surface water flow.	Surface water	No linkage anticipated	There are no surface water courses within influencing distance of the site. Therefore, the preliminary risk is assessed as VERY LOW .
		Groundwater/surface water abstractions	No linkage anticipated	The site is not within an Environment Agency Source Protection Zone and there are no surface/groundwater abstractions within influencing distance of the site. The risk to groundwater/surface water abstractions is therefore considered VERY LOW .
		Adjacent Properties	Unlikely	No significant mobile contamination source is envisaged. Therefore the preliminary risk to adjacent properties is considered LOW until such time as ground investigations are undertaken.
		Ecology	No linkage anticipated	There are no ecologically sensitive sites within influencing distance of the subject site. The risk to ecologically sensitive sites is therefore considered VERY LOW .

Source	Pathway	Receptor	Likelihood of Linkage	Comment
The likelihood of significant volatile contaminants occurring at the site due to its past use is considered low.	Inhalation of harmful vapours (indoor and outdoor airspaces)	Current Site Users	No linkage anticipated	No significant sources of volatile contaminants are envisaged with current site use being transient in nature. Therefore the current risk from inhalation of indoor/outdoor air is considered LOW .
		Site End Users	Low	Although no significant volatile contamination source is envisaged, the presence of localised hydrocarbon contamination cannot be wholly discounted at this stage. However, the preliminary risk to site end users is considered LOW .
		Construction Workers	Unlikely	In the unlikely event of construction workers coming into contact with possible volatile compounds, the exposure time will be relatively short. The risk to construction workers, assuming that appropriate health and safety measures will be adopted, is therefore considered LOW .
		Adjacent Properties	Unlikely	No significant volatile contamination source is envisaged. Therefore the preliminary risk to adjacent properties is considered LOW .
There are no current or historic landfills recorded within influencing distance of the site. The presence of potentially degradable Made Ground and / or organic deposits in significant thicknesses beneath the site is considered unlikely. Old abandoned shallow mine workings could potentially provide a source of mine gas	Emissions from the ground beneath the site collecting in confined spaces and excavations	Construction/ services maintenance workers	Unlikely	The potential to generate significant volumes of toxic and / or flammable / explosive gas beneath the site is considered low. Assuming that appropriate health and safety measures will be adopted during construction, the preliminary risk is therefore considered LOW .

Source	Pathway	Receptor	Likelihood of Linkage	Comment
beneath the site. No significant source of hydrocarbon contamination, with the potential to generate hazardous ground gases through degradation processes is envisaged. Limited ground gas monitoring undertaken as part of previous investigations has not encountered any significant concentrations or volumes of ground gas.	Migration of gases on/off site and collecting in confined spaces on/off site.	Adjoining site users	Unlikely	A significant source of potentially degradable material beneath the site is considered unlikely. The preliminary risk to adjoining site users from toxic and/or flammable/ explosive gas arising from the site is therefore considered LOW .
		Current/future site users	Low	The potential presence of mine gas beneath the site could result in such gasses migration to the surface through lines of weakness in the solid strata or through possible unrecorded mine entries. Therefore, a precautionary approach is taken at this stage, in view of the severity of the consequence, with preliminary risks from ground gas being assessed as MODERATE until such time as this is assessed further by appropriate ground investigation.
The site is not within an area which is affected by naturally occurring radon gas.	Natural emissions from the ground collecting in confined spaces within buildings	Site end users	No linkage anticipated	BRE Document 211 indicates that the site is located in an area where no radon protection measures are required. Therefore, no further necessary regarding radon protection as the risk is VERY LOW .
Chemicals which could prove aggressive to construction materials could be present locally on site.	Direct contact	Construction concrete, plastic water pipes.	Unlikely	Any risks to construction materials identified after site investigation and assessment will be mitigated as part of the structural design. The perceived risk is therefore considered LOW .

Preliminary Risk Assessment

- 6.6 Under the proposed development scenario, potential pollution linkages are on the whole considered unlikely with associated preliminary risks being assessed, on the whole, as low.
- 6.7 However, a moderate risk is assessed in relation to possible mine gas, particularly where potential lines of weakness in the solid strata such as unrecorded mine shafts may form a pathway for upward migration.

- 6.8 Uncertainties relating to the presence of ACM and asbestos fibres within the Made Ground as a result of previous unrecorded demolition and the potential, albeit for localised sources of ground contamination also exist.

7.0 SITE INVESTIGATION

Rationale

- 7.1 Intrusive investigations were undertaken primarily to detail the presence of unrecorded shallow mine workings beneath the site. Although previous investigations undertaken by Soil Mechanics Limited concluded that worked coal seams were present, a proportion of their boreholes terminated above the suspected mine workings thus limiting the amount of usable information.
- 7.2 Therefore, it was considered prudent to drill a further 8no boreholes to depths of up to 22.00mbgl to intercept the worked seams in order to confirm the previous findings and to provide up-to-date information on current ground conditions.
- 7.3 The investigations were also undertaken to provide geotechnical parameters for structural design purposes as well as verify the preliminary site conceptual model and confirm the anticipated environmental risk.
- 7.4 On the basis that solid strata was anticipated at shallow depth together with the restricted nature of the site, window sample probeholes were undertaken to provide general information on near surface deposits and to provide samples for chemical analysis.
- 7.5 The investigation locations were also chosen so as not to impact on the presence of known/suspected services.
- 7.6 Monitoring standpipes were installed in all of the window sample probeholes for the measurement of ground gas and groundwater levels.
- 7.7 Chemical analysis of a general suite of contaminants was undertaken on selected samples of soil with the inclusion of asbestos identification and hydrocarbon analysis on selected samples. This was to confirm the anticipated low contamination risk and to establish the chemical suitability of soils for possible re-use or disposal classification.

Intrusive Work

- 7.8 Ground investigation work was undertaken between 6th and 19th January 2017 by Ian Farmer Associates (IFA). This comprised the formation of 5no window sample probeholes to a maximum depth of 3.45mbgl and 8no rotary open-hole boreholes to a maximum depth of 22.00mbgl in order to investigate the presence of shallow mine workings.
- 7.9 The exploratory hole records are presented in Appendix 06 of this report whilst the exploratory hole locations are shown on Drawing 7344G-SK01 in Appendix 01.
- 7.10 Drawing 7344G/SK-02 in Appendix 01 also includes the approximate locations of the rotary holes formed by Soil Mechanics during the 2006 investigations.

Monitoring Standpipe

- 7.11 Monitoring wells for groundwater and ground gas measurements were installed in 5no probeholes as indicated on the logs presented in Appendix 06.

Geotechnical and Chemical Testing

- 7.12 In-situ geotechnical testing was undertaken at regular intervals during the formation of the probeholes in the form of Standard Penetration Tests (SPTs). The results for the testing are presented on the descriptive logs in Appendix 06.
- 7.13 Chemical analysis was undertaken on selected soil samples for the following contaminants of concern:

- Total Arsenic, Boron, Cadmium, Chromium VI, Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc.
- Total Cyanide, Phenols, Sulphur, Sulphate.
- Speciated USEPA Polyaromatic Hydrocarbons (PAH).
- Asbestos Screen and Identification.
- 2:1 water/soil sulphate extract, pH.
- Organic Matter.

7.14 Analysis for speciated Total Petroleum Hydrocarbons was also undertaken on one sample exhibiting a slight hydrocarbon odour.

7.15 The results of the chemical analyses are presented in Appendix 07.

Gas and Groundwater Monitoring

7.16 Gas and groundwater monitoring has been carried out on two occasion to date on 13th and 20th January 2017. The monitoring results to date are presented in Appendix 08.

8.0 GROUND CONDITIONS

General

- 8.1 Ground conditions encountered during the intrusive investigation generally confirm those identified in the published literature and previous reports and in summary comprise Made Ground locally underlain by Head Deposits and elsewhere or beneath the Made Ground by Pennine Lower Coal Measures strata (PLCM) which include worked coal seams.
- 8.2 The current investigation data set is supplemented by information from the previous Soil Mechanics report where this is considered sufficiently detailed and relevant so as to provide a detailed profile of the geology together with the shallow mining regime beneath the site.

Made Ground

- 8.3 Made Ground was encountered in the majority of the exploratory holes from ground level to depths of between 0.30 and 4.10mbgl but more generally between 0.50m and 1.50mbgl. The deeper Made Ground was encountered by Soil Mechanics in the south-east of the site and by Clancy in the central-western area of the site, probably being associated with deep infilled excavations for foundation construction.
- 8.4 The Made Ground generally comprises a surface horizon of asphalt over granular sub-base or more locally imported topsoil.
- 8.5 Beneath this the Made Ground is very variable in nature and generally comprises both cohesive and granular strata with inclusions of gravel and cobble-sized brick, concrete, sandstone and ash together with lesser constituents of wood, glass and metal.

Head Deposits

- 8.6 The Made Ground is underlain by a thin layer of Superficial strata considered to represent Head Deposits which extend to depths generally between 1.00m and 3.50mbgl.
- 8.7 This is generally described as firm but locally soft or stiff, sandy gravelly clay with occasional cobbles. Gravel and cobbles are described as generally sub-angular of sandstone.
- 8.8 Standard Penetration Test (SPT) 'N' values undertaken by Soil Mechanics in the Head Deposits ranged from 5 to 26 with an average of around 14 indicating a generally firm consistency. Tests undertaken by IFA gave 'N' values generally of between 21 and 34 indicating a stiff consistency.
- 8.9 Natural Moisture Contents measured by Soil Mechanics for the superficial deposits were in the range of 12% to 23%. Liquid limits within the range of 30% to 50% with corresponding Plasticity Indices in the range of 10% to 25% indicated clay of low to intermediate plasticity and low to medium volume change potential.
- 8.10 Undrained shear strength results for the superficial deposits ranges from around 28 kN/m² to 110kN/m² confirming a variable strength ranging from soft to stiff.

Pennine Lower Coal Measures (PLCM)

- 8.11 The Made Ground and Head Deposits are underlain by solid strata of the PLCM. In the northern section of the site rock-head consists of a relatively thin layer of weathered sandstone up to 3.50m in thickness.
- 8.12 This was described by Soil Mechanics as being very weak to moderately strong and was generally thickly laminated to thinly bedded.

- 8.13 SPT 'N' values undertaken in the upper horizons of the sandstone ranged from 33 to greater than 50 confirming a generally weak strength.
- 8.14 The sandstone, together with the Superficial deposits in the southern section of the site, are underlain in the main by mudstone, the upper horizons of which are highly to completely weathered and described as either a very stiff, laminated clay with fragments of mudstone or very weak to weak laminated mudstone. The rock strength increased with depth to become weak to medium strong.
- 8.15 The Soil Mechanics report describes a 0.40m thick coal seam at a depth of 13.70mbgl beneath the extreme south of the site although this is thought to be discontinuous as it was not encountered at around this depth in any other boreholes.
- 8.16 A 0.80m thick coal seam was encountered at a depth of 18.90mbgl in BH107 by IFA and is considered to represent the Soft bed Coal. Voids and loose ground described by IFA and Soil Mechanics at around the same depth in other boreholes indicates that the seam has been worked. Details of which are presented below.

Coal Seams/Shallow Mine Workings

- 8.17 The depths to the coal/shallow mine workings together with appropriate levels to Ordnance Datum are summarised as follows.

BH	Ground Level (m AOD)	Depth of Coal/Workings		Level of Coal/Workings to Ordnance Datum		Details		
		Depth to Top (mbgl)	Depth to Base (mbgl)	Depth to Top (mAOD)	Depth to Base (mAOD)	Thickness of Coal/Void (m)	Thickness of Loose / Collapsed Workings (m)	Total Thickness
Soil Mechanics 2006								
BH1	111.90	18.20	19.20	93.70	92.70	0.10	0.90	1.00
BH3	109.60	16.70	18.80	92.90	90.80	0.30	1.80	2.10
BH5	*106.95	18.30	18.60	88.65	88.35	0.30	NA	0.30
WML 2017								
BH101	112.10	19.45	19.70	92.65	92.40	0.25	NA	0.25
BH102	109.50	18.20	19.40	91.30	90.10	1.20	NA	1.20
BH103	114.10	19.10	20.20	95.00	93.90	1.10	NA	1.10
BH104	107.10	17.90	19.20	89.20	87.90	1.30	NA	1.30
BH105	105.80	18.50	19.15	87.30	86.95	0.65	NA	0.65
BH106	106.25	18.70	19.10	87.55	87.15	0.40	NA	0.40
BH107	109.70	18.90	19.70	90.80	90.00	Intact Coal	NA	0.80
BH108	105.65	18.30	18.90	87.35	86.75	0.60	NA	0.60

Notes *Assumed incorrect on log and therefore estimated from topographical survey

- 8.18 The exploratory holes on the whole confirm a general shallow easterly to south-easterly dip of the strata by approximately 2° this being consistent with the geological information recorded on the published BGS maps. The strata dip is also generally consistent with the local surface gradient.

Visual/Olfactory Evidence of Contamination

- 8.19 With the exception of a localised hydrocarbon odour encountered in WS101 at 0.60mbgl in the northern section of the site, no other visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigations.

Groundwater

- 8.20 Groundwater was only encountered in IFA boreholes BH107 and BH108 at depths of 6.00m and 3.90mbgl (103.70m to 101.75m AOD) within the mudstone and top of mudstone respectively.
- 8.21 The Soil Mechanics report indicates that standing groundwater levels were recorded at depths of between 13.00m and 20.00m below ground level (100.00m to 85.00mAOD) in the solid strata.
- 8.22 No groundwater was encountered during the formation of the IFA probeholes. Standing groundwater has been encountered in two standpipes (WS102 and WS103) during the initial monitoring visit between depths of 2.10m to 2.99mbgl, although this is considered to represent minor 'perched' groundwater conditions above the mudstone bedrock rather than a true phreatic surface.
- 8.23 It should be appreciated that the groundwater monitoring described above was undertaken during a very short period of time. Significant variations in the long term groundwater regime may occur at other times, particularly with prolonged, extreme weather conditions, and that no account can be taken of such in this report.

General

- 8.24 It should also be appreciated that ground conditions may vary between and away from the exploratory hole positions, and that no account can be taken in this report of such variations.

9.0 GEOTECHNICAL APPRAISAL

Site Preparation

- 9.1 The proposed redeveloped is to incorporate a mix of retail, office, residential and hotel buildings with associated infrastructure and services, site roads, car parks, paths and soft landscaped areas. Residential and retail buildings 9 and 10 in the south of the site are to be multi-storey with two and three level basements respectively. Building 5 and 6 in the north of the site will also incorporate undercroft car parking.
- 9.2 With the exception of the listed Infirmary building, all existing structures are to be demolished. In this respect, it will be necessary to obtain a formal report from the asbestos removal contractor that all asbestos has been removed prior to demolition commencing.
- 9.3 Due to the relatively confined urban nature of the site, demolition works will need to be carefully planned so as not to affect the integrity of surrounding buildings and infrastructure. In particular, provisions such as temporary supports will need to be in place to protect the foundations to the existing Infirmary building during the removal of basements to the adjoining buildings.
- 9.4 In view of the anticipated substantial extent of buried foundations and structures, it may be desirable to undertake a site-wide excavation as part of the demolition contract so as to remove obstructions to subsequent groundworks. The stability of existing adjacent infrastructure will however need to be considered where excavations extend up to the site boundary and it may be necessary to retain existing foundations and/or basements as temporary support under such circumstances.
- 9.5 Due to the general gradient of the site, it is inevitable that a number of retaining walls and embankments will be required to transition levels between building plots and associated hardstanding.
- 9.6 Demolition materials, including all asphalt/concrete hardstanding and below ground foundations removed as part of the clearance work, subject to appropriate sorting and crushing, would be suitable for re-use as bulk fill beneath hard cover areas. However, in view of the current building cover, it is anticipated that a large volume of material will be surplus to requirements and provisions will need to be in place at an early stage to dispose of the material sustainably and cost effectively.
- 9.7 This will include a substantial volume of soil and mudstone bedrock resulting from excavations to form the basements to structures in the south of the site together with general arisings from excavations for foundations and drainage.
- 9.8 Due to the potential for shallow cohesive soils to become softened if exposed to excess moisture, excavations should be undertaken in a controlled manner so as not to overly expose the soil during periods of inclement weather. Also, the site should, where possible be laid to fall and ideally incorporate a surface protective cover and a degree of temporary drainage to prevent surface ponding and thus enable a trafficable site for construction plant.
- 9.9 Although not considered to be significant any topsoil removed during site preparatory works and considered for re-use should be stockpiled separately from other materials and protected from inclement weather for future use in landscaped and garden areas subject to confirmatory laboratory testing.
- 9.10 All earthworks should be carried out in accordance with recommendations and guidance provided in BS6031:2009, Code of Practice for Earthworks.

Coal Seams and Shallow Abandoned Mine Workings

- 9.11 The majority of rotary boreholes drilled during the Soil Mechanics and IFA investigations have record voided and or loose ground such as would indicate the presence of shallow abandoned mine workings in the Soft Bed Coal seam at depths of between 16.70m and 19.10mbgl.

- 9.12 For situations where abandoned workings occur at relatively shallow depths, standard industry practice normally takes the maximum predicted height of collapse of such workings as being around 10 times the proven or anticipated seam thickness. In other words, where the solid rock cover is greater than 10 times the seam thickness, the risk of surface instability resulting from collapse of workings is reduced as the upward migration of the void is stalled by bulking of the collapsed strata.
- 9.13 Records indicate the Soft Bed Coal seam to be in the region of 0.80m thick regionally and this has been proven to some extent in one of the borehole BH107.
- 9.14 On this basis, a solid rock cover of around 8.00m would be considered sufficient to maintain surface stability from upward migration of voids and current borehole information indicated that this condition is met.
- 9.15 However, it may be prudent at this stage to assume that excavations for the extraction of coal could have extended beyond the vertical extent of the seam, particularly in view of the possibility that fireclay associated with the seam may also have also been extracted concurrently.
- 9.16 In view of this, the thickness of the disturbed ground as recorded in the boreholes is taken as a conservative indication of the worked seam thickness in the following table:

Hole	Geometry of Workings		Thickness of Coal / Workings (m)	10 Times Thickness (m)	Recorded Thickness of rock cover (m)
	Depth to Top (mbgl)	Depth to Base (mbgl)			
Soil Mechanic 2006					
BH1	18.20	19.20	1.00	10.00	15.50
BH3	16.70	18.80	2.10	21.00	13.90
BH5	18.30	18.60	0.30	3.00	13.50
WML 2017					
BH101	19.45	19.70	0.25	2.50	15.00
BH102	18.20	19.40	1.20	12.00	16.10
BH103	19.10	20.20	1.10	11.00	13.70
BH104	17.90	19.20	1.30	13.00	15.80
BH105	18.90	19.60	0.70	7.00	12.50
BH106	18.70	19.10	0.40	4.00	13.90
BH107	18.90	19.70	0.80	8.00	15.10
BH108	18.30	18.90	0.60	6.00	14.40

- 9.17 Based on current site levels and the depth of the worked seam the majority of the site appears to have a sufficient thickness of rock cover. However, in consideration of the anticipated basement excavations within Buildings 9 and 10 (up to 10mbgl) and the apparent migration of the void in the Soil Mechanics BH3 it is anticipated that there would be insufficient solid rock cover to prevent possible further collapse of strata in these areas.
- 9.18 Therefore, the risk of surface instability resulting from ground movement associated with collapse of abandoned shallow mine workings is considered high beneath Buildings 9 and 10 and low to moderate elsewhere. This should be confirmed by further development specific investigations and preferably once the existing structures have been demolished so as to provide a comprehensive coverage of the site.

- 9.19 Therefore, where basements are envisaged or where site re-profiling reduces the thickness of solid rock cover above the workings, it is advised that ground stabilisation may be required prior to construction of structural foundations.
- 9.20 Such stabilisation works will involve a programme of drilling and grouting with boreholes being drilled on a primary close grid. Subsequently, a cement stabilised fly-ash or similar grout will need to be injected into the boreholes under pressure with secondary or even tertiary infill holes being grouted where necessary.
- 9.21 The probeholes will need to intersect the lowest level of disturbed ground beneath the building footprints until undisturbed rock is encountered.
- 9.22 Such work will need to be undertaken under an appropriate specification and in consultation with a specialist ground treatment specialist. The works should also be subject to specific safety measures throughout the consolidation operation, which should include the monitoring of ground gas during the drilling operations.
- 9.23 As a minimum, the works should be undertaken with reference to guidance provided in the Construction Industry Research and Information Association (CIRIA) Special Publication 32, 1984, '*Construction Over Abandoned Mine Workings*'.
- 9.24 Where it is proposed to extend piled foundations beyond the level of workings, piles would need to be designed to allow for possible negative skin friction effects from any future ground movement. Alternatively, workings would need to be grouted prior to the piling works commencing.

Possible Mine Shafts

- 9.25 No indications of a possible mine shaft have been encountered during the ground investigations. Nevertheless the existence of an unrecorded shaft should not be wholly discounted at this stage.
- 9.26 Therefore, a thorough inspection should be undertaken following the site strip and also during foundation construction to confirm that no voids, marked changes in ground conditions, buried structures or any other signs which could signify the presence of a mine shaft beneath the development footprints.

Retaining Walls

- 9.27 Due to the considerable levels difference across the site, it is envisaged that retaining walls will be required to accommodate local changes in height. Retaining walls may be external or integral with the buildings or a combination of both.
- 9.28 In addition, support will be required to basement structures in the south of the site and in view of the requirement to maintain the integrity of adjacent infrastructure in this area, it is envisaged that a contiguous piled retaining wall will be required at least along the southern site boundary.
- 9.29 Consideration should be given to designing the contiguous wall to a standard where it can become an integral part of the building in the permanent state.

Foundations

- 9.30 Made Ground at the site is considered unsuitable for the direct support of structural loads as it is generally incompetent, loose and variable in nature, resulting in the potential for unacceptable total and differential settlements.
- 9.31 However, foundations for small, lightly loaded retaining walls could be constructed on Made Ground provided net allowable bearing pressures did not exceed 50kN/m².

- 9.32 For relatively lightly loaded structures, shallow spread foundations may be constructed on firm or stronger Head Deposits at a depth of no less than 1.00mbgl assuming a net allowable bearing pressure of no greater than 100kN/m².
- 9.33 For heavier structures, foundations will need to be taken down to competent solid strata where a net allowable bearing pressure of 200kN/m² is considered appropriate where it is highly weathered at shallow depth. For less weathered mudstone at depth a net allowable bearing pressure of 400kN/m² may be appropriate but this would need to be confirmed by development specific ground investigations at the appropriate time.
- 9.34 All foundations will need to be adequately reinforced to compensate for possible future differential settlements from continued ground movements. In this respect, foundations should be sufficiently rigid to ideally span any ground which has subsided and for preliminary purposes a span length of 3.00m and cantilever length of 1.50m may be appropriate to account for any loss of support.
- 9.35 Multi-storey structures may therefore need to be supported on a slab and beam or cellular reinforced raft foundation.
- 9.36 Consideration may also need to be given to incorporating sufficient flexible joints to compensate for continued movement.
- 9.37 Basement foundations may need to be designed to withstand possible hydraulic uplift forces where they are constructed at depths below the groundwater table. The Soil Mechanics report indicates that this could be at a depth of between 13.00m and 20.00mbgl although this will need to be confirmed by further development specific ground investigations.
- 9.38 Formation levels would need to be thoroughly inspected with any Made Ground, soft clay, coal or otherwise unsuitable material being removed and replaced with foundation concrete. In addition, exposed formations will need to be prevented from softening if left open for prolonged periods, particularly during inclement weather conditions.
- 9.39 Where foundations are constructed in proximity to existing, removed or proposed trees, identification of the tree species will be required to determine their water demand as provided in Appendix 4.2-A of NHBC Standards 2010, Foundations, Chapter 4.2, Building Near Trees. Assessment of the clay shrinkage/heave potential should then be undertaken in consideration of a medium volume change potential for the clay.

Floor Slabs

- 9.40 Floor slabs for the new structures should be suspended and sufficiently reinforced to withstand potential horizontal forces, unless a fully reinforced raft foundation is adopted.

Excavations and Groundwater

- 9.41 Excavations beneath the majority of the site should be feasible using an appropriate scale of hydraulic plant. However, deep excavations for the basement structures for Buildings 9 and 10 will extend into moderately strong mudstone, requiring the use of hydraulic breakers and ripping techniques.
- 9.42 This will need to be further assessed following development specific ground investigations at the appropriate time.
- 9.43 No significant groundwater inflow is anticipated into excavations although shallow perched groundwater conditions may occur locally. Conventional 'sump and pump' dewatering measures are however considered adequate to keep excavations dry.

Pavement Design

- 9.44 The pavement design value is based on a comparison with Table 5.1 'Equilibrium Subgrade CBR Estimation' in 1AN 73/06. From this it is recommended that new pavements should be designed on a CBR value for formation soils of no more than 3.0% where Made Ground or natural cohesive soils are exposed at formation level.
- 9.45 However, due to the potential variation in ground conditions across the site, the design value will need to be reviewed and confirmed by suitable in-situ testing at formation levels following any earthwork operations and prior to pavement construction.
- 9.46 Notwithstanding this, the formation at all levels should be proof-rolled prior to pavement construction, and any soft zones thus revealed should be excavated out, with the resulting excavation in-filled with appropriately graded engineered granular fill.

Concrete Design

- 9.47 Design/mix of buried concrete should be undertaken in accordance with the "Aggressive Chemical Environment for Concrete" (ACEC) classification, of BRE Special Digest 1:2005 (Concrete in Aggressive Ground). In consideration of the current development plan which includes the historically developed areas of the site, it is deemed necessary to classify the site as "Brownfield", with respect to BRE Special Digest.
- 9.48 Concentrations of 2:1 water/soil extract for sulphate do not exceed 0.06mg/l with values of pH ranging from 7.2 to 11.1 indicating near neutral to alkaline conditions.
- 9.49 On the basis of these results, the typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the site would be DS-1 and AC-1 respectively.
- 9.50 However, in view of the potential for sulphate to be present in the PLCM strata, it may be prudent to increase the design class to DS-2 and the ACEC class to AC-2z.
- 9.51 This should be confirmed where necessary by further chemical analysis of formation soils.

Drainage and Soakaways

- 9.52 In consideration of the cohesive nature of the natural soils beneath the site, soakaways are not considered a feasible drainage option for the site. However, this may need to be confirmed by appropriate soakaway testing at drainage design stage.

Colliery Spoil

- 9.53 Although not encountered within any of the exploratory holes, the localised presence of colliery spoil cannot be wholly discounted at the site.
- 9.54 Such material can be problematic due to its potential to expand / heave on exposure to air and / or inundation with water and its inherently high sulphate content and low pH values, which can be aggressive to buried concrete.
- 9.55 Also, such material may have the potential to be combustible, particularly if it contains high percentages of coal or is high in carbon content.
- 9.56 Therefore, if encountered during inspection following the site strip, consideration should be given to removing any such material where it will potentially interact with new building foundations and floor slabs.

10.0 GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA)

General

- 10.1 A review of the desk study and historical investigations has concluded that the potential for a significant pollution linkage to be present is low with more localised risks associated with the former timber yard and works in the southern section of the site.
- 10.2 This has been confirmed to a large degree by the physical ground investigation with no significant visual and/or olfactory evidence of significant ground contamination being encountered.
- 10.3 However, in view of the presence of Made Ground beneath the site, it has been considered prudent to adopt a precautionary principal and undertake chemical analysis of selected samples of sub-surface soils to provide further information on the conceptual model and hence confirm the low human health risk status of the site.

Human Health

- 10.4 Selected samples have been analysed for a general suite of contaminants of concern and compared against Screening Levels (SL's) for human health to determine the significance of the measured concentrations in relation to the site conceptual model. Thus a Generic Quantitative Risk Assessment has been undertaken in line with guidelines provided in CLR11, Model Procedures for the Management of Land Contamination, 2004.GQRA).
- 10.5 Criteria for a limited number of contaminants have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.
- 10.6 Within the document, Category 4 Screening Levels (C4SL's) are described as being more pragmatic than previous screening criteria and represent concentrations in soil that present an 'acceptable' level of risk within the context of Part 2A.
- 10.7 The National Planning Policy Framework states that 'after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990'. Therefore by inference, the C4SL's are appropriate for use in the planning context.
- 10.8 Although the SP1010 document states that C4SL only apply for a 'sandy loam soil with 6% soil organic matter', it is generally accepted that assessment criteria for metals are not sensitive to changes in soil organic content (SOM). The C4SL's have therefore been adopted as assessment criteria in this report for the listed metals within the SP1010.
- 10.9 More recently, LQM/CIEH have published a revised document entitled 'The LQM/CIEH S4ULs for Human Health Risk Assessment' 2015. In brief, the document provides updated assessment criteria which have been derived in accordance with UK legislation, national as well as EA policy and using a modified version of the CLEA software and available guidance. The new screening criteria, or Suitable 4 Use Levels (S4ULs), are intended to provide a complete and updated replacement to the previous LQM/CIEH GAC of 2009. As such they are considered appropriate for use in this assessment for other contaminants not covered by C4SL's and/or for organic contaminants assuming a worst case Soil Organic Matter (SOM) of 1% as an initial conservative assessment.
- 10.10 For each contaminant, S4UL's and C4SL's have been calculated for six land use scenarios, namely:
- Residential with homegrown produce.
 - Residential without homegrown produce.
 - Allotments.
 - Commercial.
 - Public Open Space near residential housing.

- Public Parks (remote from residential housing).

10.11 In light of the proposed development being in part residential, the SL's for a "Residential without homegrown produce" end-use are considered appropriate as a preliminary conservative assessment for the site as a whole. The reference value table is provided in Appendix 9.

10.12 However, SL's for a "Commercial" end-use are also included for reference.

Soil Test Results

10.13 7no samples of Made Ground have been analysed as part of the current investigation for suites of Metals, Semi-Metals, PAH's and more locally TPH. The results indicate that the majority of the samples contain concentrations below the stringent SL's.

10.14 The exception to this is associated with a single sample of Made Ground from WS101 at a depth of 0.80m, where a slight hydrocarbon odour was noted on the log. This sample recorded slightly elevated levels of lead, PAHs, aliphatic hydrocarbons in the heavier C16 to C35 range as indicated below.

Contaminant	Number of Samples Exceeding SL	SL (mg/kg)	Recorded Concentrations (mg/kg)
Lead	1	310	340
Benzo[a]pyrene	1	3.9	7.5
Benzo[b]fluoranthene	1	3.2	6.2
Dibenz[a,h]anthracene	1	0.31	1.2
TPH C16-C21 (Aromatic)	1	1900	2000
TPH C21-C35 (Aromatic)	1	1900	3100

10.15 None of the samples analysed indicated the presence of asbestos fibres.

10.16 None of the samples exceeded the SL's for a "Commercial" end use.

Conclusions

10.17 In consideration of the chemical test results it is concluded that the site does not contain any significant and / or widespread contamination sources.

10.18 The localised presence of slightly elevated concentrations of lead and aromatic hydrocarbons in a single sample of Made Ground in the north of the site is related to a hydrocarbon odour recorded at 0.80m. No free hydrocarbon product was noted in the probehole suggesting that the slight contamination is localised in nature and could be due to asphalt within the sample matrix.

10.19 As such, the measured levels of contamination are not considered to pose a significant risk to human health in the context of the proposed development although further development specific ground investigations and analysis will be required at the appropriate time.

10.20 Furthermore, where these materials are surfaced with buildings and hardstanding, there will be no mechanism for a direct contact pollution linkage. Therefore the risk to the end-user and to the general public will be negligible in such areas.

10.21 However, as a direct contact pollution linkage is plausible in proposed landscaped areas, it is recommended that any suspect Made Ground exposed at the surface is removed or is covered by clean sub-soil and topsoil thus removing the pollution linkage. This will normally comprise a 300mm clean cover over the existing Made Ground. However, where the Made Ground is currently less than 600mm

thick, it may be more appropriate to excavate and remove it to expose the underlying natural soils prior to placement of a suitable thickness of sub-soil/topsoil.

- 10.22 It may also be prudent to allow for encountering unrecorded contamination, particularly beneath existing floor slab and areas of hardstanding, including Asbestos Containing Material (ACM) during the groundwork operations.
- 10.23 Where excavated topsoil is considered for re-use in landscaped areas, further chemical analysis will be required to confirm its suitability.

11.0 GROUND GAS RISK ASSESSMENT

Methodology

- 11.1 Current guidance for the assessment of risk associated with the presence of hazardous ground gases (principally methane and carbon dioxide) is provided in two key documents, namely:
- Code of practice for the Characterisation and remediation from Ground Gas in Affected Developments. British Standard Institution (BS 8485:2015); and
 - Assessing Risks posed by Hazardous Ground Gases to Buildings CIRIA (C665, 2007).
- 11.2 The assessment presented herein is primarily based on the BS8485 document.
- 11.3 Hazardous ground gas qualitative risk assessment is based on a conceptual model similar to that used for soil and groundwater contamination sources (i.e., source-pathway-receptor pollutant linkages). A semi-quantitative estimate of risk can be assessed based on knowledge of the conceptual model and a measure of hazardous gas concentration and gas flow at the site within monitoring standpipes.
- 11.4 Based on the measured flow rates and hazardous gas concentrations, individual "hazardous gas flow rates" (Q_{hg}) can be derived for each monitoring point, from which the "site characteristic hazardous gas flow rate" (Q_{hgs}), and then the "Characteristic Situation" (CS) can be determined.
- 11.5 BS8485 provides guidance on the level of gas protection requirements based upon the characteristic situation and the proposed development based on building type as outlined in Table 3.

Table 3 - Building Types

	Type A	Type B	Type C	Type D
Ownership	Private	Private or commercial/ Public, possible multiple	Commercial / Public	Commercial / Industrial
Control (Change of use)	None	Some but not all	Full	Full
Room Sizes	Small	Small/ medium	Small to Large	Large Industrial/ Retail Park

- 11.6 The proposed development therefore is indicated to comprise the construction of both Type B buildings which comprise managed commercial and public buildings with small rooms and Type C which comprise commercial buildings with central building control to undertake building maintenance.

Ground Gas Conceptual Model

- 11.7 The property is not within an area where radon protection is required.
- 11.8 There are no active, non-operational or historic landfills within 500m of the site.
- 11.9 The underlying geology includes abandoned workings within relatively shallow coal seams which could have the potential to release hazardous ground gas through possible lines of weakness in the solid strata such as geological faults or mine entries.
- 11.10 Ground investigations have confirmed that no areas of relatively deep Made Ground with the potential to generate hazardous concentrations and volumes of ground gas occur beneath the site.

- 11.11 During previous investigations, ground gas monitoring recorded slightly elevated concentrations of methane, ranging from below detectable limits to 1.1% by volume in air (v/v) and slightly elevated concentrations of carbon dioxide, ranging from below detectable limits to 3.8%v/v. No significant flow rates were recorded.
- 11.12 In consideration of the preliminary conceptual model, the preliminary risk to the development from ground gas has been assessed as medium. It has therefore been considered prudent to undertake ground gas monitoring, primarily for methane and carbon dioxide, with associated flow rates, on two occasions to date, on 13th and 20th January 2017.

Monitoring Results and Recommendations

- 11.13 The results indicate concentrations of methane below detection limits with a maximum carbon dioxide concentration of 2.3% by volume in air (v/v). No positive ground gas flows were recorded during the monitoring visits.
- 11.14 The results give a maximum composite Q_{hg} value of <0.002l/hr and indicate the site to classify as Characteristic Situation (CS) 1 – 'Very Low Gas Risk' in accordance with BS8485:2015, with no specific gas protection measures required.
- 11.15 However, requirements for gas protection measures will need to be confirmed upon completion of further development specific ground gas monitoring at the appropriate time.
- 11.16 This should also be confirmed with the local authority Environmental Health / Building Control Officer prior to any building design being finalised.

12.0 OTHER POTENTIAL DEVELOPMENT CONSIDERATIONS

Waste Soils Characterisation

- 12.1 Excavation works undertaken during the development are likely to produce waste soils for which appropriate waste management will be required. In line with current sustainability principals, any waste soils should be considered for re-use where possible by incorporation into the development.
- 12.2 Excavated soils will be suitable for use as bulk fill, subject to engineering suitability, under proposed hardstanding.
- 12.3 Waste arisings comprising uncontaminated natural soil/completely weathered PLCM would be suitable for re-use as sub-soil within planned landscaped areas.
- 12.4 The re-use of excavated topsoil in such areas should only be considered following further confirmatory chemical analysis.
- 12.5 It should be noted that the chemical analysis results for disposal classification are assessed against different assessment criteria to those relating to contamination risk assessment. Soils that are deemed suitable for use in terms of risk to human health and the environment may not necessary be uncontaminated and could be classified as Non-Hazardous or even Hazardous for disposal purposes.
- 12.6 On the basis of the current information it is likely that the majority of excavated soil would be classified as Non-hazardous or even Inert with natural deposits classified as Inert for landfill disposal.
- 12.7 This would need to be confirmed by further analysis of bulk soils destined for disposal under consultation with the landfill operator.
- 12.8 In the event that excavated Made Ground, following inspection, is found to include significant hydrocarbons contamination or ACM and/or fibres that cannot be segregated, it may classify as Hazardous, subject to further quantification testing. Under current circumstances, the soil exhibiting slightly elevated concentrations of hydrocarbons in WS101 in the north of the site would therefore classify as Hazardous for disposal purposes.
- 12.9 In addition, for Inert Waste disposal (and in the unlikely event of Hazardous Waste disposal), allowance will need to be made for adequate Waste Acceptance Criteria (WAC) testing with appropriate consideration of the additional time and cost associated with this.

Imported Fill

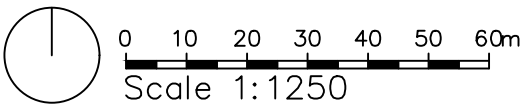
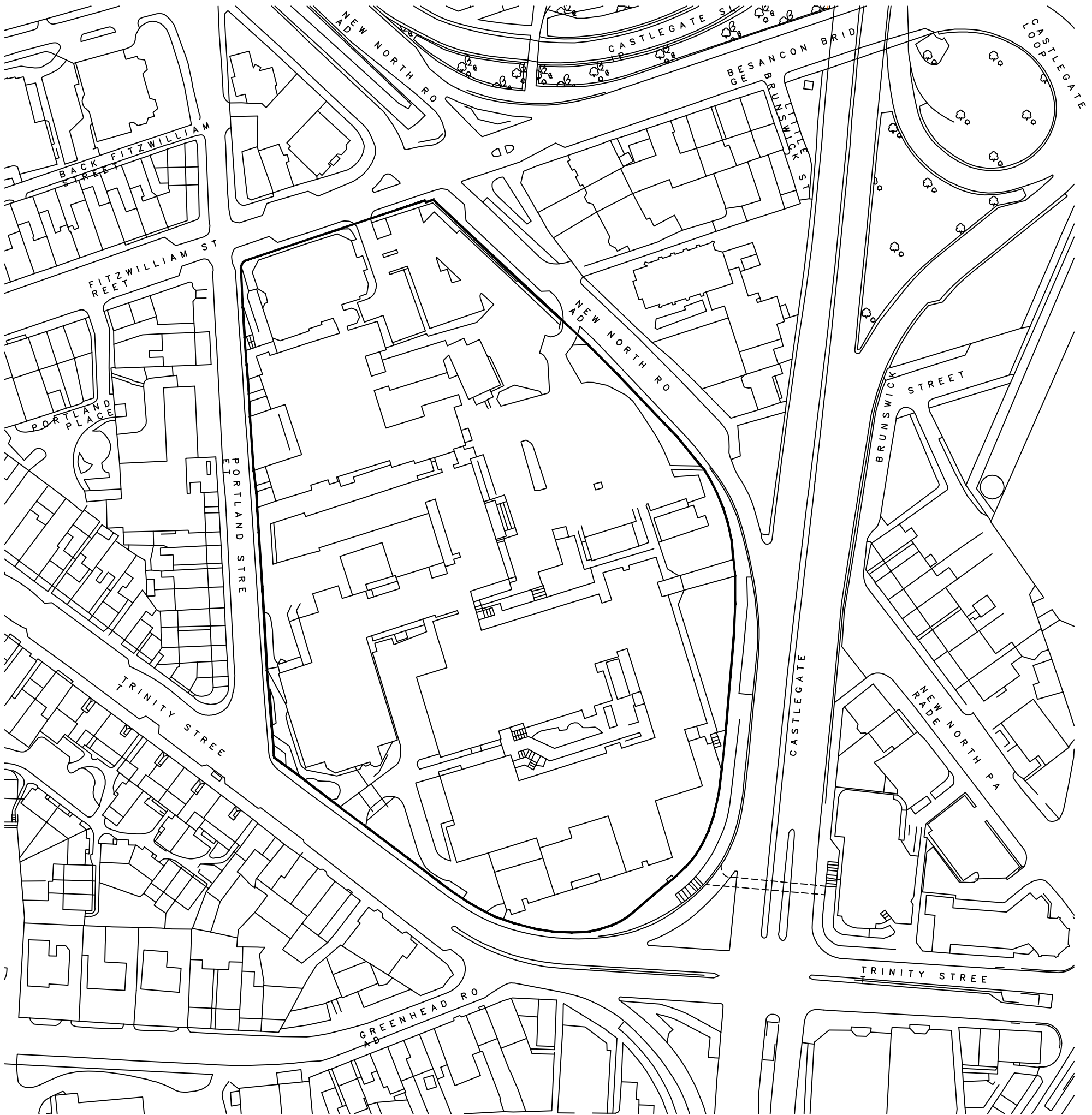
- 12.10 All imported fill, such as topsoil, will be subject to specific quality requirements. Allowance should be made for testing imported fill materials prior to emplacement to ensure suitability.

Water Supply Pipes

- 12.11 The utilities company will need to be consulted with regards to the selection of suitable water supply pipe materials for the development. However, in light of the ground conditions encountered, the requirement for specific materials and measures to protect the water supply from ground contamination is not envisaged.
- 12.12 However, any water supply pipes planned within areas containing elevated concentrations of hydrocarbons would possibly need to be protected or constructed of durable barrier pipe.

APPENDIX 01

Drawings



Contractor must verify all dimensions on site before commencing any work or shop drawings. If this drawing exceeds the quantities taken in any way the Architects are to be informed before the work is initiated. Only figured dimensions to be taken from this drawing. Do not scale off this drawing. Drawings based on Ordnance Survey and / or existing record drawings – design and drawing content subject to Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals. Authorised reproduction from Ordnance Survey Map with permission of the Controller of Her Majesty's Stationary Office. Crown Copyright reserved. Enjoy Design Ltd.

Rev. Des.

By Date Ch.

INFORMATION

Client: Rhodes Asset Management Ltd		Job No. 16,047
Project: FORMER KIRKLEES COLLEGE HUDDERSFIELD		
Title: Proposed Location Plan		
Date: Nov16	Scale: 1/1250@A3	Checked By: RG
Drawing No: 00 010	Drawn By: JNS	Revision: ~

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Scale 1:1000

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B	colour change to existing bldg	MP	13Dec16	RG
A	client comments + re-configure bldgs 4,5,6,7	JNS	30Nov16	RG
Rev. Des.		By	Date	Ch.

COMMENTS	Rhodes Asset Management Ltd			Job No. 16,047
	Project: FORMER KIRKLEES COLLEGE HUDDERSFIELD			
	Title: Proposed Site Plan			
	Date: Nov16	Scale: 1/1000@A3	Checked By: RG	
Status	Drawing No: 00 001	Drawn By: JNS	Revision: B	

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Topographical Survey Legend

Symbol	Description	Symbol	Description
...	...	...	...

Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.

Survey Station Coordinates

Stn	Easting	Northing	Level
0001	414038.27	417008.53	111.91
0006	413971.27	416956.99	115.16
0002	414129.33	416909.67	105.81
0003	414138.70	416810.03	103.86
0004	414399.90	416736.98	105.33
0005	413986.24	416797.45	111.41
005A	413982.89	416935.29	114.44
06A1	414007.80	416944.18	112.69
06B9	413974.69	416904.19	114.16
CJ1A	413990.75	416983.55	114.34
CJ1C	414023.14	416955.23	110.26
CJ1B	414020.60	416963.19	112.07
CJ1D	414071.93	416944.01	109.36
CJ1E	414076.90	416915.65	108.36
CJ1F	414083.18	416893.30	108.23
CJ1G	414037.49	416904.74	109.61
CJ1H	413975.44	416860.28	113.26
CJ1I	413988.51	416898.60	112.72
SB1A	413986.35	416889.28	113.55
SB1C	414025.45	416898.97	110.53
SB1D	414013.32	416896.37	110.70
SB1B	414005.57	416877.60	111.07
SB1F	414029.44	416884.27	110.12
SB1G	414043.31	416876.66	111.30
SB1E	414029.65	416880.43	108.06
OS4A	414051.07	416820.43	108.06
OS4B	414028.08	416801.75	109.66
OS4C	414051.07	416820.43	108.06
SAGA	414102.78	416824.70	106.26
OS4D	414049.13	416777.12	105.76
SAGA	414083.30	416787.34	105.65
OS4I	414034.89	416846.41	109.54
OS4A	414089.41	416768.12	106.08
OS4B	414133.39	416864.32	106.44
JA01	414107.27	416876.24	106.24
JA02	414056.97	416866.67	109.25
CJ5G	414075.70	416860.97	107.05
CJ5C	414028.52	416918.10	111.64
CJ5B	414116.33	416778.41	103.54
CJ4A	414044.66	416751.30	108.36
CJ5A	414034.15	416817.57	109.37
CJ5B	414093.68	416820.77	106.33
CJ5C	414053.46	416814.69	108.05
CJ5D	413977.97	416834.88	110.60
CJ5E	414015.62	416893.64	110.61
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JA04	413973.38	416928.62	114.61
CJ4B	413986.61	416937.65	114.45
JA04	414016.62	416923.02	112.78
JA05	414101.36	416890.20	107.23
BM05	414061.19	416868.50	109.55

OSBM 414095.48 416948.34 108.31m

Levels are related to OSBM
Value 105.31m
Situated on wall outside St. Patrick's Church,
as shown on Dwg SSL:9905:200:1:4
Coordinates are related to National Grid (Graphical)

Scale 1:200

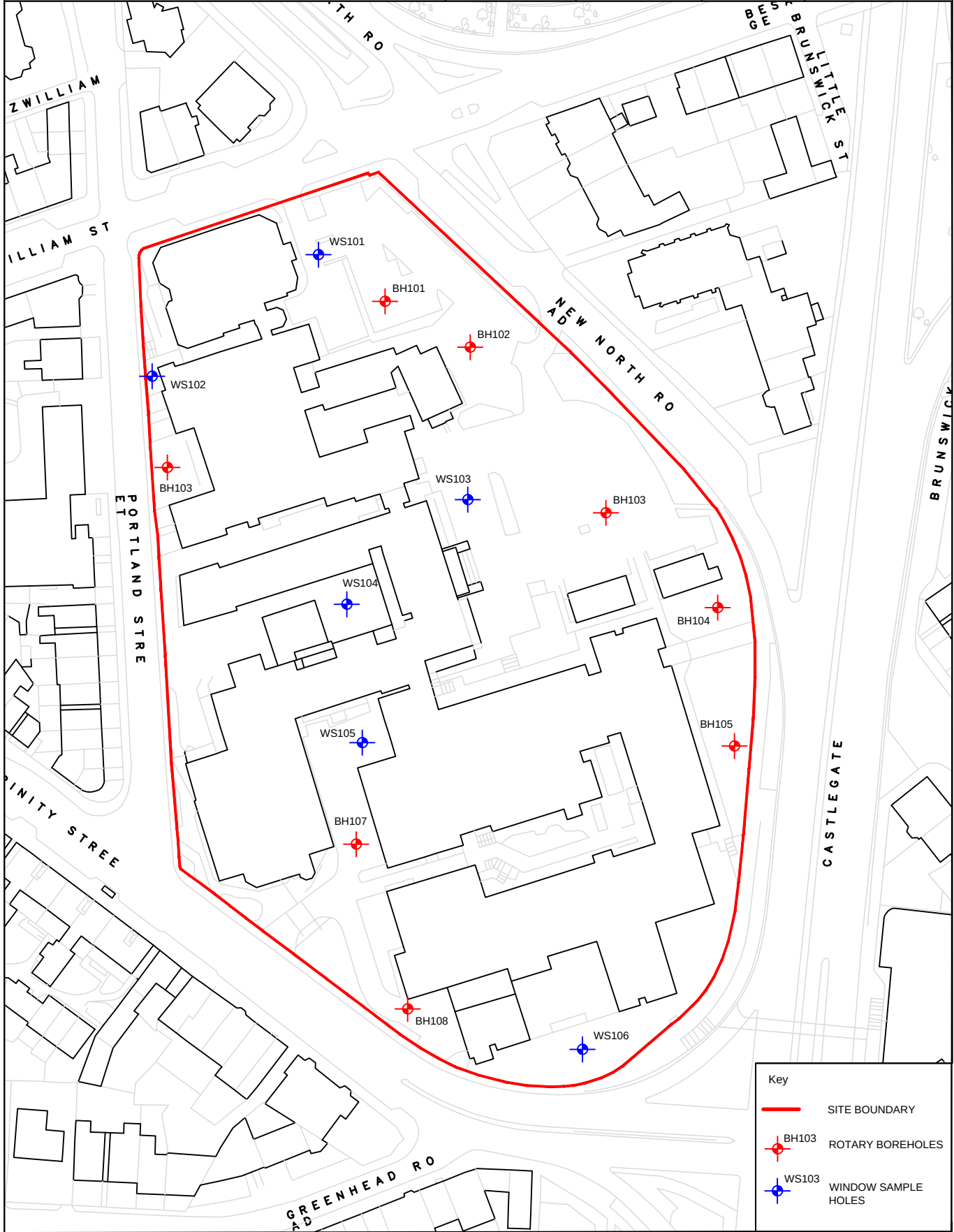
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Topographical Survey
Huddersfield Technical College

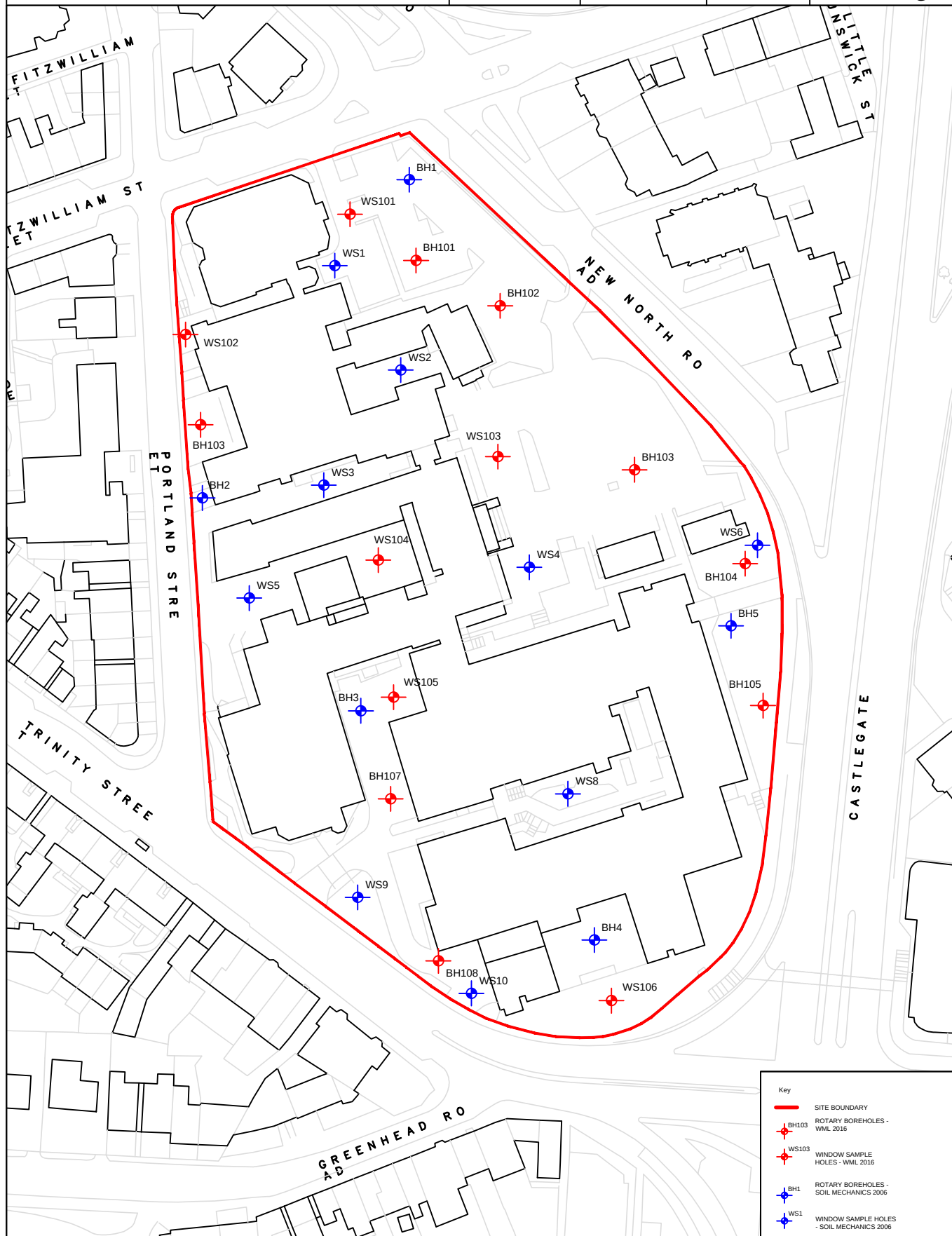
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Date: Jan 2006
Drawn: AGS ADG
Checked: AG
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Revised: N/A
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Project Trinity Street, Huddersfield		WML CONSULTING Civil, Structural & Geotechnical Engineers No.8 Oak Green Earl Road Stanley Green Business Park Cheadle Hulme Cheshire SK8 6QL Tel 0161 482 0600 Fax 0161 486 9210 e-mail info@wmlconsulting.com www.wmlconsulting.com			
Title EXPLORATORY HOLE LOCATION PLAN					
Job No. 7344G	Drawing No. SK-01 -	Drawn SCS	Checked PGD	Date 09/12/16	Scale 1:1250 @A4



Project Trinity Street, Huddersfield		WMLCONSULTING Civil, Structural & Geotechnical Engineers No.8 Oak Green Earl Road Stanley Green Business Park Cheadle Hulme Cheshire SK8 6QL Tel 0161 482 0600 Fax 0161 486 9210 e-mail info@wmlconsulting.com www.wmlconsulting.com			
Title COMBINED EXPLORATORY HOLE LOCATION PLAN					
Job No.	Drawing No.	Drawn	Checked	Date	Scale
7344G	SK-02 -	SCS	PGD	09/12/16	1:1250 @A4



APPENDIX 02

Site Photographs



Photograph 1

View west from the eastern section of the site towards Grade II listed structure.

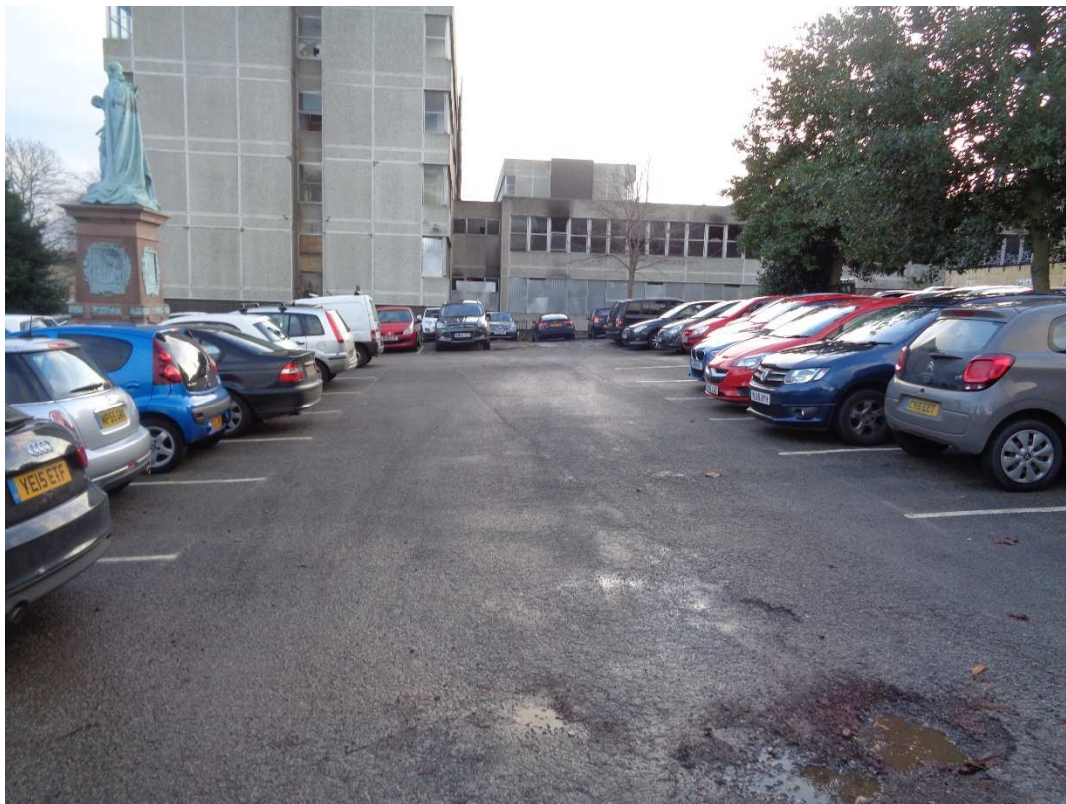


Photograph 2

View towards monument in the eastern car park.



Photograph 3
View north-west across car park in the north.



Photograph 4
View south in the eastern section of the site.



Photograph 5
Front elevation of Grade II listed structure.



Photograph 6
Elevation changes in the central section of the site.



Photograph 7
View south-east towards the junction of Castlegate and Trinity Street.



Photograph 8
South-eastern section of the site looking north along eastern boundary.



Photograph 9
Steps from the south-eastern corner to Castlegate, with the pedestrian subway just visible to the left.



Photograph 10
Southern section of the site along Trinity Street.



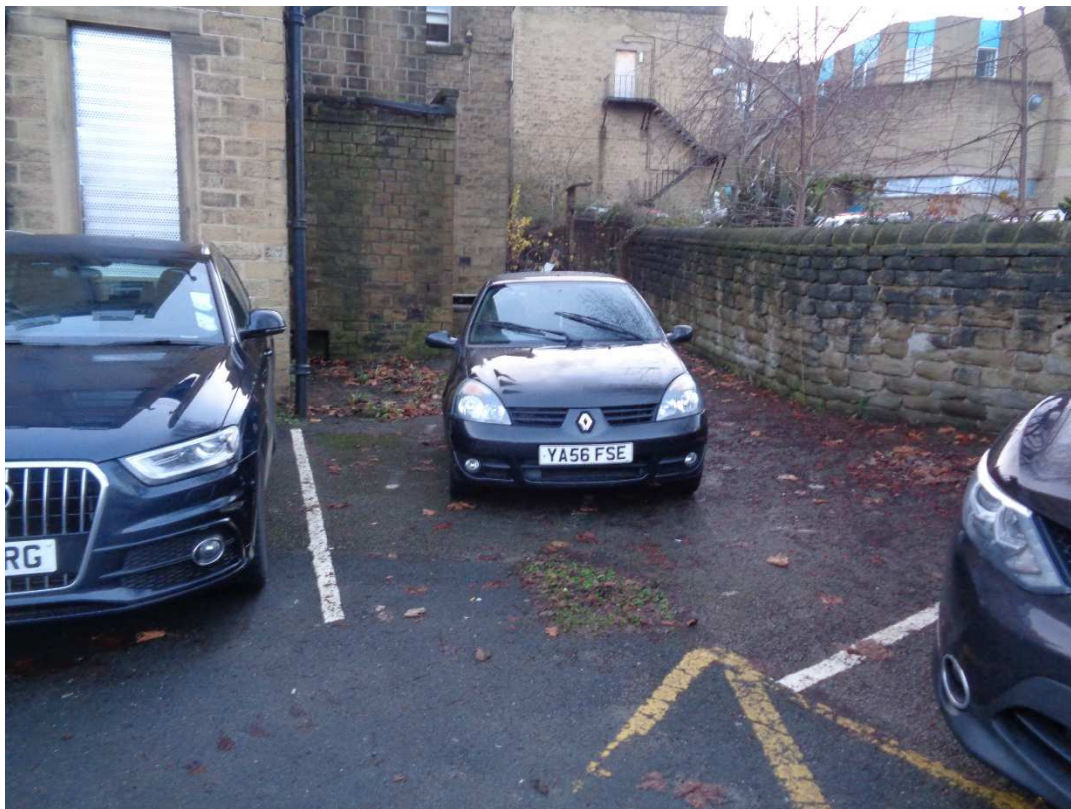
Photograph 11
View south along Portland Street with the site behind the fenced area to the left.



Photograph 12
View east across disused structures along Portland Street.



Photograph 13
Area used for parking off Portland Street opposite the children's nursery.



Photograph 14
View east from the central/western area of the site from Portland Street.

APPENDIX 03

Groundsure EnviroInsight Report



WML Consulting

UNIT 8 WRIGHT MOTTERSHAW LYDON
CONSULTING LTD, STANLEY GREEN BUSINESS
PARK,
CHEADLE/CHEADLE HULME, SK8 6QL

Groundsure
Reference:

GS-3576319

Your Reference: 7344G_-_Trinity_Lane

Report Date

18 Jan 2017

Report Delivery Method: Email - pdf

Groundsure Enviro Insight

Address: KIRKLEES COLLEGE, 37, NEW NORTH ROAD, HUDDERSFIELD, HD1 5NN

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Groundsure Enviro Insight

Address: KIRKLEES COLLEGE, 37, NEW NORTH ROAD, HUDDERSFIELD, HD1 5NN
Date: 18 Jan 2017
Reference: GS-3576319
Client: WML Consulting

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 26-Mar-2012
Grid Reference: 414055,416834
Site Size: 2.41ha

Report Reference: GS-3576319
Client Reference: 7344G_-_Trinity_Lane

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	5	0	58	45
1.2 Additional Information – Historical Tank Database	2	0	4	13
1.3 Additional Information – Historical Energy Features Database	0	0	21	49
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	1
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	2	15
1.6 Potentially Infilled Land	0	0	24	31

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	336
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	2
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	3
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	1
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	3	9	29

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	18	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology						
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No					
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes					
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.						

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes					
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	2	10	16
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	9	7
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	5	2
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	Yes	Yes
6.10 Detailed River Network entries within 500m of the site	0	0	0	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding						
7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low					

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	2
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	1	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	2

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	Yes
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

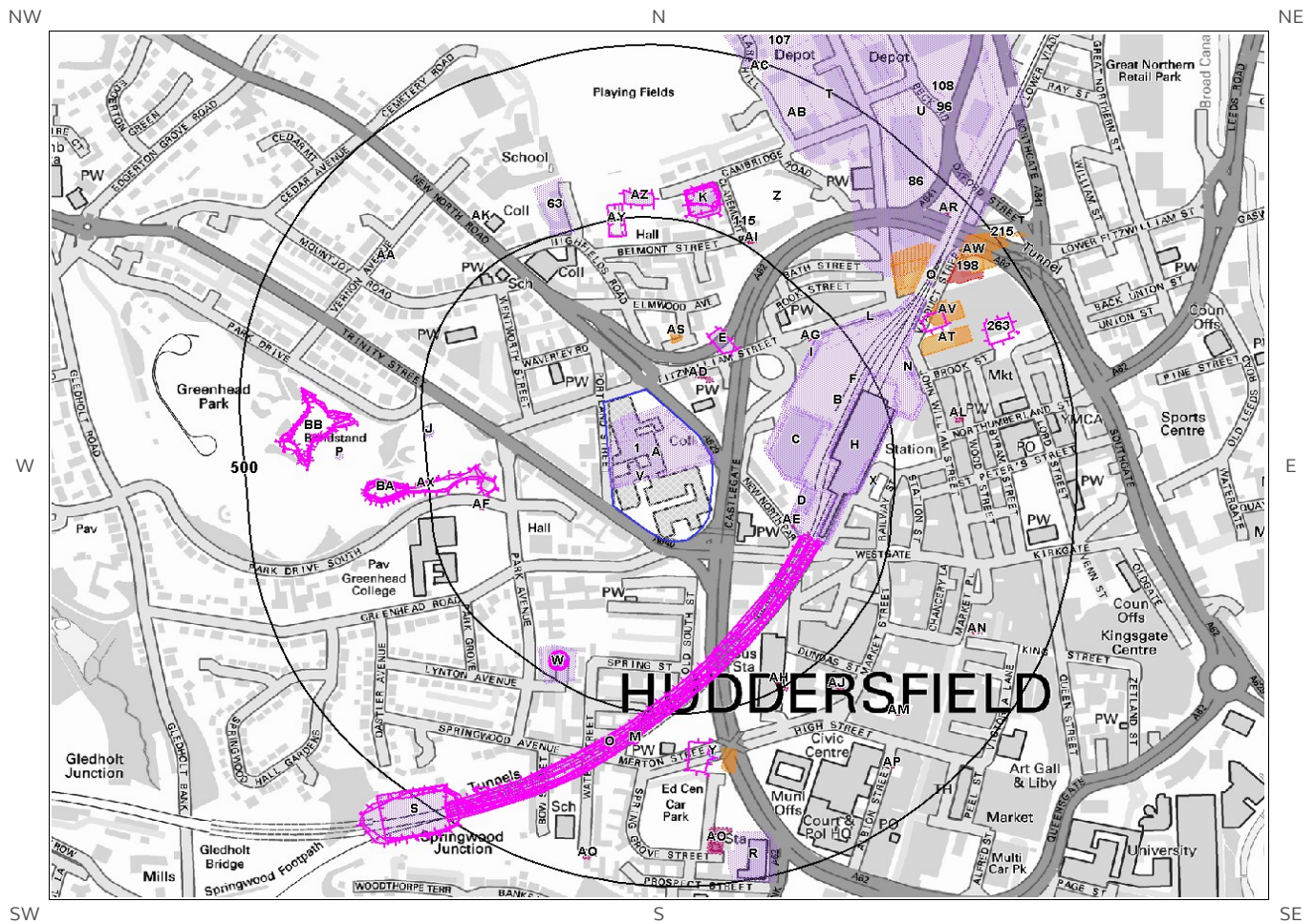
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping



Site Outline



Industrial Land Use



Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping



Search Buffers (m)



Energy Features



Petrol Stations



Tanks



Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 108

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Infirmary	1966
2A	0	On Site	Infirmary	1948
3A	0	On Site	Infirmary	1905
4A	0	On Site	Infirmary	1956
5A	0	On Site	Infirmary	1938
6B	72	E	Railway Sidings	1938
7B	75	E	Railway Sidings	1956
8C	77	E	Goods Shed	1938
9C	78	E	Railway Building	1948
10C	78	E	Railway Building	1905
11C	80	E	Railway Building	1975
12C	80	E	Goods Shed	1966
13C	80	E	Goods Shed	1956
14C	80	E	Railway Building	1985
15B	80	E	Railway Sidings	1985
16B	80	E	Railway Sidings	1975
17B	80	E	Railway Sidings	1966
18D	109	E	Railway Building	1938
19D	110	E	Railway Building	1956
20D	110	E	Railway Building	1948
21D	110	E	Railway Building	1905
22E	110	NE	Cuttings	1975
23E	110	NE	Cuttings	1985
24B	111	E	Railway Sidings	1889
25D	112	E	Railway Building	1975
26D	112	E	Railway Building	1966
27D	112	E	Railway Building	1985
28F	119	E	Railway Sidings	1948
29F	119	E	Railway Sidings	1905
30G	124	SE	Tunnel	1938
31G	125	SE	Tunnels	1985
32G	125	SE	Tunnels	1966
33G	125	SE	Tunnels	1956
34G	125	SE	Tunnels	1975

35G	127	SE	Tunnel	1905
36G	127	SE	Tunnel	1948
37G	141	SE	Tunnel	1948
38G	141	SE	Tunnel	1905
39G	143	SE	Tunnels	1966
40G	143	SE	Tunnels	1985
41G	143	SE	Tunnels	1975
42G	143	SE	Tunnels	1956
43H	144	E	Railway Station	1889
44H	147	E	Railway Station	1985
45H	147	E	Railway Station	1975
46H	147	E	Railway Station	1966
47H	149	E	Railway Station	1938
48H	151	E	Railway Station	1948
49H	151	E	Railway Station	1905
50H	153	E	Railway Station	1956
51I	171	NE	Railway Buildings	1948
52I	171	NE	Railway Buildings	1905
53I	175	NE	Railway Buildings	1938
54I	178	NE	Railway Building	1975
55I	178	NE	Railway Building	1985
56I	178	NE	Railway Buildings	1956
57I	178	NE	Railway Building	1966
58I	184	NE	Railway Building	1889
59W	199	SW	Water Works	1889
60J	236	W	Unspecified Tank	1975
61J	236	W	Unspecified Tank	1985
62J	236	W	Unspecified Tank	1966
63	245	N	Unspecified Works	1985
64K	259	N	Unspecified Pit	1948
65K	260	N	Unspecified Pit	1889
66L	264	NE	Railway Buildings	1938
67L	267	NE	Railway Buildings	1975
68L	267	NE	Railway Buildings	1985
69L	267	NE	Railway Buildings	1956
70L	267	NE	Railway Buildings	1966
71AZ	268	N	Cuttings	1889
72K	273	N	Unspecified Pit	1938
73K	273	N	Unspecified Pit	1938
74K	276	N	Unspecified Pit	1956
75M	287	S	Unspecified Shafts	1975
76M	287	S	Unspecified Shafts	1985
77N	294	NE	Railway Building	1938
78N	294	NE	Railway Building	1905
79N	294	NE	Railway Building	1948
80N	297	NE	Railway Building	1966

81N	297	NE	Railway Building	1985
82N	297	NE	Railway Building	1975
83N	297	NE	Railway Building	1956
84O	300	S	Unspecified Shafts	1975
85O	300	S	Unspecified Shafts	1985
86	337	NE	Goods Station	1956
87P	363	W	Unspecified Tank	1966
88P	363	W	Unspecified Tank	1975
89P	363	W	Unspecified Tank	1985
90Q	381	NE	Railway Building	1938
91Q	385	NE	Railway Building	1956
92U	387	NE	Railway Sidings	1956
93T	400	NE	Printing Works	1905
94R	429	S	Fire Station	1985
95BC	433	SW	Unspecified Ground Workings	1889
96	444	NE	Goods Yard	1966
97R	445	S	Fire Station	1975
98R	445	S	Fire Station	1966
99S	459	SW	Cuttings	1966
100S	459	SW	Cuttings	1985
101S	459	SW	Cuttings	1975
102T	461	NE	Goods Station	1938
103S	465	SW	Cuttings	1948
104S	465	SW	Cuttings	1905
105S	467	SW	Cuttings	1889
106U	477	NE	Railway Sidings	1948
107	486	N	Unspecified Works	1956
108	494	NE	Railway Sidings	1966

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

19

ID	Distance (m)	Direction	Use	Date
109V	0	On Site	Unspecified Tank	1994
110V	0	On Site	Unspecified Tank	1993
111W	211	SW	Unspecified Tank	1893
112X	218	E	Unspecified Tank	1918
113X	218	E	Unspecified Tank	1907
114X	218	E	Unspecified Tank	1932

115	273	NE	Unspecified Tank	1890
116M	288	S	Unspecified Tank	1893
117Y	308	S	Unspecified Tank	1907
118Y	316	S	Tanks	1932
119Y	316	S	Tanks	1918
120Z	327	NE	Tanks	1978
121Z	327	NE	Tanks	1983
122AA	362	NW	Unspecified Tank	1893
123AA	363	NW	Unspecified Tank	1907
124AB	445	NE	Unspecified Tank	1893
125AB	445	NE	Unspecified Tank	1890
126AC	488	N	Unspecified Tank	1978
127AC	488	N	Unspecified Tank	1983

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

70

ID	Distance (m)	Direction	Use	Date
128AD	58	NE	Electricity Substation	1993
129AD	59	NE	Electricity Substation	1978
130AD	62	NE	Electricity Substation	1982
131AD	62	NE	Electricity Substation	1990
132AD	62	NE	Electricity Substation	1977
133AD	63	NE	Electricity Substation	1994
134AD	63	NE	Electricity Substation	1993
135AD	64	NE	Electricity Substation	1983
136AE	110	E	Electricity Substation	1982
137AE	111	E	Electricity Substation	1990
138AE	111	E	Electricity Substation	1977
139AE	111	E	Electricity Substation	1994
140AE	111	E	Electricity Substation	1993
141AF	177	W	Electricity Substation	1993
142AF	178	W	Electricity Substation	1989
143AG	204	NE	Electricity Substation	1978
144AG	204	NE	Electricity Substation	1993
145AG	206	NE	Electricity Substation	1983
146AH	236	SE	Electricity Substation	1990
147AH	236	SE	Electricity Substation	1977
148AH	238	SE	Electricity Substation	1982
149AH	251	SE	Electricity Substation	1993

150AH	251	SE	Electricity Substation	1994
151AI	252	NE	Electricity Substation	1978
152AI	254	NE	Electricity Substation	1983
153AI	259	NE	Electricity Substation	1993
154AJ	290	SE	Electricity Substation	1982
155AJ	291	SE	Electricity Substation	1990
156AJ	291	SE	Electricity Substation	1977
157AJ	295	SE	Electricity Substation	1994
158AJ	295	SE	Electricity Substation	1993
159AK	313	NW	Electricity Substation	1985
160AK	313	NW	Electricity Substation	1993
161AK	313	NW	Electricity Substation	1993
162AL	339	E	Electricity Substation	1994
163AL	339	E	Electricity Substation	1993
164AL	342	E	Electricity Substation	1982
165AM	377	SE	Electricity Substation	1982
166AM	377	SE	Electricity Substation	1994
167AM	377	SE	Electricity Substation	1993
168AM	378	SE	Electricity Substation	1990
169AM	378	SE	Electricity Substation	1977
170AN	396	SE	Electricity Substation	1994
171AN	396	SE	Electricity Substation	1993
172AN	398	SE	Electricity Substation	1982
173AN	398	SE	Electricity Substation	1990
174AO	417	S	Electricity Substation	1995
175AO	417	S	Electricity Substation	1993
176AO	417	S	Electricity Substation	1996
177AP	427	SE	Electricity Substation	1990
178AP	427	SE	Electricity Substation	1982
179AP	427	SE	Electricity Substation	1990
180AP	427	SE	Electricity Substation	1990
181AP	427	SE	Electricity Substation	1990
182AP	428	SE	Electricity Substation	1970
183AP	428	SE	Electricity Substation	1990
184AP	428	SE	Electricity Substation	1996
185AP	428	SE	Electricity Substation	1993
186AP	428	SE	Electricity Substation	1995
187AO	430	S	Electricity Substation	1990
188AO	430	S	Electricity Substation	1990
189AO	430	S	Electricity Substation	1982
190AO	431	S	Electricity Substation	1990
191AO	431	S	Electricity Substation	1970
192AQ	466	S	Electricity Substation	1983
193AQ	466	S	Electricity Substation	1993
194AQ	466	S	Electricity Substation	1996
195AR	467	NE	Electricity Substations	1993

196AR	467	NE	Electricity Substations	1978
197AR	468	NE	Electricity Substations	1983

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

1

ID	Distance (m)	Direction	Use	Date
198	408	NE	Filling Station	1983

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

17

ID	Distance (m)	Direction	Use	Date
199AS	75	NE	Garage	1978
200AS	76	NE	Garage	1983
201Y	306	S	Garage	1970
202AT	326	NE	Garage	1978
203AT	326	NE	Garage	1959
204AT	327	NE	Garage	1958
205Q	340	NE	Garage	1983
206AU	344	NE	Garage	1959
207AU	344	NE	Garage	1978
208AU	344	NE	Garage	1958
209AV	357	NE	Garage	1959
210AV	357	NE	Garage	1978
211AV	358	NE	Garage	1958
212AW	432	NE	Garage	1959
213AW	432	NE	Garage	1958
214AW	458	NE	Garage	1959
215	467	NE	Motor Works	1918

1.6 Potentially Infilled Land

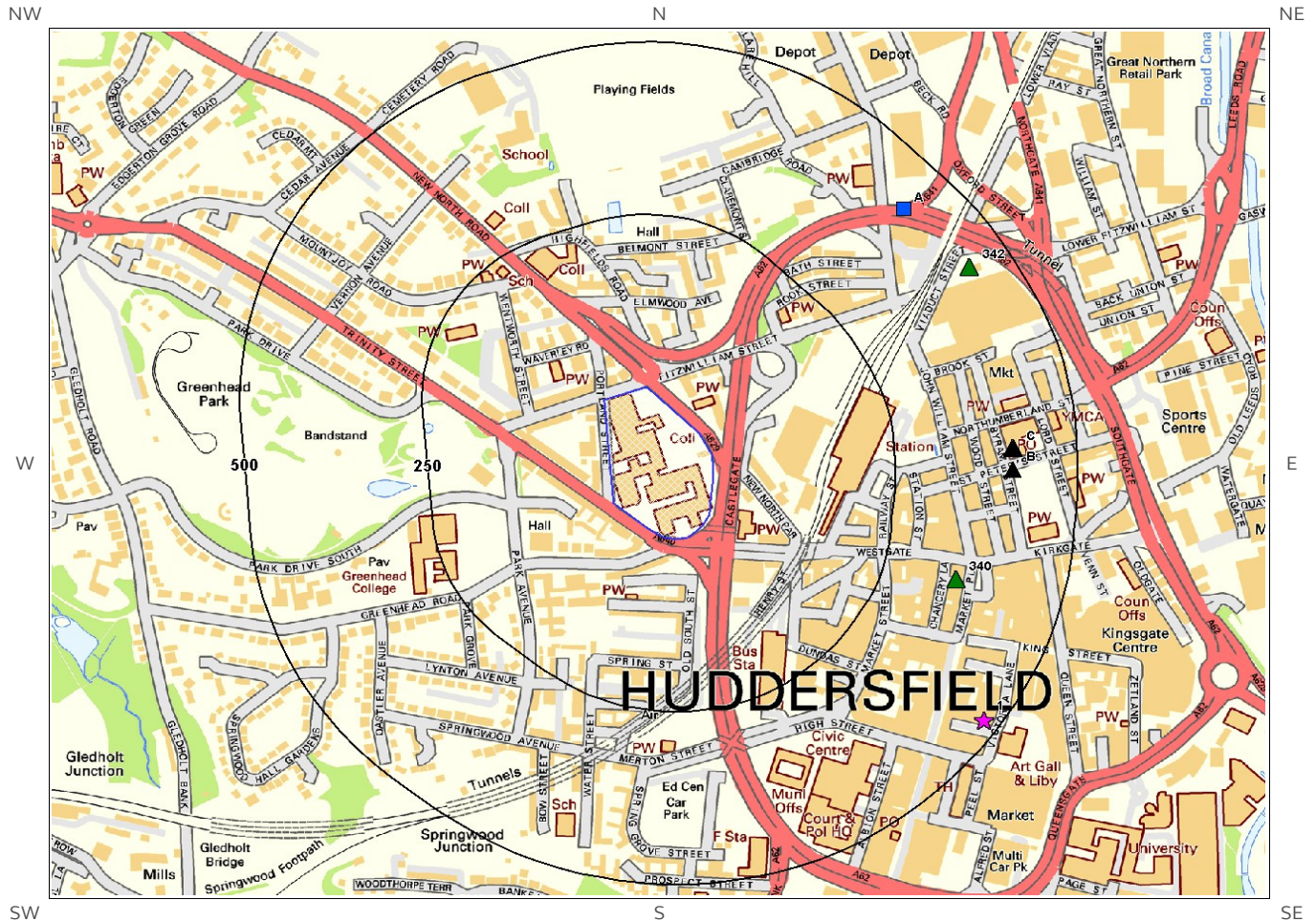
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 55

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
216E	110	NE	Cuttings	1975
217E	110	NE	Cuttings	1985
218G	124	SE	Tunnel	1938
219G	125	SE	Tunnels	1956
220G	125	SE	Tunnels	1975
221G	125	SE	Tunnels	1966
222G	125	SE	Tunnels	1985
223G	127	SE	Tunnel	1905
224G	127	SE	Tunnel	1948
225G	141	SE	Tunnel	1948
226G	141	SE	Tunnel	1905
227G	143	SE	Tunnels	1956
228G	143	SE	Tunnels	1975
229G	143	SE	Tunnels	1966
230G	143	SE	Tunnels	1985
231AX	159	W	Fish Ponds	1905
232AX	159	W	Ponds	1889
233W	210	SW	Reservoir	1938
234W	211	SW	Reservoir	1956
235W	212	SW	Reservoir	1948
236W	212	SW	Reservoir	1905
237AY	225	N	Pond	1985
238AY	225	N	Pond	1975
239AY	225	N	Pond	1966
240K	259	N	Unspecified Pit	1948
241K	260	N	Unspecified Pit	1889
242AZ	268	N	Cuttings	1889
243K	273	N	Unspecified Pit	1938
244K	273	N	Unspecified Pit	1938
245K	276	N	Unspecified Pit	1956
246BA	278	W	Pond	1938
247BA	278	W	Pond	1948
248BA	278	W	Pond	1956
249BA	278	W	Pond	1975
250BA	278	W	Pond	1966
251BA	278	W	Pond	1985
252M	287	S	Unspecified Shafts	1985
253M	287	S	Unspecified Shafts	1975

254Y	292	S	Ponds	1889
255O	300	S	Unspecified Shafts	1985
256O	300	S	Unspecified Shafts	1975
257BB	343	W	Fish Pond	1948
258BB	343	W	Fish Pond	1905
259BB	344	W	Fish Pond	1889
260AV	345	NE	Pond	1889
261BB	347	W	Fish Pond	1956
262BB	348	W	Fish Pond	1938
263	415	NE	Ponds	1889
264BC	433	SW	Unspecified Ground Workings	1889
265S	459	SW	Cuttings	1975
266S	459	SW	Cuttings	1966
267S	459	SW	Cuttings	1985
268S	465	SW	Cuttings	1905
269S	465	SW	Cuttings	1948
270S	467	SW	Cuttings	1889

2. Environmental Permits, Incidents and Registers Map



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- | | | | | | |
|---|-------------------------------|---|--|---|---|
|  | Site Outline |  | Recorded Pollution Incident |  | RAS 3 & 4 Authorisations |
|  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |  | Part A(2) and Part B Authorised Processes |
|  | Dangerous Substances (List 2) |  | COMAH / NIHHS Sites |  | Sites Determined as Contaminated Land |
|  | Water Industry Referrals |  | Hazardous Substance Consents and Enforcements | | |
|  | Licenced Discharge Consents | | | | |
|  | Red List Discharge Consents | | | | |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

336

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
343B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
344B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
345B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
346B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
347B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
348B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
349B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
350B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
351B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
352B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
353B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
354B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
355B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
356B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
357B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
358B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
359B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
360B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
361B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
362B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
363B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
364B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
365B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
366B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
367B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
368B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
369B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: SOLVENT EMISSIONS DIRECTIVE; ACTIVITIES EXCEEDING SOLVENT THRESHOLD	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
370B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
371B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: CP3738GJ Original Permit Number: UP3738LY EPR Reference: - Issue Date: 1/12/2008 Effective Date: 1/12/2008 Last date noted as effective: 2016-08-31 Status: Superseded
372B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
373B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
374B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
375B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
376B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
377B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
378B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
379B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
380B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
381B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES	Permit Number: UP3738LY Original Permit Number: UP3738LY EPR Reference: - Issue Date: 20/12/2006 Effective Date: 20/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
382B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
383B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
384B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
385B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective

ID	Distance (m)	Direction	NGR	Details	
386B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
387B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
388B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
389B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
390B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: SOLVENT EMISSIONS DIRECTIVE; ACTIVITIES EXCEEDING SOLVENT THRESHOLD	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
391B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
392B	411	E	414540 416860	Operator: Piramal Healthcare Uk Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: VP3033KY Original Permit Number: UP3738LY EPR Reference: - Issue Date: - Effective Date: 30/9/2009 Last date noted as effective: 2016-08-31 Status: Surrender Effective
393B	411	E	414540 416860	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: WP3633CS Original Permit Number: WP3633CS EPR Reference: - Issue Date: 23/1/2012 Effective Date: 23/1/2012 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
394B	411	E	414540 416860	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: WP3633CS Original Permit Number: WP3633CS EPR Reference: - Issue Date: 23/1/2012 Effective Date: 23/1/2012 Last date noted as effective: 2016-08-31 Status: Superseded
395B	411	E	414540 416860	Operator: Arch Timber Protection Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: XP3533WY Original Permit Number: XP3533WY EPR Reference: - Issue Date: 15/12/2014 Effective Date: 15/12/2014 Last date noted as effective: 2016-08-31 Status: Transfer Effective
396B	411	E	414540 416860	Operator: Arch Timber Protection Limited Installation Name: Huddersfield Chemical Industry Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: XP3533WY Original Permit Number: XP3533WY EPR Reference: - Issue Date: 15/12/2014 Effective Date: 15/12/2014 Last date noted as effective: 2016-08-31 Status: Transfer Effective
397B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: GP3835CA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
398B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
399B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
400B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
401B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: BP3439VK Original Permit Number: RP3333LP EPR Reference: - Issue Date: 20/2/2014 Effective Date: 20/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
402B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
403B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
404B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
405B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
406B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
407B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
408B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
409B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
410B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
411B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: GP3835CA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
412B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
413B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: SP3436UA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
414B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
415B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
416B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
417B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
418B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
419B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
420B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
421B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
422B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
423B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
424B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
425B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
426B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
427B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: GP3835CA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
428B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
429B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: WP3533KK Original Permit Number: RP3333LP EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
430B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
431B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: SP3436UA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
432B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
433B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination

ID	Distance (m)	Direction	NGR	Details
434B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
435B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
436B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
437B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
438B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
439B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
440B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
441B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
442B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
443B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
444B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
445B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: GP3439VZ Original Permit Number: UP3138LT EPR Reference: - Issue Date: 21/2/2014 Effective Date: 21/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
446B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
447B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
448B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
449B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
450B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
451B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
452B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
453B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
454B	411	E	414540 416860	Operator: Lubrizol Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: AP3733LE Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/12/2006 Effective Date: 18/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
455B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
456B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
457B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
458B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
459B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
460B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
461B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
462B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded
463B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
464B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded
465B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective

ID	Distance (m)	Direction	NGR	Details	
466B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded
467B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
468B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
469B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
470B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
471B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
472B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
473B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective

ID	Distance (m)	Direction	NGR	Details	
474B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded
475B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
476B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
477B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
478B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superseded
479B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
480B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
481B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: PP3636WY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective

ID	Distance (m)	Direction	NGR	Details	
482B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superceded
483B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
484B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superceded
485B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
486B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superceded
487B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
488B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superceded
489B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded

ID	Distance (m)	Direction	NGR	Details	
490B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superceded
491B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
492B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: SP3436UA Original Permit Number: RP3333LP EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superceded
493B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
494B	411	E	414540 416860	Operator: Npil Pharmaceuticals (uk) Limited Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: BP3238XM Original Permit Number: UP3738LY EPR Reference: - Issue Date: 26/3/2008 Effective Date: 26/3/2008 Last date noted as effective: 2016-08-31 Status: Superceded
495B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded
496B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superceded
497B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superceded

ID	Distance (m)	Direction	NGR	Details
498B	411	E	414540 416860	Operator: Dalkia Utilities Services Plc Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: VP3633KT Original Permit Number: UP3638LR EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
499B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superseded
500B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
501B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superseded
502B	411	E	414540 416860	Operator: Dalkia Utilities Services Plc Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: VP3633KT Original Permit Number: UP3638LR EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
503B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superseded
504B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
505B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: SP3037KS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/1/2010 Effective Date: 14/1/2010 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
506B	411	E	414540 416860	Operator: Dalkia Utilities Services Plc Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: UP3638LR Original Permit Number: UP3638LR EPR Reference: - Issue Date: 22/12/2006 Effective Date: 22/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
507B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
508B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
509B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
510B	411	E	414540 416860	Operator: Dalkia Utilities Services Plc Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: UP3638LR Original Permit Number: UP3638LR EPR Reference: - Issue Date: 22/12/2006 Effective Date: 22/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
511B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
512B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
513B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
514B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
515B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
516B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: HP3137UL Original Permit Number: UP3138LT EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
517B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES	Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
518B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
519B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
520B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE	Permit Number: WP3533KK Original Permit Number: RP3333LP EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
521B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination

ID	Distance (m)	Direction	NGR	Details
522B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: BP3439VK Original Permit Number: RP3333LP EPR Reference: - Issue Date: 20/2/2014 Effective Date: 20/2/2014 Last date noted as effective: 2016-08-31 Status: Superseded
523B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
524B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
525B	411	E	414540 416860	Operator: Arch Uk Biocides Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: WP3533KK Original Permit Number: RP3333LP EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
526B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
527B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: CP3733NR Original Permit Number: UP3138LT EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-08-31 Status: Superseded
528B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
529B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
530B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
531B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
532B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
533B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: NP3535EY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 18/12/2013 Effective Date: 18/12/2013 Last date noted as effective: 2016-08-31 Status: Superseded
534B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
535B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
536B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
537B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
538B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
539B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
540B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
541B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
542B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
543B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
544B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
545B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
546B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
547B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
548B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
549B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
550B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
551B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
552B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
553B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
554B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
555B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
556B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
557B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
558B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
559B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
560B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
561B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
562B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
563B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded
564B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
565B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
566B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
567B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
568B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: FP3538CW Original Permit Number: UP3138LT EPR Reference: - Issue Date: 14/3/2012 Effective Date: 14/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
569B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
570B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
571B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
572B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
573B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
574B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
575B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3934XU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/4/2008 Effective Date: 1/4/2008 Last date noted as effective: 2016-08-31 Status: Superseded
576B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: XP3135CY Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
577B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: HP3639FS Original Permit Number: UP3138LT EPR Reference: - Issue Date: 1/12/2011 Effective Date: 1/12/2011 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
578B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: MP3032FU Original Permit Number: UP3138LT EPR Reference: - Issue Date: 23/6/2011 Effective Date: 23/6/2011 Last date noted as effective: 2016-08-31 Status: Superseded
579B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
580B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: WP3333KM Original Permit Number: UP3138LT EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
581B	411	E	414540 416860	Operator: Syngenta Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: UP3138LT Original Permit Number: UP3138LT EPR Reference: - Issue Date: 6/12/2006 Effective Date: 6/12/2006 Last date noted as effective: 2016-08-31 Status: Superseded
582B	411	E	414540 416860	Operator: Syngenta Limited Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: HP3539DJ Original Permit Number: UP3138LT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-08-31 Status: Determination
583C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
584C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
585C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective

ID	Distance (m)	Direction	NGR	Details
586C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
587C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
588C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
589C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
590C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BP3836WF Original Permit Number: WP3633CS EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Superseded
591C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BP3836WF Original Permit Number: WP3633CS EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Superseded
592C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: RP3634AY Original Permit Number: WP3633CS EPR Reference: - Issue Date: 22/12/2015 Effective Date: 22/12/2015 Last date noted as effective: 2016-08-31 Status: Superseded
593C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: RP3634AY Original Permit Number: WP3633CS EPR Reference: - Issue Date: 22/12/2015 Effective Date: 22/12/2015 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
594C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: SP3035NB Original Permit Number: WP3633CS EPR Reference: - Issue Date: 22/7/2013 Effective Date: 22/7/2013 Last date noted as effective: 2016-08-31 Status: Superseded
595C	412	E	414540 416890	Operator: Cofely Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: SP3035NB Original Permit Number: WP3633CS EPR Reference: - Issue Date: 22/7/2013 Effective Date: 22/7/2013 Last date noted as effective: 2016-08-31 Status: Superseded
596C	412	E	414540 416890	Operator: Engie Fm Limited Installation Name: Syngenta Leeds Road Process: COMBUSTION; ANY FUEL =>50MW Permit Number: UP3530DW Original Permit Number: WP3633CS EPR Reference: - Issue Date: 31/5/2016 Effective Date: 31/5/2016 Last date noted as effective: 2016-08-31 Status: Effective
597C	412	E	414540 416890	Operator: Engie Fm Limited Installation Name: Syngenta Leeds Road Process: COMBUSTION; ANY FUEL =>50MW Permit Number: UP3530DW Original Permit Number: WP3633CS EPR Reference: - Issue Date: 31/5/2016 Effective Date: 31/5/2016 Last date noted as effective: 2016-08-31 Status: Effective
598C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
599C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
600C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
601C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
602C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
603C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
604C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
605C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
606C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
607C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
608C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
609C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS	Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective

ID	Distance (m)	Direction	NGR	Details
610C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
611C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
612C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
613C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
614C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
615C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
616C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
617C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
618C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
619C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
620C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
621C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
622C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
623C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
624C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
625C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
626C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
627C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
628C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
629C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
630C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
631C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
632C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
633C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
634C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
635C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
636C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
637C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
638C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
639C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
640C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
641C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
642C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
643C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
644C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
645C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
646C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
647C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
648C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
649C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
650C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
651C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
652C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
653C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
654C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
655C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
656C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
657C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details	
658C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES	Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
659C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
660C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES	Permit Number: GP3035CS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 1/3/2012 Effective Date: 1/3/2012 Last date noted as effective: 2016-08-31 Status: Superseded
661C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
662C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS	Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
663C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES	Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded
664C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS	Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
665C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES	Permit Number: ZP3639VC Original Permit Number: AP3733LE EPR Reference: - Issue Date: 3/4/2014 Effective Date: 3/4/2014 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
666C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded
667C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
668C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PHARMACEUTICALS; PRODUCING PHARMACEUTICALS USING CHEMICAL/BIOLOGICAL PROCESSES Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
669C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
670C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: WP3233KS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 13/11/2009 Effective Date: 13/11/2009 Last date noted as effective: 2016-08-31 Status: Superseded
671C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
672C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
673C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
674C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: VP3431UF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 2/11/2007 Effective Date: 2/11/2007 Last date noted as effective: 2016-08-31 Status: Superseded
675C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BP3336WB Original Permit Number: AP3733LE EPR Reference: - Issue Date: 11/12/2014 Effective Date: 11/12/2014 Last date noted as effective: 2016-08-31 Status: Effective
676C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: PLANT HEALTH AND BIOCIDES; FORMULATING PRODUCTS IF RELEASE TO WATER OF PRESCRIBED SUBSTANCES Permit Number: WP3231XF Original Permit Number: AP3733LE EPR Reference: - Issue Date: 18/7/2008 Effective Date: 18/7/2008 Last date noted as effective: 2016-08-31 Status: Superseded
677C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: LP3030HS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 25/10/2010 Effective Date: 25/10/2010 Last date noted as effective: 2016-08-31 Status: Superseded
678C	412	E	414540 416890	Operator: Lubrizol Ltd Installation Name: Huddersfield Chemical Industry Process: ASSOCIATED PROCESS Permit Number: KP3337MS Original Permit Number: AP3733LE EPR Reference: - Issue Date: 4/4/2007 Effective Date: 4/4/2007 Last date noted as effective: 2016-08-31 Status: Superseded

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

3

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
340	351	E	414462 416702	Address: Johnson Cleaners UK, 6 Market Place, Huddersfield, HD1 2AN Process: Dry Cleaning Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
341C	412	E	414540 416892	Address: Thomas Broadbent & Sons Ltd, Queens Street South, Huddersfield, HD1 3EA Process: Foundry Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
342	440	NE	414480 417153	Address: Tesco Stores Ltd, Viaduct Street, Huddersfield, HD1 1RW Process: Unloading of Petrol into Storage at Service Stations Stage I & II Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

2

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
2A	429	NE	414390 417240	Address: CASTLEGATE/BRADFORD LINK ROAD, HUDDERSFIELD, HUDDERSFIELD, WEST YORKSHIRE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WADC805 Permit Version: 2 Receiving Water: HEBBLE BECK Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 14/04/2009 Effective Date: 14-Apr-2009 Revocation Date: -
3A	429	NE	414390 417240	Address: CASTLEGATE/BRADFORD LINK ROAD, HUDDERSFIELD, HUDDERSFIELD, WEST YORKSHIRE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WADC805 Permit Version: 1 Receiving Water: HEBBLE BECK Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 18/09/1989 Effective Date: 18-Sep-1989 Revocation Date: 13/04/2009

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

1

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	478	SE	414500 416500	Incident Date: 05-Nov-2001 Incident Identification: 41224 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

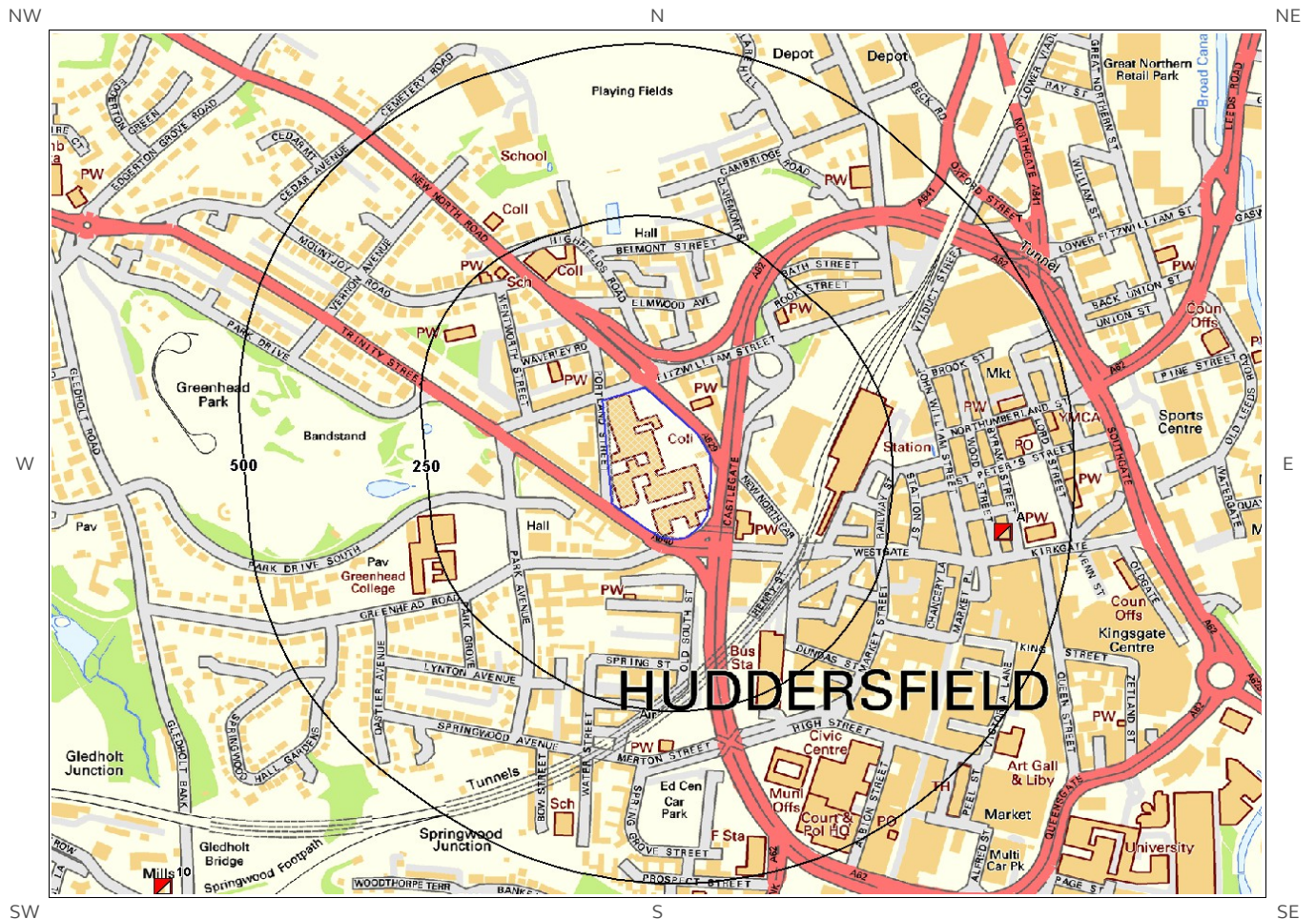
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

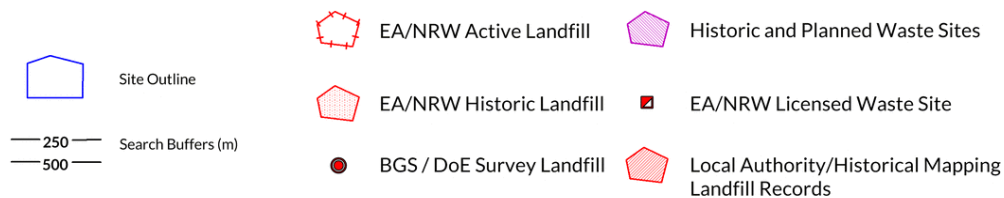
0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

4

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
Not shown	948	E	415000 417200	Site Address: NEGAS Holder Station, Gas Works Street, Huddersfield Waste Licence: Yes Site Reference: 4700/0505 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 19-Apr-1985 Licence Surrendered: 30-Apr-1994 Licence Holder Address: New York Road, Leeds Operator: - Licence Holder: North East Gas First Recorded: 30-Apr-1985 Last Recorded: 31-Aug-1989
Not shown	1121	E	415300 417300	Site Address: Golf Driving Range, Lower Kilner Bank, off Bradley Mills Road, Huddersfield Waste Licence: Yes Site Reference: 4700/0435 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 24-May-1984 Licence Surrendered: 31-Dec-1990 Licence Holder Address: Civic Centre, Huddersfield Operator: - Licence Holder: Kirklees Metropolitan Borough Council First Recorded: - Last Recorded: -
Not shown	1229	NE	415000 418100	Site Address: Emerald Street Brick and Tile Landfill Site, Huddersfield Waste Licence: - Site Reference: 4700/WY053, 1382 Waste Type: Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrendered: - Licence Holder Address: - Operator: West Yorkshire Metropolitan County Council Licence Holder: West Yorkshire Waste Management Limited First Recorded: - Last Recorded: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1291	E	415400 417100	Site Address: Brown Royd Quarry, Off Kilner Bank, Dalton, Huddersfield Waste Licence: - Site Reference: - Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Elliotts Bricks Limited Licence Holder: - First Recorded: 25-Mar-1965 Last Recorded: -

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1326	NE	415392 417549	McAlpine Stadium	Kirklees Metropolitan Council	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

41

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
5A	408	E	414531 416773	Site Address: Property Services Consultancy, Kirkgate Buildings, Byram Street, Huddersfield, West Yorkshire, HD1 1BY Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR001 EPR reference: - Operator: Kirklees Meptropolitan Council Waste Management licence No: 60992 Annual Tonnage: 0.0 Issue Date: 26/03/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Former Blakeborough's Tip Correspondence Address: Property Services Consultancy, Kirkgate Buildings, Byram Street, Huddersfield, West Yorkshire, HD1 1BY
6A	408	E	414531 416773	Site Address: Property Services Consultancy, Kirkgate Buildings, Byram Street, Huddersfield, West Yorkshire, HD1 1BY Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR001 EPR reference: UP3295ZB/A001 Operator: Kirklees Metropolitan Council Waste Management licence No: 60992 Annual Tonnage: 250000.0 Issue Date: 26/03/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Former Blakeborough's Tip Correspondence Address: -
7A	408	E	414531 416773	Site Address: Property Services Consultancy, Kirkgate Buildings, Byram Street, Huddersfield, West Yorkshire, HD1 1BY Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR001 EPR reference: EA/EPR/UP3295ZB/A001 Operator: Kirklees Council Waste Management licence No: 60992 Annual Tonnage: 250000.0 Issue Date: 26/03/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Former Blakeborough's Tip Correspondence Address: -
Not shown	826	NE	414616 417572	Site Address: A K Auto Centre Ltd, 45-46, Lower Viaduct Street, Huddersfield, West Yorks, HD1 6BN Type: Vehicle Depollution Facility <5000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AKA003 EPR reference: EA/EPR/HB3530RN/V002 Operator: A K Auto Centre Limited Waste Management licence No: 104324 Annual Tonnage: 4999.0 Issue Date: 31/08/2012 Effective Date: - Modified: 20/01/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: A K Auto Centre Limited Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	828	NE	414625 417567	Site Address: A K Auto Centre Ltd, 45-46, Lower Viaduct Street, Huddersfield, West Yorks, HD1 6BN Type: Vehicle Depollution Facility <5000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AKA003 EPR reference: EA/EPR/HB3530RN/A001 Operator: A K Auto Centre Ltd Waste Management licence No: 104324 Annual Tonnage: 4999.0 Issue Date: 31/08/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: A K Auto Centre Ltd Correspondence Address: -
10	832	SW	413374 416257	Site Address: Land/premises At, Allen Row, The Triangle, Huddersfield, West Yorkshire, HD1 4RR Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000150 EPR reference: EA/EPR/CP3592ZG/A001 Operator: Oldroyd Gary Waste Management licence No: 65365 Annual Tonnage: 2500.0 Issue Date: 04/01/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Breaking Vw's Correspondence Address: -
Not shown	885	S	414043 415878	Site Address: Highway Depot, Hemsworth Lane, Fitzwilliam, Wakefield, West Yorkshire, WF9 5AZ Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHA118 EPR reference: EA/EPR/EB3139RY/S002 Operator: Shanks Waste Management Limited Waste Management licence No: 61913 Annual Tonnage: 0.0 Issue Date: 08/03/1996 Effective Date: 25/02/2013 Modified: - Surrendered Date: 30/07/2015 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Fitzwilliam H W R C Correspondence Address: -
Not shown	885	S	414043 415878	Site Address: Fitzwilliam Household Waste Site, Hemsworth Lane, Fitzwilliam, Wakefield, West Yorkshire, WF9 5AZ Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHA118 EPR reference: EA/EPR/EB3139RY/T001 Operator: Shanks Waste Management Ltd Waste Management licence No: 61913 Annual Tonnage: 7499.0 Issue Date: 08/03/1996 Effective Date: 25/02/2013 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Fitzwilliam Household Waste Site Correspondence Address: -
Not shown	889	SW	413405 416146	Site Address: The Triangle, Paddock Foot, Huddersfield, West Yorkshire, HD1 4RY Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ISL001 EPR reference: EA/EPR/TP3595ZX/T001 Operator: Islam Mohammad Waste Management licence No: 61032 Annual Tonnage: 9600.0 Issue Date: 11/08/1993 Effective Date: 02/08/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Huddersfield Auto Salvage Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	983	SE	414765 416045	Site Address: Albert Haigh & Son Ltd, Firth Street, Huddersfield, West Yorkshire, HD1 3BD Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ELL002 EPR reference: EA/EPR/ZP3594ZH/V002 Operator: Albert Haigh & Son Ltd Waste Management licence No: 65065 Annual Tonnage: 4999.0 Issue Date: 29/06/2000 Effective Date: - Modified: 20/01/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Albert Haigh & Son Ltd Correspondence Address: -
Not shown	983	SE	414765 416045	Site Address: Land/premises At, Firth Street, Huddersfield, West Yorkshire, HD1 3BD Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ELL002 EPR reference: EA/EPR/ZP3594ZH/A001 Operator: Ellis Barrie K Waste Management licence No: 65065 Annual Tonnage: 4999.0 Issue Date: 29/06/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Albert Haigh & Son Ltd Correspondence Address: -
Not shown	983	SE	414765 416045	Site Address: Land/premises At, Firth Street, Huddersfield, West Yorkshire, HD1 3BD Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ELL002 EPR reference: EA/EPR/ZP3594ZH/A001 Operator: Albert Haigh & Son Limited Waste Management licence No: 65065 Annual Tonnage: 4999.0 Issue Date: 29/06/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Albert Haigh & Son Ltd Correspondence Address: -
Not shown	1054	S	414260 415724	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 3PG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000085 EPR reference: EA/EPR/FP3194ZX/V002 Operator: Huddersfield Skip Hire Services Ltd Waste Management licence No: 65045 Annual Tonnage: 100000.0 Issue Date: 25/01/1999 Effective Date: 29/01/2004 Modified: 04/02/2005 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Scotland Yard Correspondence Address: -
Not shown	1054	S	414260 415724	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 3PG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HUN059 EPR reference: EA/EPR/AB3206TC/T001 Operator: Hunter Group Yorkshire Ltd Waste Management licence No: 65045 Annual Tonnage: 100000.0 Issue Date: 25/01/1999 Effective Date: 27/08/2013 Modified: 04/02/2005 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Scotland Yard Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	1054	S	414260 415724	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 3PG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JSB009 EPR reference: EA/EPR/DB3534AB/T001 Operator: J S Bamforth & Co Ltd Waste Management licence No: 65045 Annual Tonnage: 100000.0 Issue Date: 25/01/1999 Effective Date: 05/01/2012 Modified: 04/02/2005 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Scotland Yard Correspondence Address: -
Not shown	1080	NE	414765 417780	Site Address: Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR009 EPR reference: EA/EPR/FP3195ZK/A001 Operator: Sita (kirklees) Limited Waste Management licence No: 61060 Annual Tonnage: 100000.0 Issue Date: 02/04/1998 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: IPPC Site Name: Huddersfield Transfer Loading Station Correspondence Address: -
Not shown	1080	NE	414765 417780	Site Address: Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR009 EPR reference: EA/EPR/FP3195ZK/A001 Operator: Sita (Kirklees) Ltd Waste Management licence No: 61060 Annual Tonnage: 100000.0 Issue Date: 02/04/1998 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Huddersfield Transfer Loading Station Correspondence Address: -
Not shown	1099	NE	414793 417780	Site Address: Land/premises At, Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000073 EPR reference: EA/EPR/XP3792ZK/V003 Operator: Suez Recycling And Recovery Kirklees Ltd Waste Management licence No: 65286 Annual Tonnage: 24999.0 Issue Date: 31/03/2005 Effective Date: - Modified: 30/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Vine Street Mrf Correspondence Address: -
Not shown	1099	NE	414793 417780	Site Address: Land/premises At, Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000073 EPR reference: EA/EPR/XP3792ZK/V002 Operator: Sita (Kirklees) Ltd Waste Management licence No: 65286 Annual Tonnage: 24999.0 Issue Date: 31/03/2005 Effective Date: - Modified: 23/05/2006 Surrendered Date: 0 Expiry Date: - Cancelled Date: - Status: Modified Site Name: Vine Street Mrf Correspondence Address: -

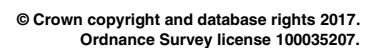
ID	Distance (m)	Direction	NGR	Details
Not shown	1099	NE	414793 417780	Site Address: Land/premises At, Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000073 EPR reference: EA/EPR/XP3792ZK/V002 Operator: Sita (kirklees) Ltd Waste Management licence No: 65286 Annual Tonnage: 24999.0 Issue Date: 31/03/2005 Effective Date: - Modified: 23/05/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Vine Street Mrf Correspondence Address: -
Not shown	1163	NE	414600 418000	Site Address: Alder Street Depot, Flint Street, Fartown, Huddersfield, West Yorkshire, HD1 6LG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KMC002 EPR reference: EA/EPR/PP3796ZK/V003 Operator: Kirklees Metropolitan Council Waste Management licence No: 65523 Annual Tonnage: 24999.0 Issue Date: 12/01/2007 Effective Date: - Modified: 19/03/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Alder Street Depot Correspondence Address: -
Not shown	1163	NE	414600 418000	Site Address: Flint Street/alder Street Depot, Flint Street, Fartown, Huddersfield, West Yorkshire, HD1 6LG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KMC002 EPR reference: EA/EPR/PP3796ZK/A001 Operator: Kirklees Council Waste Management licence No: 65523 Annual Tonnage: 24999.0 Issue Date: 12/01/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Flint Street/alder Street Depot Correspondence Address: -
Not shown	1183	S	414138 415581	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GAR002 EPR reference: - Operator: Lees Gareth Waste Management licence No: 65045 Annual Tonnage: 0.0 Issue Date: 25/01/1999 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Holme Valley Skip Hire Correspondence Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 3PG
Not shown	1183	S	414138 415581	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000085 EPR reference: - Operator: Holme Valley Skip Hire Ltd Waste Management licence No: 65045 Annual Tonnage: 0.0 Issue Date: 25/01/1999 Effective Date: 29/01/2004 Modified: 04/02/2005 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Scotland Yard Correspondence Address: Ringham Works, Wortley Moor Road, Wortley, Leeds, LS12 4NF

ID	Distance (m)	Direction	NGR	Details
Not shown	1183	S	414138 415581	Site Address: Scotland Yard, Queens Mill Road, Lockwood, Huddersfield, West Yorkshire, HD1 Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 000085 EPR reference: - Operator: Holme Valley Skip Hire Ltd Waste Management licence No: 65045 Annual Tonnage: 0.0 Issue Date: 25/01/1999 Effective Date: 29/01/2004 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Scotland Yard Correspondence Address: Ringham Works, Wortley Moor Road, Wortley, Leeds, LS12 4NF
Not shown	1186	NE	414900 417800	Site Address: Huddersfield Hws, Vine Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6NT Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR010 EPR reference: EA/EPR/CP3395ZT/S002 Operator: Kirklees Waste Services Limited Waste Management licence No: 61062 Annual Tonnage: 15650.0 Issue Date: 02/04/1996 Effective Date: - Modified: - Surrendered Date: 11/08/2000 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Huddersfield Hws Correspondence Address: -
Not shown	1186	NE	414900 417800	Site Address: Huddersfield Hws, Vine Street, Leeds Road, Huddersfield, HD1 6NT Type: Household Waste Amenity Site Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: KIR010 EPR reference: - Operator: Kirklees Waste Services Limited Waste Management licence No: 61062 Annual Tonnage: 0.0 Issue Date: 02/04/1996 Effective Date: - Modified: - Surrendered Date: 11/08/2000 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Huddersfield Hws Correspondence Address: Lancashire House, 24, Winckley Square, Preston, PR1 3JJ
Not shown	1248	SW	413066 415977	Site Address: Land / Premises At, Stoney Battery Road, Paddock, Huddersfield, HD4 5AA Type: 75kte HCl Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PPR001 EPR reference: EA/EPR/XP3399VH/A001 Operator: P P Recycling Ltd Waste Management licence No: 102728 Annual Tonnage: 74999.0 Issue Date: 31/05/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: P P Recycling Correspondence Address: -
Not shown	1297	NE	414899 417952	Site Address: Land/premises At, Emerald Street, Huddersfield, West Yorkshire, HD1 6BY Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR002 EPR reference: EA/EPR/HP3894ZJ/V005 Operator: Suez Recycling And Recovery Kirklees Ltd Waste Management licence No: 65026 Annual Tonnage: 24999.0 Issue Date: 19/08/1999 Effective Date: - Modified: 30/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Emerald Street Household Waste Site & Composting Facility Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	1297	NE	414899 417952	Site Address: Land/premises At, Emerald Street, Huddersfield, West Yorkshire, HD1 6BY Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR002 EPR reference: EA/EPR/HP3894ZJ/V002 Operator: Sita (kirklees) Limited Waste Management licence No: 65026 Annual Tonnage: 24999.0 Issue Date: 19/08/1999 Effective Date: - Modified: 23/08/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Emerald Street Household Waste Site & Composting Facility Correspondence Address: -
Not shown	1297	NE	414899 417952	Site Address: Emerald Street, Huddersfield, West Yorkshire Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR002 EPR reference: - Operator: Sita (Kirklees) Limited Waste Management licence No: 65026 Annual Tonnage: 0.0 Issue Date: 19/08/1999 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Emerald Street Household Waste Site & Composting Facility Correspondence Address: Diamond Street, Huddersfield, West Yorkshire, HD1 6BZ
Not shown	1297	NE	414899 417952	Site Address: Land/premises At, Emerald Street, Huddersfield, West Yorkshire, HD1 6BY Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR002 EPR reference: EA/EPR/HP3894ZJ/V002 Operator: Sita (Kirklees) Ltd Waste Management licence No: 65026 Annual Tonnage: 24999.0 Issue Date: 19/08/1999 Effective Date: - Modified: 23/08/2007 Surrendered Date: 0 Expiry Date: - Cancelled Date: - Status: Modified Site Name: Emerald Street Household Waste Site & Composting Facility Correspondence Address: -
Not shown	1400	NE	414781 418168	Site Address: Hillhouse Sidings, Alder Street, Huddersfield, West Yorkshire, HD1 6LD Type: 75kte Vehicle Depollution Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRU035 EPR reference: EA/EPR/FP3995LH/A001 Operator: Truckline Services Ltd Waste Management licence No: 101433 Annual Tonnage: 74999.0 Issue Date: 25/02/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Truckline Services Ltd Correspondence Address: -
Not shown	1421	E	415473 416350	Site Address: Back Chapel Lane, Mold Green, Huddersfield, HD5 9BG Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOR003 EPR reference: - Operator: Morley Waste Traders Waste Management licence No: 63999 Annual Tonnage: 0.0 Issue Date: 16/09/1997 Effective Date: 23/11/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Mold Green Site Correspondence Address: Treefield Ind Est, Gildersome, Leeds, LS27 7JU
Not shown	1421	E	415473 416350	Site Address: Back Chapel Lane, Mold Green, Huddersfield, HD5 9BG Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOR003 EPR reference: - Operator: Morley Waste Traders Ltd Waste Management licence No: 63999 Annual Tonnage: 0.0 Issue Date: 16/09/1997 Effective Date: 23/11/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Mold Green Site Correspondence Address: Treefield Ind Est, Gildersome, Leeds, LS27 7JU

ID	Distance (m)	Direction	NGR	Details	
Not shown	1421	E	415473 416350	Site Address: Back Chapel Lane, Mold Green, Huddersfield, HD5 9BG Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KTM001 EPR reference: - Operator: K & T Moorhouse Waste Management licence No: 63999 Annual Tonnage: 0.0	Issue Date: 16/09/1997 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: K & T Moorhouse Correspondence Address: Back Chapel Lane, Mold Green, Huddersfield, HD5 9BG
Not shown	1434	E	415485 416346	Site Address: Land/premises At, Back Chapel Lane, Moldgreen, Huddersfield, West Yorkshire, HD5 9BG Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOR003 EPR reference: EA/EPR/DP3397SG/V003 Operator: Morley Waste Traders Ltd Waste Management licence No: 63999 Annual Tonnage: 25000.0	Issue Date: 16/09/1997 Effective Date: 23/11/2005 Modified: 23/01/2009 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Morley Waste Traders Ltd Correspondence Address: -
Not shown	1437	NE	414800 418200	Site Address: Hillhouse Sidings, Alder Street, Fartown, Huddersfield, West Yorkshire, HD1 6LD Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ABL001 EPR reference: EA/EPR/FP3395ZC/S002 Operator: Able Fuels Waste Management licence No: 61051 Annual Tonnage: 4920.0	Issue Date: 07/12/1994 Effective Date: - Modified: - Surrendered Date: 19/09/2000 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Able Fuels Correspondence Address: -
Not shown	1487	NE	415168 417960	Site Address: Bar Street, Leeds Road, Huddersfield, HD1 6PB Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REA001 EPR reference: - Operator: Readymix-huddersfield Ltd Waste Management licence No: 61018 Annual Tonnage: 0.0	Issue Date: 25/02/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Readymix Huddersfield Limited Correspondence Address: Red Doles Lane, Leeds Road, Huddersfield, HD2 1YD
Not shown	1487	NE	415168 417960	Site Address: Bar Street, Leeds Road, Huddersfield, HD1 6PB Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REA001 EPR reference: - Operator: Readymix (Huddersfield) Ltd Waste Management licence No: 61018 Annual Tonnage: 0.0	Issue Date: 25/02/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Readymix Huddersfield Limited Correspondence Address: Red Doles Lane, Leeds Road, Huddersfield, HD2 1YD

ID	Distance (m)	Direction	NGR	Details	
Not shown	1487	NE	415168 417960	Site Address: Land/premises At, Bar Street, Leeds Road, Huddersfield, West Yorkshire, HD1 6PB Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REA001 EPR reference: EA/EPR/KP3395ZW/V002 Operator: Readymix- Huddersfield Ltd Waste Management licence No: 61018 Annual Tonnage: 74999.0	Issue Date: 25/02/1992 Effective Date: - Modified: 22/01/2008 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Readymix Huddersfield Limited Correspondence Address: -



4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

18

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1A	54	NE	Electricity Sub Station	414105 416993	HD1	Electrical Features	Infrastructure and Facilities
2A	66	NE	Electricity Sub Station	414106 417009	HD1	Electrical Features	Infrastructure and Facilities
3	67	W	Delicious Desserts	413923 416833	79, Trinity Street, Huddersfield, HD1 4DN	Baking and Confectionery	Foodstuffs
4	87	NE	Lombard Shipping Plc	414135 417010	83, Fitzwilliam Street, Huddersfield, HD1 5LG	Distribution and Haulage	Transport, Storage and Delivery
5	88	SW	P S Briggs	413986 416708	29, Greenhead Road, Huddersfield, HD1 4EN	Disability and Mobility Equipment	Consumer Products
6	114	NW	Patrick Parsons	413904 417051	5, Waverley Road, Huddersfield, HD1 5NA	Civil Engineers	Engineering Services
7	118	E	Electricity Sub Station	414241 416785	HD1	Electrical Features	Infrastructure and Facilities
8	162	SE	Brian Mellor Associates	414258 416707	Britannic House 3, Upperhead Row, Huddersfield, HD1 2JL	Civil Engineers	Engineering Services
9B	165	SE	Gantry	414238 416672	HD1	Travelling Cranes and Gantries	Industrial Features
10B	172	SE	Gantry	414237 416661	HD1	Travelling Cranes and Gantries	Industrial Features
11	181	W	Electricity Sub Station	413811 416812	HD1	Electrical Features	Infrastructure and Facilities
12	181	W	Vehicle Damage Assessors	413797 416970	128, Trinity Street, Huddersfield, HD1 4DT	Vehicle Repair, Testing and Servicing	Repair and Servicing
13	194	NE	Electricity Sub Station	414249 417050	HD1	Electrical Features	Infrastructure and Facilities
14	194	SE	J P B Jewellery	414279 416678	3a Cherry Tree Centre, Half Moon Street, Huddersfield, HD1 2JD	Jewellery, Gems, Clocks and Watches	Consumer Products
15	207	E	Huddersfield Rail Station	414334 416905	HD1	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
16	207	S	Works	414018 416562	HD1	Unspecified Works Or Factories	Industrial Features
17	225	E	Town Centre Beds	414346 416761	2a, Railway Street, Huddersfield, HD1 1JP	Beds and Bedding	Consumer Products
18	244	SE	Specsavers Hearcare	414324 416658	18, Market Street, Huddersfield, HD1 2ET	Disability and Mobility Equipment	Consumer Products

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
19	449	NE	414478 417171	Tesco	Tesco Huddersfield, Viaduct Street, Huddersfield, West Yorkshire, HD1 1RW	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
HEAD	HEAD	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

5.3 Bedrock and Solid Geology

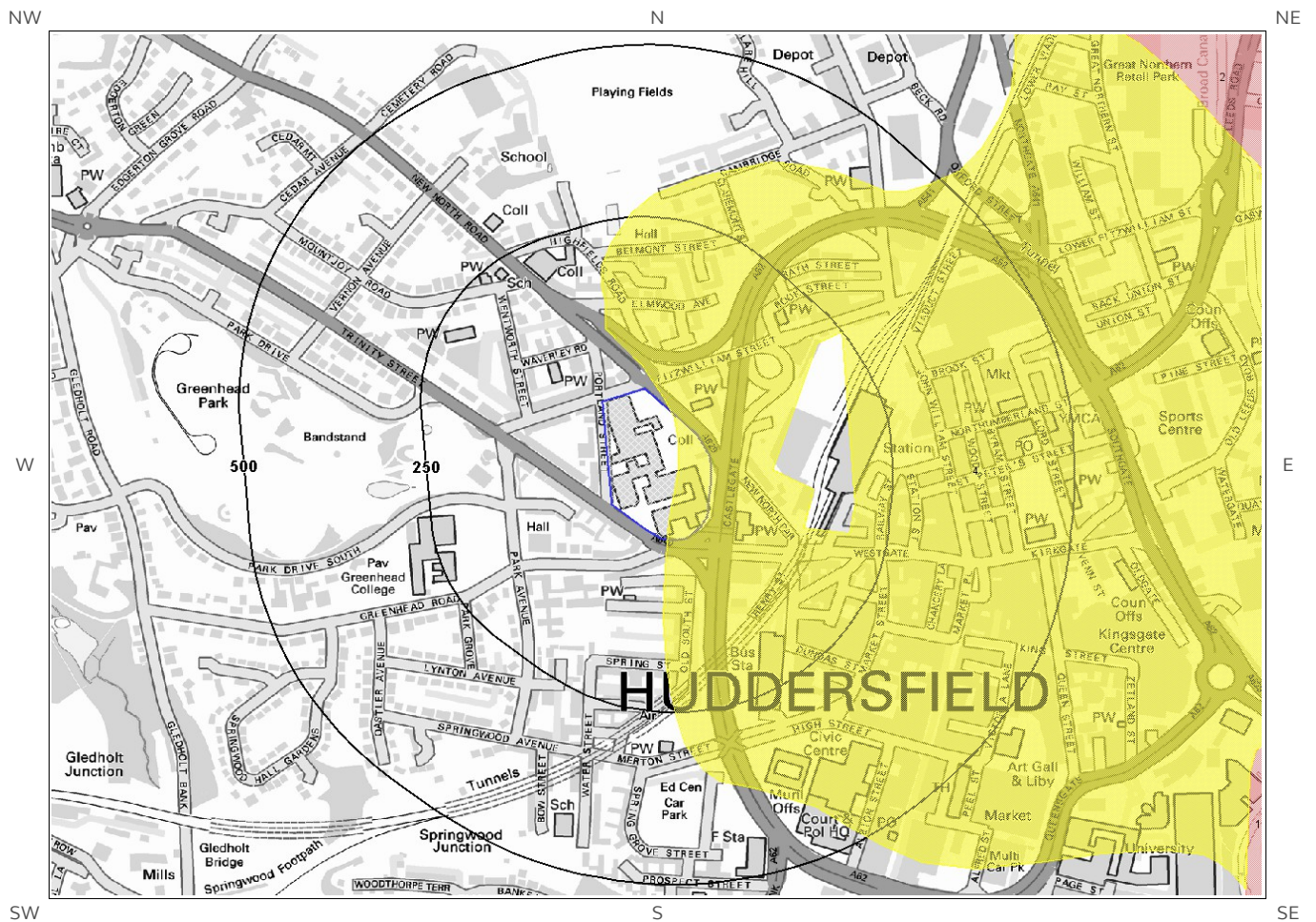
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MBR-SDST	MIDDLE BAND ROCK	SANDSTONE
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE

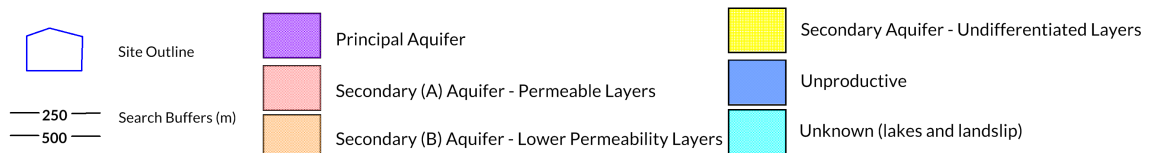
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

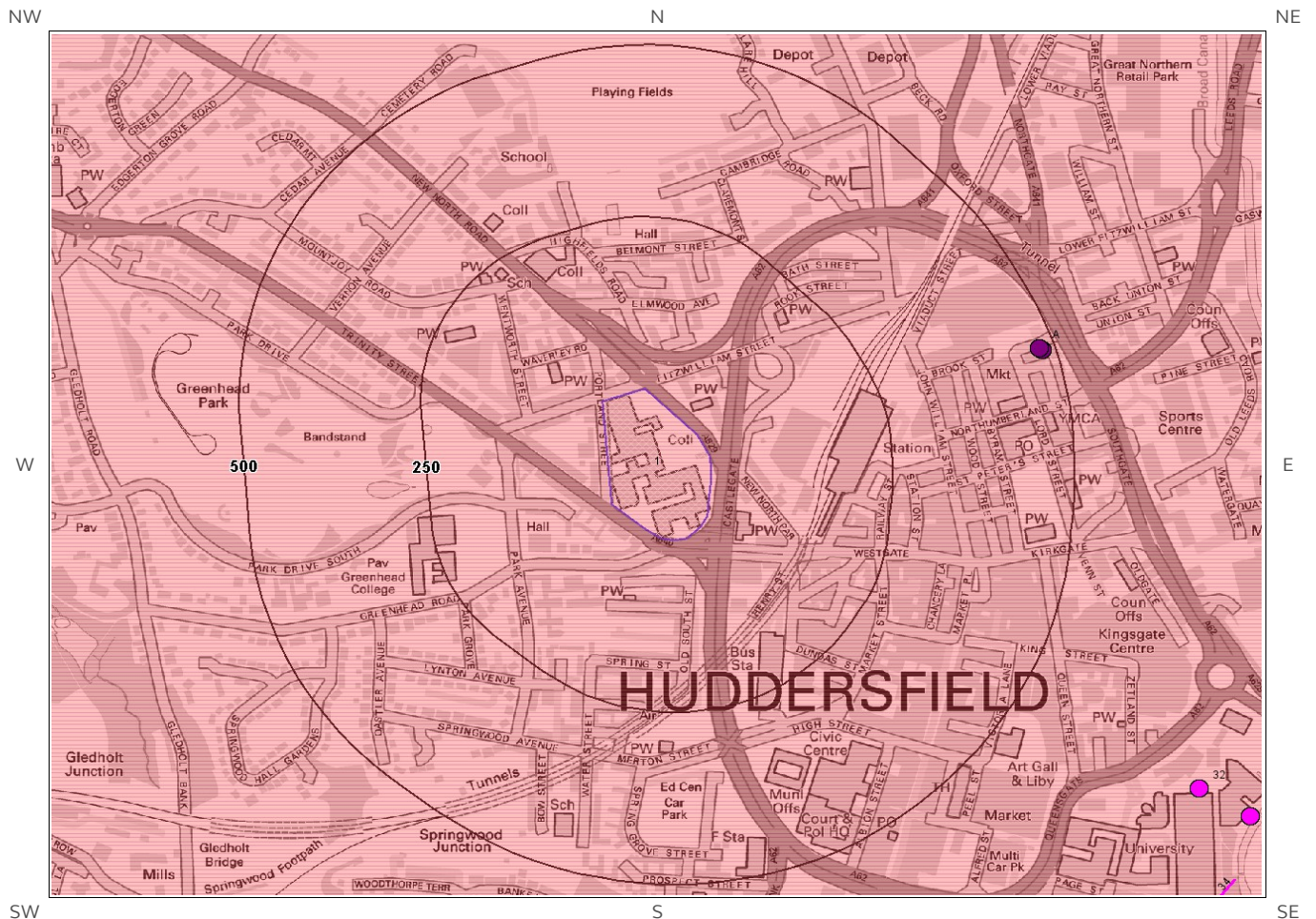
6a. Aquifer Within Superficial Geology



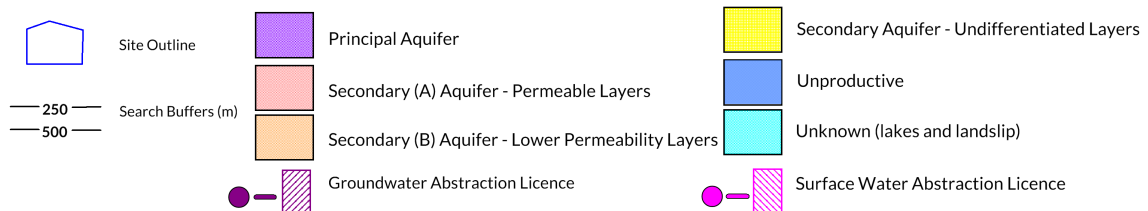
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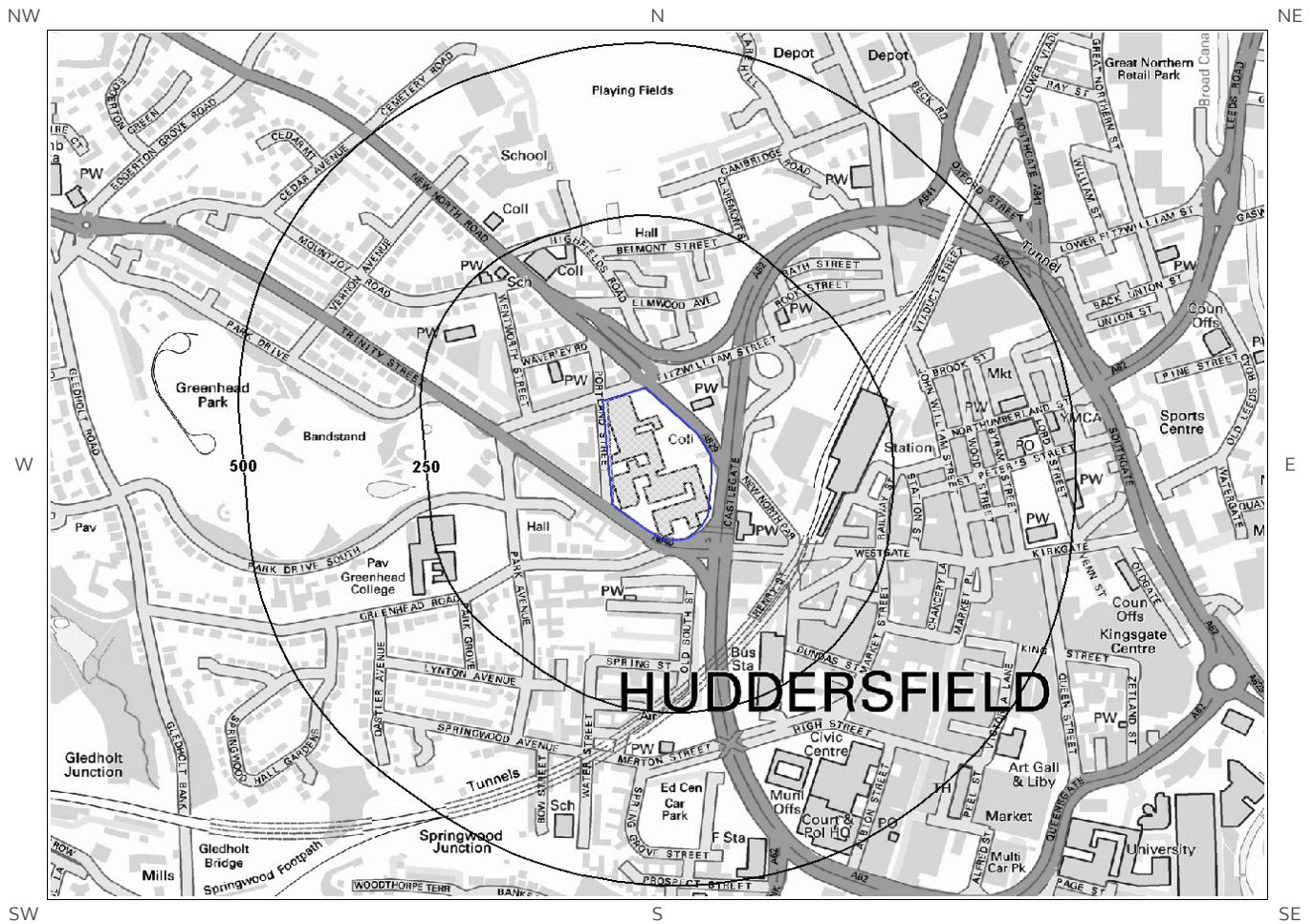
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



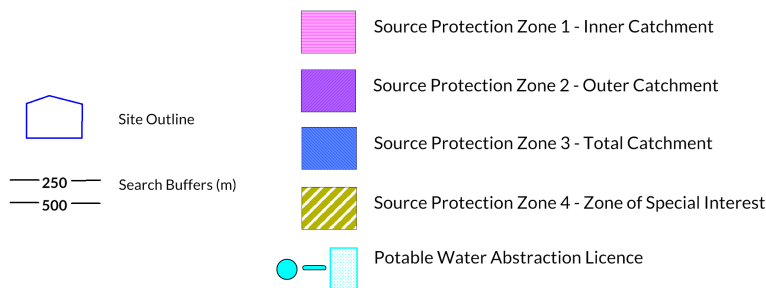
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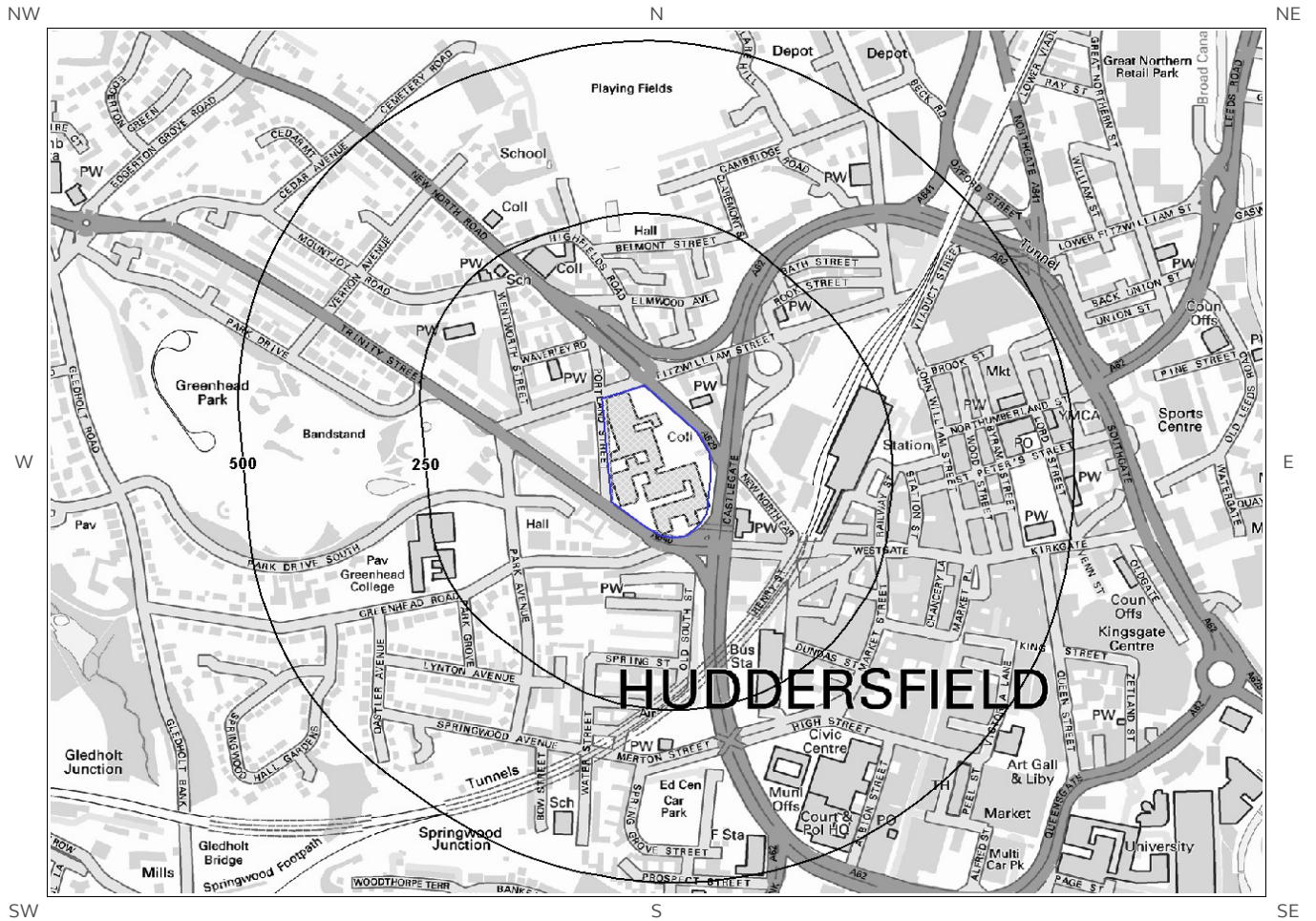
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



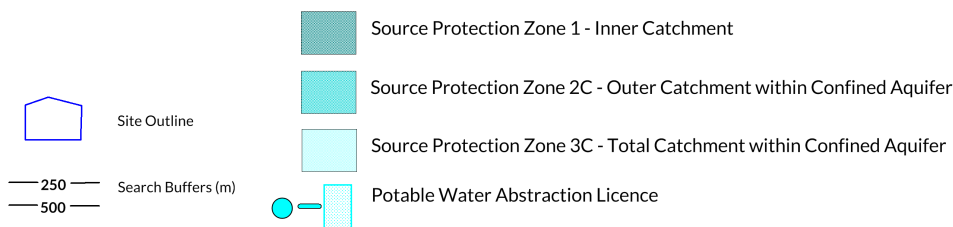
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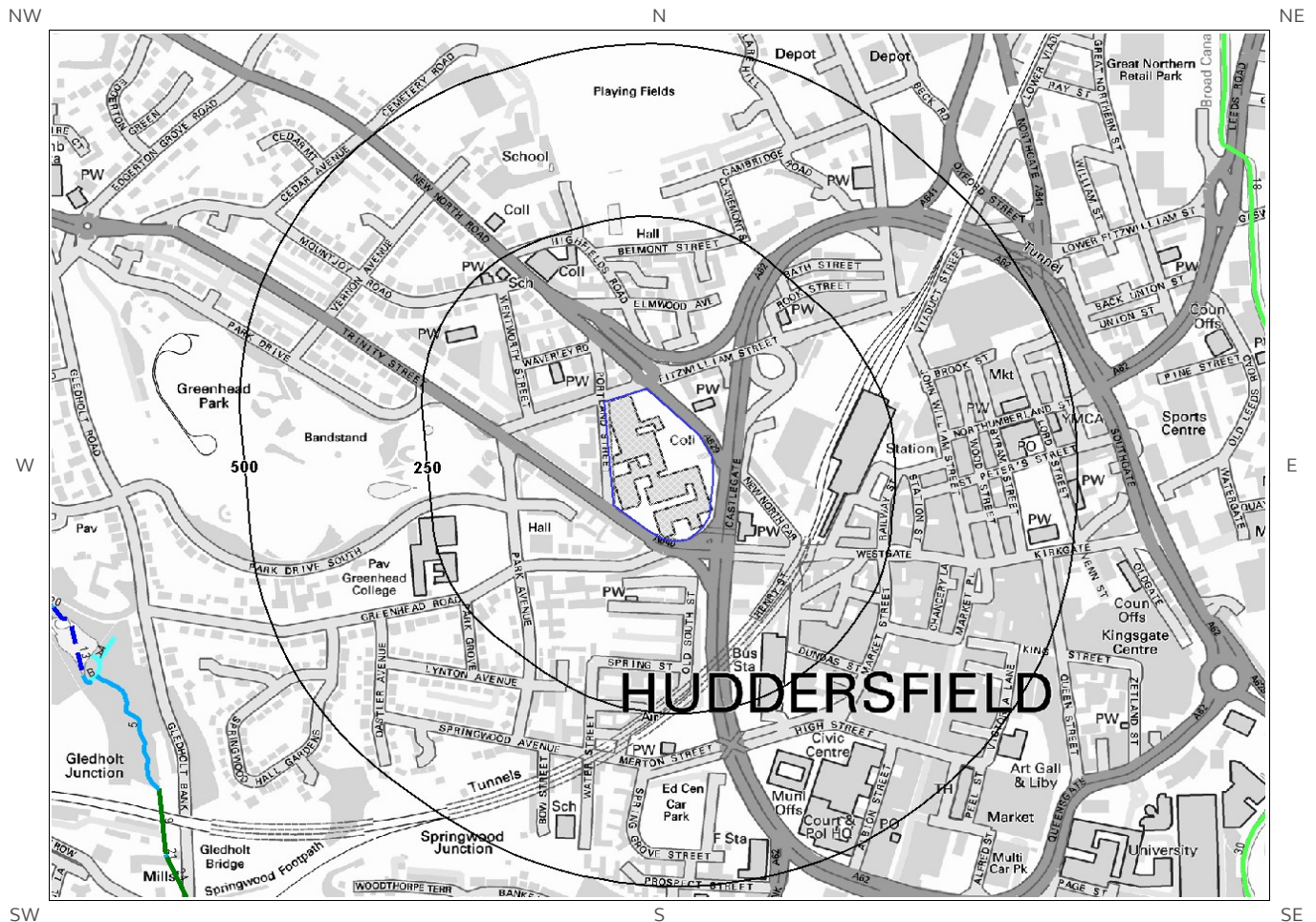
6d. Hydrogeology – Source Protection Zones within confined aquifer



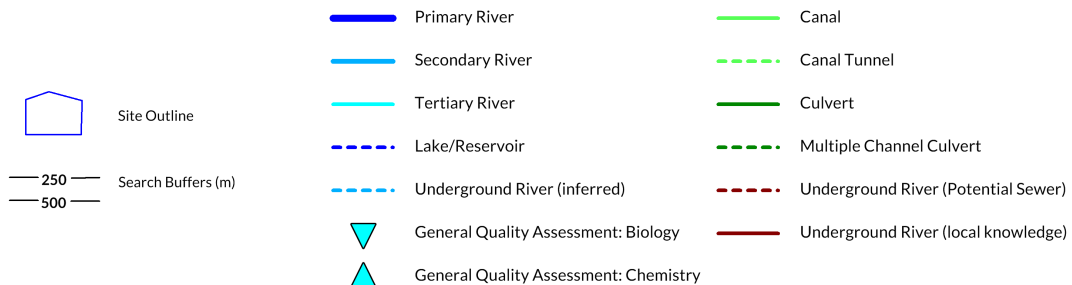
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6e. Hydrology – Detailed River Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
4	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
3A	478	E	414580 417040	Status: Historical Licence No: 2/27/11/193 Details: Non-Evaporative Cooling Direct Source: Groundwaters Point: Borehole - Coal Measures - Huddersfield Data Type: Point Name: KIRKLEES METROPOLITAN COUNCIL Annual Volume (m³): 2400 Max Daily Volume (m³): 85 Original Application No: 8256 Original Start Date: 18/5/2007 Expiry Date: 31/3/2015 Issue No: 2 Version Start Date: 1/4/2008 Version End Date:
4A	481	E	414584 417037	Status: Historical Licence No: 2/27/11/193/R01 Details: Heat Pump Direct Source: Groundwaters Point: Borehole - Coal Measures - Huddersfield Data Type: Point Name: Kirklees Council Annual Volume (m³): 28000 Max Daily Volume (m³): 312.2 Original Application No: NPS/WR/018568 Original Start Date: 17/4/2015 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 17/4/2015 Version End Date:
Not shown	694	S	413830 416110	Status: Historical Licence No: 2/27/11/190 Details: Process Water Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: SKA TEXTILES LTD Annual Volume (m³): 465000 Max Daily Volume (m³): 1272 Original Application No: 8135 Original Start Date: 4/2/2005 Expiry Date: 31/12/2010 Issue No: 2 Version Start Date: 18/4/2006 Version End Date:
Not shown	776	S	413794 416036	Status: Historical Licence No: NE/027/0011/006 Details: Process Water Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: SKA TEXTILES LTD Annual Volume (m³): 200000 Max Daily Volume (m³): 1272 Original Application No: NPS/WR/004875 Original Start Date: 6/1/2011 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 6/1/2011 Version End Date:
Not shown	795	N	414140 417770	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2009 Version End Date:
Not shown	824	S	414400 416000	Status: Historical Licence No: 2/27/11/176 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Huddersfield Data Type: Point Name: SKA TEXTILES LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 06683 Original Start Date: 20/8/1995 Expiry Date: - Issue No: 101 Version Start Date: 8/2/2001 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	904	N	414210 417870	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit- Huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2009 Version End Date:
Not shown	904	N	414210 417870	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/3/1999 Version End Date:
Not shown	904	N	414210 417870	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole - Millstone Grit Data Type: Point Name: BRITVIC SOFT DRINKS LTD Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 101 Version Start Date: 1/11/2004 Version End Date:
Not shown	917	SE	414600 416000	Status: Historical Licence No: 2/27/11/176 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Name: SKA TEXTILES LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 6683 Original Start Date: 20/8/1995 Expiry Date: - Issue No: 101 Version Start Date: 8/2/2001 Version End Date:
Not shown	917	SE	414600 416000	Status: Historical Licence No: 2/27/11/176 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Huddersfield Data Type: Point Name: SKA TEXTILES LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 06683 Original Start Date: 20/8/1995 Expiry Date: - Issue No: 101 Version Start Date: 8/2/2001 Version End Date:
Not shown	942	N	414250 417900	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2009 Version End Date:
Not shown	1028	NE	414500 417900	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/3/1999 Version End Date:
Not shown	1028	NE	414500 417900	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole - Millstone Grit Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 00679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/3/1999 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1147	E	415200 417290	Status: Historical Licence No: 2/27/11/060 Details: Process Water Direct Source: Groundwaters Point: Borehole 3 - Millstone Grit Data Type: Point Name: SYNGENTA LTD Annual Volume (m³): 3527696 Max Daily Volume (m³): 6000.84 Original Application No: 666 Original Start Date: 27/1/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/10/2006 Version End Date:
Not shown	1147	E	415200 417290	Status: Historical Licence No: 2/27/11/060 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Groundwaters Point: Borehole 3 - Millstone Grit Data Type: Point Name: SYNGENTA LTD Annual Volume (m³): 3527696 Max Daily Volume (m³): 6000.84 Original Application No: 666 Original Start Date: 27/1/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/10/2006 Version End Date:
Not shown	1147	E	416690 418150	Status: Historical Licence No: 2/27/11/060 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Groundwaters Point: Borehole X4 - Carboniferous Millstone Grit Data Type: Region Name: ZENECA FINE CHEMICAL MANUFACTURING ORGANISATION Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 666 Original Start Date: 27/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 27/1/1966 Version End Date:
Not shown	1172	NE	415180 417400	Status: Historical Licence No: 2/27/11/060 Details: Process Water Direct Source: Groundwaters Point: Borehole 4 - Millstone Grit - Huddersfield Data Type: Point Name: SYNGENTA LTD Annual Volume (m³): 3527696 Max Daily Volume (m³): 6000.84 Original Application No: 666 Original Start Date: 27/1/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/10/2006 Version End Date:
Not shown	1172	NE	415180 417400	Status: Historical Licence No: 2/27/11/060 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Groundwaters Point: Borehole 4 - Millstone Grit - Huddersfield Data Type: Point Name: SYNGENTA LTD Annual Volume (m³): 3527696 Max Daily Volume (m³): 6000.84 Original Application No: 666 Original Start Date: 27/1/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/10/2006 Version End Date:
Not shown	1401	NE	415000 418000	Status: Historical Licence No: 2/27/11/171 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Name: HUDDERSFIELD DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 6256 Original Start Date: 24/5/1990 Expiry Date: - Issue No: 100 Version Start Date: 24/5/1990 Version End Date:
Not shown	1401	NE	415000 418000	Status: Historical Licence No: 2/27/11/171 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Millstone Grit - Huddersfield Data Type: Point Name: HUDDERSFIELD DYEING CO LTD Annual Volume (m³): 136410 Max Daily Volume (m³): 637.07 Original Application No: 6256 Original Start Date: 24/5/1990 Expiry Date: - Issue No: 100 Version Start Date: 24/5/1990 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/031 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Moldgreen Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): 36754 Max Daily Volume (m³): 136.38 Original Application No: 1567(2) Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/018 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Moldgreen Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): 105854 Max Daily Volume (m³): 390.95 Original Application No: 1567(1) Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/031 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Millstone Grit - Moldgreen Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): 36754 Max Daily Volume (m³): 136.38 Original Application No: 1567(2) Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/018 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Millstone Grit - Moldgreen Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): 105854 Max Daily Volume (m³): 390.956 Original Application No: 1567(1) Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/018 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 156701 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1685	E	415700 416200	Status: Historical Licence No: 2/27/11/031 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Name: W T JOHNSON & SONS (HUDDERSFIELD) LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 156702 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 Version End Date:
Not shown	1978	S	413400 414900	Status: Historical Licence No: 2/27/10/008 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Name: BASS BREWERS (TADCASTER) Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 580 Original Start Date: 1/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 8/7/1970 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site?

Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	683	S	414179 416087	Status: Active Licence No: NE/027/0011/011 Details: Non-Evaporative Cooling Direct Source: Surface Water Point: Huddersfield Narrow Canal Data Type: Point Name: Canal and River Trust Annual Volume (m³): 1684800 Max Daily Volume (m³): 7560 Application No: NPS/WR/008366 Original Start Date: 24/4/2012 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 24/4/2012 Version End Date:
32	784	SE	414800 416400	Status: Historical Licence No: 2/27/11/160 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 5273 Original Start Date: 1/3/1974 Expiry Date: - Issue No: 100 Version Start Date: 17/11/1993 Version End Date:
33	865	SE	414870 416360	Status: Active Licence No: 2/27/11/160 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: Canal and River Trust Annual Volume (m³): 700000 Max Daily Volume (m³): 3600 Application No: 5273 Original Start Date: 1/3/1974 Expiry Date: - Issue No: 102 Version Start Date: 21/1/2008 Version End Date:
34	892	SE	414690 416080	Status: Active Licence No: 2/27/11/175 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Narrow Canal Data Type: Line Name: Canal and River Trust Annual Volume (m³): 1250000 Max Daily Volume (m³): 3960 Application No: 6636 Original Start Date: 22/9/1994 Expiry Date: - Issue No: 103 Version Start Date: 21/1/2008 Version End Date:
Not shown	902	SE	414650 416010	Status: Historical Licence No: 2/27/11/175 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Narrow Canal Data Type: Line Name: BRITISH WATERWAYS BOARD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 6636 Original Start Date: 22/9/1994 Expiry Date: - Issue No: 100 Version Start Date: 22/9/1994 Version End Date:
Not shown	910	SE	414650 416010	Status: Historical Licence No: 2/27/11/175 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Narrow Canal Data Type: Line Name: BRITISH WATERWAYS BOARD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 6636 Original Start Date: 22/9/1994 Expiry Date: - Issue No: 101 Version Start Date: 10/3/2003 Version End Date:
Not shown	970	S	414200 415800	Status: Historical Licence No: 2/27/10/009 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface Water Point: River Holme - Huddersfield Data Type: Point Name: TAYLOR & LODGE LTD Annual Volume (m³): 54552 Max Daily Volume (m³): 327.31 Application No: 654 Original Start Date: 1/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	970	S	414200 415800	Status: Historical Licence No: 2/27/10/009 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface Water Point: River Holme Data Type: Point Name: TAYLOR & LODGE LTD Annual Volume (m³): 54552 Max Daily Volume (m³): 327.312 Application No: 654 Original Start Date: 1/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:
Not shown	972	NE	414800 417600	Status: Historical Licence No: 2/27/11/182 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface Water Point: Huddersfield Broad Canal Data Type: Point Name: BRITISH WATERWAYS Annual Volume (m³): 170000 Max Daily Volume (m³): 750 Application No: 6871 Original Start Date: 10/7/1998 Expiry Date: 31/12/2006 Issue No: 100 Version Start Date: 10/7/1998 Version End Date:
Not shown	1109	NE	414830 417760	Status: Active Licence No: 2/27/11/158 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface Water Point: Huddersfield Broad Canal - Huddersfield Incinerator Data Type: Point Name: Canal and River Trust Annual Volume (m³): 273000 Max Daily Volume (m³): 1090 Application No: 5182 Original Start Date: 27/10/1972 Expiry Date: - Issue No: 103 Version Start Date: 21/1/2008 Version End Date:
Not shown	1109	NE	414830 417760	Status: Historical Licence No: 2/27/11/158 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface Water Point: Huddersfield Broad Canal Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 5182 Original Start Date: 27/10/1972 Expiry Date: - Issue No: 102 Version Start Date: 26/10/1999 Version End Date:
Not shown	1401	NE	415000 418000	Status: Historical Licence No: 2/27/11/131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: BRITISH WATERWAYS Annual Volume (m³): - Max Daily Volume (m³): - Application No: 02266 Original Start Date: 26/5/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1993 Version End Date:
Not shown	1401	NE	415000 418000	Status: Historical Licence No: 2/27/11/131 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: BRITISH WATERWAYS Annual Volume (m³): - Max Daily Volume (m³): - Application No: 02266 Original Start Date: 26/5/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1993 Version End Date:
Not shown	1401	NE	415000 418000	Status: Active Licence No: 2/27/11/131 Details: Process Water Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: Canal and River Trust Annual Volume (m³): 400000 Max Daily Volume (m³): 1800 Application No: 2266 Original Start Date: 26/5/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/1/2008 Version End Date:
Not shown	1401	NE	415000 418000	Status: Active Licence No: 2/27/11/131 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: Canal and River Trust Annual Volume (m³): 400000 Max Daily Volume (m³): 1800 Application No: 2266 Original Start Date: 26/5/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/1/2008 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1443	SW	412800 416000	Status: Historical Licence No: 2/27/11/148 Details: General use relating to Secondary Category (Low Loss) Direct Source: Surface Water Point: Huddersfield Canal Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 3585 Original Start Date: 26/5/1966 Expiry Date: - Issue No: 100 Version Start Date: 8/10/1979 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details
Not shown	795	N	414140 417770	Status: Active Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	904	N	414210 417870	Status: Active Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit- Huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	904	N	414210 417870	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	904	N	414210 417870	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole - Millstone Grit Data Type: Point Name: BRITVIC SOFT DRINKS LTD Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	942	N	414250 417900	Status: Active Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole-millstone Grit-huddersfield Data Type: Point Name: BRITVIC SOFT DRINKS PLC Annual Volume (m³): 360000 Max Daily Volume (m³): 1200 Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1028	NE	414500 417900	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole - Millstone Grit Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 00679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1028	NE	414500 417900	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: Groundwaters Point: Borehole Data Type: Point Name: BENJAMIN SHAW & SONS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 679 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	987	S	414300 415800	River Name: Holme Reach: Mag Brook River Colne End/Start of Stretch: End of Stretch NGR	E	E	E	E	E

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	970	S	414292 415815	River Name: River Colne Reach: Longwood Beck River Holme End/Start of Stretch: End of Stretch NGR	B	A	A	A	A
Not shown	970	S	414292 415815	River Name: River Colne Reach: River Holme Sir John Ramsden Can End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	987	S	414300 415800	River Name: River Holme/ramsdens Clough Reach: Mag Brook River Colne End/Start of Stretch: End of Stretch NGR	B	B	B	A	A
Not shown	1027	S	414194 415742	River Name: River Holme/ramsdens Clough Reach: Mag Brook River Colne End/Start of Stretch: Sample Point NGR	B	B	B	A	A
Not shown	1060	SE	415000 416200	River Name: River Colne Reach: Sir John Ramsden Canhebble Brook End/Start of Stretch: Start of Stretch NGR	B	B	B	B	A
Not shown	1060	SE	415000 416200	River Name: River Colne Reach: River Holme Sir John Ramsden Can End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1103	SE	414695 415840	River Name: River Colne Reach: River Holme Sir John Ramsden Can End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1262	NE	415207 417539	River Name: River Colne Reach: Hebble Brook Fenay Beck End/Start of Stretch: Start of Stretch NGR	B	B	B	B	A
Not shown	1262	NE	415207 417539	River Name: River Colne Reach: Sir John Ramsden Canhebble Brook End/Start of Stretch: End of Stretch NGR	B	B	B	B	A

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

No

Database searched and no data found.

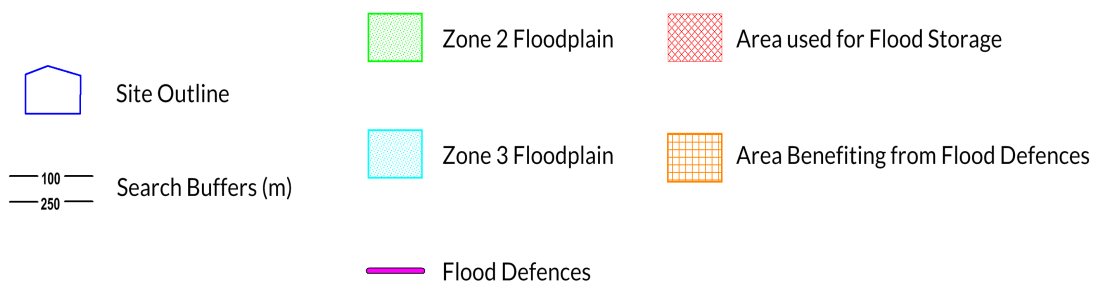
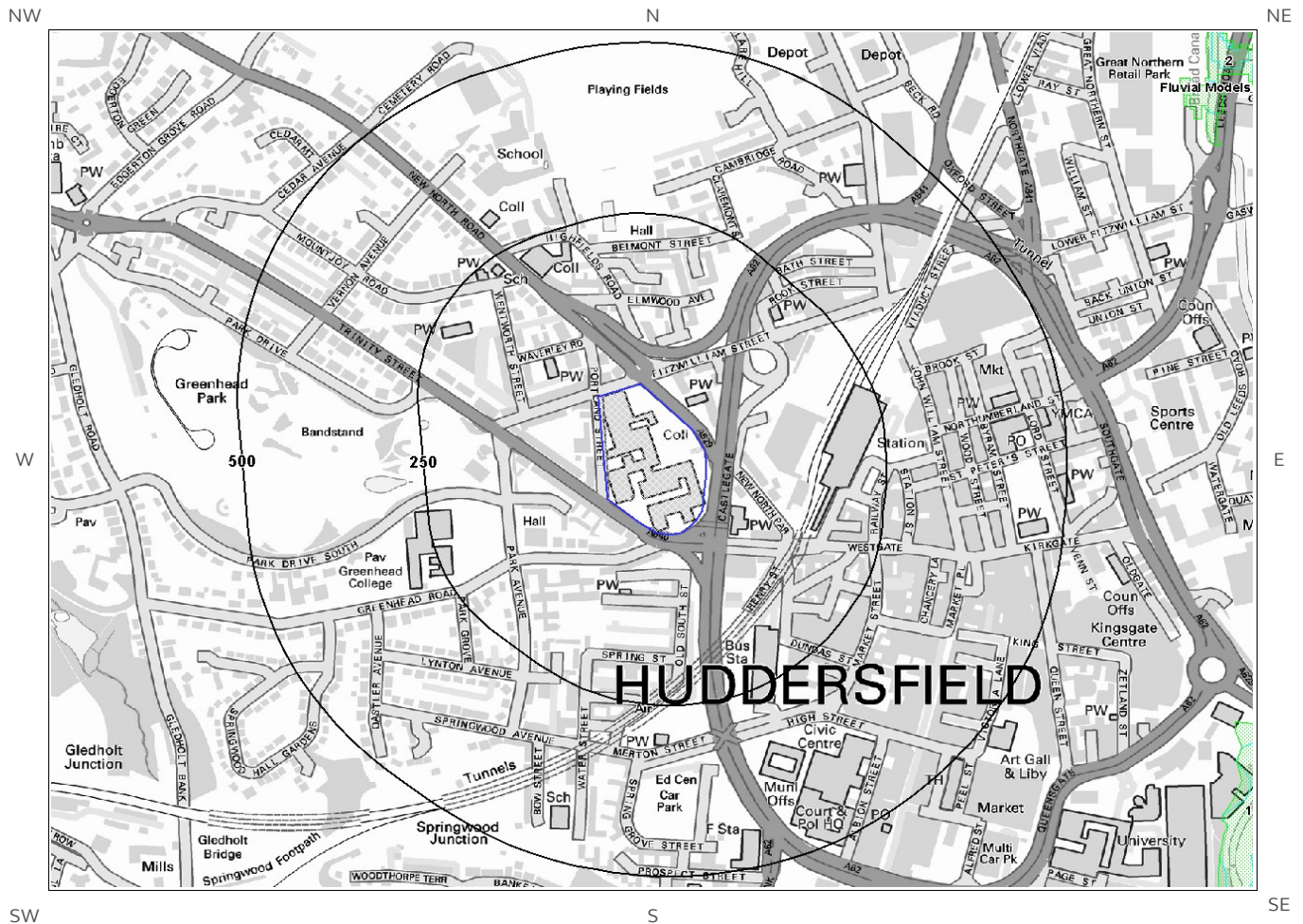
6.11 Surface Water Features

Are there any surface water features within 250m of the study site?

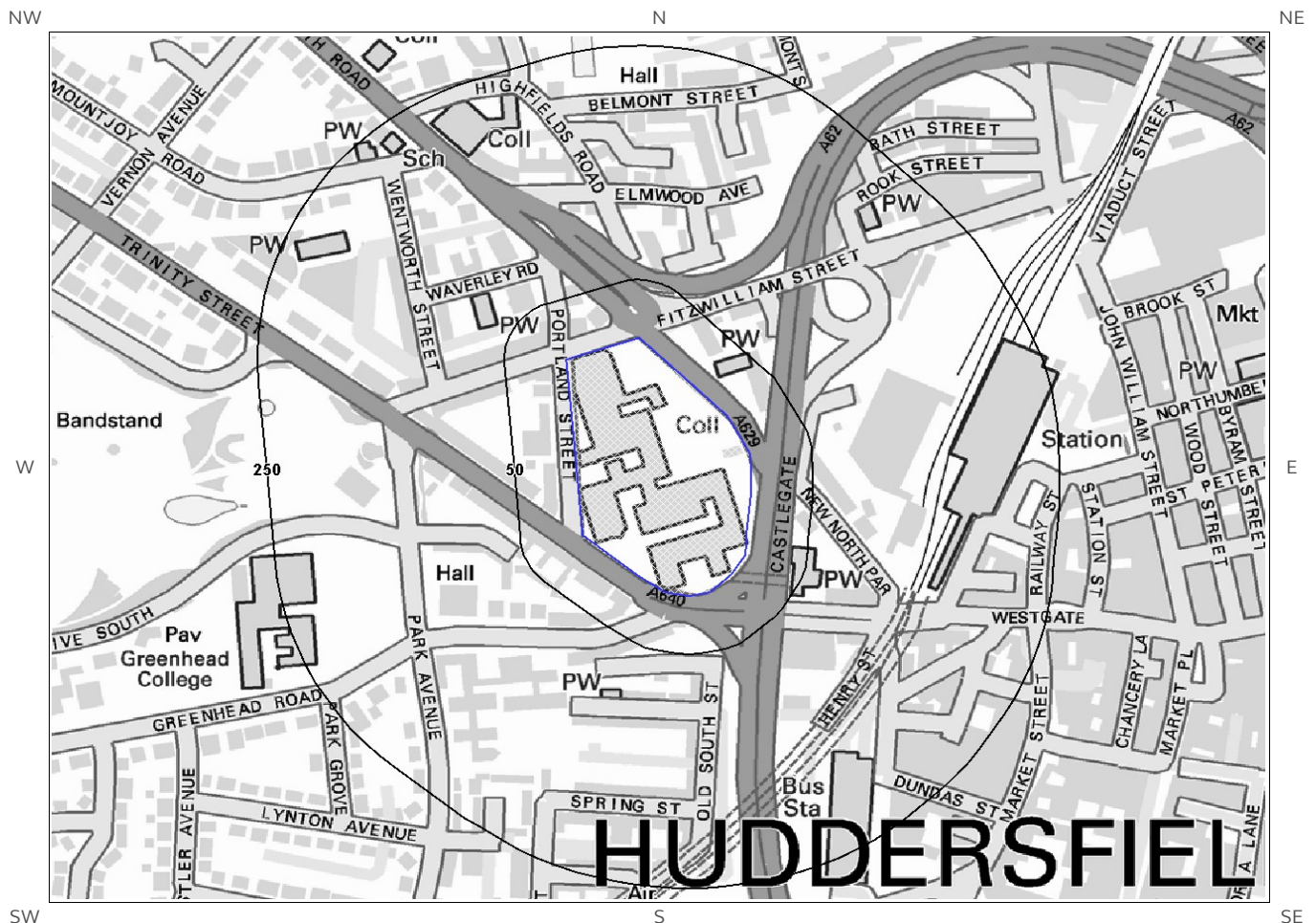
No

Database searched and no data found.

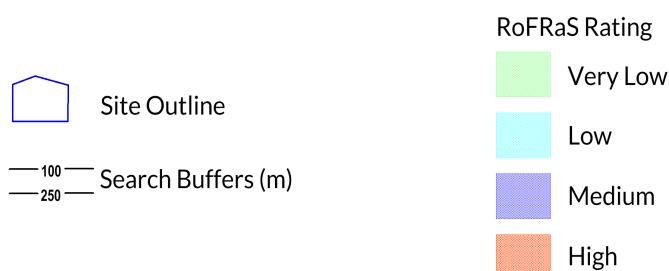
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding?

Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

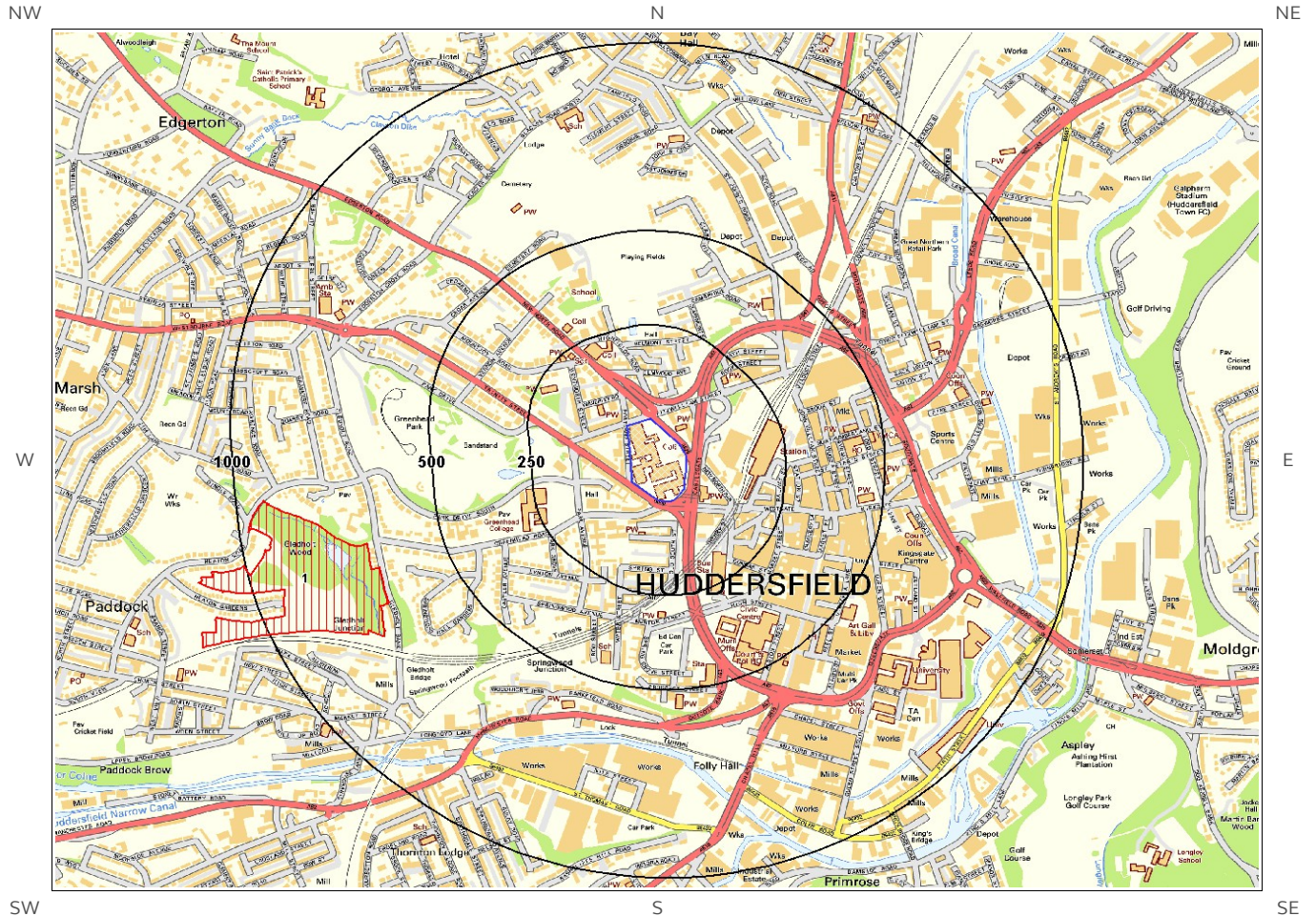
What is the British Geological Survey confidence rating in this result?

Low

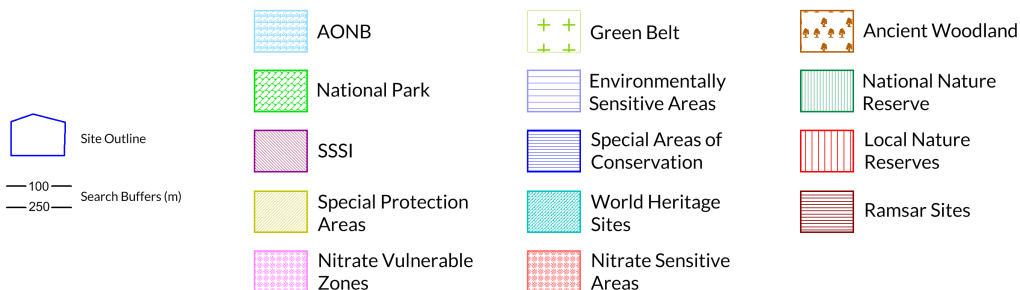
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

2

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1836	N	UNKNOWN	Ancient Replanted Woodland
Not shown	1937	NW	UNKNOWN	Ancient Replanted Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
1	675	W	Gledholt Woods	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

2

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ID	Distance	Direction	Green Belt Name	Local Authority Name
Not shown	1638	N	Liverpool, Manchester and West Yorks Greenbelt	Kirklees District (B)
Not shown	1854	SW	Liverpool, Manchester and West Yorks Greenbelt	Kirklees District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property no significant increase in insurance risk due to natural slope instability problems.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

* This indicates an automatically generated 50m buffer and site.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing

ones as described in publication BR211 by the Building Research Establishment?

No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? Yes

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Kirklees Council
Phone: 01484 221 000
Web: <http://www.kirklees.gov.uk/>
Address: Civic Centre 3, Market Street, Huddersfield, HD1 1WG

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



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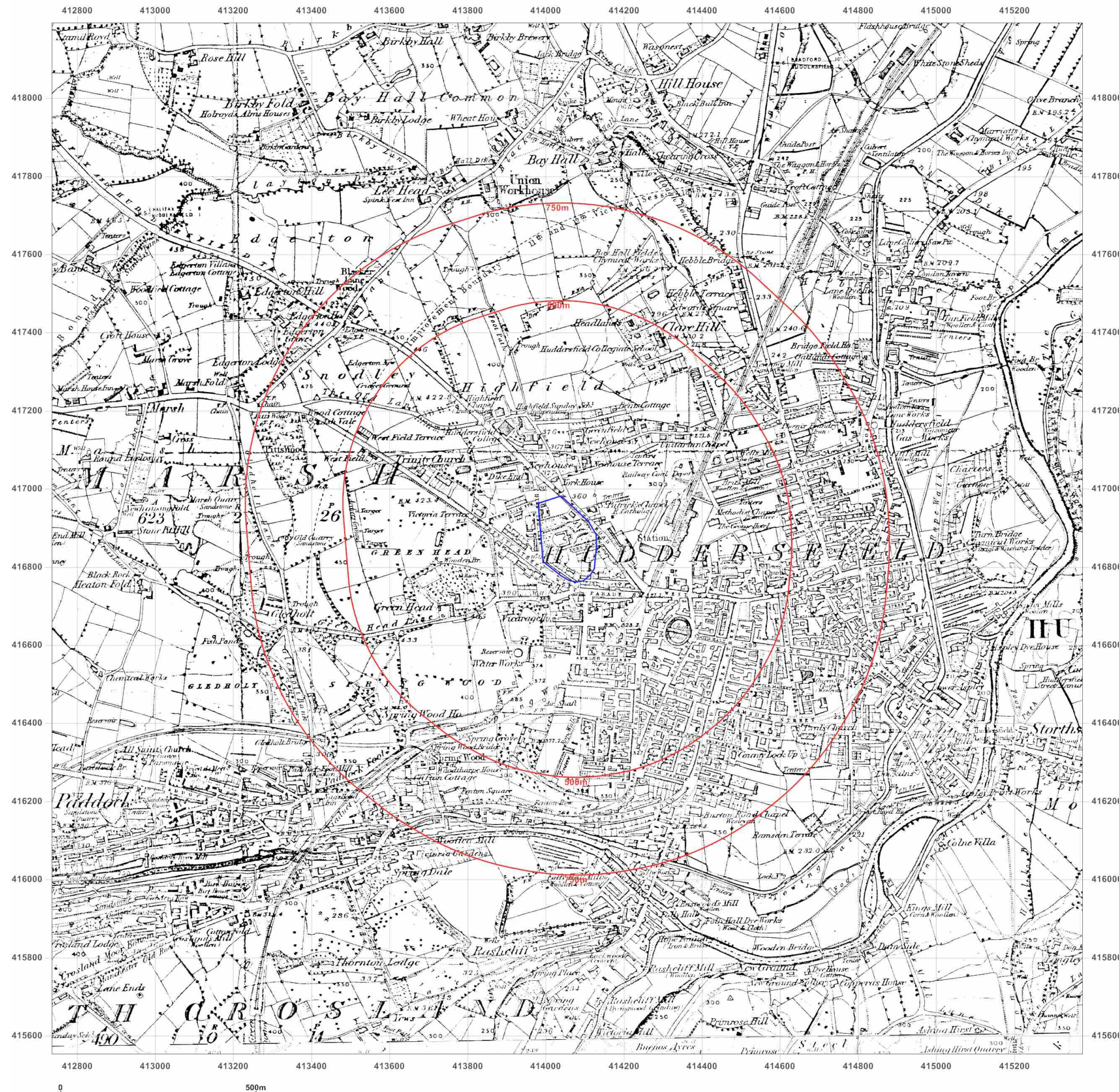


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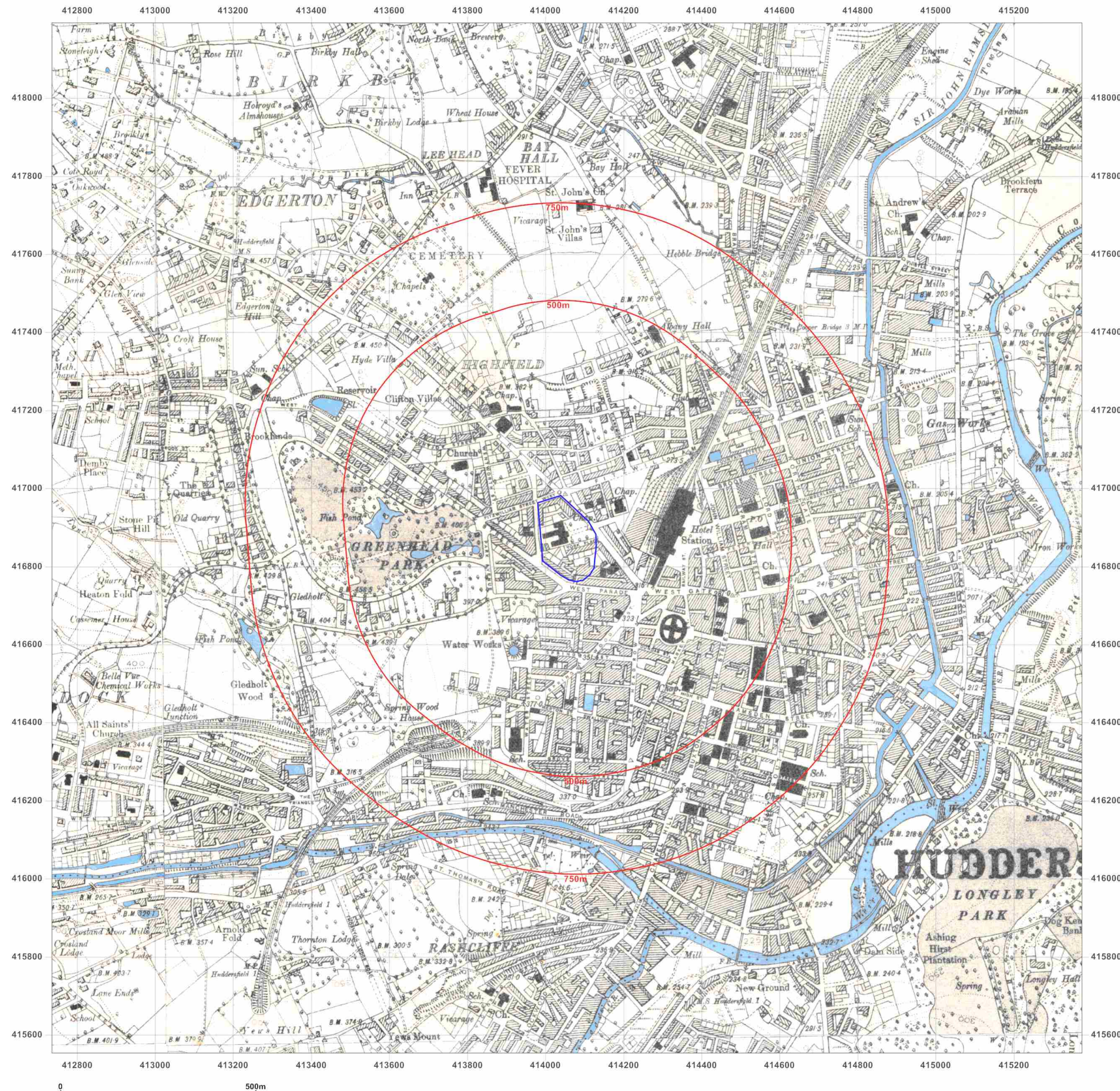


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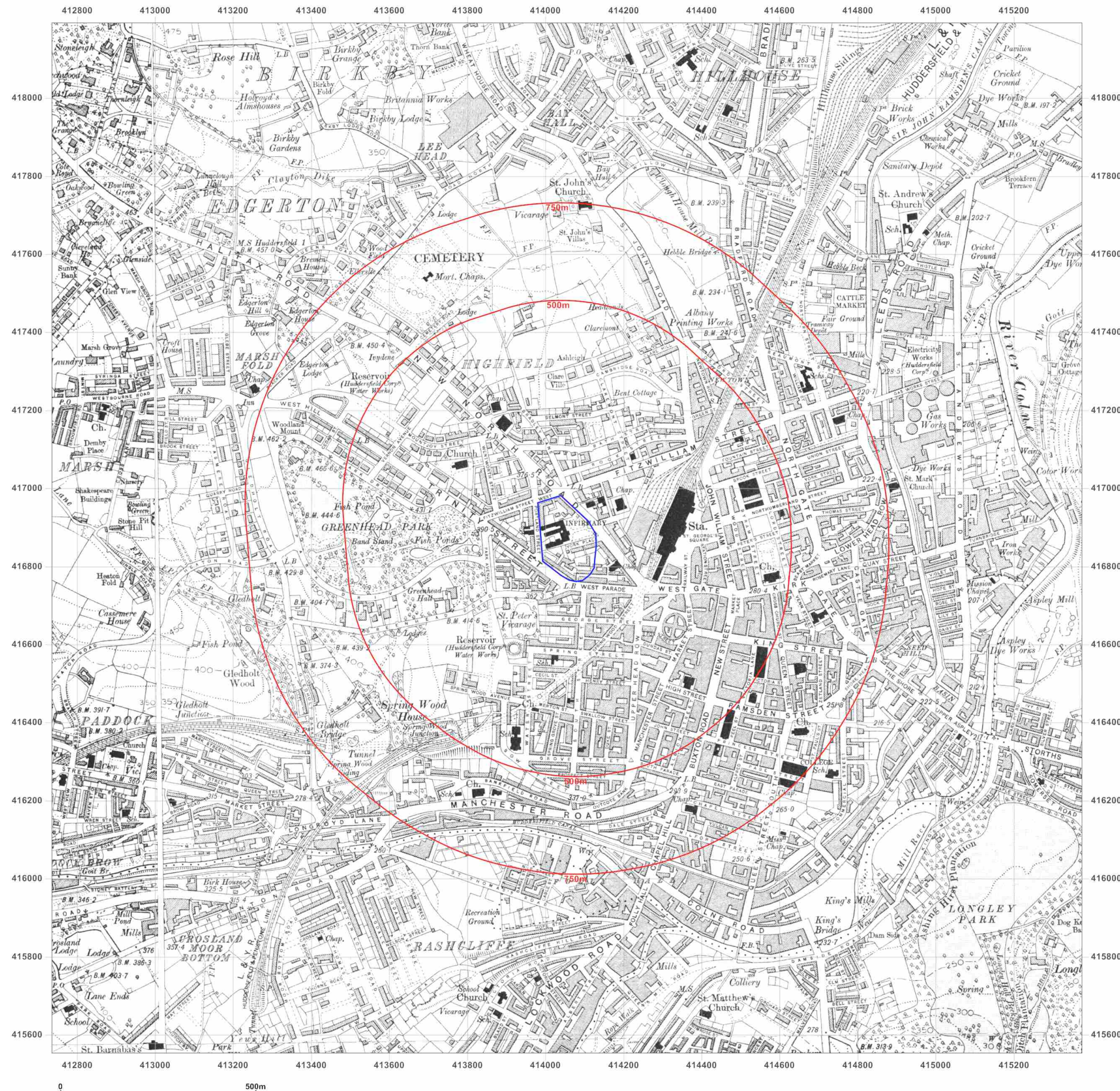


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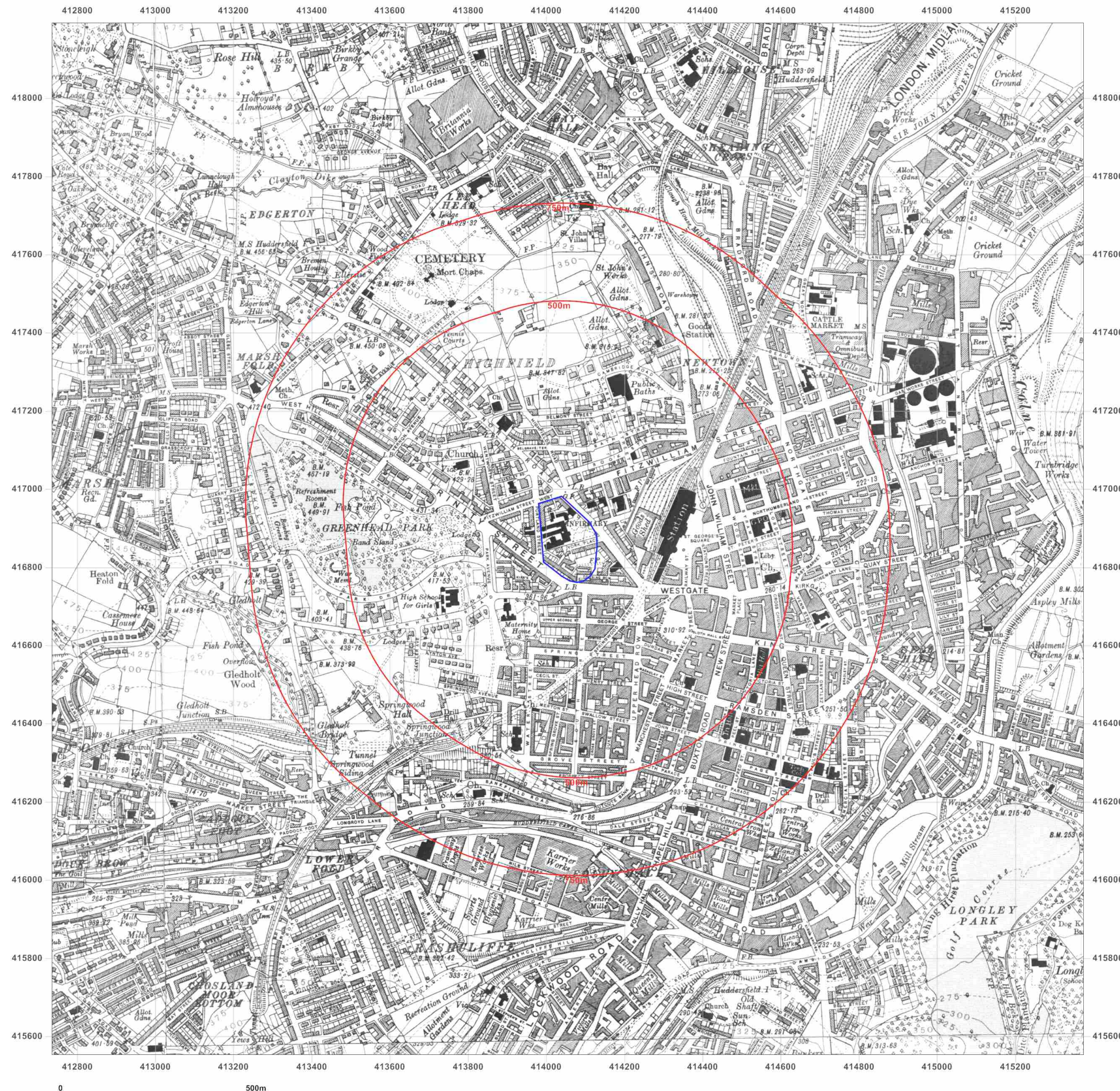


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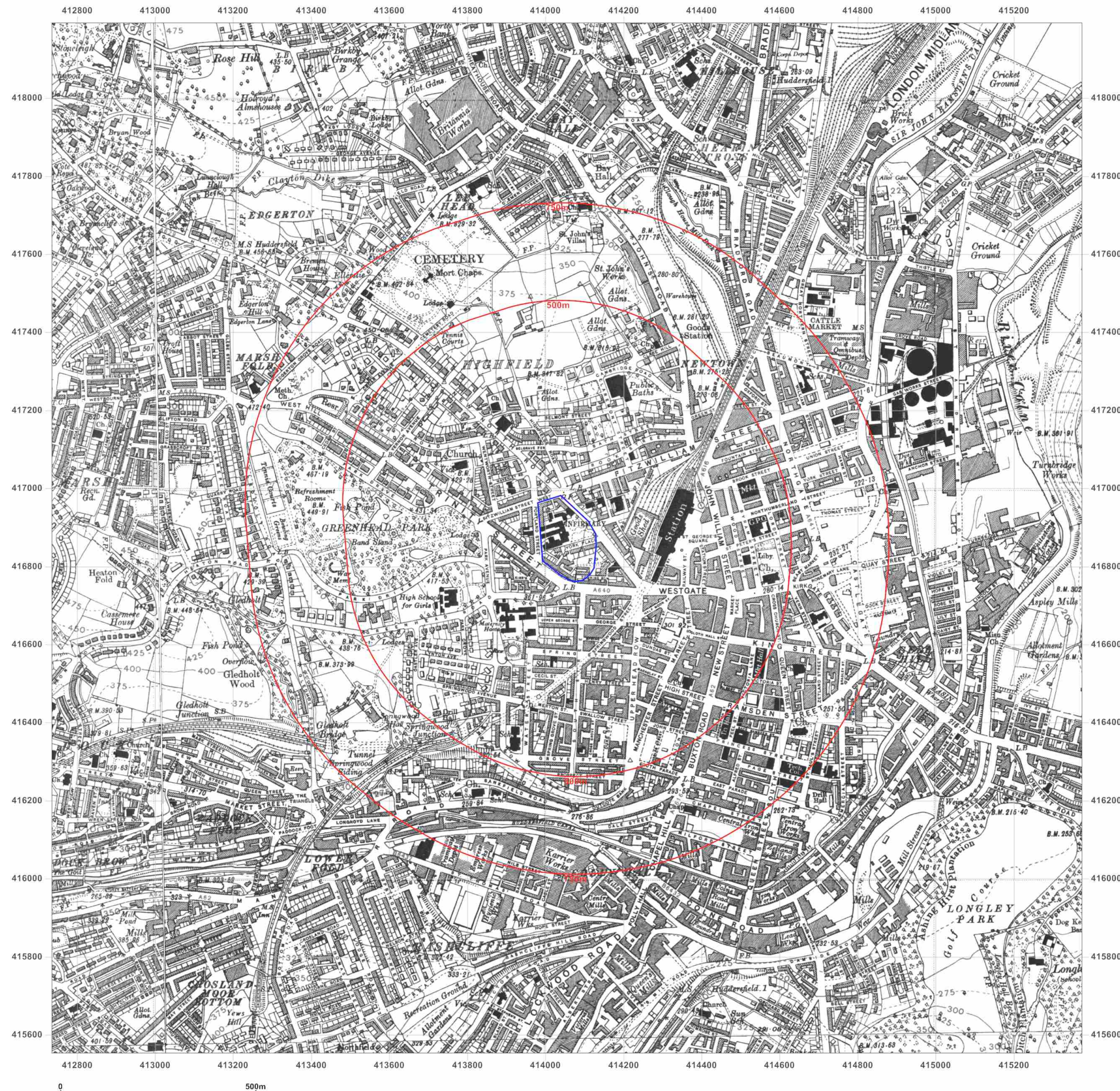


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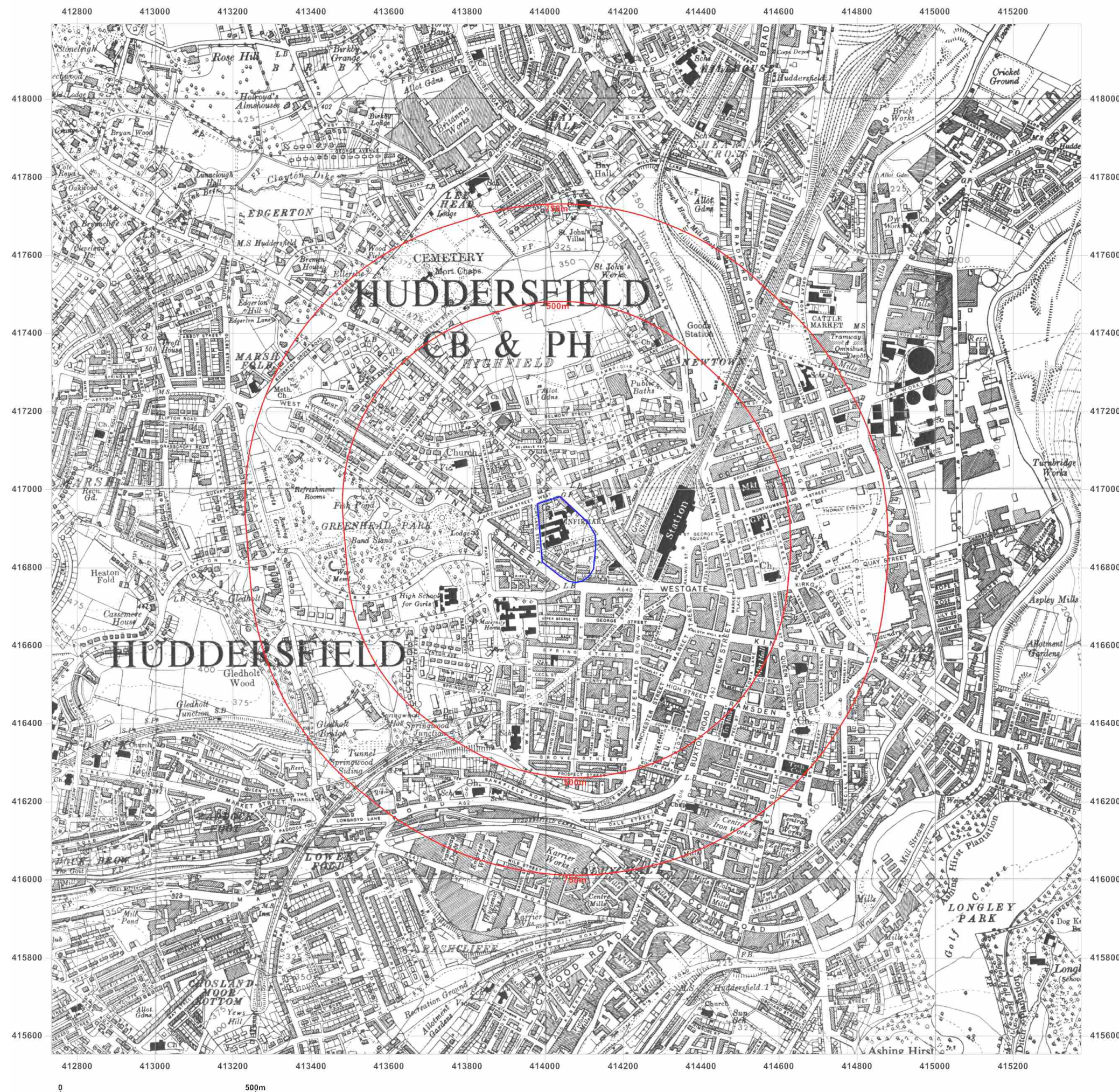


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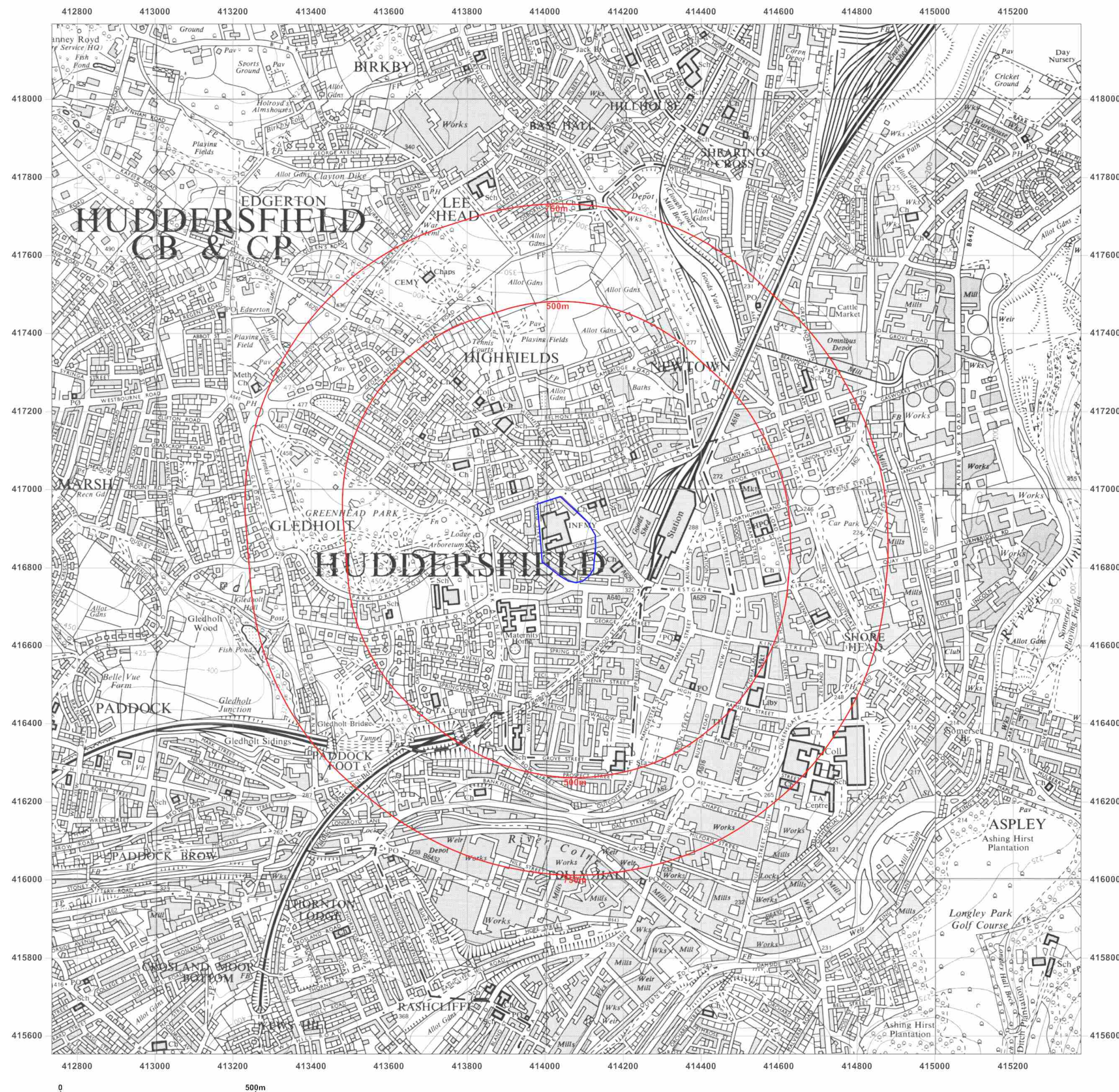


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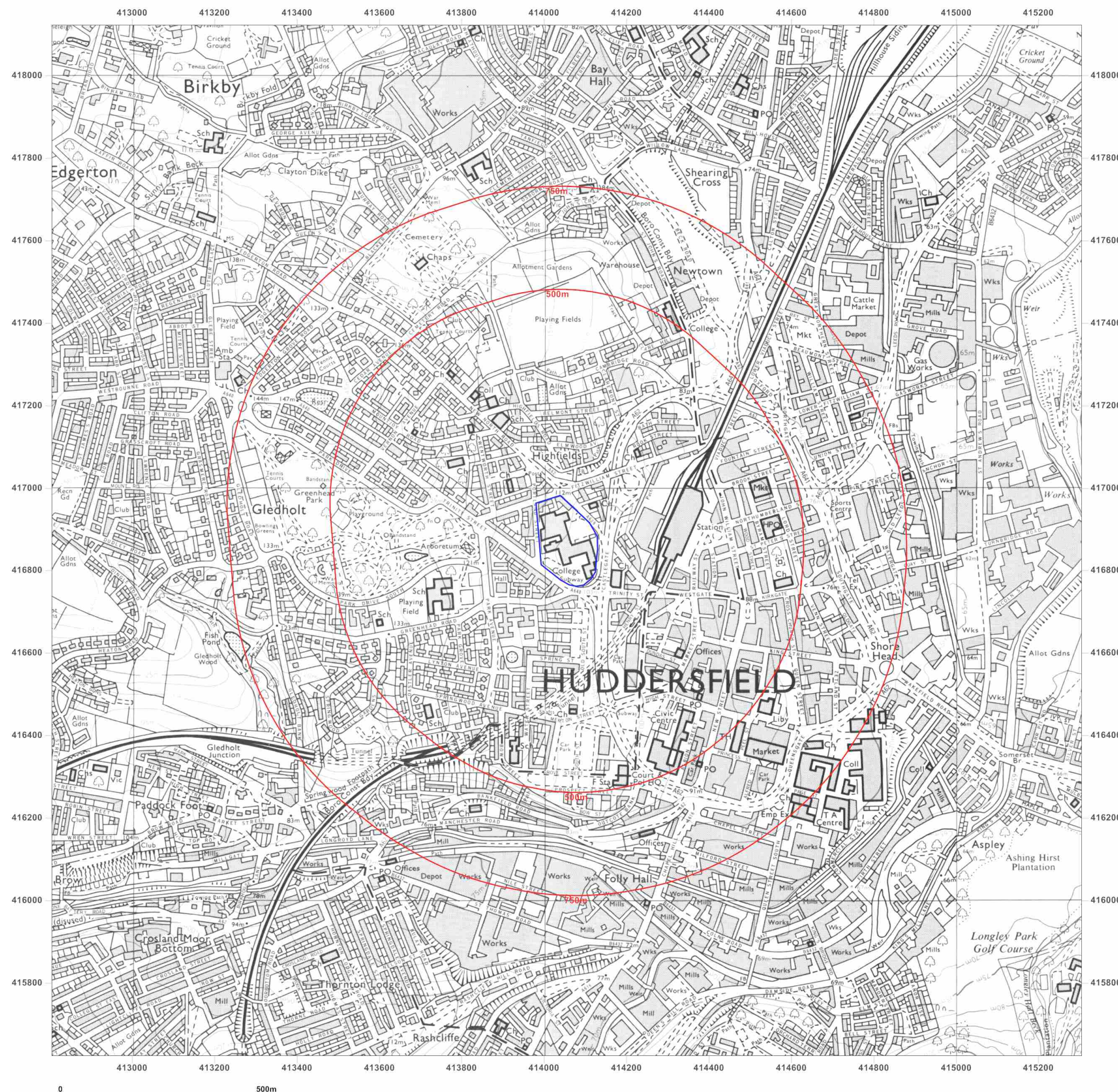


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Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1985-1988

Scale: 1:10,000

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Edition N/A
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Revised 1988
Edition N/A
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Levelled N/A

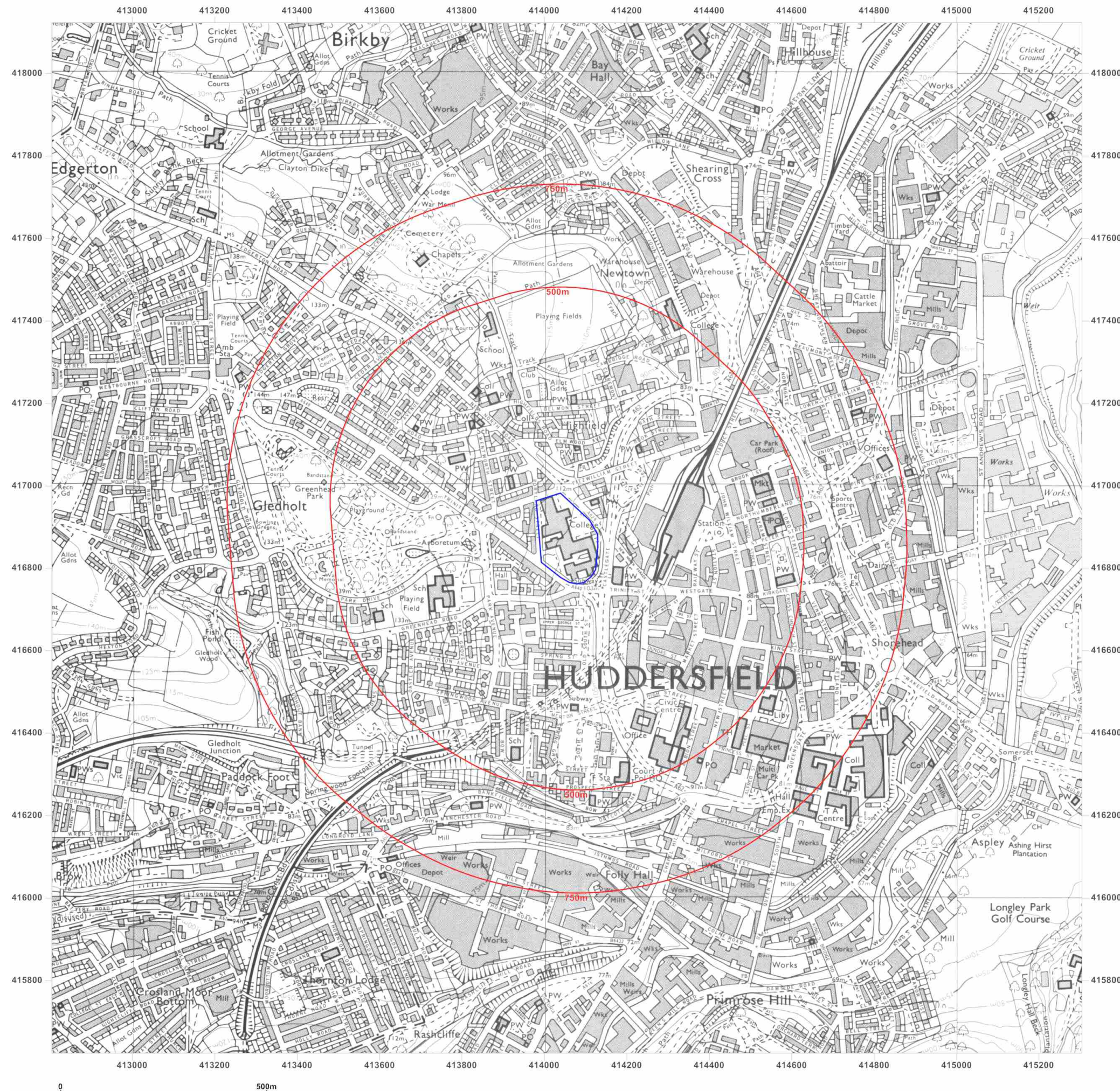


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Site Details:

KIRKLEES COLLEGE, 37, NEW
NORTH ROAD,
HUDDERSFIELD, HD1 5NN

Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



2002

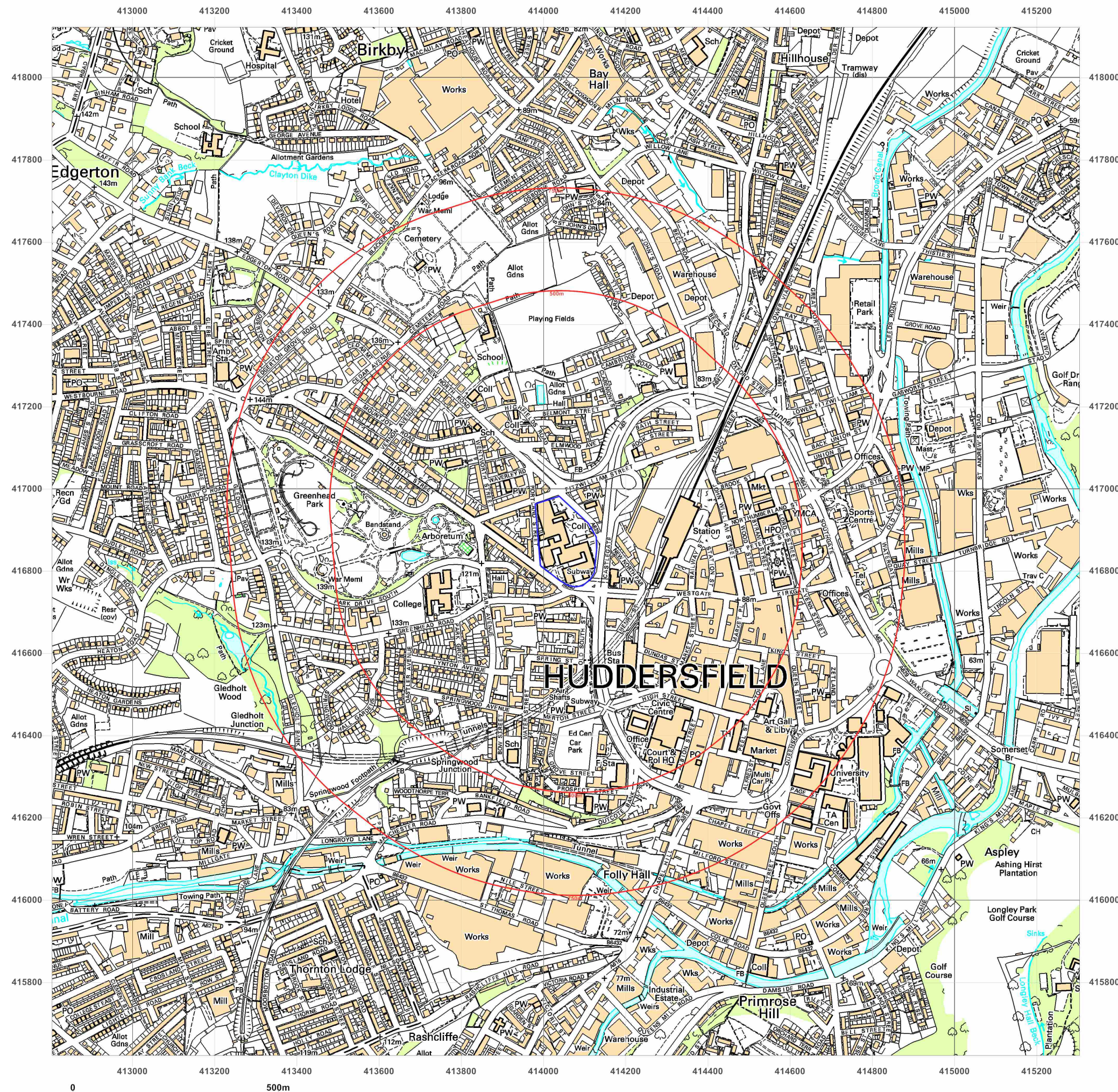


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Site Details:

KIRKLEES COLLEGE, 37, NEW
NORTH ROAD,
HUDDERSFIELD, HD1 5NN

Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010

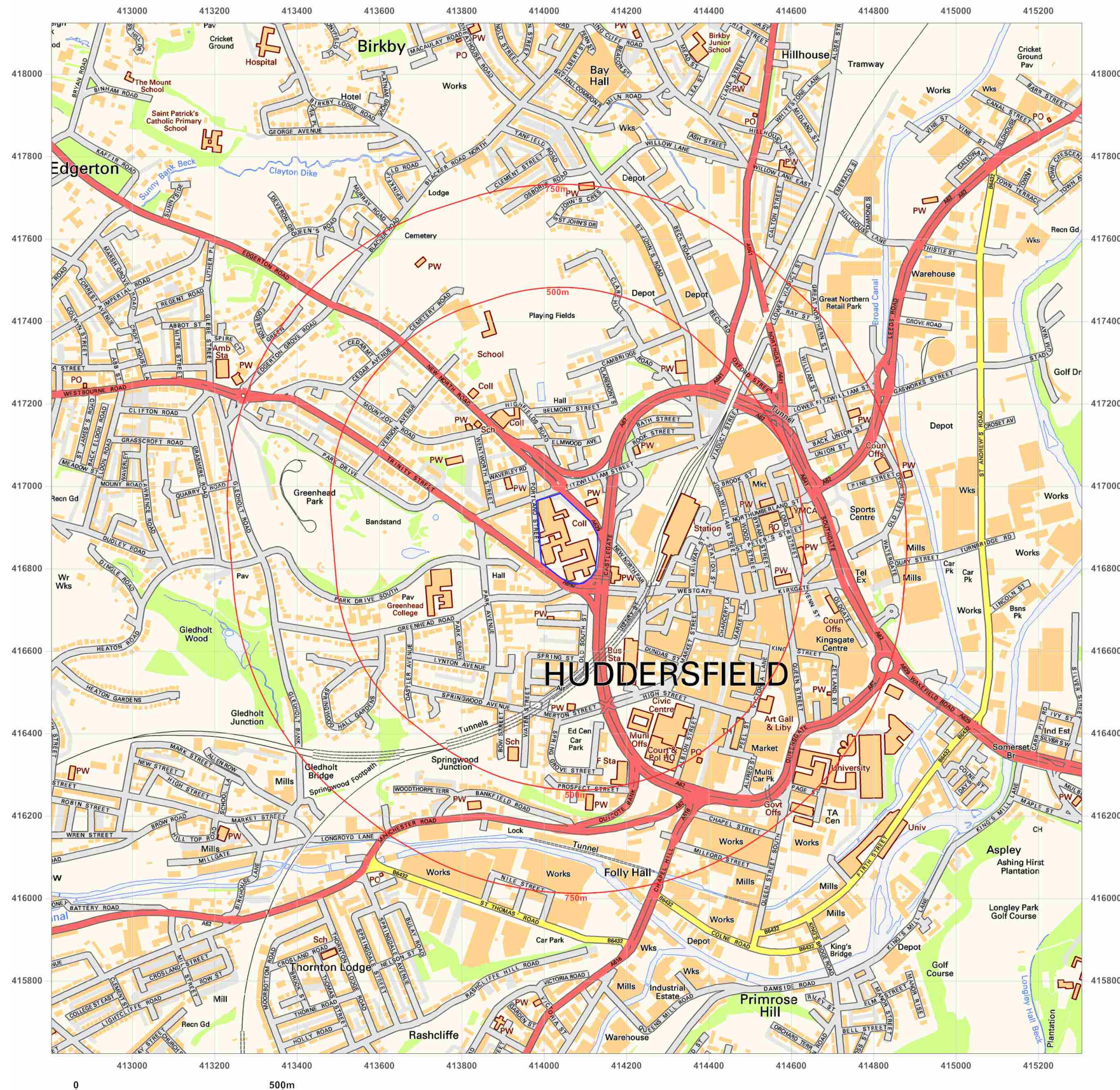


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Site Details:

KIRKLEES COLLEGE, 37, NEW
NORTH ROAD,
HUDDERSFIELD, HD1 5NN

Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



2014

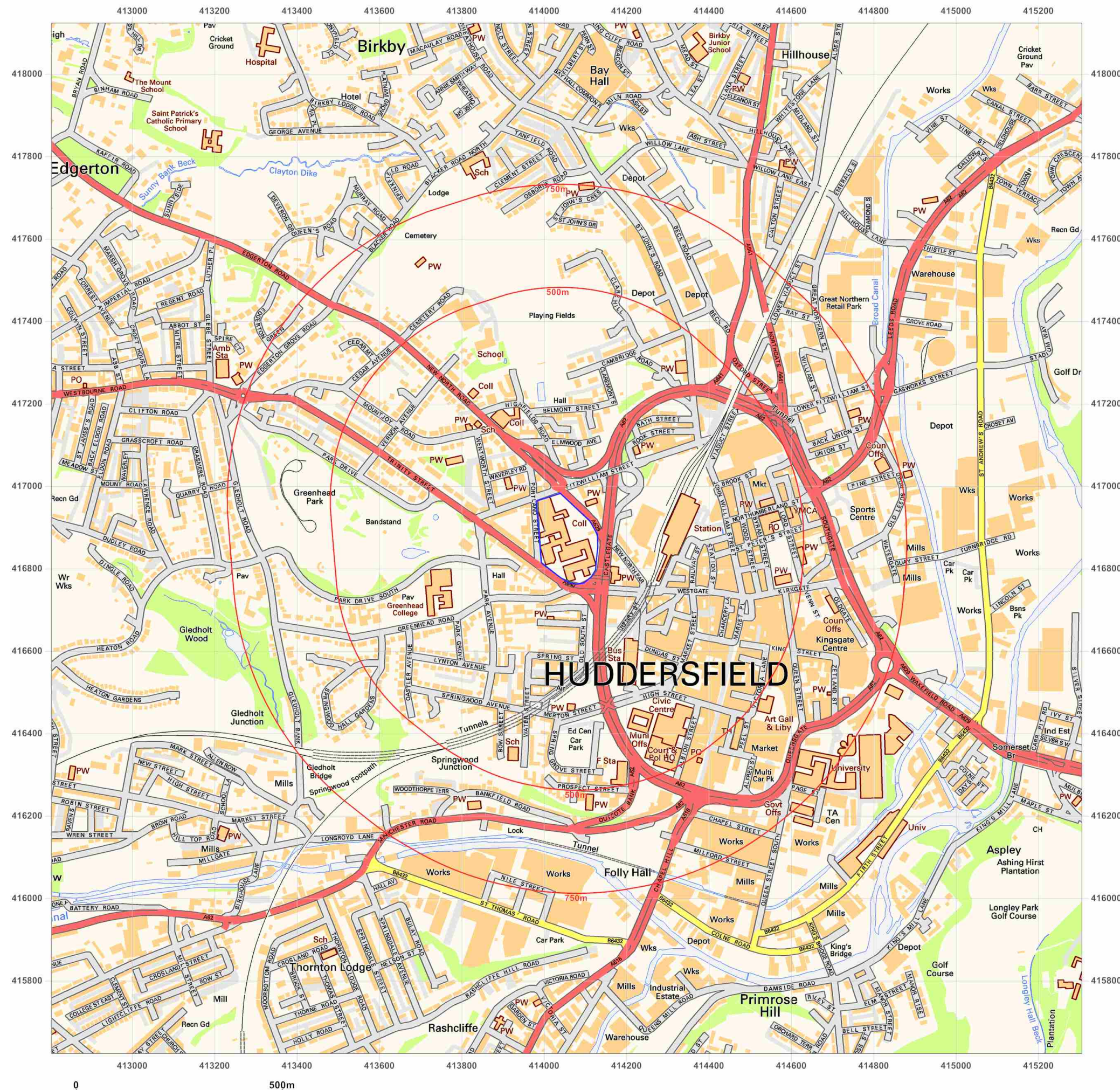


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WML Consulting

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Report Date 18 Jan 2017

Report Delivery Method: Email - pdf

Groundsure Geo Insight

Address: KIRKLEES COLLEGE, 37, NEW NORTH ROAD, HUDDERSFIELD, HD1 5NN

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Geoinsight

Groundsure Geo Insight

Address: KIRKLEES COLLEGE, 37, NEW NORTH ROAD, HUDDERSFIELD, HD1 5NN

Date: 18 Jan 2017

Reference: GS-3576320

Client: WML Consulting

NW N NE



SW S SE

Aerial Photograph Capture date: 26-Mar-2012
Grid Reference: 414055,416834
Site Size: 2.41ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	Yes
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	Yes
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	Yes
1.4 Radon data	1.4.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

Section 2:Ground Workings	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	10	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	0	12	4	12
2.3 Current Ground Workings	0	0	0	0	4

Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	4	0
3.2 Coal Mining	1	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	1
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0

Section 4: Natural Ground Subsidence	On-site
4.1 Shrink Swell Clay	Very Low
4.2 Landslides	Low
4.3 Ground Dissolution of Soluble Rocks	Negligible
4.4 Compressible Deposits	Negligible
4.5 Collapsible Deposits	Very Low
4.6 Running Sand	Very Low

Section 5: Borehole Records	On-site	0-50m	51-250
5 BGS Recorded Boreholes	0	2	43

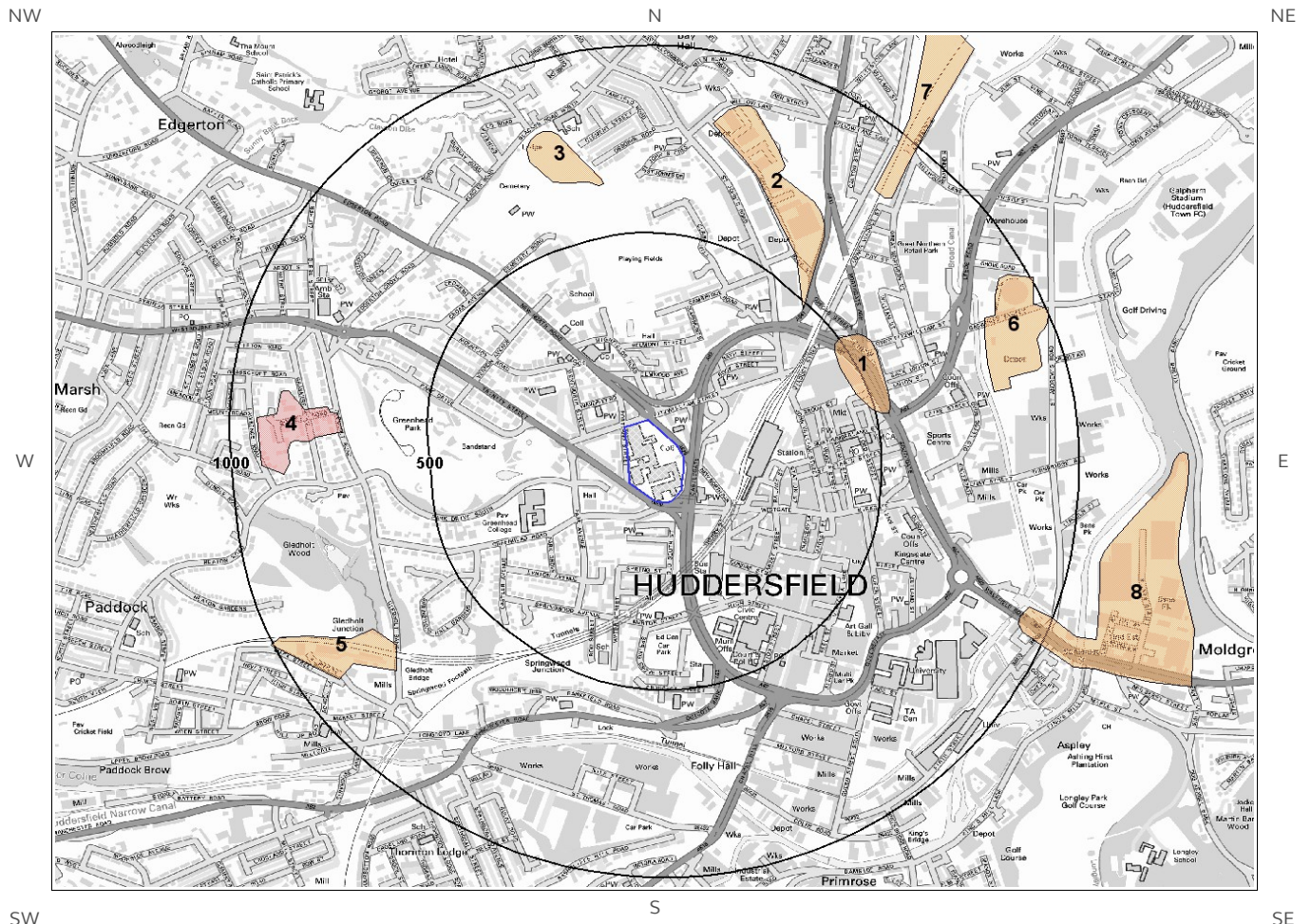
Section 6: Estimated Background Soil Chemistry	On-site	0-50m	51-250
6 Records of Background Soil Chemistry	3	8	9

Section 7: Railways and Tunnels	On-site	0-50m	51-250	251-500
7.1 Tunnels	0	0	2	Not Searched
7.2 Historical Railway and Tunnel Features	0	0	56	Not Searched
7.3 Historical Railways	0	0	0	Not Searched
7.4 Active Railways	0	0	18	Not Searched

Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

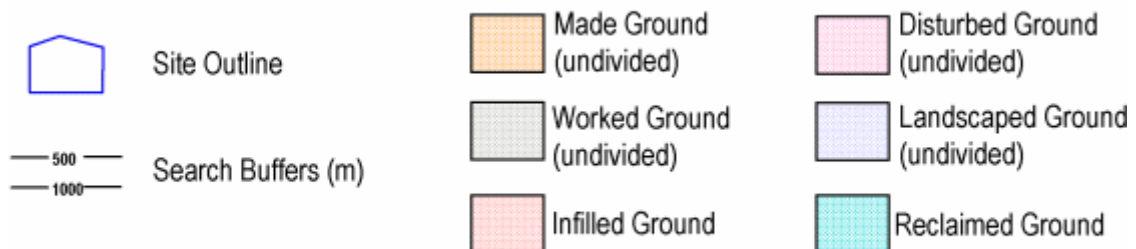
1 Geology

1.1 Artificial Ground Map



Artificial Ground Legend

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1 Geology

1.1 Artificial Ground

1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:077

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

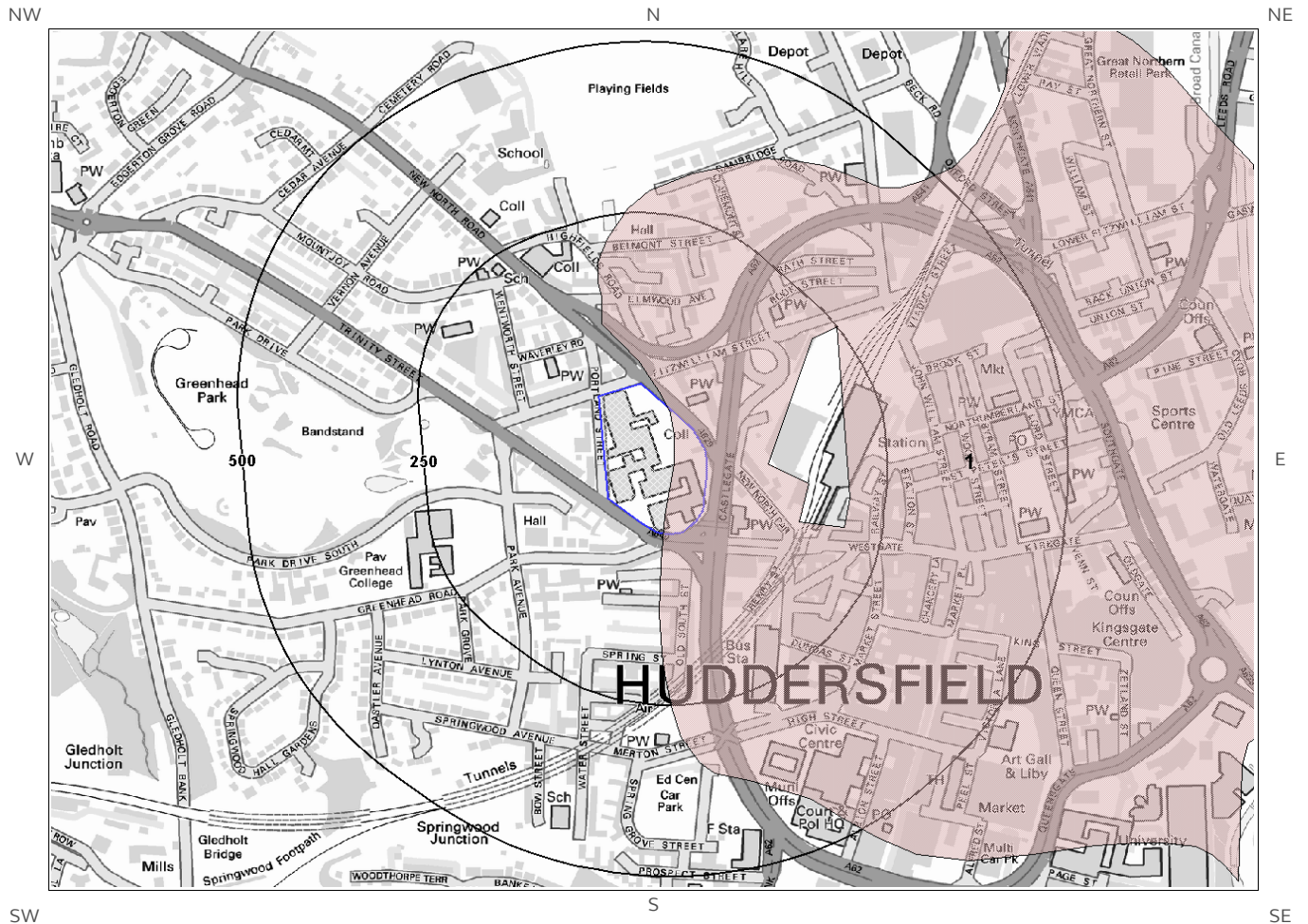
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	461.0	NE	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	484.0	NE	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

1.2 Superficial Deposits and Landslips Map

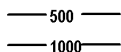


Superficial Deposits and Landslips
Legend

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Site Outline



Search Buffers (m)

1.2 Superficial Deposits and Landslips

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	HEAD	HEAD	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Very Low

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

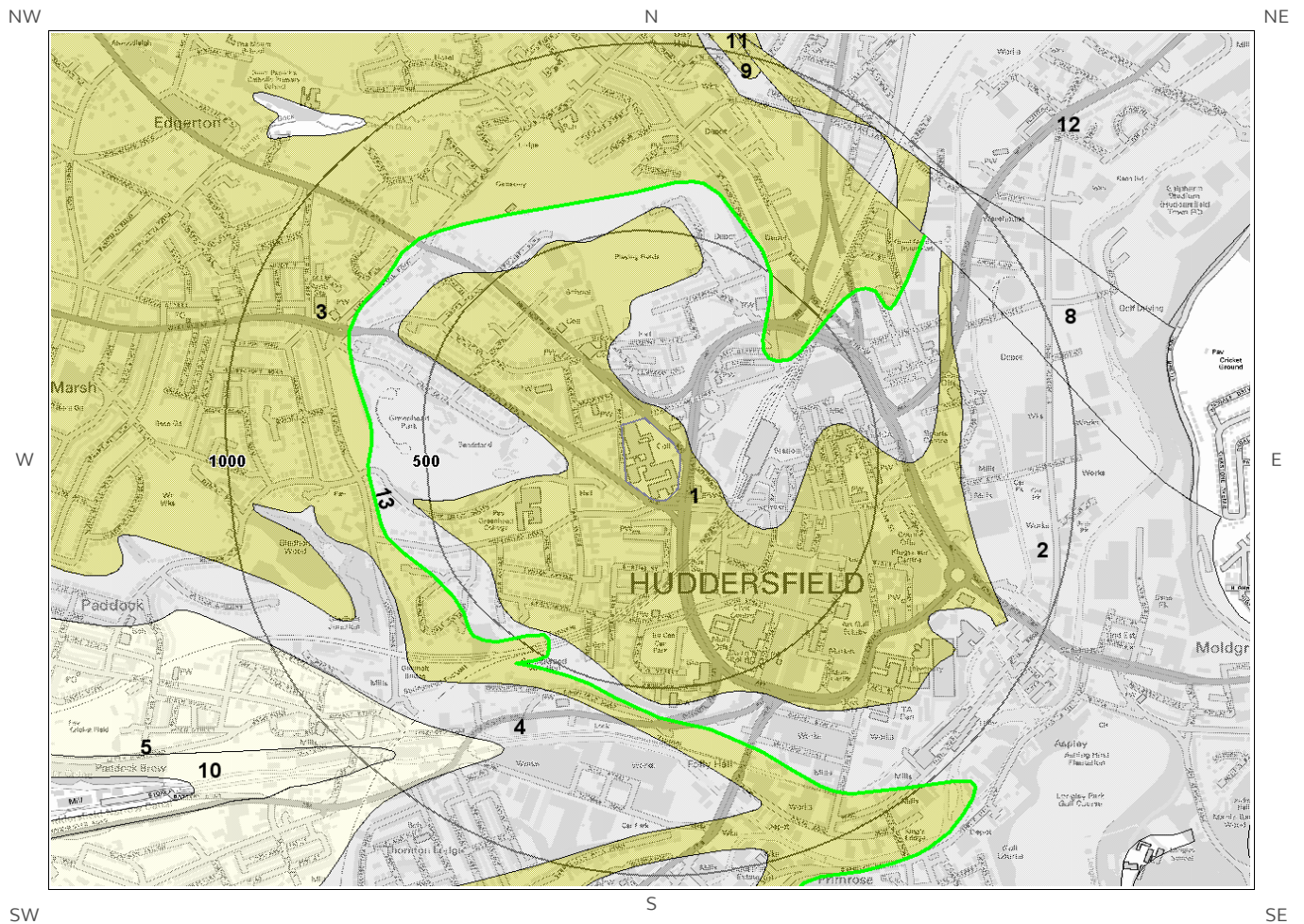
1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site* boundary? No

Database searched and no data found.

* This includes an automatically generated 50m buffer zone around the site

1.3 Bedrock and Faults Map

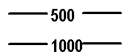


Bedrock and Faults Legend

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Site Outline



Search Buffers (m)

1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:077

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MBR-SDST	Middle Band Rock - Sandstone	Langsettian
2	32.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian
3	332.0	NE	SBF-SDST	Soft Bed Flags - Sandstone	Langsettian

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site* boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	High	Moderate
32.0	E	Fracture	High	Low

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
13	332.0	NE	ROCK	Coal seam, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

* This includes an automatically generated 50m buffer zone around the site

1.4 Radon Data

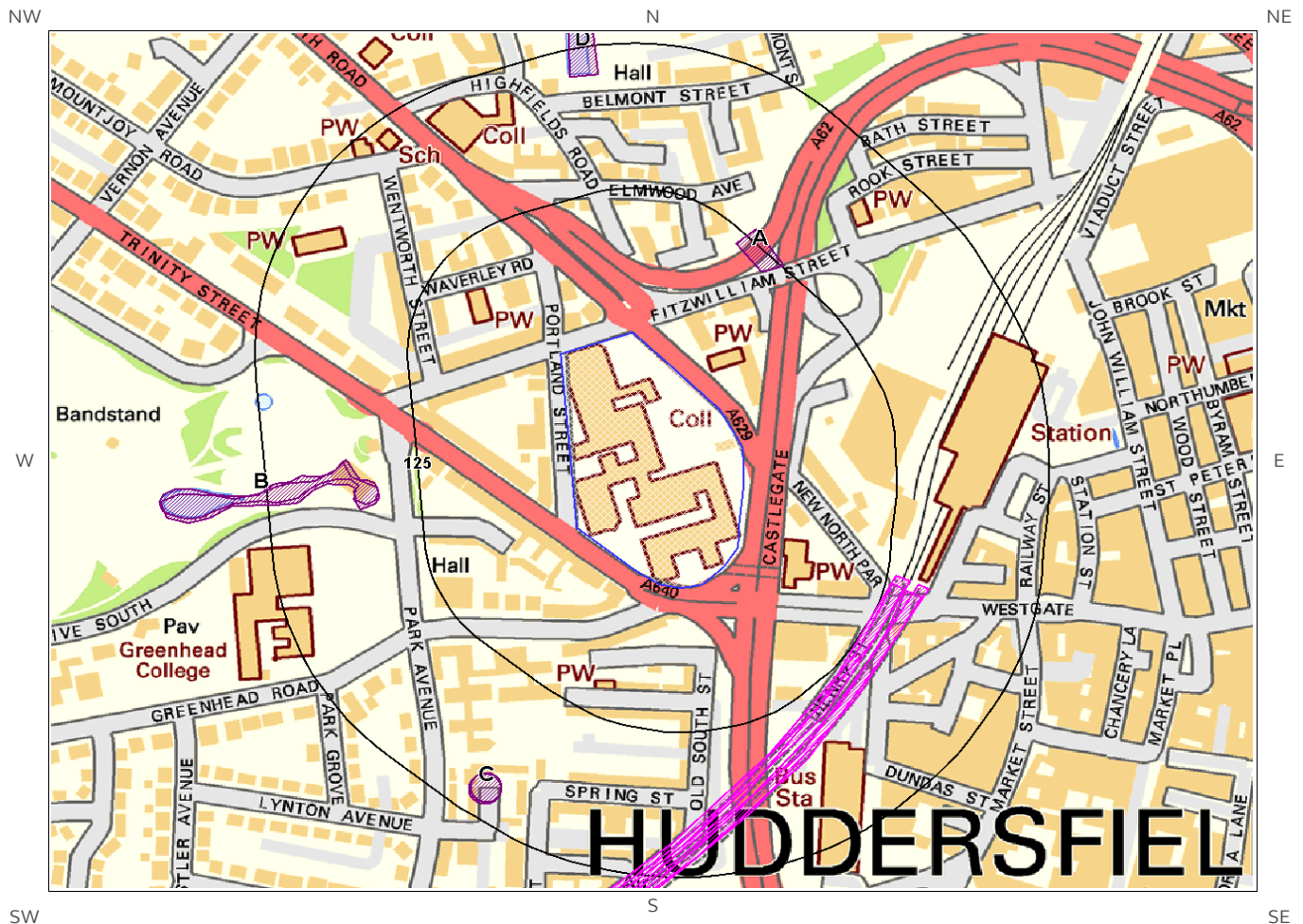
1.4.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level

1.4.2 Radon Protection

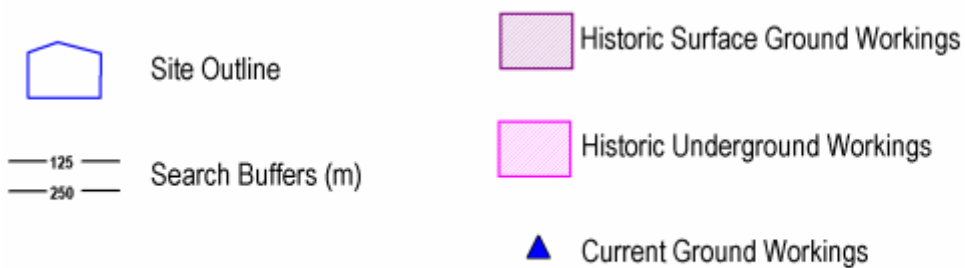
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary

2 Ground Workings Map



Ground Workings Legend

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2 Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
1A	110.0	NE	414143 417053	Cuttings	1975
2A	110.0	NE	414143 417053	Cuttings	1985
3B	159.0	W	413755 416847	Fish Ponds	1905
4B	159.0	W	413741 416844	Ponds	1889
5C	211.0	SW	413918 416590	Reservoir	1951
6C	212.0	SW	413917 416588	Reservoir	1948
7C	212.0	SW	413917 416588	Reservoir	1905
8D	225.0	N	413997 417227	Pond	1975
9D	225.0	N	413997 417227	Pond	1985
10D	225.0	N	413997 417227	Pond	1966

2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
11E	125.0	SE	414107 416571	Tunnels	1966
12E	125.0	SE	414107 416571	Tunnels	1985
13E	125.0	SE	414107 416571	Tunnels	1951
14E	125.0	SE	414107 416571	Tunnels	1975
15E	127.0	SE	414111 416568	Tunnel	1905
16E	127.0	SE	414111 416568	Tunnel	1948
17E	141.0	SE	414118 416558	Tunnel	1905
18E	141.0	SE	414118 416558	Tunnel	1948
19E	143.0	SE	414121 416563	Tunnels	1985
20E	143.0	SE	414121 416563	Tunnels	1966
21E	143.0	SE	414121 416563	Tunnels	1951
22E	143.0	SE	414121 416563	Tunnels	1975
Not shown	287.0	S	414022 416474	Unspecified Shafts	1985
Not shown	287.0	S	414022 416474	Unspecified Shafts	1975
Not shown	300.0	S	413987 416468	Unspecified Shafts	1985
Not shown	300.0	S	413987 416468	Unspecified Shafts	1975
Not shown	563.0	SW	413548 416353	Tunnel	1985
Not shown	563.0	SW	413548 416353	Tunnel	1966
Not shown	563.0	SW	413548 416353	Tunnel	1951
Not shown	563.0	SW	413548 416353	Tunnel	1975
Not shown	567.0	SW	413544 416350	Tunnel	1905
Not shown	567.0	SW	413544 416350	Tunnel	1948

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	581.0	SW	413540 416340	Tunnel	1985
Not shown	581.0	SW	413540 416340	Tunnel	1966
Not shown	581.0	SW	413540 416340	Tunnel	1951
Not shown	581.0	SW	413540 416340	Tunnel	1975
Not shown	584.0	SW	413539 416336	Tunnel	1905
Not shown	584.0	SW	413539 416336	Tunnel	1948

2.3 Current Ground Workings

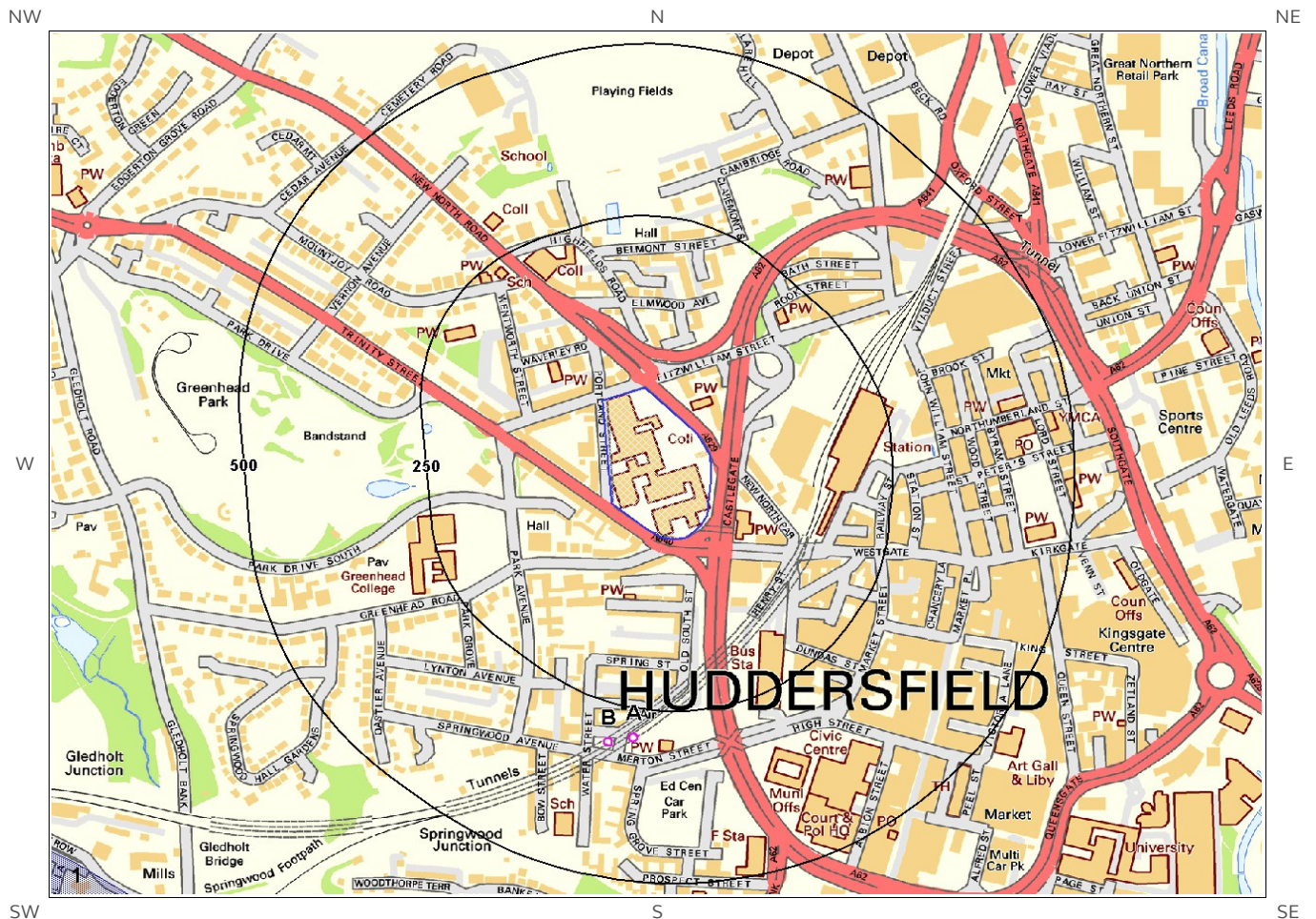
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	644.0	W	413341 416865	Sandstone	Gledholt Lane	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	854.0	W	413125 416950	Sandstone	Marsh	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	962.0	W	413018 416920	Sandstone	Stone Pit Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	997.0	NE	414801 417634	Coal, Deep	Lane Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and
Natural Cavities Legend

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3 Mining, Extraction & Natural Cavities

3.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
2A	287.0	S	414022 416474	Unspecified Shafts	1975
3A	287.0	S	414022 416474	Unspecified Shafts	1985
4B	300.0	S	413987 416468	Unspecified Shafts	1975
5B	300.0	S	413987 416468	Unspecified Shafts	1985

3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	761.0	SW	Not available	Vein Mineral	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.10 Clay Mining

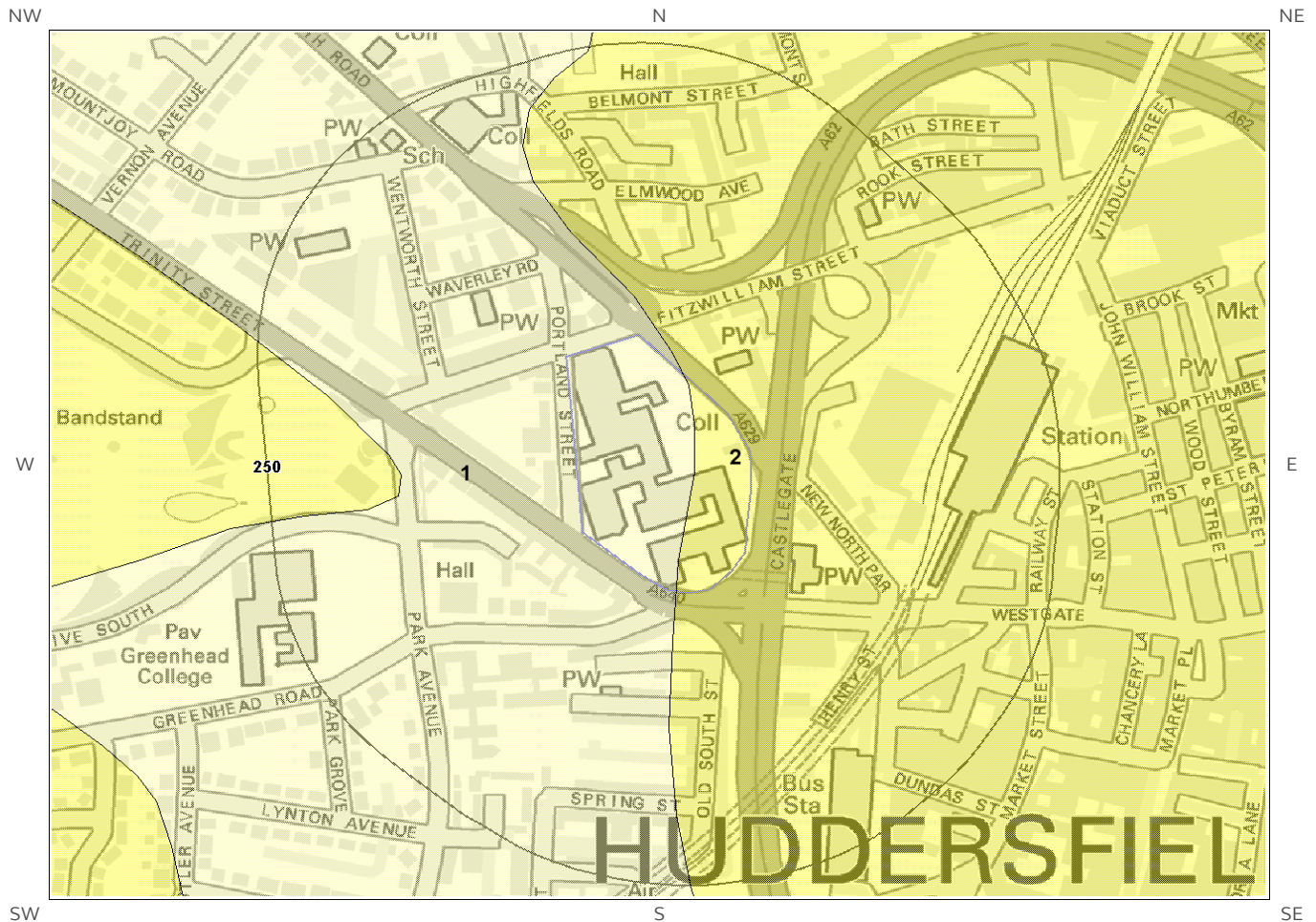
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

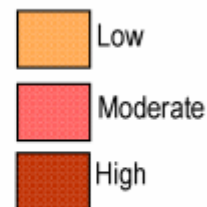
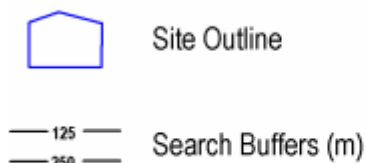
4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map

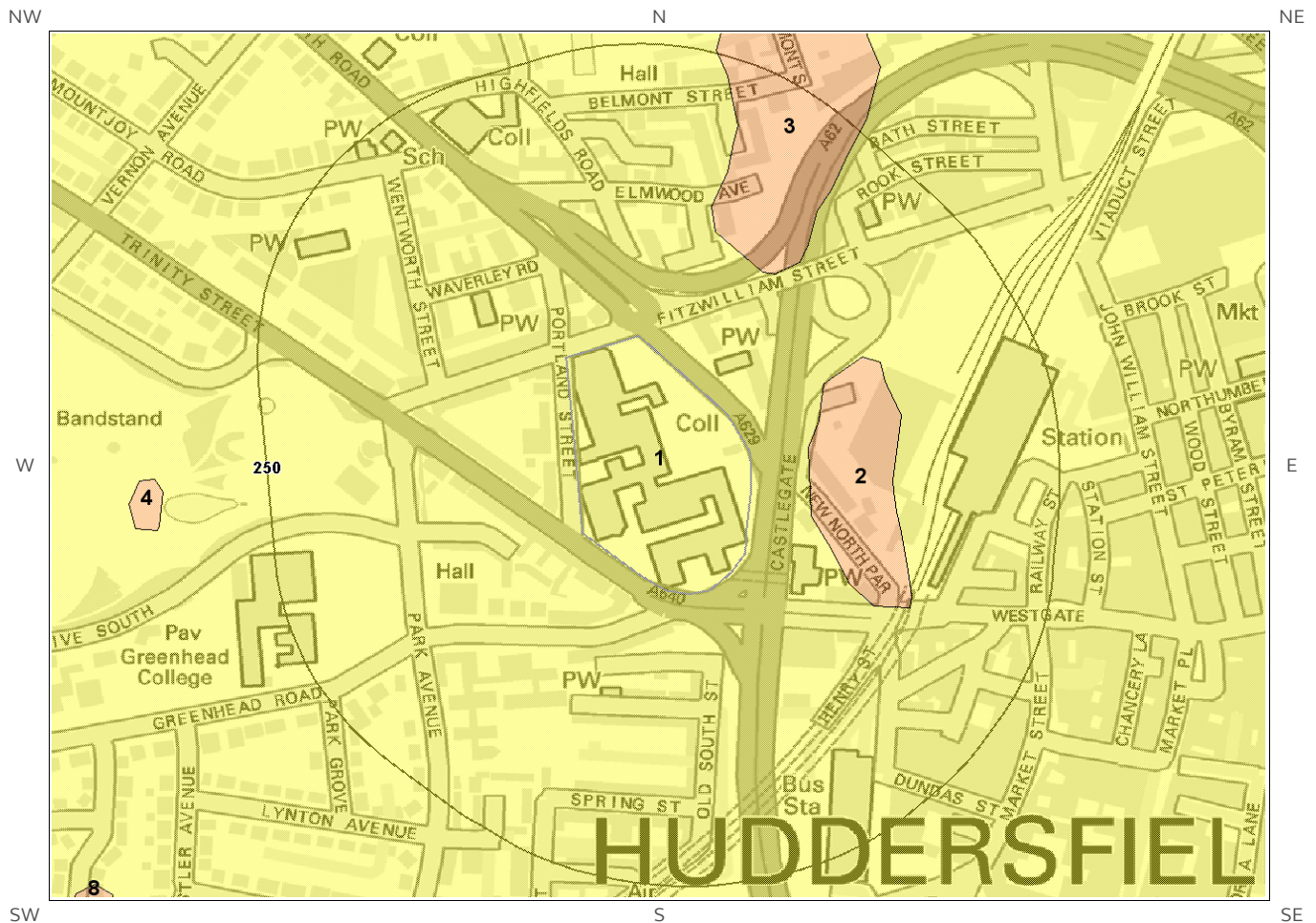


Shrink Swell Clay Legend

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4.2 Landslides Map

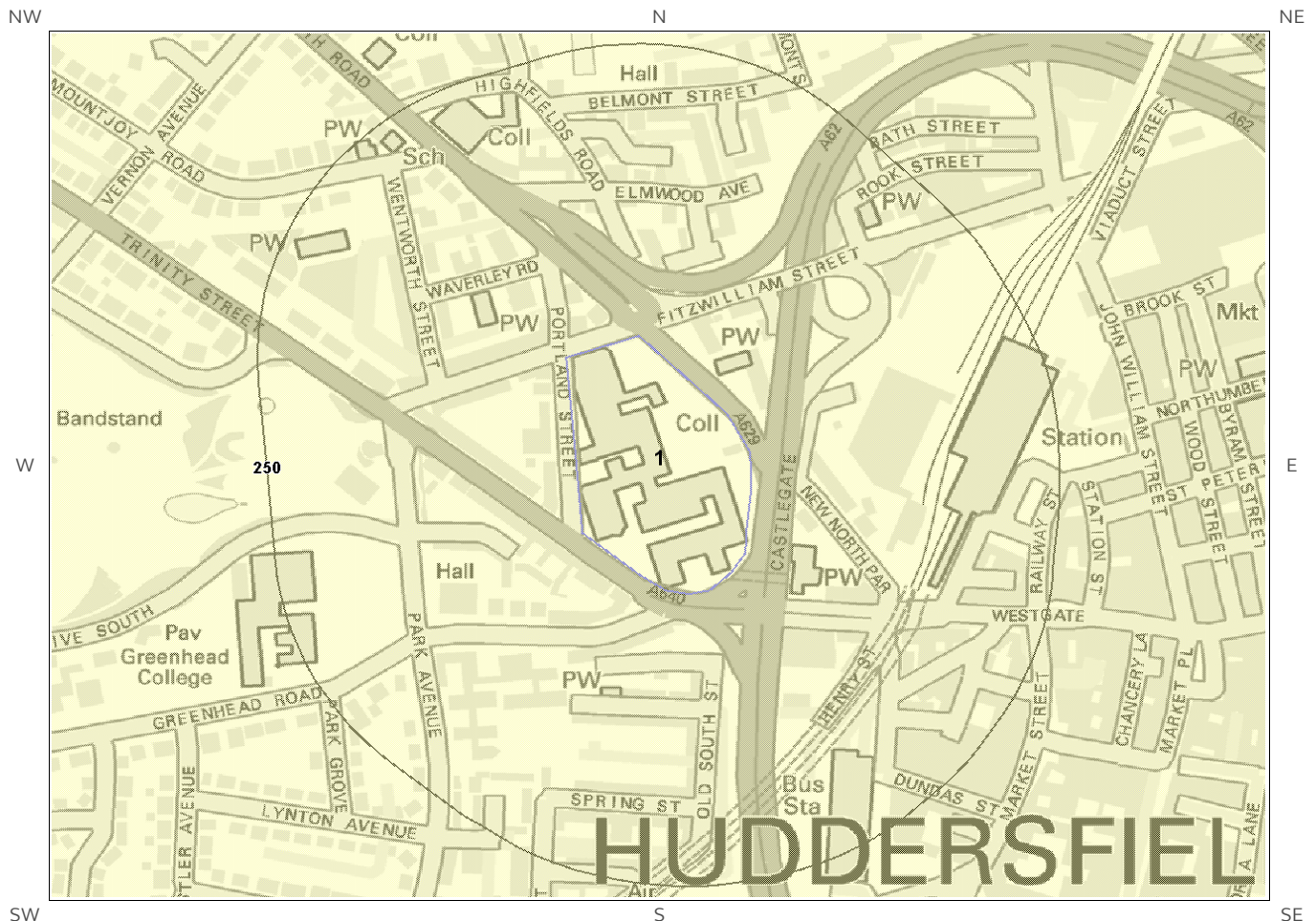


Landslides Legend

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4.3 Ground Dissolution Soluble Rocks Map

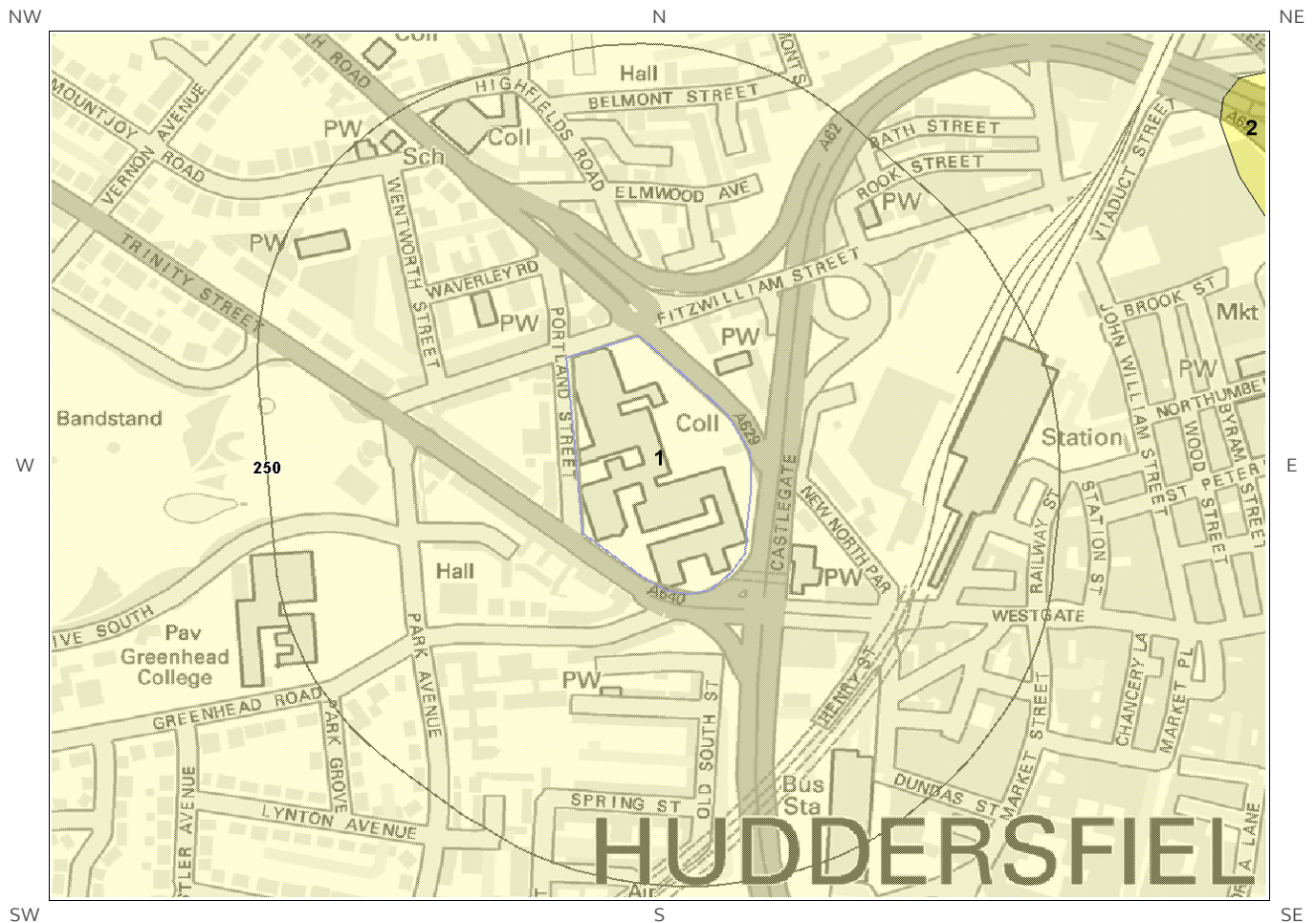


Ground Dissolution
Soluble Rocks Legend

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4.4 Compressible Deposits Map

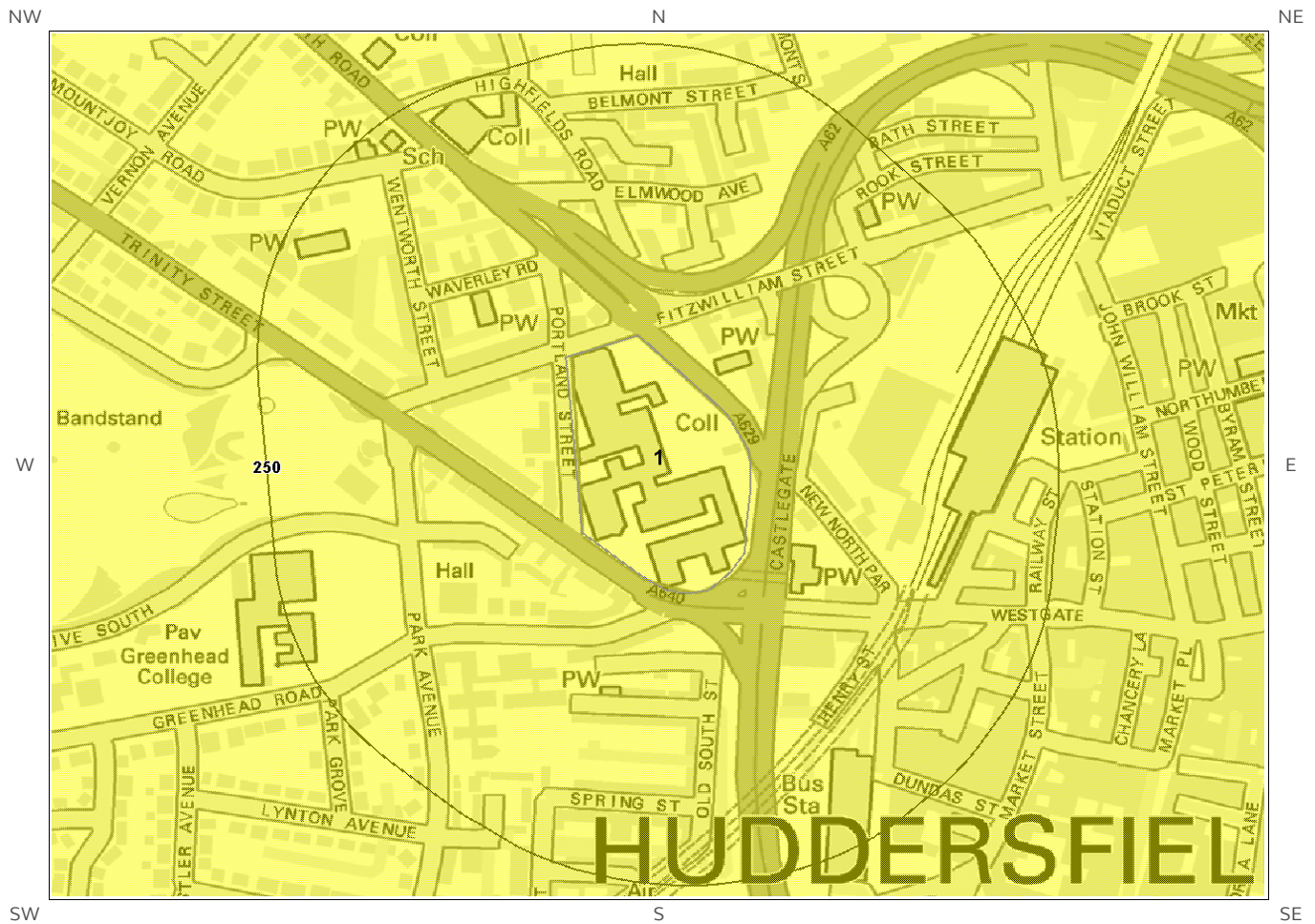


Compressible Deposits Legend

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4.5 Collapsible Deposits Map

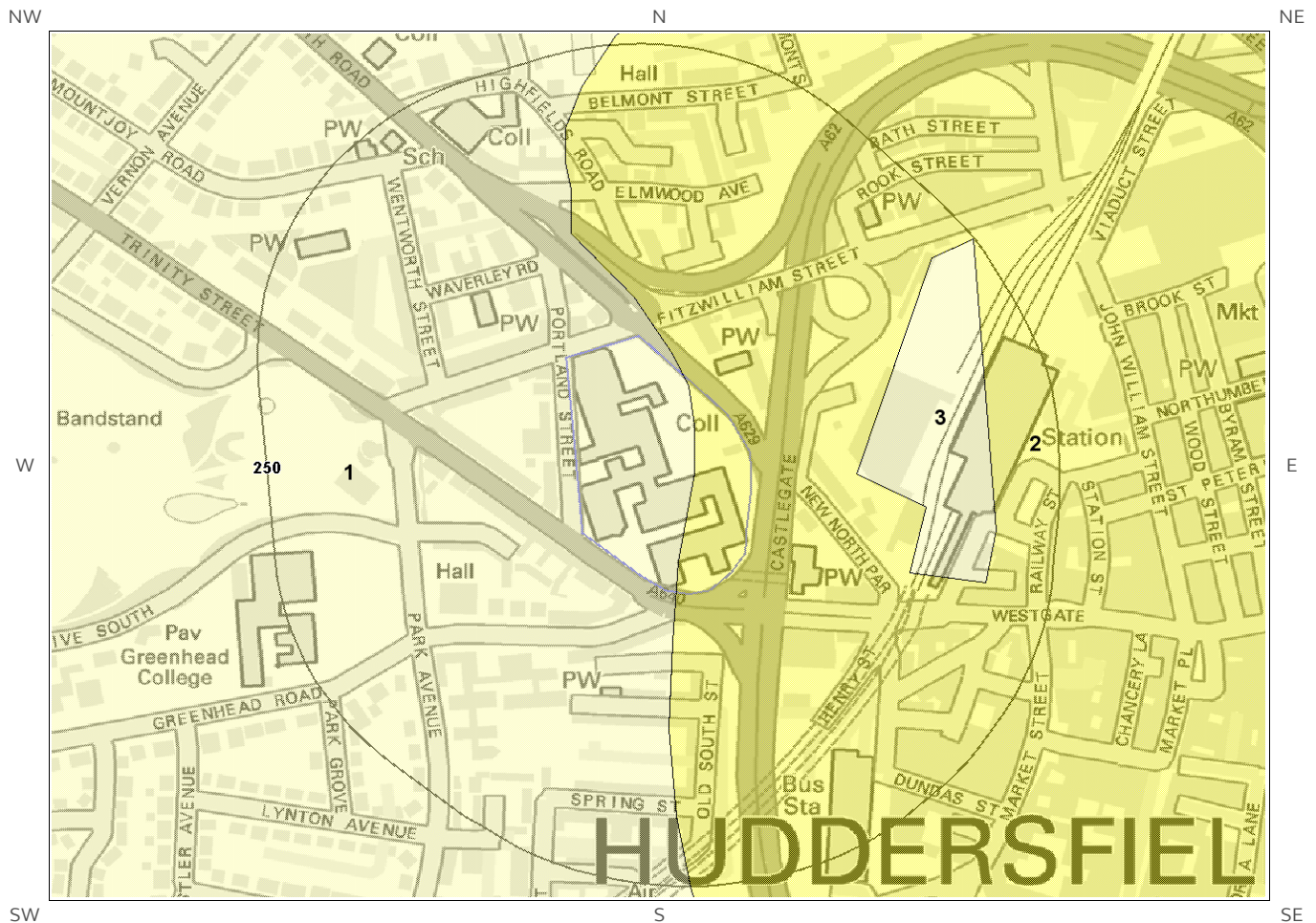


Collapsible Deposits Legend

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4.6 Running Sand Map



Running Sand Legend

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4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Low

4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
2	47.0	E	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to the ground, such as drainage or excavations, take place. Possible increase in construction cost to reduce potential slope stability problems. For existing property, no significant increase in insurance risk due to natural slope instability problems.

* This includes an automatically generated 50m buffer zone around the site

4.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

4.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.

4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

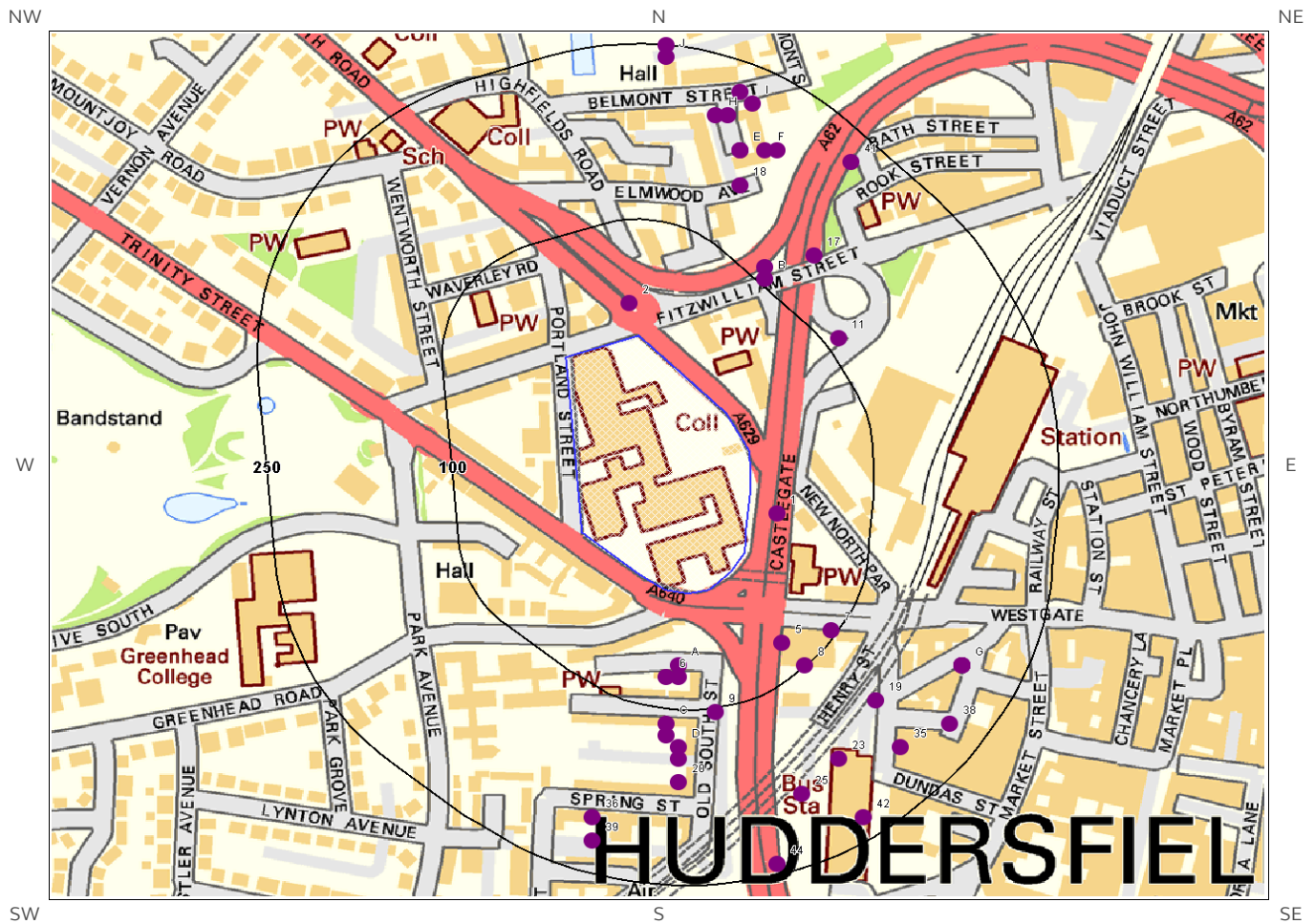
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

4.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

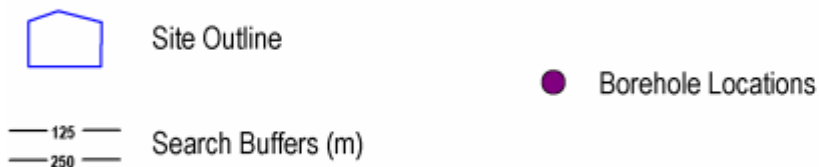
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

5 Borehole Records Map



Borehole Records Legend

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5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

45

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	23.0	E	414150 416830	SE11NW476	7.01	OFF NEW NORTH ROAD 2B
2	29.0	N	414030 417010	SE11NW494	6.1	HUDDERSFIELD INNER RING ROAD 4
3A	63.0	S	414070 416700	SE11NW256	2.95	OLD SOUTH ST H'FIELD 1A
4A	72.0	S	414070 416690	SE11NW262	21.6	OLD SOUTH ST H'FIELD 5
5	73.0	SE	414154 416719	SE11NW891	-1.0	TRINITY STREET HUDDERSFIELD 1
6	74.0	S	414060 416690	SE11NW255	2.95	OLD SOUTH ST H'FIELD 1
7	95.0	SE	414194 416730	SE11NW892	-1.0	TRINITY STREET HUDDERSFIELD 2
8	99.0	SE	414172 416700	SE11NW893	-1.0	TRINITY STREET HUDDERSFIELD 3
9	104.0	S	414100 416660	SE11NW511	5.18	UPPERHEAD ROW HUDDERSFIELD 7
10B	105.0	NE	414140 417030	SE11NW496	21.03	HUDDERSFIELD INNER RING ROAD 5A
11	111.0	NE	414200 416980	SE11NW493	9.14	HUDDERSFIELD INNER RING ROAD 3
12B	112.0	NE	414140 417040	SE11NW495	17.68	HUDDERSFIELD INNER RING ROAD 5
13C	113.0	S	414060 416650	SE11NW257	3.0	OLD SOUTH ST H'FIELD 2
14C	123.0	S	414060 416640	SE11NW261	21.0	OLD SOUTH ST H'FIELD 4
15D	132.0	S	414070 416630	SE11NW258	3.0	OLD SOUTH ST H'FIELD 2A
16D	142.0	S	414070 416620	SE11NW260	2.9	OLD SOUTH ST H'FIELD 3A
17	146.0	NE	414180 417050	SE11NW497	12.19	HUDDERSFIELD INNER RING ROAD 6
18	152.0	NE	414120 417110	SE11NW568	-1.0	BELMONT STREET HUDDERSFIELD TP2
19	161.0	SE	414230 416670	SE11NW510	3.05	UPPERHEAD ROW HUDDERSFIELD 6
20	162.0	S	414070 416600	SE11NW259	22.1	OLD SOUTH ST H'FIELD 3
21E	178.0	NE	414120 417140	SE11NW570	-1.0	BELMONT STREET HUDDERSFIELD TP4

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
22E	178.0	NE	414120 417140	SE11NW564	-1.0	W.Y.H.A. BELMONT STREET HUDDERSFIELD 2
23	179.0	SE	414200 416620	SE11NW509	4.27	UPPERHEAD ROW HUDDERSFIELD 5
24F	188.0	NE	414140 417140	SE11NW565	-1.0	W.Y.H.A. BELMONT STREET HUDDERSFIELD 3
25	190.0	SE	414170 416590	SE11NW508	3.96	UPPERHEAD ROW HUDDERSFIELD 4
26F	194.0	NE	414150 417140	SE11NW569	-1.0	BELMONT STREET HUDDERSFIELD TP3
27H	198.0	N	414100 417170	SE11NW567	-1.0	BELMONT STREET HUDDERSFIELD TP1
28G	201.0	SE	414300 416700	SE11NW51	25.2	HUDDERSFIELD PHASE I 2A
29G	201.0	SE	414300 416700	SE11NW54	10.05	HUDDERSFIELD PHASE 2 2
30G	201.0	SE	414300 416700	SE11NW55	17.55	HUDDERSFIELD PHASE 2 3
31G	201.0	SE	414300 416700	SE11NW50	50.0	HUDDERSFIELD PHASE I 1
32G	201.0	SE	414300 416700	SE11NW53	17.6	HUDDERSFIELD PHASE 2 1
33G	201.0	SE	414300 416700	SE11NW52	150.0	HUDDERSFIELD PHASE 2 R3
34H	201.0	N	414110 417170	SE11NW566	-1.0	W.Y.H.A. BELMONT STREET HUDDERSFIELD 4
35	203.0	SE	414250 416630	SE11NW214	22.0	GEORGE ST HUDDERSFIELD 1
36	204.0	S	414000 416570	SE11NW157	19.4	SPRING ST HUDDERSFIELD 2/2R
37I	218.0	NE	414130 417180	SE11NW563	-1.0	W.Y.H.A. BELMONT STREET HUDDERSFIELD 1
38	220.0	SE	414290 416650	SE11NW215	25.0	GEORGE ST HUDDERSFIELD 2
39	223.0	S	414000 416550	SE11NW156	19.9	SPRING ST HUDDERSFIELD 1/1R
40I	224.0	N	414120 417190	SE11NW571	-1.0	BELMONT STREET HUDDERSFIELD TP5
41	226.0	NE	414210 417130	SE11NW475	6.1	JUNCTION OF CLAREMONT STREET AND ROOK STREET 6A
42	232.0	SE	414220 416570	SE11NW507	3.51	UPPERHEAD ROW HUDDERSFIELD 3
43J	239.0	N	414060 417220	SE11NW578	-1.0	CAMBRIDGE ROAD HUDDERSFIELD TP2
44	241.0	S	414150 416530	SE11NW492	9.14	HUDDERSFIELD INNER RING ROAD 2A
45J	249.0	N	414060 417230	SE11NW572	-1.0	CAMBRIDGE ROAD HUDDERSFIELD 1

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/15631101
#2: scans.bgs.ac.uk/sobi_scans/boreholes/15631277
#3A: scans.bgs.ac.uk/sobi_scans/boreholes/41343
#4A: scans.bgs.ac.uk/sobi_scans/boreholes/41349
#6: scans.bgs.ac.uk/sobi_scans/boreholes/41342
#9: scans.bgs.ac.uk/sobi_scans/boreholes/15631300
#10B: scans.bgs.ac.uk/sobi_scans/boreholes/15631279
#11: scans.bgs.ac.uk/sobi_scans/boreholes/15631276
#12B: scans.bgs.ac.uk/sobi_scans/boreholes/15631278
#13C: scans.bgs.ac.uk/sobi_scans/boreholes/41344
#14C: scans.bgs.ac.uk/sobi_scans/boreholes/41348
#15D: scans.bgs.ac.uk/sobi_scans/boreholes/41345
#16D: scans.bgs.ac.uk/sobi_scans/boreholes/41347
#17: scans.bgs.ac.uk/sobi_scans/boreholes/15631280
#19: scans.bgs.ac.uk/sobi_scans/boreholes/15631299
#20: scans.bgs.ac.uk/sobi_scans/boreholes/41346
#23: scans.bgs.ac.uk/sobi_scans/boreholes/15631298
#25: scans.bgs.ac.uk/sobi_scans/boreholes/15631297
#28G: scans.bgs.ac.uk/sobi_scans/boreholes/41138
#29G: scans.bgs.ac.uk/sobi_scans/boreholes/41141
#30G: scans.bgs.ac.uk/sobi_scans/boreholes/41142
#31G: scans.bgs.ac.uk/sobi_scans/boreholes/41137
#32G: scans.bgs.ac.uk/sobi_scans/boreholes/41140
#33G: scans.bgs.ac.uk/sobi_scans/boreholes/41139
#35: scans.bgs.ac.uk/sobi_scans/boreholes/41301
#36: scans.bgs.ac.uk/sobi_scans/boreholes/41244
#38: scans.bgs.ac.uk/sobi_scans/boreholes/41302
#39: scans.bgs.ac.uk/sobi_scans/boreholes/41243
#41: scans.bgs.ac.uk/sobi_scans/boreholes/15631095
#42: scans.bgs.ac.uk/sobi_scans/boreholes/15631296
#44: scans.bgs.ac.uk/sobi_scans/boreholes/15631275

6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

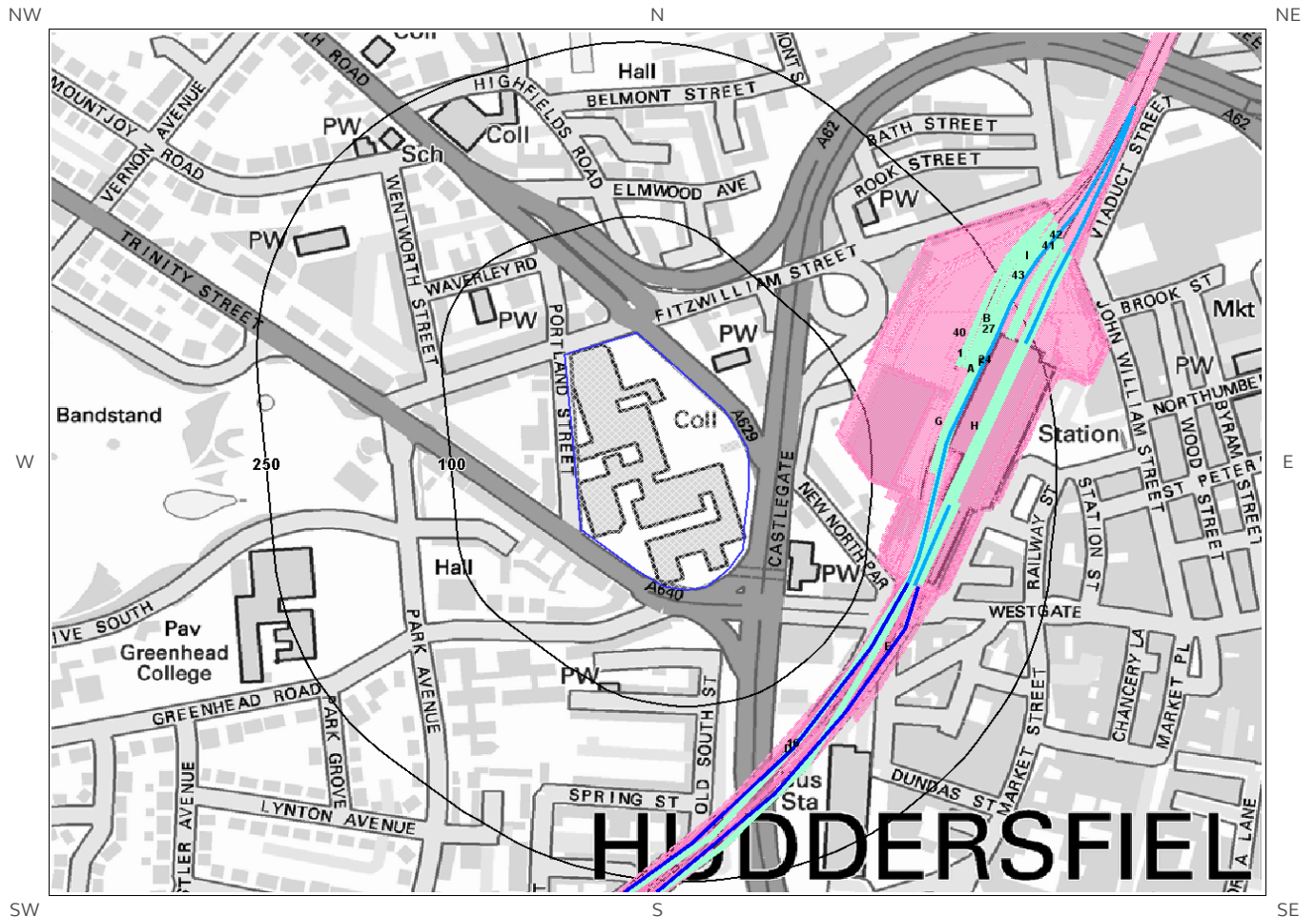
20

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
0.0	On Site	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
18.0	N	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
18.0	N	RuralSoil	35 - 45 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
19.0	N	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
19.0	N	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
28.0	N	RuralSoil	35 - 45 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	<100 mg/kg
28.0	N	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
32.0	E	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
39.0	N	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
52.0	NE	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
78.0	N	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	>180 mg/kg	45 - 60 mg/kg	<100 mg/kg
85.0	E	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	>180 mg/kg	45 - 60 mg/kg	100 - 200 mg/kg
100.0	N	RuralSoil	<15 mg/kg	<1.8 mg/kg	>180 mg/kg	45 - 60 mg/kg	<100 mg/kg
143.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	>180 mg/kg	45 - 60 mg/kg	100 - 200 mg/kg
172.0	NE	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	>180 mg/kg	45 - 60 mg/kg	100 - 200 mg/kg
172.0	NE	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	>180 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
219.0	NE	RuralSoil	25 - 35 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
230.0	N	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	>180 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

7 Railways and Tunnels Map



Railways and Tunnels Legend

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	Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Site Outline		Railway Tunnel (OS Mapping)
	Search Buffers (m) — 250 — — 500 —		High Speed 2
	Abandoned or Dismantled Railway (OpenStreetMap)		High Speed 2 Revised Proposed Route
	Railway Track (OS Mapping)		Crossrail 1
			Railway and/or Tunnel Feature from Historical Mapping

7 Railways and Tunnels

7.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? Yes

Distance (m)	Direction	Detail
132	SE	Railway Tunnel
146	E	Railway Tunnel

Any records that have been identified are represented on the Railways and Tunnels Map.

7.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	72	E	414310 416941	Railway Sidings	1938
2A	75	E	414263 416933	Railway Sidings	1956
24	77	E	n/a	Railway	1907
3A	80	E	414315 416930	Railway Sidings	1975

ID	Distance (m)	Direction	NGR	Details	Date
4A	80	E	414315 416930	Railway Sidings	1985
5A	80	E	414315 416930	Railway Sidings	1966
25A	80	E	n/a	Railway	1918
26F	85	E	n/a	Railway	1932
6F	111	E	414323 416935	Railway Sidings	1889
27	116	E	414250 416982	Railway Sidings	1907
28B	117	E	414250 416984	Railway Sidings	1918
29B	117	E	414250 416984	Railway Sidings	1893
30B	118	E	414349 417020	Railway Sidings	1932
7B	119	E	414324 416977	Railway Sidings	1905
8B	119	E	414324 416977	Railway Sidings	1948
31G	119	E	414274 416880	Railway Sidings	1959
32H	120	E	414321 416880	Railway Sidings	1977
33	121	E	414278 416893	Railway Sidings	1982
34G	121	E	414289 416879	Railway Sidings	1960
44J	124	SE	414106 416566	Tunnel	1938
45C	125	SE	414107 416571	Tunnels	1975
46C	125	SE	414107 416571	Tunnels	1985
47C	125	SE	414107 416571	Tunnels	1966
48C	125	SE	414107 416571	Tunnels	1956
9	127	SE	n/a	Tunnel	1907
10C	127	SE	414112 416571	Tunnel	1907
11C	127	SE	414102 416562	Tunnel	1932
12C	127	SE	414102 416562	Tunnel	1918
49K	127	SE	414111 416568	Tunnel	1905
50K	127	SE	414111 416568	Tunnel	1948
13D	128	SE	414179 416635	Tunnel	1994
14D	128	SE	414179 416635	Tunnel	1993
15D	129	SE	414166 416630	Tunnel	1960
16	129	SE	414151 416613	Tunnels	1959

ID	Distance (m)	Direction	NGR	Details	Date
35H	134	E	414313 416883	Railway Sidings	1994
36H	134	E	414313 416883	Railway Sidings	1993
37H	134	E	414315 416881	Railway Sidings	1990
17E	135	SE	n/a	Tunnel	1932
18D	136	SE	414178 416634	Tunnel	1982
19D	141	E	414182 416626	Tunnel	1990
20D	141	E	414182 416626	Tunnel	1960
21D	141	E	414182 416626	Tunnel	1977
22J	141	SE	414120 416560	Tunnel	1907
23E	141	E	n/a	Tunnel	1918
51J	141	SE	414118 416558	Tunnel	1948
52J	141	SE	414118 416558	Tunnel	1905
53J	143	SE	414121 416563	Tunnels	1975
54J	143	SE	414121 416563	Tunnels	1985
55J	143	SE	414121 416563	Tunnels	1966
56J	143	SE	414121 416563	Tunnels	1956
38I	171	NE	414335 417050	Railway Sidings	1959
39I	171	NE	414373 417066	Railway Sidings	1958
40	178	NE	414300 416980	Railway Sidings	1982
41	213	NE	414369 417073	Railway Sidings	1978
42	220	NE	414381 417089	Railway Sidings	1993
43	246	NE	414348 417030	Railway Sidings	1983

Any records that have been identified are represented on the Railways and Tunnels Map.

7.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
129	SE	Not given	Rail
136	SE	Not given	Rail
137	E	Not given	Multi Track
138	E	Not given	Rail
141	E	Not given	Rail
141	E	Not given	Rail
142	E	Not given	Rail
143	E	Not given	Multi Track
144	E	Not given	Rail
146	E	Not given	Rail
149	E	Not given	Rail
185	NE	Not given	Rail
189	E	Not given	Rail
193	E	Not given	Rail
197	E	Not given	Rail
232	NE	Not given	Rail
234	NE	Not given	Rail
243	E	Not given	Multi Track

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

Crossrail route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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info@groundsure.com



British Geological Survey Enquiries

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Keyworth, Nottingham NG12 5GG
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Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries



**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX



The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



**The Coal
Authority**

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<https://www.gov.uk/government/organisations/public-health-england>
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



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Map Name: County Series Town Plan

Map date: 1890

Scale: 1:500

Printed at: 1:1,000



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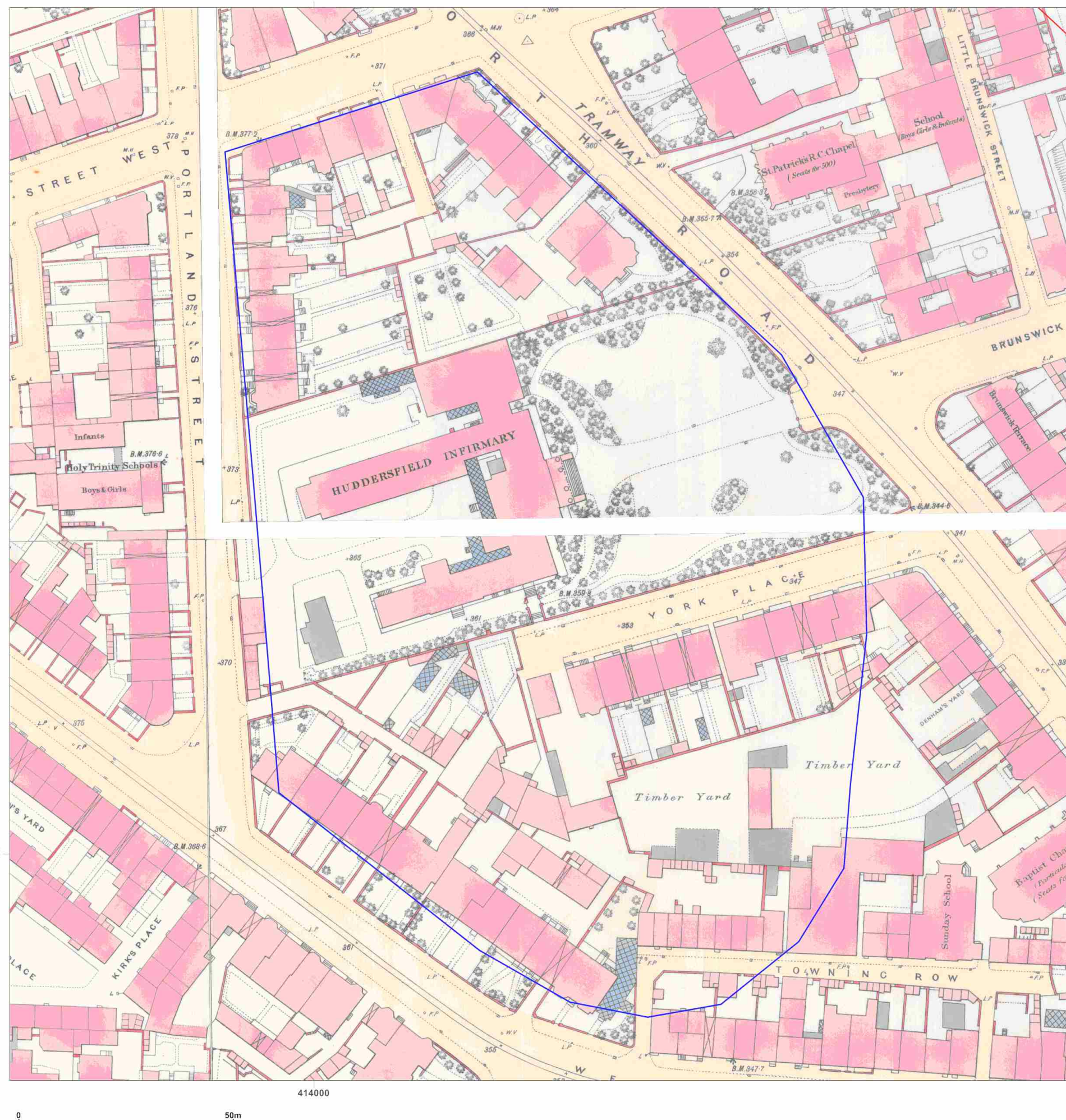


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Map Name: County Series

Map date: 1893

Scale: 1:2,500

Printed at: 1:2,500



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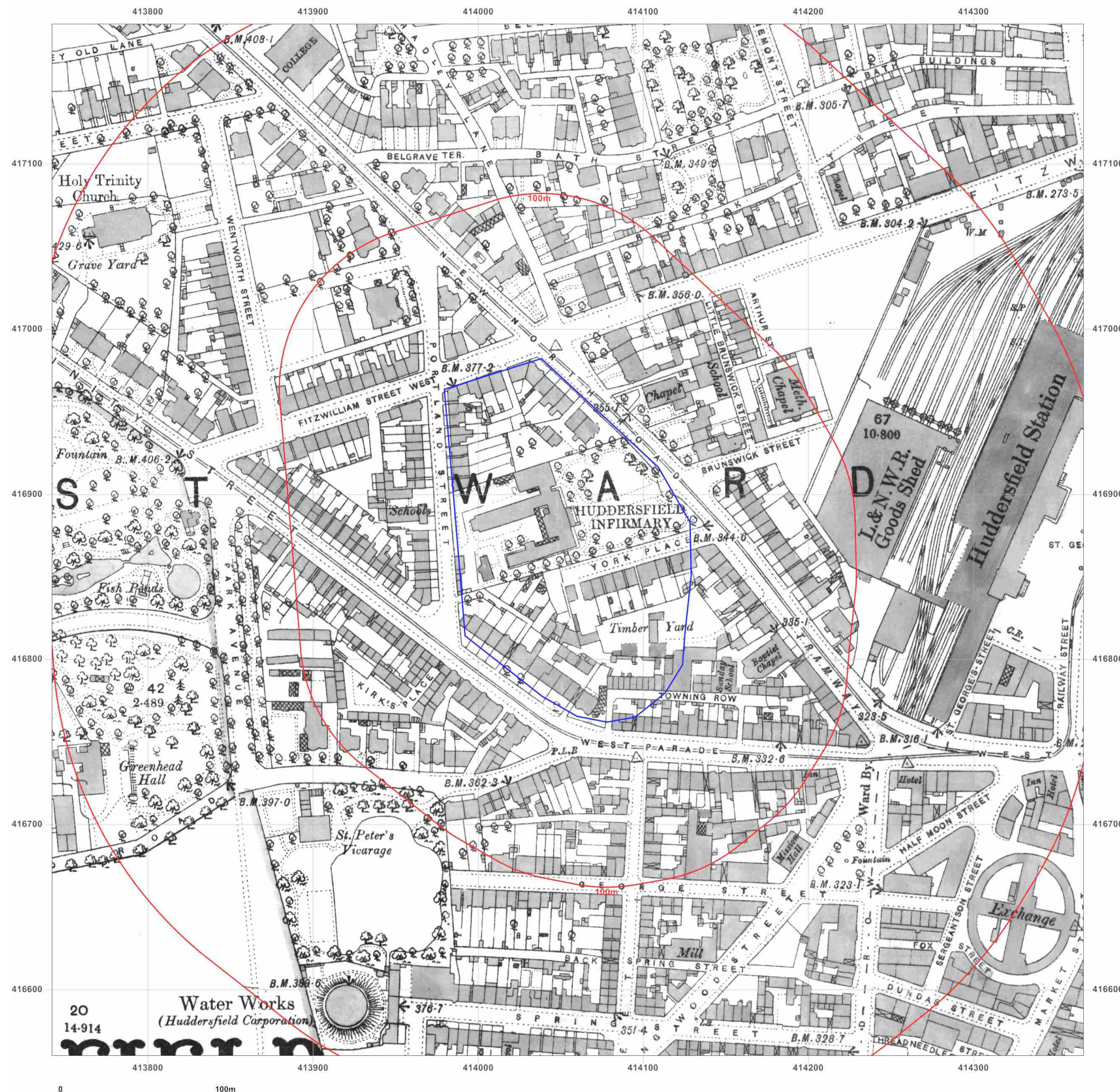


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Map Name: County Series

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: County Series

Map date: 1918

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: County Series

Map date: 1932

Scale: 1:2,500

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1959-1960

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1958-1960

Scale: 1:2,500

Printed at: 1:2,500



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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1975-1978

Scale: 1:1,250

Printed at: 1:2,000



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Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1977-1981

Scale: 1:1,250

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1982-1987

Scale: 1:1,250

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1987-1990

Scale: 1:1,250

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1989-1993

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: 7344G_-_Trinity_Lane
Report Ref: GS-3576321
Grid Ref: 414054, 416872

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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APPENDIX 04
Coal Authority Report



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

KIRKLEES COLLEGE
37 NEW NORTH ROAD
HUDDERSFIELD
KIRKLEES
HD1 5NN

Date of enquiry: 18 January 2017
Date enquiry received: 18 January 2017
Issue date: 18 January 2017

Our reference: 51001347115001
Your reference: 7344G - Trinity Lane



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

WML CONSULTING

Enquiry address

KIRKLEES COLLEGE, 37 NEW NORTH ROAD,
HUDDERSFIELD, KIRKLEES, HD1 5NN

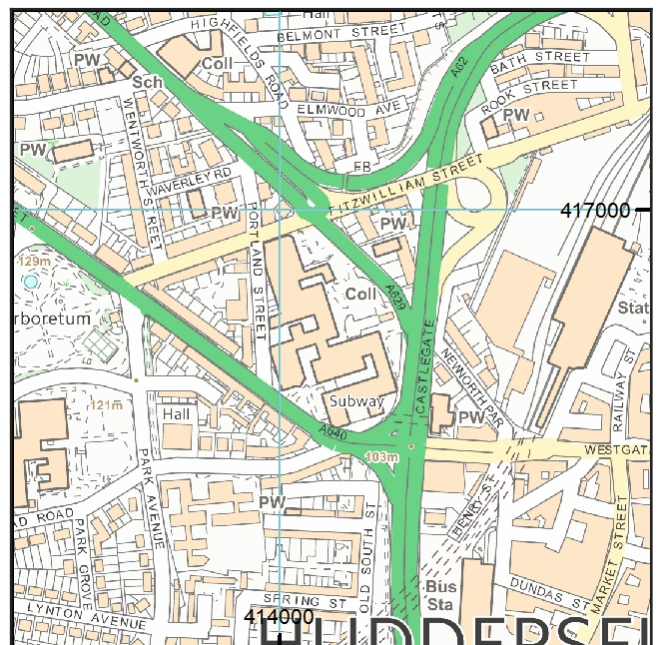
How to contact us

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NG18 4RG

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Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is not within a surface area that could be affected by past underground mining.

However the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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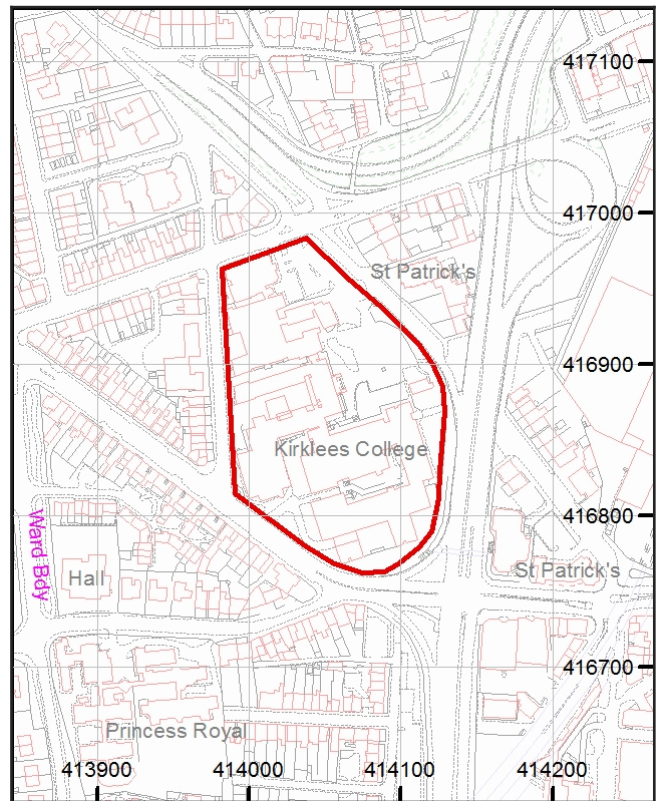
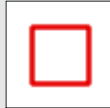
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Enquiry boundary

Key

Approximate position of enquiry boundary shown



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APPENDIX 05

Soil Mechanics Report Excerpts - 2006

Soil Mechanics

The UK's leading geotechnical specialists

Report No A6111/1

HUDDERSFIELD TECHNICAL COLLEGE, HUDDERSFIELD

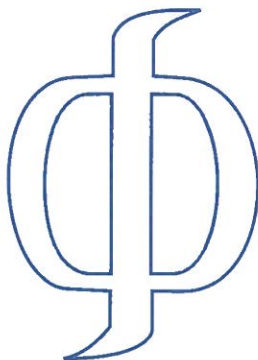
REPORT ON GROUND INVESTIGATION

VOLUME 1: FACTUAL

Carried out for : Huddersfield Technical College

Engineer : Wright Mottershaw Lydon Consulting Ltd.

Date : October 2006



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email sm.doncaster@esgl.co.uk
www.soil-mechanics.com

Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 04/08/2006 End 07/08/2006		Equipment, Methods and Remarks Beretta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 3.00m Diameter 121mm Casing Depth 3.00m		Ground Level +111.89 mOD Coordinates E 414031.00 National Grid N 416975.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.50-1.00	ES 1	0.00-1.20 m Hand dug inspection pit			BITUMEN (HARDSTANDING)	0.10 +111.79			
					Limestone HARDCORE (SUB-BASE)	(0.40)			
					Brown slightly clayey sandy GRAVEL with frequent angular cobbles. Gravel and cobbles are of sandstone and brick. (MADE GROUND)	0.50 +111.39			
					NO DESCRIPTION (Foreman records reaming casing)	1.20 +110.69			
0.00-3.00 1.50-2.00	Rotary Open Hole Drilling ES 2					(1.80)			
3.00-3.90	89 83 0				Moderately weak and moderately strong thickly laminated to thinly bedded light brown grey, becoming dark grey, fine to medium grained SANDSTONE.	3.00 +108.89			
	NI 75 180				Discontinuities: subhorizontal, closely spaced, planar, rough, with orange brown staining and occasionally infilled (up to 10 mm) with gravelly clay.	(1.99)			
3.90-5.40	75 47 19					4.99 +106.90			
					Weak becoming moderately weak thinly to thickly laminated dark grey MUDSTONE, locally recovered as clay.	(1.51)			
5.40-6.90	97 83 57				Discontinuities: generally subhorizontal, closely spaced, planar, smooth and clean; locally randomly orientated, planar, smooth with orange staining.	6.50 +105.39			
	NI 100 360				Moderately strong and strong laminated to thinly bedded dark grey MUDSTONE.	(1.50)			
6.90-8.00	100 0 0				Discontinuities: probably subhorizontal closely spaced, planar, smooth (but core recovered non intact, mainly drilling induced).	8.00 +103.89			
					Grey MUDSTONE (Foreman's description)				
Stratum continues to 18.20 m									
Groundwater Entries No. Struck Post strike behaviour None observed (see Key Sheet)					Depth Related Remarks * From to (m)		Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole BH1 Sheet 1 of 2		



Φ

Drilled MB Logged BF Checked JH/RCG		Start 04/08/2006 End 07/08/2006		Equipment, Methods and Remarks Beretta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 3.00m Diameter 121mm Casing Depth 3.00m		Ground Level +111.89 mOD Coordinates E 414031.00 National Grid N 416975.00			
Samples and Tests						Strata					
Depth		TCR SCR RCG	If	Records/Samples	Date Casing	Time Water	Description (Continued from Sheet 1)		Depth, Level/ (Thickness)	Legend	Backfill/ Instruments
8.00-20.00			Rotary Open Hole Drilling	Flush: 3.00-18.20 Polymer mud, 100 %			Grey MUDSTONE (Foreman's description)		(10.20)		
					04/08/2006 3.00	1800 2.00					
					07/08/2006 3.00	0800					
							VOID (Foreman's description)		18.20 +93.69		
							LOOSE GROUND (Foreman's description)		18.30 +93.59		
									(0.90)		
							Grey MUDSTONE (Foreman's description)		19.20 +92.69		
									(0.80)		
					07/08/2006 3.00						
Depth		TCR SCR RCG	If	Records/Samples	Date Casing	Time Water	EXPLORATORY HOLE ENDS AT 20.00 m				
Groundwater Entries No. Struck Post strike behaviour None observed (see Key Sheet)							Depth Related Remarks * From to (m)		Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Scale 1:50 (c) Soil Mechanics www.soil-mechanics.com 402.24 01/11/2006 14:09:24							Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole BH1 Sheet 2 of 2		

Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 02/08/2006 End 03/08/2006		Equipment, Methods and Remarks Beretta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 3.00m Diameter 121mm Casing Depth 3.00m		Ground Level +113.86 mOD Coordinates E 413989.00 National Grid N 416911.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.50	ES 1	0.00-1.20 m Hand dug inspection pit			BITUMEN (HARDSTANDING)	0.15 +113.71			
					Angular COBBLES of red brick (MADE GROUND)	0.20 +113.66			
					Angular COBBLES of sandstone with some light brown slightly clayey slightly sandy angular GRAVEL of sandstone and brick. (MADE GROUND, possible basement fill)	(1.00)			
0.00-3.00	Rotary Open Hole Drilling				NO DESCRIPTION (Foreman records reaming casing)	1.20 +112.66			
						(1.80)			
3.00-3.90	89 47 11				Moderately weak thickly laminated to thinly bedded light brown becoming light grey fine to medium grained SANDSTONE.	3.00 +110.86			
					Discontinuities: subhorizontal, very closely spaced, planar, rough, with orange brown staining and occasionally infilled (up to 80 mm) with gravelly clay.	(2.43)			
3.90-5.40	97 67 13	Flush: 3.00-5.70 Polymer mud, 100 %				4.82-5.43 m Interlaminated/inter bedded with dark grey siltstone			
5.40-6.00	100 75 50	Flush: 5.70-6.00 Polymer mud, 0 %			Weak becoming moderately weak thickly laminated and very thinly bedded black carbonaceous MUDSTONE.	5.43 +108.43			
6.00-6.90	94 64 50				Discontinuities: subhorizontal, closely spaced, planar, smooth and generally clean or occasionally with gravelly clay infill (up to 40 mm).	6.00-6.27 m Recovered as clay			
6.90-8.20	100 96 80					7.36-7.44 m Subvertical fracture			
8.20-9.30	100 75 64				Moderately strong becoming strong thinly laminated and very thinly bedded black carbonaceous MUDSTONE.	8.20 +105.66			
					Discontinuities: subhorizontal, closely spaced, planar, smooth and generally clean or with orange staining, occasionally with gravelly clay infill (up to 40 mm).				
			02/08/2006 1800 6.00 2.50						
			03/08/2006 0800 6.00 3.50						
Stratum continues to 17.80 m									
Groundwater Entries No. Struck Post strike behaviour None observed (see Key Sheet)					Depth Related Remarks * From to (m)		Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole BH2 Sheet 1 of 2		

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Drilled	MB	Start	02/08/2006	Equipment, Methods and Remarks		Depth from	to	Diameter	Casing Depth	Ground Level	+113.86 mOD
Logged	BF	End		Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		0.00m	3.00m	121mm	3.00m	Coordinates	E 413989.00
Checked	JH/RCG		03/08/2006			3.00m	17.80m	121mm	6.00m	National Grid	N 416911.00

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Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 27/07/2006 End 28/07/2006		Equipment, Methods and Remarks Beretta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 6.00m Diameter 121mm Casing Depth 2.40m		Ground Level +109.56 mOD Coordinates E 414030.00 National Grid N 416845.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.20	ES 1	0.00-1.20 m Hand dug inspection pit			BITUMEN (HARDSTANDING)	0.00 +109.56 (0.30)			
0.40	ES 2				Limestone HARDCORE (SUB-BASE)	0.30 +109.26			
0.60	ES 3				Stiff orange mottled grey slightly sandy gravelly CLAY with occasional cobbles. Gravel and cobbles are of sandstone.	(0.95)			
1.20-1.65	SPT S D4	N=21 (3,5/5,4,5,7)			Stiff orange brown sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone and occasionally coal. Occasional very thin beds of moderately strong sandstone.	1.25 +108.31			
1.25-2.40	100 NR NR	NA				(1.55)			
2.40-2.90	100 NR NR								
2.90-3.70	100 88 31	NI 50 150			Very weak thinly laminated to very thinly bedded grey SILTSTONE with occasional very thin and thin beds of sandstone. Discontinuities: subhorizontal, very closely spaced, planar, smooth. 3.30-3.50 m 30 degree fractures	2.80 +106.76 (0.73)			
3.70-5.20	100 73 63	NI 100 150			Weak thinly laminated dark grey MUDSTONE. Discontinuities: subhorizontal, closely spaced, planar, smooth, and with orange brown staining or clean.	3.53 +106.03			
5.20-6.00	100 43 19	NI NI 150				(2.47)			
			27/07/2006 2.40	1800					
			28/07/2006 2.40	0800	Dark grey MUDSTONE (Foreman's description)	6.00 +103.56			
		Flush: 1.25-16.70 Water, 100 %							
Depth	TCR ASD	If	Records/Samples	Date Casing	Time Water	Stratum continues to 16.70 m			
Groundwater Entries No. Struck (m) Post strike behaviour None observed (see Key Sheet)				Depth sealed (m)		Depth Related Remarks * From to (m)		Chiselling Depths (m) Time Tools used	
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole BH3 Sheet 1 of 2			

Scale 1:50

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Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 27/07/2006 End 28/07/2006		Equipment, Methods and Remarks Benetta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 6.00m Diameter 121mm Casing Depth 2.40m		Ground Level +109.56 mOD Coordinates E 414030.00 National Grid N 416845.00		
Samples and Tests						Strata				
Depth	TCR SCR ROD	If	Records/Samples	Date Casing	Time Water	Description (Continued from Sheet 1)		Depth, Level/ (Thickness)	Legend	Backfill/ Instruments
6.00-20.00						Dark grey MUDSTONE (Foreman's description)		(10.70)		
						VOID (Foreman's description)		16.70 +92.86 (0.30)		
						LOOSE GROUND (Foreman's description) (Possibly collapsed workings)		17.00 +92.56 (1.80)		
			Flush: 16.70-20.00 Water, 0 %			Dark grey MUDSTONE (Foreman's description)		18.80 +90.76 (1.20)		SP
				28/07/2006 2.40		EXPLORATORY HOLE ENDS AT 20.00 m				
Groundwater Entries No. Struck Post strike behaviour None observed (see Key Sheet)			Depth sealed (m)		Depth Related Remarks * From to (m)			Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College			Borehole BH3 Sheet 2 of 2	

Scale 1:50

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Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 31/07/2006 End 31/07/2006		Equipment, Methods and Remarks Beretta T41 Rotary core drilling (PWF size, 87mm diameter core)		Depth from 0.00m to 18.90m Diameter 121mm Casing Depth 1.65m		Ground Level Coordinates National Grid +105.65 mOD E 414082.00 N 416786.00	
Samples and Tests					Strata				
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.20	ES 1	0.00-1.20 m Hand dug inspection pit			BITUMEN (HARDSTANDING)	0.10 +105.55			
0.40	ES 2				Orange sandy angular GRAVEL of sandstone and limestone. (SUB-BASE)	0.30 +105.35			
0.90	ES 3				Stiff grey and brown slightly sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone, brick, limestone, clinker and occasional slag. Sand is ash. (MADE GROUND)	(1.35)			
1.20-1.65	SPT S D 4	N=22 (3,4/4,5,6,7)							
1.50	ES 5								
1.65-2.40	40 NR NR NA				Stiff brown sandy gravelly CLAY. Gravel is angular fine to coarse of mainly sandstone.	1.65 +104.00			
2.65-2.80		ES 6			Very weak thinly laminated dark grey MUDSTONE locally recovered as clay.	(0.75)			
2.40-3.90	87 87 23				Discontinuities: subhorizontal to 20 degrees, closely spaced, planar, smooth, stained orange brown.	2.40 +103.25			
3.90-4.35		SPT S N=39 (3,5/7,9,11,12) D 7							
3.90-5.40	100 77 33								
5.40-6.90	89 44 27				Weak becoming moderately weak thinly laminated to thinly bedded black carbonaceous MUDSTONE.	6.18 +99.47			
6.90-8.40	100 70 11				Discontinuities: subhorizontal, closely spaced, planar, smooth with brown staining.				
8.40-9.90	100 77 50								
	NI 100 350		31/07/2006	1800					
			1.65	3.30					
Depth					Stratum continues to 13.70 m				
Groundwater Entries					Depth Related Remarks *				
No.	Struck (m)	Post strike behaviour	Depth sealed (m)		From	to (m)		Chiselling Depths (m)	
None observed (see Key Sheet)								Time Tools used	
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE				
Scale 1:50					Project No. A6111				
(c) Soil Mechanics www.soil-mechanics.com 402.24 01/11/2008 14:10:06					Carried out for Huddersfield Technical College				
AGS					Borehole BH4				
					Sheet 1 of 2				

Borehole Log



Soil Mechanics

Drilled MB Logged BF Checked JH/RCG		Start 31/07/2006 End 31/07/2006		Equipment, Methods and Remarks Beretta T41 Rotary core drilling (PWF size, 87mm diameter core)		Depth from 0.00m to 18.90m Diameter 121mm Casing Depth 1.65m		Ground Level +105.65 mOD Coordinates E 414082.00 National Grid N 416788.00	
Samples and Tests					Strata				
Depth	TCR SCR RCD	If	Records/Samples	Date Casing	Time Water	Description (Continued from Sheet 1)	Depth, Level (Thickness)	Legend	Backfill/ Instruments
9.90-11.40	100 87 40			01/08/2006 1.65	0800 4.70	Weak becoming moderately weak thinly laminated to thinly bedded black carbonaceous MUDSTONE. Discontinuities: subhorizontal, closely spaced, planar, smooth with brown staining.	10.49-10.51 m 45 degree fracture 11.07-11.15 m 45 degree fracture 11.23-11.37 m 45 degree fracture		
11.40-12.90	100 95 0								
12.90-14.40	100 53 37	NI				Very weak and weak black bright COAL.	13.70-14.11 m Subvertical fracture	13.70 +91.95 (0.41)	
14.40-15.90	100 77 67		Flush: 9.90-18.90 Polymer mud, 100 %			Weak and moderately weak, thinly bedded orange brown fine to medium grained SANDSTONE. Discontinuities: subhorizontal, very closely to closely spaced, undulating, smooth and stained brown.		14.11 +91.54 (0.84)	
15.90-17.40	100 77 39	NI				Weak thinly laminated to medium bedded dark grey MUDSTONE. Discontinuities: subhorizontal, closely spaced, planar, smooth, stained brown with occasional gravelly clay infill (up to 40 mm).	15.87-15.90 m 45 degree fracture	14.95 +90.70 (2.22)	
17.40-18.90	100 83 55			01/08/2006 1.65	2.40	Thinly interlaminated and thinly interbedded strong light grey SANDSTONE and moderately strong dark grey SILTSTONE. Discontinuities: subhorizontal, closely to medium spaced, planar, smooth and clean.	17.40-17.65 m Mainly sandstone 17.90-18.10 m Subvertical fracture 18.60-18.90 m Mainly sandstone	17.17 +88.48 (1.73)	
EXPLORATORY HOLE ENDS AT 18.90 m								18.90 +86.75	SP
Groundwater Entries No. Struck Post strike behaviour None observed (see Key Sheet)					Depth sealed (m)		Depth Related Remarks * From to (m)		
Chiselling Depths (m)					Time		Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College				
Scale 1:50 (c) Soil Mechanics www.soil-mechanics.com 402.24 01/11/2006 14:10:12					Borehole BH4 Sheet 2 of 2				

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Drilled PS Logged BF Checked JH/RCG		Start 10/08/2006 End 11/08/2006		Equipment, Methods and Remarks Comacchio GEO 205 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core)		Depth from to Diameter Casing Depth 0.00m 3.20m 121mm 3.00m 3.20m 9.20m 121mm 9.20m 21.83m 121mm			Ground Level Coordinates National Grid +106.25 mOD E 414118.00 N 416856.00		
Samples and Tests					Strata						
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/Instrument			
0.00-0.80	ES 1	0.00-0.80 m Hand dug inspection pit			Brown slightly clayey gravelly SAND with occasional cobbles of sandstone. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)	(0.80)					
0.00-3.20	Rotary Open Hole Drilling				Firm to stiff brown sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone and brick. Sand is occasionally ash. (MADE GROUND)	0.80 +105.45 (0.40) 1.20 +105.05					
3.20-4.71	52 NR NR NA				OVERBURDEN (Foreman's description)	(2.00)					
3.20-4.71	52 NR NR NA				Stiff yellow brown slightly gravelly CLAY	3.20 +103.05 (1.05)					
4.71-6.15	100 69 28				Very stiff thinly laminated, occasionally fissured, orange and grey slightly gravelly CLAY. Gravel is angular fine to coarse of sandstone.	4.25 +102.00 (0.55) 4.80 +101.45					
6.15-7.70	45 32 0 NI NI 150				Very weak and weak thinly laminated black carbonaceous MUDSTONE. Discontinuities: subhorizontal to 20 degrees, closely spaced, planar, smooth and stained orange.	(2.20)					
7.70-9.20	83 40 0				Moderately weak black carbonaceous MUDSTONE. Discontinuities: subhorizontal, closely spaced, planar, smooth and stained orange.	7.00 +99.25 (2.20)					
					Grey MUDSTONE (Foreman's description)	9.20 +97.05					
		Flush: 0.80-18.28 Water, 100 %									
Depth	121mm	If	Records/Samples	Date Casing	Time Water	Stratum continues to 18.28 m					
Groundwater Entries						Depth Related Remarks *		Chiselling			
No.	Struck	Post strike behaviour	Depth sealed (m)			From	to (m)	Depths (m)	Time	Tools used	
None observed (see Key Sheet)											
Project						HUDDERSFIELD TECHNICAL COLLEGE		Borehole			
Project No.						A6111		BH5			
Carried out for						Huddersfield Technical College		Sheet 1 of 3			

Borehole Log



Soil Mechanics

Drilled PS Logged BF Checked JH/RCG		Start 10/08/2006 End 11/08/2006		Equipment, Methods and Remarks Comacchio GEO 205 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core)			Depth from 0.00m to 3.20m Diameter 121mm Casing Depth 3.00m		Ground Level +106.25 mOD Coordinates E 414118.00 National Grid N 416856.00		
Samples and Tests						Strata					
Depth	TOR	IF	Records/Samples	Date	Time	Description (Continued from Sheet 2)			Depth, Level	Legend	Backfill/
			Flush: 18.28-21.83 Water, 0 %			Grey MUDSTONE (Foreman's description)			(3.23)		
				11/08/2006	3.00				21.83	+84.42	SP
						EXPLORATORY HOLE ENDS AT 21.83 m					
Depth	TOR	IF	Records/Samples	Date	Time						
Groundwater Entries				Depth sealed		Depth Related Remarks *			Chiselling		
No. Struck Post strike behaviour				(m)		From to (m)			Depths (m) Time Tools used		
None observed (see Key Sheet)											
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College			Borehole BH5 Sheet 3 of 3		



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Drilled MB Logged BF Checked JH/RCG		Start 07/08/2006 End 09/08/2006		Equipment, Methods and Remarks Beretta T41 Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).		Depth from 0.00m to 2.70m 2.70m 18.50m		Diameter 121mm 121mm		Casing Depth 2.70m		Ground Level Coordinates +106.95 mOD E 414104.00 N 416909.00					
Samples and Tests						Strata											
Depth		Type & No		Records		Date Casing		Time Water		Description		Depth, Level/ (Thickness)		Legend		Backfill/ Instruments	
0.50-1.00		ES 1		0.00-1.20 m Hand dug inspection pit						BITUMEN (HARDSTANDING)		0.05 +106.90					
0.00-2.70		Rotary Open Hole Drilling								Red angular GRAVEL and COBBLES of burnt shale. (MADE GROUND)		0.15 +106.80 (0.35)					
										Dark brown clayey slightly gravelly SAND with occasional roots and rootlets. Gravel is angular fine to coarse of brick and sandstone. (MADE GROUND)		(0.70)					
										Light brown clayey gravelly SAND with occasional cobbles. Gravel and cobbles are angular of sandstone.		1.20 +105.75					
										NO DESCRIPTION (Foreman records reaming casing)		(1.50)					
										2.00 m Possibly sandstone rockhead							
2.70-3.80		100 66 0								Moderately weak and moderately strong very thinly and thinly bedded light orange grey fine to medium grained SANDSTONE.		2.70 +104.25					
		NI 50 100								Discontinuities: subhorizontal, very closely to closely spaced, planar, smooth with orange brown staining and occasionally infilled (up to 30 mm) with gravelly clay.		(2.35)					
3.80-5.30		100 80 13								3.13-3.17 m Subvertical fracture							
										4.56-4.80 m Subvertical fracture							
5.30-6.80		90 29 7								Weak to moderately weak thinly laminated to thickly bedded dark grey SILTSTONE.		5.05 +101.90					
		NI 35 50								Discontinuities: subhorizontal, very closely spaced, planar, smooth with orange brown staining.		(0.82)					
										5.05-5.87 m Subvertical fracture (intermittent)							
6.80-8.30		100 93 80								Weak to moderately weak thinly and thickly laminated dark grey MUDSTONE.		5.87 +101.08					
										Discontinuities: subhorizontal, extremely closely to very closely spaced, planar, smooth with orange brown staining.		(1.13)					
						07/08/2006 1800 3.40											
						08/08/2006 0800 2.70											
8.30-9.80		97 87 40								Moderately strong becoming strong thinly to thickly laminated dark grey, locally black and carbonaceous, MUDSTONE.		7.00 +99.95					
										Discontinuities: subhorizontal, closely spaced, planar, smooth with orange brown staining.							
										7.70-8.00 m Subvertical fracture							
										8.70-8.90 m Subvertical fracture							
Depth		Type		Records/Samples		Date Casing		Time Water		Stratum continues to 16.10 m							
Groundwater Entries						Depth Related Remarks *						Chiselling					
No.		Struck (m)		Post strike behaviour		Depth sealed (m)		From		to (m)		Depths (m)		Time		Tools used	
				None observed (see Key Sheet)													
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College						Borehole BH6 Sheet 1 of 2					

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Drilled	MB	Start	Equipment, Methods and Remarks			Depth from	to	Diameter	Casing Depth	Ground Level	+106.95 mOD
Logged	BF	07/08/2006	Bertea T41			0.00m	2.70m	121mm	2.70m	Coordinates	E 414104.00
Checked	JH/RCG	End	Rotary open hole drilling. Rotary core drilling (PWF size, 87mm diameter core).			2.70m	18.50m	121mm		National Grid	N 416909.00
		09/08/2006									

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

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 AGS

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG	Start 27/07/2006 End 27/07/2006	Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 3.05m Diameter 110mm Casing Depth	Ground Level +112.28 mOD Coordinates E 414025.00 National Grid N 416942.00
Samples and Tests				Strata	
Depth	Type & No	Records	Date Casing	Time Water	Description
0.20	ES 1	0.00-1.20 m Hand dug inspection pit			Brown clayey slightly gravelly SAND. Gravel is angular fine to medium of sandstone, rare brick and bitumen. Occasional rootlets. (TOPSOIL)
0.40	ES 2				
0.60	ES 3				
1.20-1.65	SPT S	N=9 (1,1/2,2,2,3)			Dark brown clayey slightly gravelly SAND. Gravel is angular fine to medium of sandstone, brick and limestone hardcore. Occasional pockets of soft brown clay. (MADE GROUND)
1.20	ES 4				
1.20-1.65	D 5				
1.20-1.65	B 6				
1.65-2.10	U 7	85 blows			Firm orange brown mottled black sandy slightly gravelly CLAY. Gravel is angular fine to medium of sandstone and occasional coal.
2.10	D 8				
2.16-2.61	SPT S	N=16 (6,4/4,5,4,3)			Stiff, locally very stiff, orange brown sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone.
2.16-2.60	B 10				
2.16-2.60	D 9				
2.60-3.05	SPT S	N=37 (4,10/6,6,9,16)			Very weak light grey brown SANDSTONE.
2.60-3.05	D 11				
			27/07/2006	dry	EXPLORATORY HOLE ENDS AT 3.05 m
Depth Type & No Records Date Casing Time Water					
Groundwater Entries No. Struck (m) Post strike behaviour None observed (see Key Sheet)			Depth sealed (m)	Depth Related Remarks * From 3.05 to (m) Unable to advance sampler further.	
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.			Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole WS1 Sheet 1 of 1

Scale 1:50

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Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG	Start 26/07/2006 End 26/07/2006	Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 3.10m Diameter 110mm Casing Depth	Ground Level +111.30 mOD Coordinates E 414036.00 National Grid N 416923.00
Samples and Tests				Strata	
Depth	Type & No	Records	Date Casing	Time Water	Description
0.10	ES 1	0.00-1.20 m Hand dug inspection pit			BITUMEN (HARDSTANDING)
0.15-0.40	B 3				Limestone HARDCORE (SUB-BASE)
0.30	ES 2				Dark brown clayey sandy GRAVEL. Gravel is angular fine to coarse of brick. (MADE GROUND)
0.40-0.70	B 5				
0.50	ES 4				
0.70	D 6				
0.70-1.20	B 8				
0.80	ES 7				
1.20-1.65	SPT S	N=7 (-, -, 3, 1, 2, 1)			Stiff dark brown sandy gravelly CLAY with frequent angular cobbles of sandstone. Gravel is angular fine to coarse of sandstone. Occasional brick and bitumen. (MADE GROUND)
1.20-1.65	B 10				
1.20-1.65	D 9				
1.65-2.10	U 11	250 blows			Firm, locally soft, orange slightly sandy slightly gravelly CLAY. Gravel is angular fine to coarse of sandstone.
2.10-2.55	SPT S	N=38 (3, 10/7, 5, 10, 16)			
2.10-2.55	D 12				
2.10-2.65	B 13				
2.65-3.10	SPT S	N=51 (11, 11/9, 12, 16, 14)			Very weak fine to medium grained SANDSTONE with frequent thin beds of sandy gravelly clay. Gravel is angular fine to coarse of sandstone.
2.65-3.10	D 14				
				26/07/2006	dry
EXPLORATORY HOLE ENDS AT 3.10 m					
Groundwater Entries No. Struck Post strike behaviour Depth sealed (m) None observed (see Key Sheet)					
Depth Related Remarks * From to (m) 3.10 Unable to advance sampler further.					
Chiselling Depths (m) Time Tools used					
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College	
Scale 1:50 (c) Soil Mechanics www.soil-mechanics.com 402.24 01/11/2006 14:11:06 AGS				Borehole WS2 Sheet 1 of 1	

Φ

Drilled GH Logged BF Checked JH/RCG		Start 27/07/2006 End 27/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 1.65m Diameter 110mm Casing Depth 1.65m		Ground Level Coordinates National Grid +110.60 mOD E 414018.00 N 416896.00	
Samples and Tests					Strata				
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.20	ES 1	0.00-1.20 m Hand dug inspection pit			Sandstone cobble sets (HARDSTANDING)	0.13 +110.47			
0.60	ES 2				Black sandy angular fine to medium GRAVEL of slag, clinker, brick and coal. Sand is ash. (MADE GROUND)	0.32 +110.28			
1.20-1.65	SPT S	N=33 (3,7,7,8,8,10)			Firm orange mottled grey sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone.	(0.68)			
1.20-1.65	D 3		27/07/2006		Very weak orange SANDSTONE with occasional brown staining and thin beds of clay.	1.00 +109.60			
1.20-1.65	B 4		1.65	dry		(0.65)			
1.65	D 5				EXPLOATORY HOLE ENDS AT 1.65 m	1.65 +108.95			
Depth	Type & No	Records	Date Casing	Time Water					
Groundwater Entries					Depth Related Remarks *		Chiselling		
No.	Struck	Post strike behaviour	Depth sealed (m)		From	to (m)	Depths (m)	Time Tools used	
None observed (see Key Sheet)					1.65	Unable to advance sampler further.			
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole WS3 Sheet 1 of 1		

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG		Start 26/07/2006 End 26/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 2.93m Diameter 110mm Casing Depth		Ground Level +108.61 mOD Coordinates E 414077.00 National Grid N 416878.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.10 0.20	ES 1 D 2	0.00-1.20 m Hand dug inspection pit			Dark brown slightly clayey gravelly SAND. Gravel is angular fine to coarse of sandstone, wood, glass and bitumen. Frequent rootlets. (MADE GROUND)	0.20 +108.41 (0.40)			
0.50 0.60 0.60-1.20	ES 3 D 4 B 5				Orange brown slightly clayey gravelly SAND. Gravel is angular fine to coarse of sandstone and brick. Occasional angular cobbles of sandstone and brick. (MADE GROUND)	0.60 +108.01 (0.80)			
1.00	ES 6				Stiff, becoming firm, locally soft sandy gravelly CLAY with occasional cobbles of brick and sandstone. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)	1.40 +107.21 (1.00)			
1.20-1.65 1.20-1.65 1.20-1.65 1.40 1.65-2.00	SPT S D 7 B 8 ES 9 U 10	N=7 (1,2/2,1,2,2) 87 blows			Stiff orange mottled brown and light grey sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone and rare coal. Occasional rounded cobbles of sandstone.	2.40 +106.21 (0.53)			
2.00-2.45 2.00-2.45 2.00-2.45 2.45-2.70 2.70-2.93 2.70-2.93	SPT S D 11 B 12 U 13 SPT S D 14	N=17 (2,3/3,4,4,6) 150 blows 50 (7,7/8,9 for 0mm)	26/07/2006	dry	Very weak thinly bedded orange fine grained SANDSTONE with occasional brown staining and very thin beds of stiff sandy clay. EXPLORATORY HOLE ENDS AT 2.93 m	2.93 +105.68			
Depth	Type & No	Records	Date Casing	Time Water					
Groundwater Entries No. Struck (m) Post strike behaviour None observed (see Key Sheet)			Depth sealed (m)		Depth Related Remarks * From to (m) 2.93 Unable to advance sampler further.		Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole WS4 Sheet 1 of 1		

Φ

Drilled	GH	Start	28/07/2006	Equipment, Methods and Remarks	Depth from	to	Diameter	Casing Depth	Ground Level	+115.50 mOD
Logged	BF	End		Competitor 130	0.00m	1.90m	110mm		Coordinates	E 413993.00
Checked	JH/RCG		28/07/2006	Dynamic sampling					National Grid	N 416871.00

Groundwater Entries			Depth sealed (m)	Depth Related From to (m)	Remarks *	Chiselling Depths (m)	Time	Tools used
No.	Struck (m)	Post strike behaviour						
		None observed (see Key Sheet)		1.90	Unable to advance sampler further.			

Scale 1:50

Project No. A6111
Carried out for Huddersfield Technical College

Sheet 1 of 1

Φ

Drilled	GH	Start 26/07/2006 End 26/07/2006	Equipment, Methods and Remarks Competitor 130 Dynamic sampling	Depth from 0.00m	to 0.80m	Diameter 110mm	Casing Depth	Ground Level +106.25 mOD Coordinates E 414118.00 National Grid N 416856.00
Logged	BF							
Checked	JHRCG							

Groundwater Entries			Depth sealed (m)	Depth Related Remarks *		Chiselling Depths (m)	Time	Tools used
No.	Struck (m)	Post strike behaviour		From 0.80	to (m)			
		None observed (see Key Sheet)			Obstruction.			

Borehole
WS6A
Sheet 1 of 1

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG		Start 26/07/2006 End 26/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 0.60m Diameter 110mm Casing Depth		Ground Level +105.75 mOD Coordinates E 414126.00 National Grid N 416856.00			
Samples and Tests					Strata						
Depth	Type & No	Records	Date Casing	Time Water	Description				Depth, Level/ (Thickness)	Legend	Backfill/ Instruments
		0.00-0.60 m Hand dug inspection pit	26/07/2006	dry	Brown sandy TOPSOIL				(0.60)		
					EXPLORATORY HOLE ENDS AT 0.60 m				0.60 +105.15		
Depth	Type & No	Records	Date Casing	Time Water							
Groundwater Entries No. Struck (m) Post strike behaviour None observed (see Key Sheet)			Depth sealed (m)		Depth Related Remarks * From to (m) 0.60 Obstruction.				Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College				Borehole WS6B Sheet 1 of 1		

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG		Start 26/07/2006 End 26/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 0.60m Diameter 110mm Casing Depth		Ground Level +106.00 mOD Coordinates E 414124.00 National Grid N 416854.00			
Samples and Tests					Strata						
Depth	Type & No	Records	Date Casing	Time Water	Description				Depth, Level (Thickness)	Legend	Backfill/ Instruments
		0.00-0.60 m Hand dug inspection pit	26/07/2006	dry	Brown sandy TOPSOIL				(0.60)		
					EXPLORATORY HOLE ENDS AT 0.60 m				0.60 +105.40		
Depth	Type & No	Records	Date Casing	Time Water							
Groundwater Entries No. Struck Post strike behaviour (m)			Depth sealed (m)		Depth Related Remarks * From to (m) 0.60 Obstruction.				Chiselling Depths (m) Time Tools used		
None observed (see Key Sheet)											
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College					Borehole WS6C Sheet 1 of 1	

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG	Start 25/07/2006 End 25/07/2006	Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 4.15m Diameter 110mm Casing Depth	Ground Level +105.42 mOD Coordinates E 414118.00 National Grid N 416801.00
Samples and Tests				Strata	
Depth	Type & No	Records	Date Casing	Time Water	Description Depth, Level/ (Thickness) Legend Backfill/ Instruments
0.10 0.20	ES 1 D 2	0.00-1.20 m Hand dug inspection pit.			0.20 +105.22
0.50 0.50-1.00	ES 3 B 4				
1.20-1.65 1.20-1.65 1.20-2.10 1.20 1.65-2.10	SPT S D 5 B 6 ES 7 U NR	N=7 (2,2,2,1,2) 117 blows No recovery			
2.10-2.55 2.10-2.55 2.10-2.75 2.20 2.55-2.75	SPT S D 8 B 9 ES 10 U NR	N=23 (3,6/3,3,3,14) No recovery			(3.80)
2.75-3.20 2.75-3.20 2.75-3.70	SPT S D 11 B 12	N=11 (1,1/-,4,5,2)			
3.20-3.25	U NR	64 blows No recovery			
3.70-4.15 3.70-4.15	SPT S D 13	N=21 (3,8/4,5,6,6)	25/07/2006	dry	4.00 +101.42 4.15 +101.27
Very stiff to hard thinly laminated dark brown grey CLAY with occasional staining on laminae planes. EXPLORATORY HOLE ENDS AT 4.15 m					
Depth	Type & No	Records	Date Casing	Time Water	
Groundwater Entries No. Struck Post strike behaviour (m) (m)			Depth sealed (m)		Chiselling Depths (m) Time Tools used
None observed (see Key Sheet)					
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.			Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College		Borehole WS7 Sheet 1 of 1

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Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG		Start 24/07/2006 End 24/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 5.00m Diameter 110mm Casing Depth		Ground Level +109.71 mOD Coordinates E 414025.00 National Grid N 416795.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level/ (Thickness)	Legend	Backfill/ Instruments	
0.10 0.20	ES 1 D 2	0.00-1.00 m Hand dug inspection pit			Firm brown sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone and occasional cobbles of sandstone. Frequent rootlets (<6mm) and rootlets. (TOPSOIL)	0.20 +109.51			
0.50 0.50-1.00	ES 3 B 4					(0.80)			
1.00-1.45 1.00 1.00-1.45	SPT S ES 5 B 6	N=7 (1,1/2,1,2,2)			Very stiff brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular fine to coarse of sandstone. Frequent cobbles of sandstone. (MADE GROUND)	1.00 +108.71			
1.45-1.90	U 7	123 blows							
1.90-2.00 2.00-2.10 2.10-2.55 2.10-2.55 2.10-2.55 2.50 2.55-3.00	D 8 ES 9 SPT S D 10 B 11 W 21 U 12	N=8 (1,2/2,1,1,4)			Firm and stiff, locally very stiff, dark grey mottled orange brown sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone and coal. Occasional subangular cobbles of sandstone between 1.00 and 2.00m. Below 2.50m, mica crystals.	(2.50)			
3.00-3.45 3.00-3.10 3.10-3.55 3.10-3.55	SPT S ES 13 D 14 B 15	N=9 (1,1/2,2,3,2)							
3.55-4.00	U 16	117 blows			Very stiff locally firm thickly laminated dark grey micaceous CLAY (Probably weathered MUDSTONE)	3.50 +106.21			
4.00-4.10 4.10-4.55 4.10-4.55 4.10-4.55	ES 17 SPT S D 18 B 19	N=11 (2,1/2,3,5,1)				(1.50)			
4.55-5.00 4.55-5.00	SPT S D 20	N=69 (8,8/7,19,18,25)	24/07/2006	dry					
EXPLORATORY HOLE ENDS AT 5.00 m						5.00 +104.71			
Depth	Type & No	Records	Date Casing	Time Water					
Groundwater Entries					Depth Related Remarks *	Chiselling			
No.	Struck (m)	Post strike behaviour	Depth sealed (m)		From to (m)	Depths (m)	Time	Tools used	
1	3.00	-	-		5.00 Unable to advance sampler further.				
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A6111 Carried out for Huddersfield Technical College	Borehole WS9 Sheet 1 of 1			

Dynamic Sampler Hole Log



Soil Mechanics

Drilled GH Logged BF Checked JH/RCG		Start 26/07/2006 End 26/07/2006		Equipment, Methods and Remarks Competitor 130 Dynamic sampling		Depth from 0.00m to 2.55m Diameter 110mm Casing Depth		Ground Level +105.78 mOD Coordinates E 414074.00 National Grid N 416770.00	
Samples and Tests						Strata			
Depth	Type & No	Records	Date Casing	Time Water	Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.10	ES 1	0.00-1.20 m Hand dug inspection pit			Stiff dark brown sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone, brick and occasional ceramic, glass, wood and plastic. Occasional angular cobbles of sandstone and brick and frequent rootlets. (TOPSOIL) Hard, becoming very stiff with depth, orange brown mottled dark grey slightly sandy slightly gravelly CLAY. Gravel is angular fine to coarse of sandstone, rare brick and 1 No. nail. (MADE GROUND) Very stiff, locally firm, brown slightly gravelly CLAY. Gravel is angular fine to medium of sandstone and coal. Very weak thinly laminated dark grey MUDSTONE with occasional orange staining along laminae planes. Occasional laminae of hard clay. EXPLORATORY HOLE ENDS AT 2.55 m	(0.30)			
0.30	D 2					0.30 +105.48			
0.50	ES 3					(0.90)			
0.50-1.00	B 4								
1.00	ES 5								
1.20-1.65	SPT S	N=12 (3,2/3,3,3,3)				1.20 +104.58			
1.20-1.65	D 6								
1.20-1.65	B 7					(0.80)			
1.30	ES 8								
1.65-2.10	U 9	240 blows							
2.10-2.55	SPT S	N=42 (4,6/8,10,12,12)	26/07/2006	dry		2.00 +103.78			
2.10-2.55	D 10					(0.55)			
						2.55 +103.23			
Depth	Type & No	Records	Date Casing	Time Water					
Groundwater Entries No. Struck Post strike behaviour Depth sealed (m) None observed (see Key Sheet)					Depth Related Remarks * From to (m) 2.55 Unable to advance sampler further.		Chiselling Depths (m) Time Tools used		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project HUDDERSFIELD TECHNICAL COLLEGE Project No. A8111 Carried out for Huddersfield Technical College		Borehole WS10 Sheet 1 of 1		



ENCLOSURE B
INSTRUMENTATION AND MONITORING

Installation Details	B1
Groundwater Monitoring	B2
Gas Monitoring	B3

Installation Details



Soil Mechanics

Hole No	Instrument ID	Installation Type	Date of Installation	Tip depth, (m)	Piezometer Diameter (mm)	Top of response zone, (m)	Base of response zone, (m)	Tubing Completion Details	Headworks	Remarks
BH1		SP	7 Aug 2006	2.50	50	0.50	2.50	Gas tap	Stop cock cover	
BH1		SP	7 Aug 2006	20.00	50	5.00	20.00	Gas tap	Stop cock cover	
BH2		SP	3 Aug 2006	17.80	50	5.00	17.80	Gas tap	Stop cock cover	
BH3		SP	28 Jul 2006	18.00	50	9.00	18.00	Gas tap	Stop cock cover	
BH4		SP	31 Jul 2006	18.90	50	3.00	18.90	Gas tap	Stop cock cover	
BH5		SP	11 Aug 2006	21.83	50	4.25	21.83	Gas tap	Stop cock cover	
WS7		SP	25 Jul 2006	1.00	50	0.30	1.00	Gas tap	Stop cock cover	
WS9		SP	24 Jul 2006	3.00	50	0.50	3.00	Gas tap	Stop cock cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well Prepared:
01/11/2006 09:28



Project HUDDERSFIELD TECHNICAL COLLEGE
Project No. A6111
Carried out for Huddersfield Technical College

Table

B1

Groundwater Monitoring



Soil Mechanics

Hole No	Instrument ID	Instrument Type	Tip Depth (mBGL)	Reading				
				Date	Time (hhmmss)	Water Level (mBGL) * calculated	Head (m above Tip) * calculated	Comments
BH1		SP	2.50	8 Aug 2006	083000			dry
BH1		SP	2.50	10 Aug 2006	161000			dry
BH1		SP	2.50	16 Aug 2006	124500			dry
BH1		SP	2.50	29 Aug 2006	142000			dry
BH1		SP	20.00	8 Aug 2006	081500	19.16	0.84 *	
BH1		SP	20.00	10 Aug 2006	161500	19.16	0.84 *	
BH1		SP	20.00	16 Aug 2006	125200	19.17	0.83 *	
BH1		SP	20.00	29 Aug 2006	144000	19.20	0.80 *	
BH2		SP	17.80	7 Aug 2006	084500	13.24	4.56 *	
BH2		SP	17.80	10 Aug 2006	121000	13.18	4.62 *	
BH2		SP	17.80	16 Aug 2006	135000	13.41	4.39 *	
BH2		SP	17.80	29 Aug 2006	080000	13.37	4.43 *	
BH3		SP	18.00	2 Aug 2006	082000			dry
BH3		SP	18.00	10 Aug 2006	115200	17.99	0.01 *	
BH3		SP	18.00	16 Aug 2006	134000			dry
BH3		SP	18.00	29 Aug 2006	151000			dry
BH4		SP	18.90	3 Aug 2006	090000	16.20	2.70 *	
BH4		SP	18.90	10 Aug 2006	115200	16.56	2.34 *	
BH4		SP	18.90	16 Aug 2006	133000	15.56	3.34 *	
BH4		SP	18.90	29 Aug 2006	163000	16.79	2.11 *	
BH5		SP	21.83	16 Aug 2006	130500	20.33	1.50 *	
BH5		SP	21.83	29 Aug 2006	161000	20.34	1.49 *	
WS7		SP	1.00	3 Aug 2006	093000			dry
WS7		SP	1.00	10 Aug 2006	114500	0.99	0.01 *	
WS7		SP	1.00	16 Aug 2006	131000	0.98	0.02 *	
WS7		SP	1.00	29 Aug 2006	155000			dry
WS9		SP	3.00	2 Aug 2006	085000	2.40	0.60 *	
WS9		SP	3.00	10 Aug 2006	115500	2.48	0.52 *	
WS9		SP	3.00	16 Aug 2006	132000	2.38	0.62 *	
WS9		SP	3.00	29 Aug 2006	153000	2.25	0.75 *	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



Project HUDDERSFIELD TECHNICAL COLLEGE
Project No. A6111
Carried out for Huddersfield Technical College

Table

B2

Gas Monitoring



Soil Mechanics

								Detection Limit						
								Unit	%vol	%LEL	%vol	%vol	ppm	ppm
Hole No	Date	Reading Depth, mBGL	Air Temperature, oC	Barometric Pressure, mbar	Groundwater Level, mBGL	Gas Differential Pressure, Pa	Gas Flow Rate, l/hr	Gas	Methane	Methane	Oxygen	Carbon dioxide	Carbon monoxide	Hydrogen sulphide
BH1	8 Aug 2006	2.50	19	1006	dry	0.0	0.1		ND	ND	19.8	0.2	5.9	ND
BH1	16 Aug 2006	2.50			dry				ND	ND	20.4	0.2	ND	ND
BH1	29 Aug 2006	2.50		995	dry		0.0		ND	ND	20.7	ND	ND	ND
BH1	8 Aug 2006	20.00	19	1006	19.16	0.0	0.1		1.1	22.8	20.8	ND	6.1	ND
BH1	16 Aug 2006	20.00			19.17				ND	ND	18.2	1.2	1.9	ND
BH1	29 Aug 2006	20.00		997	19.20		0.0		ND	ND	20.9	ND	ND	ND
BH2	7 Aug 2006	17.80	20	1004	13.24	0.0	0.1		ND	ND	21.0	ND	14.4	ND
BH2	16 Aug 2006	17.80			13.41				ND	ND	14.5	0.5	1.4	ND
BH2	29 Aug 2006	17.80		997	13.37		0.0		ND	ND	18.3	0.3	ND	ND
BH3	2 Aug 2006	18.00	24	1006	dry	0.0	-0.4		ND	ND	16.6	2.7	2.3	ND
BH3	16 Aug 2006	18.00			dry				ND	ND	20.2	ND	3.6	ND
BH3	29 Aug 2006	18.00		997	dry		0.0		ND	ND	8.0	2.9	ND	ND
BH4	3 Aug 2006	18.90	22	1005	16.20	0.0	0.1		0.4	8.3	19.3	ND	33.9	ND
BH4	16 Aug 2006	18.90			15.56				ND	ND	7.7	3.5		1.6
BH4	29 Aug 2006	18.90		997	16.79		-0.6		ND	ND	6.2	3.8	1.7	ND
BH5	16 Aug 2006	21.83			20.33				ND	ND	20.4	0.4	2.0	ND
BH5	29 Aug 2006	21.83		997	20.34		0.0		ND	ND	21.1	ND	ND	ND
WS7	3 Aug 2006	1.00	22	1005	dry				ND	ND	19.1	1.4	ND	ND
WS7	16 Aug 2006	1.00			0.98				ND	ND	19.9	1.1	ND	ND
WS7	29 Aug 2006	1.00		997	dry		0.0		ND	ND	20.8	ND	ND	ND
WS9	2 Aug 2006	3.00	24	1006	2.40	0.0	0.1		ND	ND	20.2	1.0	ND	ND
WS9	16 Aug 2006	3.00			2.38				ND	ND	19.8	0.7	ND	ND
WS9	29 Aug 2006	3.00		997	2.25		0.0		ND	ND	16.0	0.7	ND	ND

Notes: ND - not detected

Project HUDDERSFIELD TECHNICAL COLLEGE
Project No. A6111
Carried out for Huddersfield Technical College

Table

B3



ENCLOSURE C
GEOTECHNICAL LABORATORY TEST RESULTS

Index Properties – Summary of Results	INDX 1
Particle Size Distribution Analyses	PSD 1 to 2
Unconsolidated Undrained Triaxial Compression Tests – Summary of Results	UUSUM 1
Chemical Tests – Summary of Results	CHEM 1
Chemical Tests - TES Report	EFS/062831

INDEX PROPERTIES - SUMMARY OF RESULTS

Project No	Project Name													
A6111	HUDDERSFIELD TECHNICAL COLLEGE - PHASE 1 GROUND INVESTIGATION													
Hole No.	Sample				Soil Description	ρ	ρ_d	W	< 425 μ m sieve	W_L	W_P	I_P	ρ_s	Remarks
	No.	Depth (m)		type		Mg/m ³	%	%	%	%	%	Mg/m ³		
		from	to											
WS1	7	1.65	2.10	U	Stiff yellowish brown sandy slightly gravelly CLAY. Gravel is weak sandstone.			15	69	36	16	20		
WS1	9	2.16	2.60	D	Brown slightly clayey slightly gravelly SAND with rare sandstone.			12						
WS10	9	1.65	2.10	U	Firm dark brown slightly sandy friable CLAY.			23	100	40	25	15		
WS2	10	1.20	1.65	B	Dark brownish grey mottled yellowish brown slightly sandy slightly gravelly CLAY.			20	72	42	20	22		
WS2	9	1.20	1.65	D	Brown and light brown slightly sandy slightly gravelly CLAY.			20						
WS4	10	1.65	2.00	U	Firm yellowish brown sandy slightly gravelly CLAY. Gravel is sandstone.			19	94	47	22	25		
WS5	5	1.00	1.45	B	Yellowish brown sandy gravelly CLAY.			12	39	36	20	16		
WS5	4	1.00	1.45	D	Yellowish brown sandy slightly gravelly CLAY.			16						
WS8	8	1.45	1.90	U	Firm yellowish brown sandy gravelly CLAY with occasional cobbles.			16	65	34	20	14		
WS8	14	2.80	3.80	B	Dark brown laminated CLAY.			16	100	44	27	17		
WS8	15	3.80	4.25	D	Dark grey laminated CLAY.			11						
WS9	7	1.45	1.90	U	Firm to stiff greyish brown slightly sandy slightly gravelly CLAY.			21	81	44	23	21		
WS9	12	2.55	3.00	U	Firm to stiff dark brownish grey slightly sandy slightly gravelly CLAY with silt pockets.			16	100	32	20	12		
WS9	16	3.55	4.00	U	Firm to stiff greyish brown slightly sandy CLAY.			25	100	48	27	21		

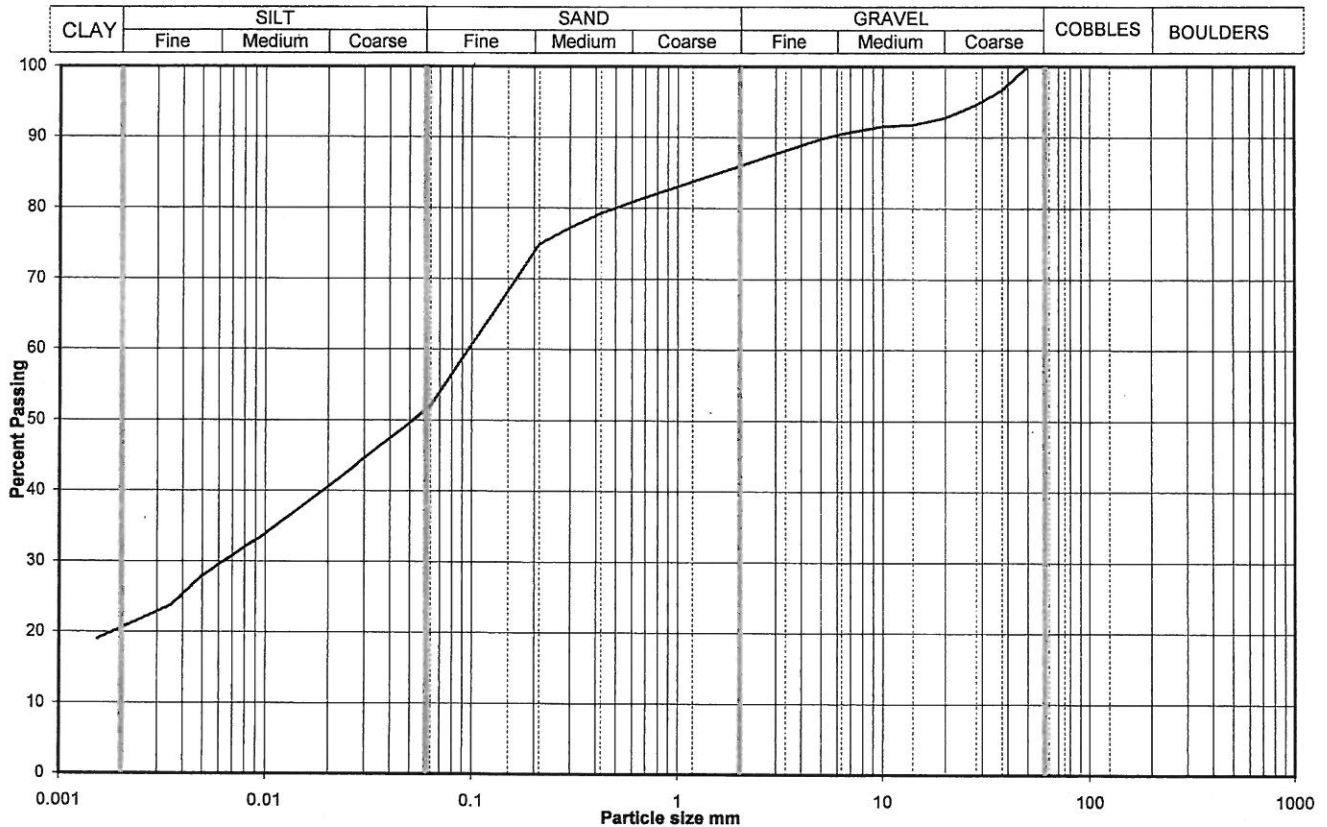
General notes:

Definitive method used in all cases unless annotated otherwise. See individual test reports for further details.

Key : ρ bulk density, linear W_L Liquid limit ρ_s particle density
 ρ_d dry density W_P Plastic limit NP non - plastic -g = gas jar
 w moisture content I_P Plasticity Index -p = small pycnometer

Particle Size Distribution Analysis

Project No	A6111	Sample Details:	Hole No		WS2	
Project Name	HUDDERSFIELD TECHNICAL COLLEGE - PHASE 1 GROUND INVESTIGATION		Depth (m BGL)		1.20	
			Samp No	10	Type	B
			ID	ESGA611120060802000082		
			Spec Ref			



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	52
90	100	0.0487	49
75	100	0.0350	46
63	100	0.0252	43
50	100	0.0181	40
37.5	97	0.0096	34
28	95	0.0049	28
20	93	0.0035	24
14	92	0.0015	19
10	91		
6.3	90		
5.0	90		
3.35	88		
2.00	86		
1.18	84		
0.600	81	Particle density, Mg/m3 2.65 assumed	
0.425	79		
0.300	77	Dry mass of sample, kg 2.4	
0.212	75		
0.150	68		
0.063	52		

Soil description	Dark brownish grey mottled yellowish brown slightly sandy slightly gravelly CLAY.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions	Cobbles / boulders	0	
	Gravel	14	
	Sand	34	
	Silt	31	
	Clay	21	

Uniformity Coefficient	D_{60} / D_{10}	#N/A
------------------------	-------------------	------

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2.9
Rev 0
Nov 04



Soil Mechanics



Approved

Date

[Signature]

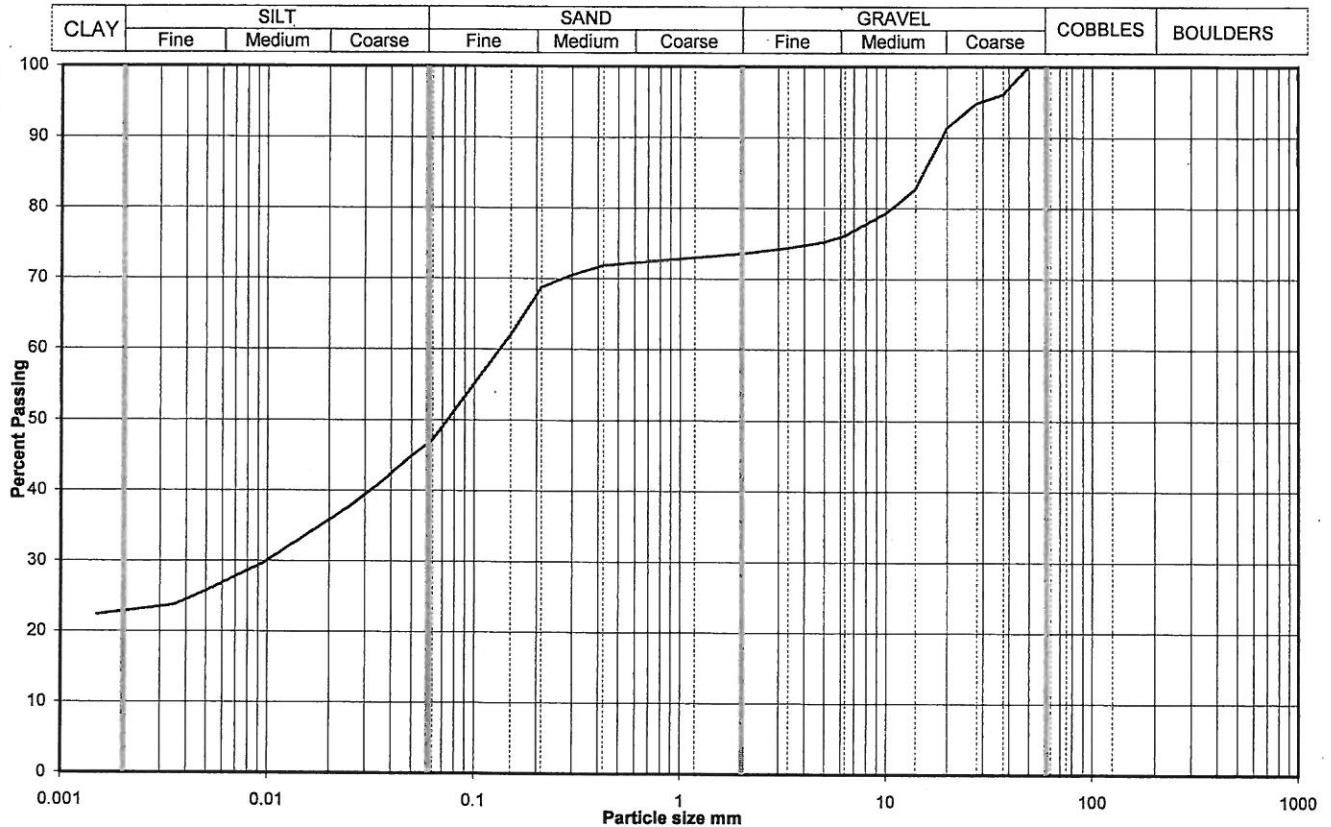
24.8.06

Figure

PSD

Particle Size Distribution Analysis

Project No	A6111	Sample Details:	Hole No		WS8	
Project Name	HUDDERSFIELD TECHNICAL COLLEGE - PHASE 1 GROUND INVESTIGATION		Depth (m BGL)		1.00	
			Samp No	6	Type	B
			ID	ESGA611120060731000022		
			Spec Ref			



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	47
90	100	0.0482	44
75	100	0.0348	41
63	100	0.0251	38
50	100	0.0180	35
37.5	96	0.0095	30
28	95	0.0049	26
20	91	0.0035	24
14	83	0.0015	22
10	79		
6.3	76		
5.0	75		
3.35	74		
2.00	74		
1.18	73		
0.600	72	Particle density, Mg/m3 2.65 assumed	
0.425	72		
0.300	70	Dry mass of sample, kg 1.9	
0.212	69		
0.150	62		
0.063	47		

Soil description	Brown mottled brownish grey slightly sandy slightly gravelly CLAY.	
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377	
Remarks		
Sample Proportions	Cobbles / boulders	0
	Gravel	26
	Sand	27
	Silt	24
	Clay	23

Uniformity Coefficient	D_{60} / D_{10}	#N/A
------------------------	-------------------	------

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2.9
Rev 0
Nov 04



Soil Mechanics



Approved

Date

[Signature]

24.8.06

Figure

PSD

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TESTS WITHOUT MEASUREMENT OF PORE PRESSURE - SUMMARY OF RESULTS

Project No	Project Name															
A6111	HUDDERSFIELD TECHNICAL COLLEGE - PHASE 1 GROUND INVESTIGATION															
Hole No.	Sample				Soil Description	Density		w	Test type	Dia. mm	σ_3 kPa	At failure / end of stage				Remarks
	No.	Depth (m)		type		bulk Mg/m ³	dry					Axial strain %	$\delta_1 - \delta_2$ kPa	C_u kPa	M O D E	
		from	to													
WS1	7	1.65	2.10	U	Stiff yellowish brown sandy slightly gravelly CLAY. Gravel is weak sandstone.	2.12	1.83	15	UU	101.4	40	19.6	221	111	P	
WS10	9	1.65	2.10	U	Firm dark brown slightly sandy friable CLAY.	1.67	1.36	23	UU	103.7	40	20.1	84	42	P	
WS4	10	1.65	2.00	U	Firm yellowish brown sandy slightly gravelly CLAY. Gravel is sandstone.	1.97	1.66	19	UU	100.6	40	10.3	108	54	C	
WS8	8	1.45	1.90	U	Firm yellowish brown sandy gravelly CLAY with occasional cobbles.	2.12	1.83	16	UU	103.1	35	19.7	123	61	B	
WS9	7	1.45	1.90	U	Firm to stiff greyish brown slightly sandy slightly gravelly CLAY.	1.97	1.63	21	UU	102.0	35	10.8	154	77	B	
WS9	16	3.55	4.00	U	Firm to stiff greyish brown slightly sandy CLAY.	1.93	1.54	25	UU	102.5	75	6.9	146	73	B	

General notes: Tests carried out in accordance with BS1377: Part 7: 1990, clause 8 for single stage, clause 9 for multistage tests. Specimens nominally 2:1 height diameter ratio and tested at a rate of strain of 2%/minute, unless annotated otherwise. See individual test reports for further details.

Legend UU - single stage test (may be in sets of specimens) σ_3 cell pressure Mode of failure P plastic
 UUM - multistage test on a single specimen $\sigma_1 - \sigma_3$ deviator stress B brittle
 suffix:R - remoulded or recompactd C_u undrained shear strength C compound

CHEMICAL TESTS - SUMMARY OF RESULTS

Project No	Project Name
A6111	HUDDERSFIELD TECHNICAL COLLEGE - PHASE 1 GROUND INVESTIGATION

Hole No.	Sample				Soil Description	pH	Org	LOI	Sulphate as SO ₄			CO ₂	Chloride, Cl		<2 mm	Remarks
	No.	Depth (m)		type					soil	2:1	water		water sol.	acid sol.		
		from	to													
WS1	5	1.20	1.65	D	Dark brown slightly sandy slightly gravelly CLAY.	7.0				0.06					85	
WS2	6	0.70	0.70	D	Brown and yellowish brown sandy slightly gravelly CLAY.	6.0				0.14					78	
WS3	5	1.65	1.65	D	Light brown and brown sandy gravelly CLAY.	3.6				0.08					40	
WS4	11	2.00	2.45	D	Yellowish brown sandy slightly gravelly CLAY.	5.1				0.04					51	
WS5	6	1.45	1.45	D	Yellowish brown sandy gravelly CLAY.	4.5				0.10					42	
WS8	5	1.00	1.45	D	Yellowish brown sandy slightly gravelly CLAY.	5.3				0.08					58	
WS9	8	1.90	2.00	D	Brownish grey sandy CLAY.	5.0				0.14					78	
WS9	21	2.50	2.50	W		6.2				0.10						

General notes: BS 1377:Part 3:1990 definitive method used in all cases unless annotated otherwise. See individual test reports for further details

Key : 2:1 2:1 water:soil extract from soil Org Organic matter content CO₂ Carbonate content (rapid titration)
 < 2 mm material passing 2mm sieve LOI Mass loss on ignition



TEST REPORT

SOIL SAMPLE ANALYSIS



TES Report No. EFS/062831

Soil Mechanics
Askern Road
Carcroft
Doncaster
DN6 8DG

Site: Huddersfield-Phase 1

The 2 samples described in this report were logged for analysis by TES Bretby on 14-Aug-2006.

The analysis was completed by: 01-Sep-2006

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Table of Report Notes (Page 3)

On behalf of
TES Bretby :
J Elstub

Date of Issue: 01-Sep-2006

Tests marked 'A' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise
S04 analysis not conducted in accordance with BS1377 unless otherwise stated
Water Soluble Sulphate on 2:1 water:soil extract
AR denotes analysis conducted on the As Received sample
BTEX analysis expressed as ug/kg As Received
Phenol HPLC results expressed as mg/kg As Received

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise
S.G. expressed as g/cm³@ 15°C

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging
U = undetected above reporting limit
J = concentration at instrument was below lowest calibration standard
E = concentration at instrument was above top calibration standard
B = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile
CR denotes Crocidolite
AM denotes Amosite
NADIS denotes No Asbestos Detected in Sample
NBFO denotes No Bulk fibres Observed
T Trace
L Low (2-15%)
M Medium (15-50%)
H High (>50%)

General notes:

^ this analysis was subcontracted to another laboratory
\$ Within laboratory tolerances
\$\$ unable to analyse due to nature of sample
¥ Results for guidance only, possible interference
& Blank corrected
I.S insufficient sample for analysis
Intf Unable to analyse due to interferences
N.D Not determined
N.R Not recorded
N.Def Not detected
Req Analysis Requested, see attached sheets for results
b Raised detection limit due to nature of sample
* denotes the accreditation has been removed by the laboratory for this result only

END OF REPORT



TEST REPORT

SOIL SAMPLE ANALYSIS



TES Report No. EFS/062723

Soil Mechanics
Askern Road
Carcroft
Doncaster
DN6 8DG

Site: Huddersfield-Phase 1

The 13 samples described in this report were logged for analysis by TES Bretby on 03-Aug-2006.
The analysis was completed by: 23-Aug-2006

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3)
Table of PAH (MS-SIM) (80) Results (Pages 4 to 9)
Table of Report Notes (Page 10)

On behalf of
TES Bretby :
J Elstub

Project Co-ordinator

Date of Issue: 23-Aug-2006

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 7 ES 3 0.5	Job Number:	S06_2723
LIMS ID Number:	CL0615787	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC13.D	Date Analysed:	21-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	20.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	1.64	182.29	89
Acenaphthylene	208-96-8	3.33	29.91	59
Acenaphthene	83-32-9	3.47	11.33	83
Fluorene	86-73-7	3.88	70.92	96
Phenanthrene	85-01-8	5.04	502.34	97
Anthracene	120-12-7	5.11	143.01	98
Fluoranthene	206-44-0	6.75	440.01	84
Pyrene	129-00-0	7.07	403.20	66
Benzo[a]anthracene	56-55-3	9.01	162.45	69
Chrysene	218-01-9	9.06	167.96	M
Benzo[b]fluoranthene	205-99-2	10.64	163.40	87
Benzo[k]fluoranthene	207-08-9	10.67	62.28	89
Benzo[a]pyrene	50-32-8	11.07	124.31	92
Indeno[1,2,3-cd]pyrene	193-39-5	12.51	73.84	62
Dibenzo[a,h]anthracene	53-70-3	12.56	5.07	64
Benzo[g,h,i]perylene	191-24-2	12.80	75.95	63
Total (USEPA16) PAHs	-	-	2618.27	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	106
Acenaphthene-d10	106
Phenanthrene-d10	119
Chrysene-d12	122
Perylene-d12	122

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	121
Terphenyl-d14	81

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 7 ES 7 1.2	Job Number:	S06_2723
LIMS ID Number:	CL0615788	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC11.D	Date Analysed:	20-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	10.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	1.64	11.70	74
Acenaphthylene	208-96-8	3.16	2.09	78
Acenaphthene	83-32-9	3.33	21.46	63
Fluorene	86-73-7	3.88	20.44	M
Phenanthrene	85-01-8	5.04	132.16	92
Anthracene	120-12-7	5.11	48.34	93
Fluoranthene	206-44-0	6.75	194.80	82
Pyrene	129-00-0	7.07	186.79	83
Benzo[a]anthracene	56-55-3	9.01	85.17	52
Chrysene	218-01-9	9.05	92.37	85
Benzo[b]fluoranthene	205-99-2	10.63	98.59	88
Benzo[k]fluoranthene	207-08-9	10.67	29.98	89
Benzo[a]pyrene	50-32-8	11.07	83.49	60
Indeno[1,2,3-cd]pyrene	193-39-5	12.50	57.24	M
Dibenzo[a,h]anthracene	53-70-3	12.56	2.59	65
Benzo[g,h,i]perylene	191-24-2	12.79	49.20	M
Total (USEPA16) PAHs	-	-	1116.41	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	112
Acenaphthene-d10	97
Phenanthrene-d10	112
Chrysene-d12	119
Perylene-d12	111

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	128
Terphenyl-d14	93

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 1 ES 2 0.4	Job Number:	S06_2723
LIMS ID Number:	CL0615791	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC3.D	Date Analysed:	19-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	1.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	1.69	0.23	69
Acenaphthylene	208-96-8	3.28	0.14	89
Acenaphthene	83-32-9	3.45	0.34	98
Fluorene	86-73-7	4.02	0.30	98
Phenanthrene	85-01-8	5.22	3.57	97
Anthracene	120-12-7	5.29	1.12	98
Fluoranthene	206-44-0	6.96	6.00	85
Pyrene	129-00-0	7.28	4.62	70
Benzo[a]anthracene	56-55-3	9.23	3.00	50
Chrysene	218-01-9	9.28	2.45	95
Benzo[b]fluoranthene	205-99-2	10.87	4.01	74
Benzo[k]fluoranthene	207-08-9	10.91	1.37	76
Benzo[a]pyrene	50-32-8	11.30	2.84	92
Indeno[1,2,3-cd]pyrene	193-39-5	12.74	2.40	63
Dibenzo[a,h]anthracene	53-70-3	12.80	0.45	56
Benzo[g,h,i]perylene	191-24-2	13.03	1.92	77
Total (USEPA16) PAHs	-	-	34.76	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	77
Acenaphthene-d10	78
Phenanthrene-d10	85
Chrysene-d12	92
Perylene-d12	89

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	113
Terphenyl-d14	103

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons

GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 2 ES 4 0.5	Job Number:	S06_2723
LIMS ID Number:	CL0615792	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC3.D	Date Analysed:	19-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	1.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	-	< 0.08	-
Acenaphthylene	208-96-8	-	< 0.08	-
Acenaphthene	83-32-9	3.46	0.11	90
Fluorene	86-73-7	4.03	0.09	92
Phenanthrene	85-01-8	5.22	1.19	95
Anthracene	120-12-7	5.30	0.40	96
Fluoranthene	206-44-0	6.96	2.76	63
Pyrene	129-00-0	7.29	2.24	80
Benzo[a]anthracene	56-55-3	9.24	1.37	51
Chrysene	218-01-9	9.29	1.34	85
Benzo[b]fluoranthene	205-99-2	10.87	1.65	89
Benzo[k]fluoranthene	207-08-9	10.90	0.45	91
Benzo[a]pyrene	50-32-8	11.30	1.16	67
Indeno[1,2,3-cd]pyrene	193-39-5	12.75	0.79	53
Dibenzo[a,h]anthracene	53-70-3	12.80	0.16	60
Benzo[g,h,i]perylene	191-24-2	13.03	0.64	73
Total (USEPA16) PAHs	-	-	< 14.51	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	82
Acenaphthene-d10	89
Phenanthrene-d10	84
Chrysene-d12	91
Perylene-d12	88

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	98
Terphenyl-d14	99

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 3 ES 1 0.2	Job Number:	S06_2723
LIMS ID Number:	CL0615794	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC3.D	Date Analysed:	19-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	1.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	-	< 0.08	-
Acenaphthylene	208-96-8	-	< 0.08	-
Acenaphthene	83-32-9	-	< 0.08	-
Fluorene	86-73-7	-	< 0.08	-
Phenanthrene	85-01-8	5.22	0.80	84
Anthracene	120-12-7	5.29	0.13	86
Fluoranthene	206-44-0	6.96	0.94	70
Pyrene	129-00-0	7.28	0.83	65
Benzo[a]anthracene	56-55-3	9.23	1.08	M
Chrysene	218-01-9	9.28	1.16	M
Benzo[b]fluoranthene	205-99-2	10.87	2.86	96
Benzo[k]fluoranthene	207-08-9	10.89	1.08	95
Benzo[a]pyrene	50-32-8	11.30	1.96	86
Indeno[1,2,3-cd]pyrene	193-39-5	12.74	2.09	67
Dibenzo[a,h]anthracene	53-70-3	12.80	0.41	72
Benzo[g,h,i]perylene	191-24-2	13.03	1.69	84
Total (USEPA16) PAHs	-	-	< 15.35	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	81
Acenaphthene-d10	85
Phenanthrene-d10	84
Chrysene-d12	88
Perylene-d12	85

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	103
Terphenyl-d14	102

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:	Soil Mechanics: Huddersfield-Phase 1		
Sample Details:	WS 4 ES 1 0.1	Job Number:	S06_2723
LIMS ID Number:	CL0615795	Date Booked in:	03-Aug-06
QC Batch Number:	1964	Date Extracted:	15-Aug-06
Quantitation File:	0818CCC3.D	Date Analysed:	19-Aug-06
Directory:	0818ABN.MS5\	Matrix:	Soil
Dilution:	1.0	Ext Method:	Ultrasonic

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	1.69	0.30	75
Acenaphthylene	208-96-8	-	< 0.08	-
Acenaphthene	83-32-9	3.46	0.41	99
Fluorene	86-73-7	4.03	0.32	95
Phenanthrene	85-01-8	5.22	4.60	97
Anthracene	120-12-7	5.29	1.47	98
Fluoranthene	206-44-0	6.96	8.05	85
Pyrene	129-00-0	7.29	6.41	73
Benzo[a]anthracene	56-55-3	9.23	4.00	52
Chrysene	218-01-9	9.28	3.51	93
Benzo[b]fluoranthene	205-99-2	10.86	5.11	76
Benzo[k]fluoranthene	207-08-9	10.90	1.72	77
Benzo[a]pyrene	50-32-8	11.30	3.58	76
Indeno[1,2,3-cd]pyrene	193-39-5	12.74	2.81	52
Dibenzo[a,h]anthracene	53-70-3	12.80	0.58	76
Benzo[g,h,i]perylene	191-24-2	13.03	2.15	75
Total (USEPA16) PAHs	-	-	< 45.10	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	88
Acenaphthene-d10	87
Phenanthrene-d10	85
Chrysene-d12	90
Perylene-d12	86

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	100

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise
S04 analysis not conducted in accordance with BS1377 unless otherwise stated
Water Soluble Sulphate on 2:1 water:soil extract
AR denotes analysis conducted on the As Received sample
BTEX analysis expressed as ug/kg As Received
Phenol HPLC results expressed as mg/kg As Received

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise
S.G. expressed as g/cm³ @ 15°C

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging
U = undetected above reporting limit
J = concentration at instrument was below lowest calibration standard
E = concentration at instrument was above top calibration standard
B = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

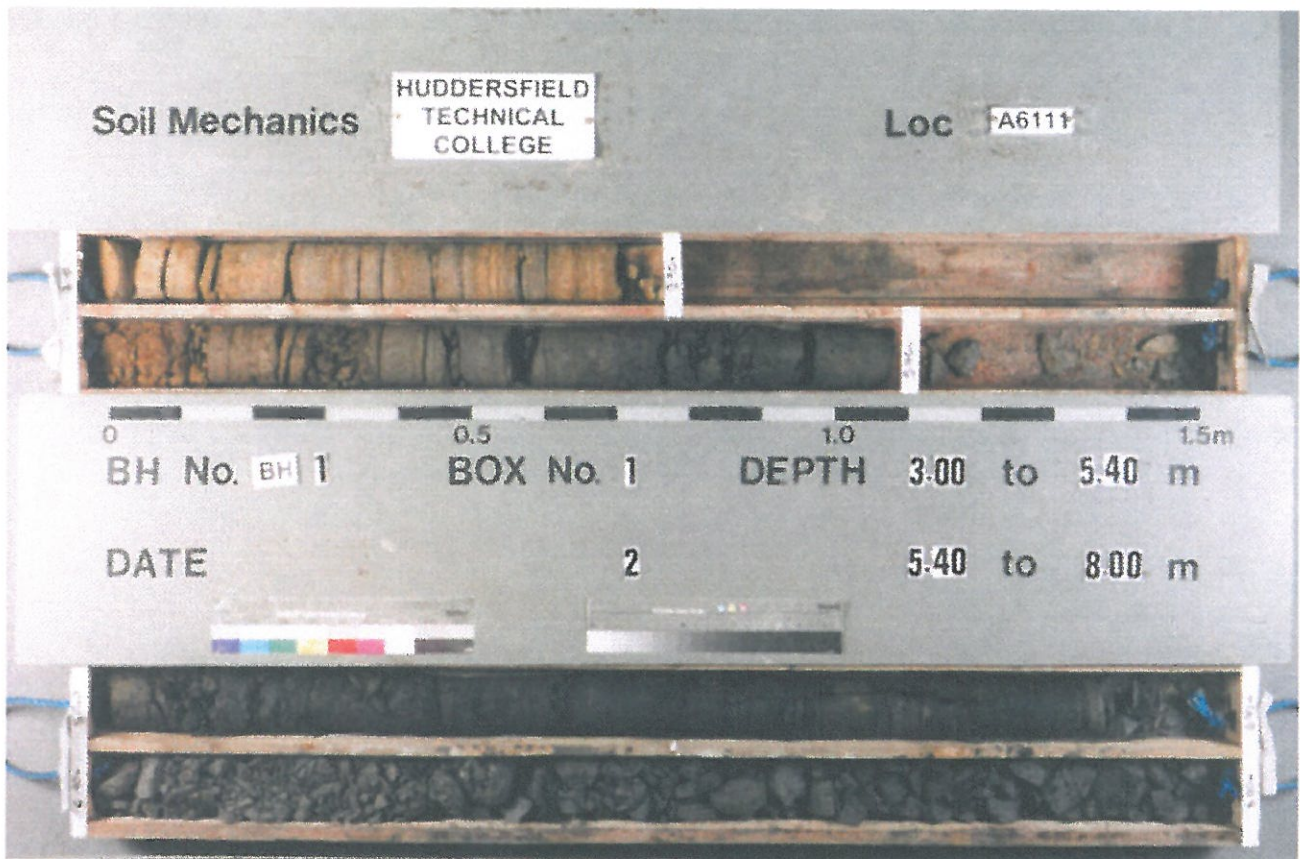
Asbestos analysis specific:

CH denotes Chrysotile
CR denotes Crocidolite
AM denotes Amosite
NADIS denotes No Asbestos Detected in Sample
NBFO denotes No Bulk fibres Observed
T Trace
L Low (2-15%)
M Medium (15-50%)
H High (>50%)

General notes:

^ this analysis was subcontracted to another laboratory
\$ Within laboratory tolerances
\$\$ unable to analyse due to nature of sample
¥ Results for guidance only, possible interference
& Blank corrected
I.S insufficient sample for analysis
Intf Unable to analyse due to interferences
N.D Not determined
N.R Not recorded
N.Det Not detected
Req Analysis Requested, see attached sheets for results
p Raised detection limit due to nature of sample
* denotes the accreditation has been removed by the laboratory for this result only

END OF REPORT

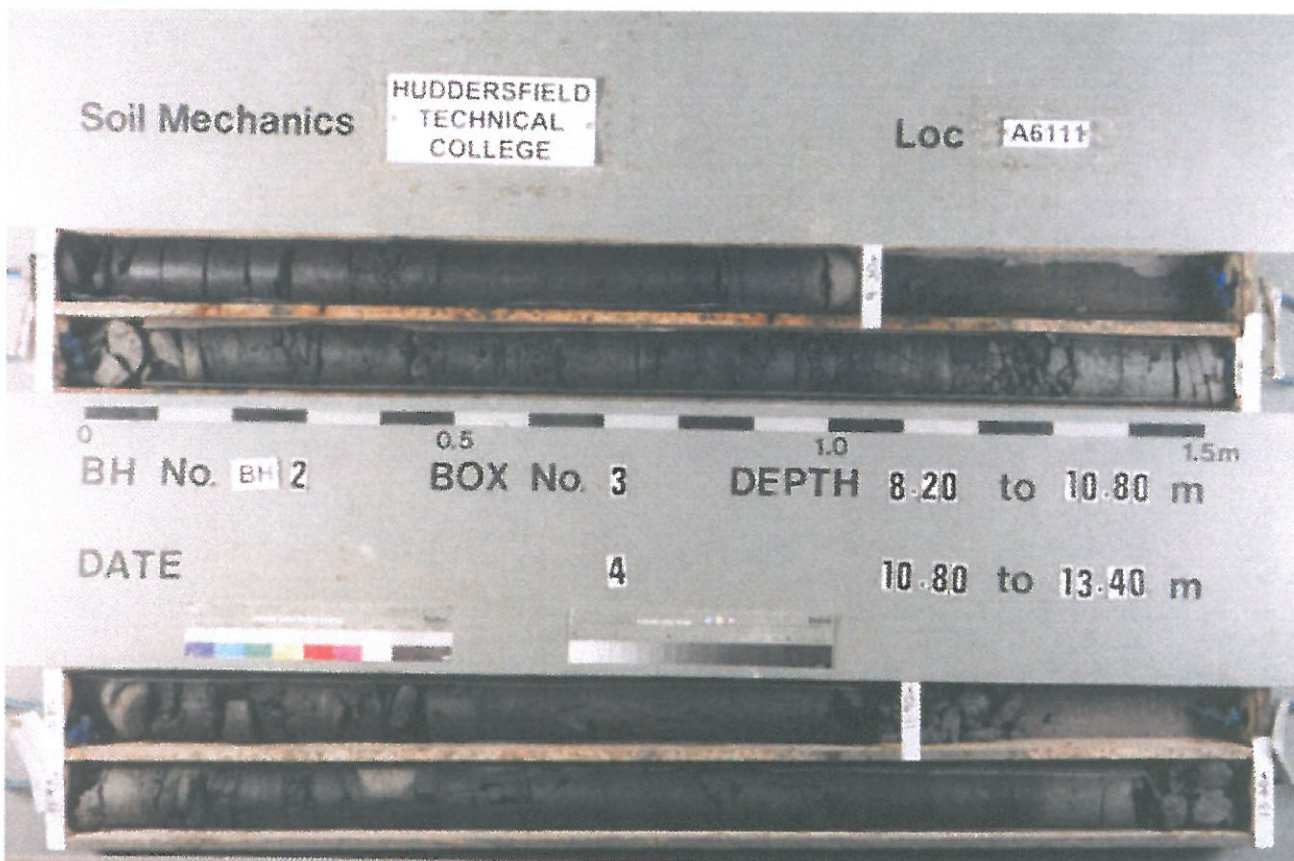
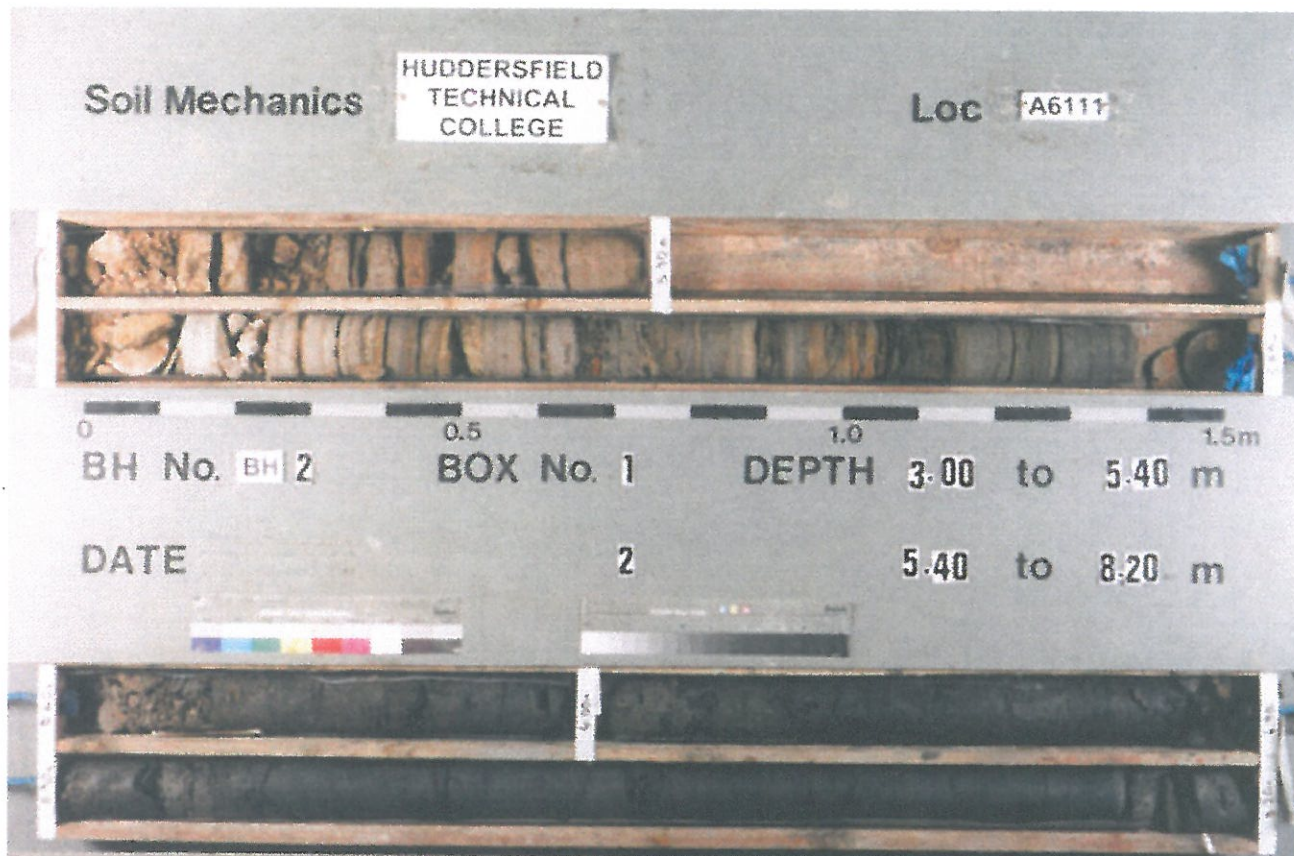


Notes:

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 Project No. A6111
 Carried out for Huddersfield Technical College

Plate

1



Notes:

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 Project No. A6111
 Carried out for Huddersfield Technical College

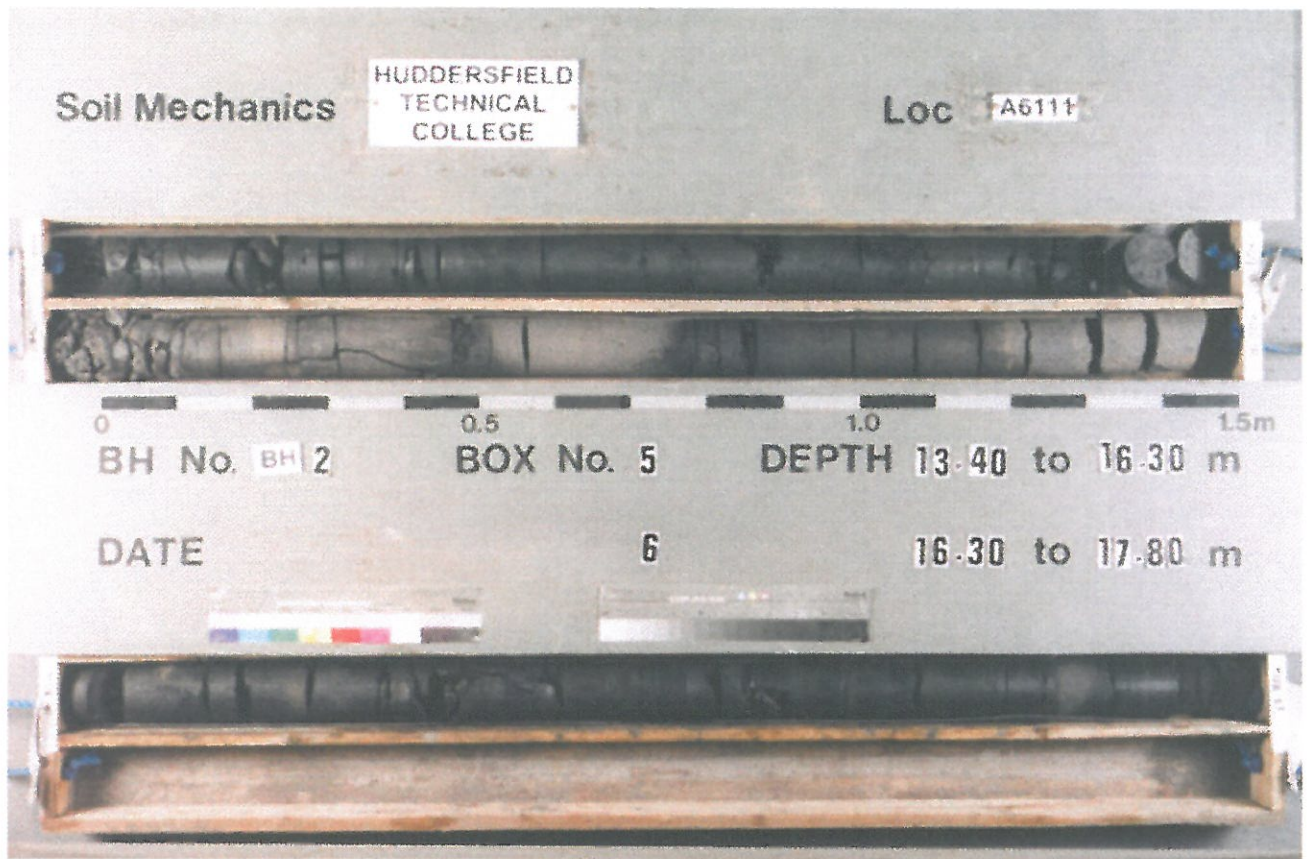
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2

Photographs



Soil Mechanics



Notes:

Project HUDDERSFIELD TECHNICAL COLLEGE
Project No. A6111
Carried out for Huddersfield Technical College

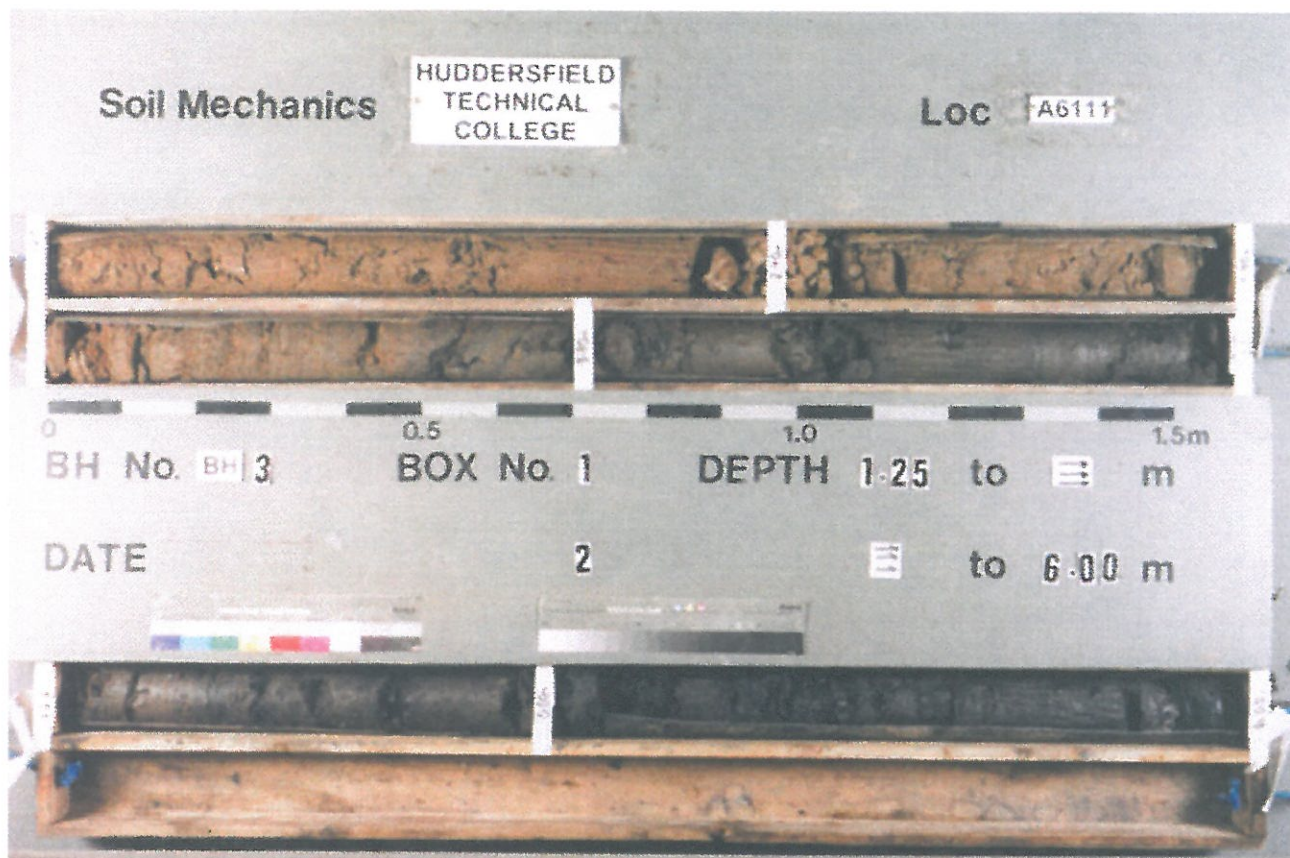
Plate

3

Photographs



Soil Mechanics

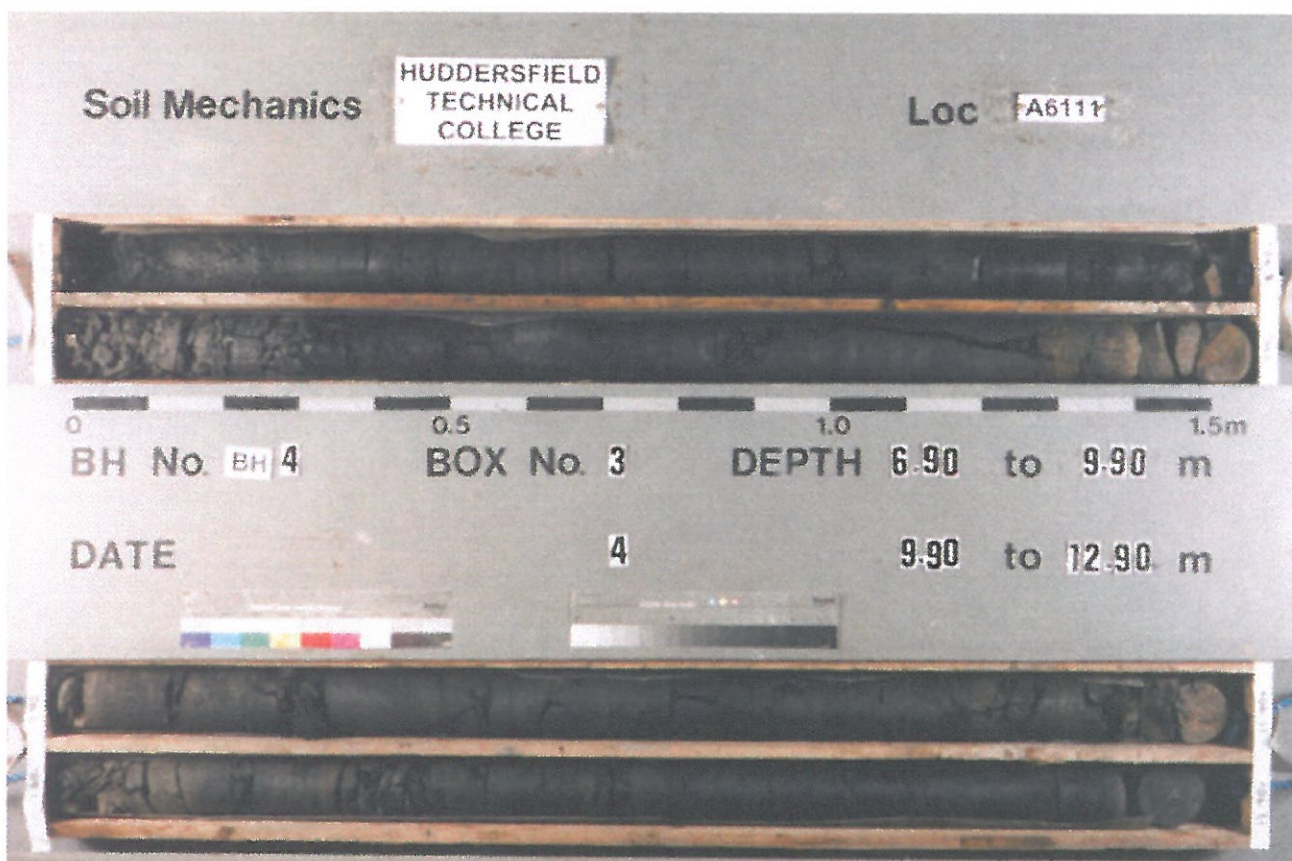
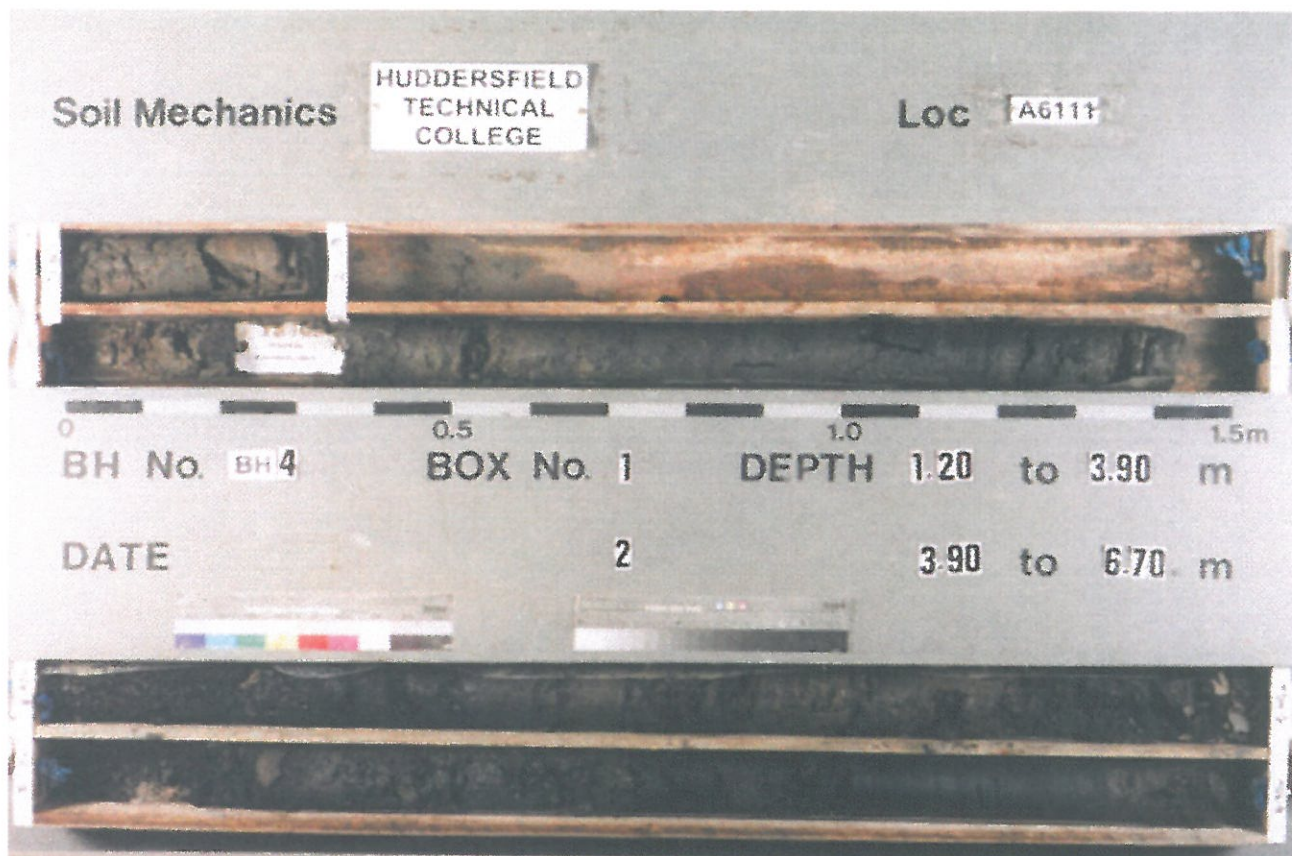


Notes:

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 Carried out for Huddersfield Technical College

Plate

4



Notes:

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 Project No. A6111
 Carried out for Huddersfield Technical College

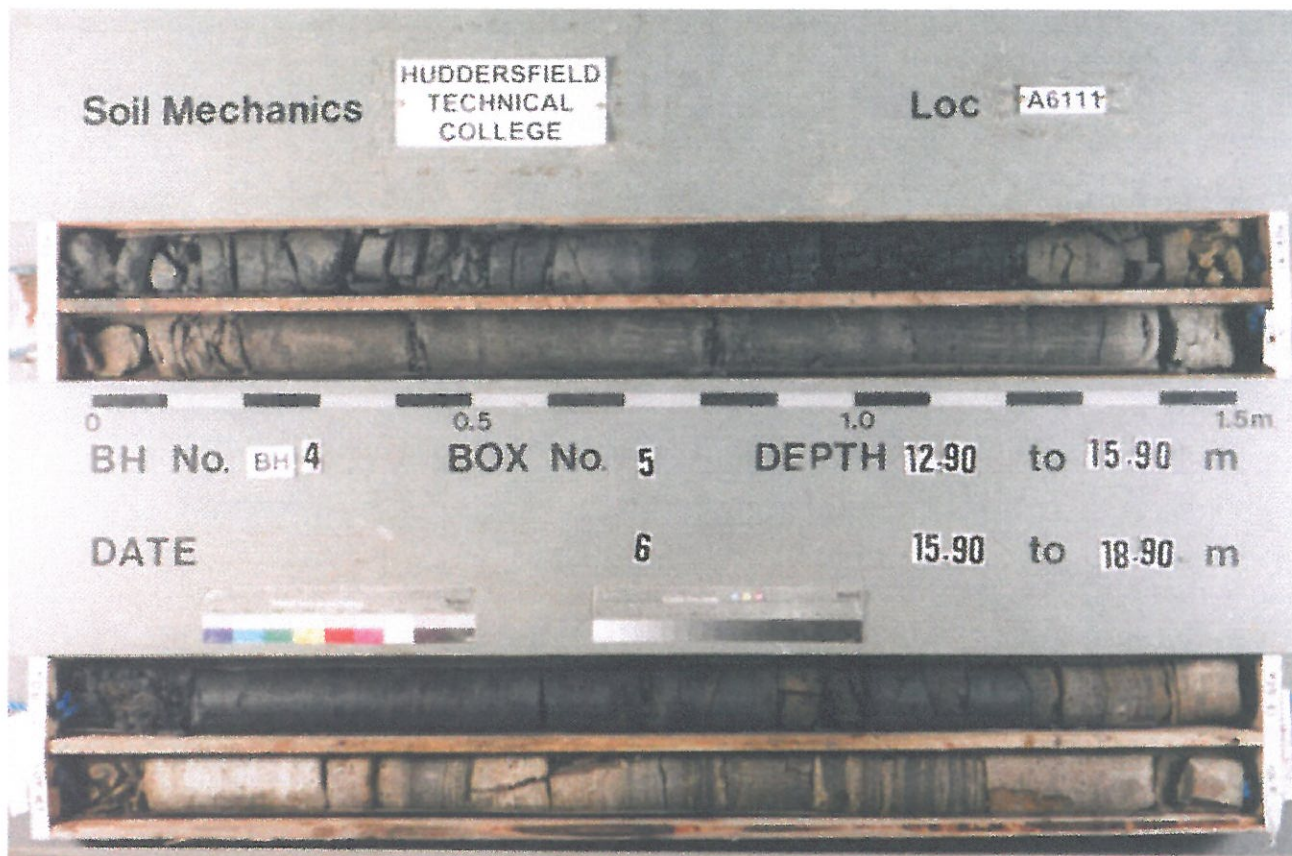
Plate

5

Photographs



Soil Mechanics

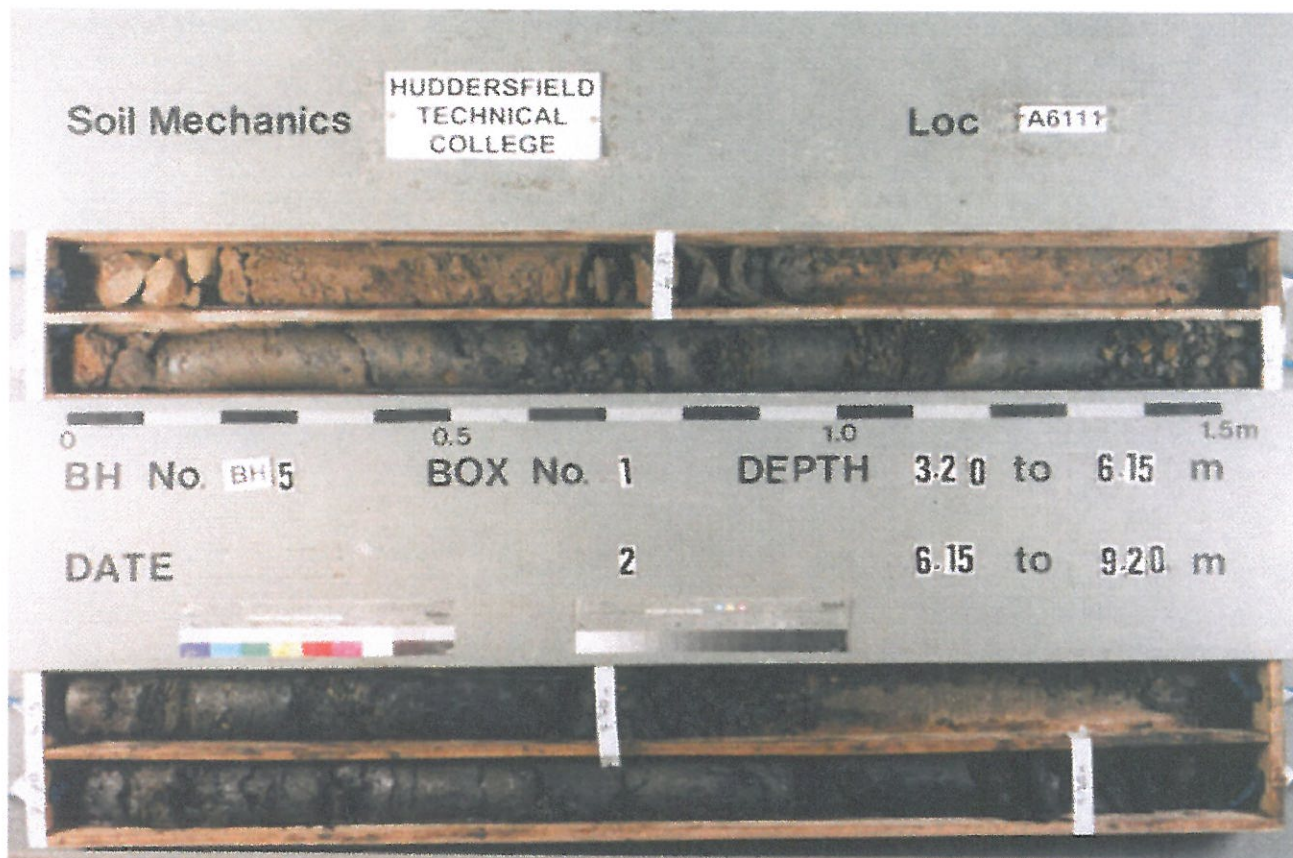


Notes:

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Plate

6

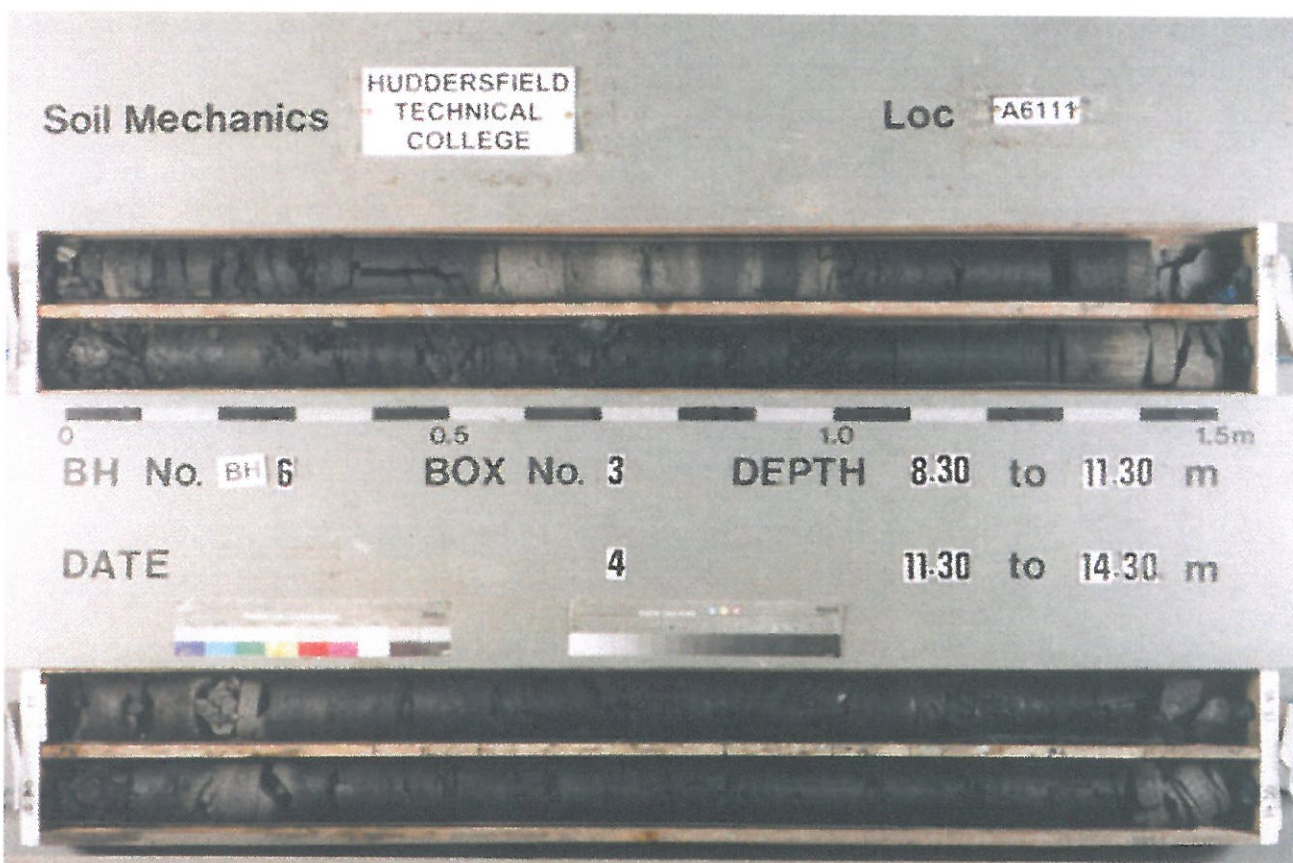
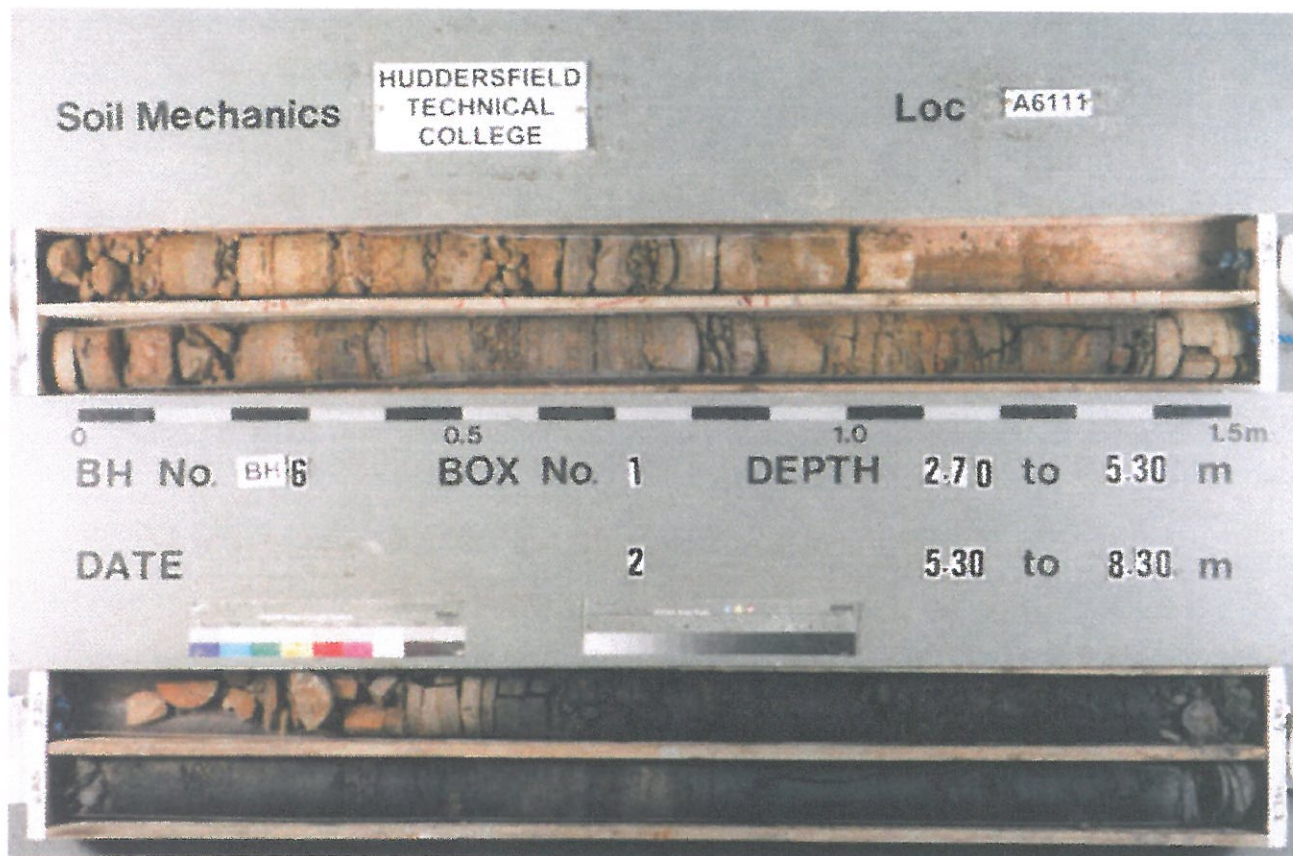


Notes:

Project HUDDERSFIELD TECHNICAL COLLEGE
 Project No. A6111
 Carried out for Huddersfield Technical College

Plate

7

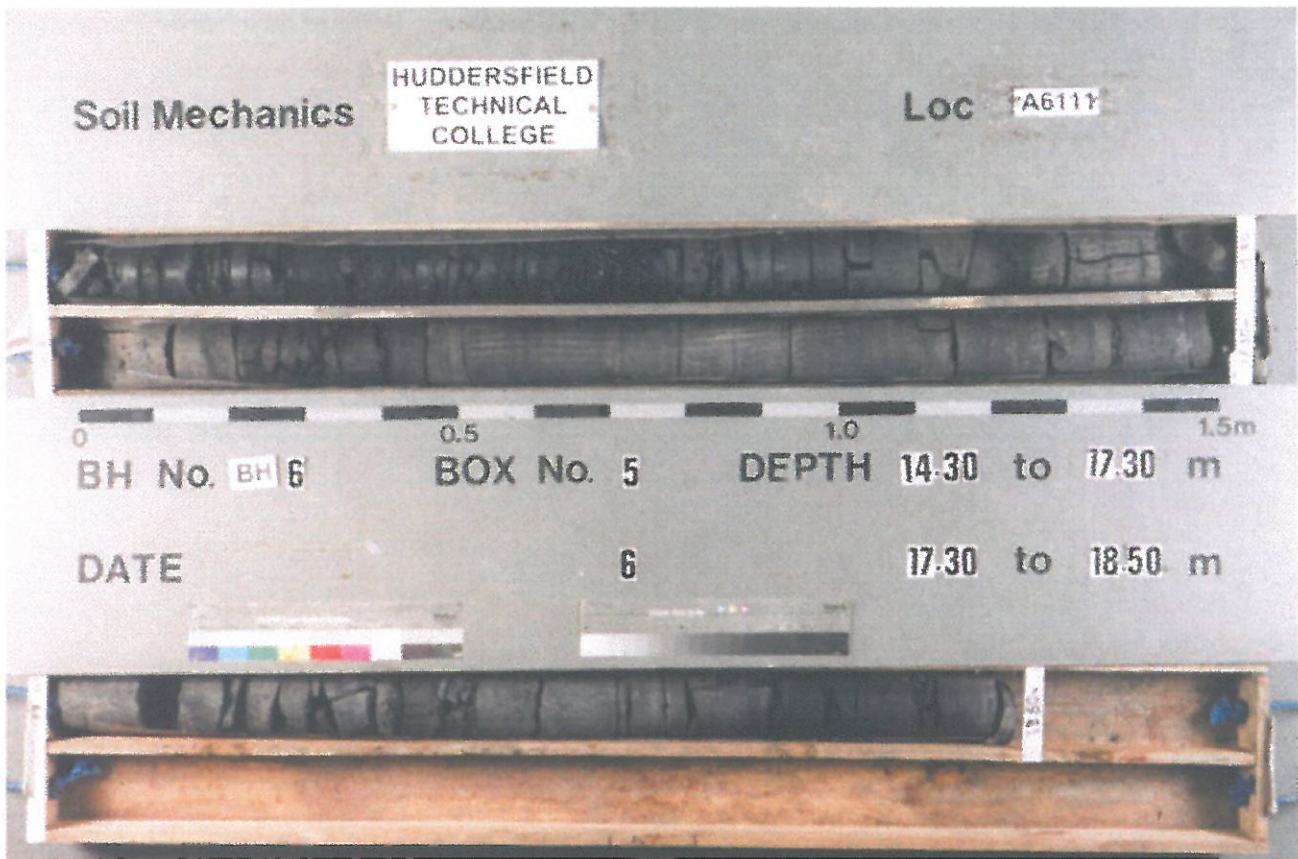


Notes:

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Plate

8



Notes:

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Project No. A6111
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Plate

Digital base plan supplied by Hudson's Field
Technica College

STANFORD CA 94305



Score: 1250

Row	Drawn	Date	Approved	Date	Modified	Deleted
1						

Time	
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KPLA 3115

Percentage

HUDDERSFIELD TECHNICAL
COLLEGE

02-0007

Huddersfield Technical
College

Soil Mechanics

Date 16/08/06	Drawn By AW	Project No A6111	Rev 0
Sheet Size A0		Scale 1:250	F2

APPENDIX 06

Exploratory Hole Records

Core Photographs BH104

Run 1+2: 10.00m-12.50m



Core Photographs BH104

Run 3+4: 12.50m-15.50m



Core Photographs BH104

Run 5+6: 15.50m–18.50m



		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH101						
		Contract Number: 42009	Date Started: 16/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT	Sheet 1 of 3							
Rotary Drilling Log		Easting: 414030.6		Northing: 416949.7		Ground Level: 112.13		Plant Used: Comacchio 205		Print Date: 26/01/2017		Scale: 1:50		
Weather:				Termination:										
Samples & In Situ Testing							Strata Details					Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
					B1 0.20	111.93	0.20		MADE GROUND: Tarmacadam.					
					D3 0.50 ES2 0.50		(1.00)		MADE GROUND: Yellow brown, sandy, slightly clayey, angular to subrounded, fine to coarse GRAVEL including sandstone.					
					D5 1.00 ES4 1.00	110.93	1.20		MADE GROUND: Yellow sandstone fill (driller's description).			1		
							(0.60)							
						110.33	1.80		Yellow, sandy CLAY with sandstone cobble (driller's description).			2		
							(1.30)							
						109.03	3.10		Light, yellow, sandy CLAY with sandstone cobbles (driller's description).			3		
							(1.30)							
						107.73	4.40		Orange brown SANDSTONE (driller's description).			4		
						107.43	4.70		Light, yellow SANDSTONE (driller's description).			5		
							(1.10)							
						106.33	5.80		Grey weathered MUDSTONE (driller's description).			6		
							(1.70)					7		
						104.63	7.50		Grey, weathered MUDSTONE (driller's description).			8		
							(3.00)					9		
												10		
Start & End of Shift Observations					Borehole Diameter				Casing Diameter		Remarks:			
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 15.00m and 21.00m to 22.00m.					
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Flush Information					Installation									
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Fracture Index reported as number per metre. TCR, SCR and RQD reported in %					
15.00	19.50	Water	100%						RC SPT Issue Number: 1 Issue Date: 08-12-16					
19.50	21.00	Water	70%											

		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH101							
		Contract Number: 42009	Date Started: 16/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT	Sheet 2 of 3								
Rotary Drilling Log		Easting: 414030.6		Northing: 416949.7		Ground Level: 112.13		Plant Used: Comacchio 205		Print Date: 26/01/2017		Scale: 1:50			
Weather:				Termination:											
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
						101.63	10.50		Grey, weathered MUDSTONE (driller's description).						
									Grey MUDSTONE (driller's description).						
												11			
												12			
							(4.50)					13			
												14			
						97.13	15.00		Weak to medium strong, dark grey MUDSTONE with bivalve fossils throughout. Discontinuities are subhorizontal (0-20 degrees), very closely to closely spaced, smooth planar, tight to partly open.						
15.00 - 16.50	100	67	19	NI					Between 15.00m and 15.42m: non intact recovered as angular, fine to coarse gravel.						
				8								16			
												17			
16.50 - 18.00	100	96	45				(4.44)					18			
				12								19			
									Between 18.00m and 18.07m: non intact recovered as angular, fine to coarse gravel.						
18.00 - 19.50	95	75	17	NI					Between 18.07m and 19.33m: subhorizontal (0-5 degrees) smooth and rough planar, tight to partly open.						
				18								20			
				NI		92.69	19.44		Between 19.33m and 19.44m: non intact recovered as angular, fine to coarse gravel.						
				NR		92.43	19.70		Void (coal workings).						
				NI					Weak to medium strong, dark grey MUDSTONE. Discontinuities are subhorizontal (0-15 degrees), closely spaced, rough planar,						
									Between 19.70m and 20.25m: non intact recovered as angular, fine to coarse gravel.						
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 15.00m and 21.00m to 22.00m.					
										Water Strikes					
										Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Flush Information						Installation									
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Top (m)	Base (m)	Type	Dia (mm)						
15.00	19.50	Water	100%							Fracture Index reported as number per metre. TCR, SCR and RQD reported in %					
19.50	21.00	Water	70%							RC SPT Issue Number: 1 Issue Date: 08-12-16					

					Contract Name: Trinity Street, Huddersfield					Client: WML Consulting					Borehole ID: BH101						
					Contract Number: 42009		Date Started: 16/01/2017		Logged By: JM		Checked By: MHW		Status: DRAFT								
Rotary Drilling Log					Easting: 414030.6		Northing: 416949.7		Ground Level: 112.13		Plant Used: Comacchio 205		Print Date: 26/01/2017		Sheet 3 of 3 Scale: 1:50						
Weather:					Termination:																
Samples & In Situ Testing										Strata Details										Groundwater	
Depth		TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation					
19.50 - 21.00		84	55	48	4			(1.30)		partly open. Below 20.50m: light grey.											
							91.13	21.00		Grey MUDSTONE (driller's description).					21						
								(1.00)													
							90.13	22.00		End of Borehole at 22.00m					22						
															23						
															24						
															25						
															26						
															27						
															28						
															29						
															30						
Start & End of Shift Observations										Borehole Diameter		Casing Diameter		Remarks:							
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 15.00m and 21.00m to 22.00m.												
16-01-2017	15:30	22.00	10.50	14.90																	
										Water Strikes											
										Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks						
Flush Information					Installation																
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Fracture Index reported as number per metre. TCR, SCR and RQD reported in %												
15.00	19.50	Water	100%						RC SPT Issue Number: 1 Issue Date: 08-12-16												
19.50	21.00	Water	70%																		

		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH106						
		Contract Number: 42009		Date Started: 06/01/2017		Logged By: JM		Checked By: MHW		Status: DRAFT				
Rotary Core Drilling Log		Easting: 414119.8		Northing: 416855.4		Ground Level: 106.26mOD		Plant Used: Comacchio 205		Print Date: 25/01/2017		Sheet 1 of 3 Scale: 1:50		
Weather:				Termination:										
Coring Details					Strata Details							Groundwater		
Depth	TCR	SCR	RQD	Fracture Spacing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation	
					105.96	(0.30) 0.30		MADE GROUND: Grass over, dark brown, slightly gravelly, fine and medium SAND with rootlets.				1		
					(0.50) 0.30	MADE GROUND: Dark brown, sandy, angular to subrounded, fine to coarse GRAVEL including concrete and brick.								
					105.46	0.80		Light, yellow brown, very clayey, gravelly, fine to coarse SAND with low cobble content. Gravel is subangular to subrounded, fine to coarse including sandstone.						
					105.06	1.20		Yellow brown, clayey SAND with sandstone cobble (driller's description).						
					(3.60)		Dark grey weathered MUDSTONE (driller's description).							
							(5.20)							
					96.26	10.00					10			
					Start & End of Shift Observations					Borehole Diameter				Casing Diameter
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m.					
					20.00	92	12.50	121						
Flush Information					Installation				Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
11.00	10.00	Water	40%											
12.50	11.00	Water	60%											
14.00	12.50	Water	50%											
Fracture spacing as FI or Min, Average and Max in mm. TCR, SCR and RQD reported in %														
IFA RC Issue Number: 2 Issue Date: 13/07/16														

	Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH106				
	Contract Number: 42009	Date Started: 06/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT						
Rotary Core Drilling Log	Easting: 414119.8	Northing: 416855.4	Ground Level: 106.26mOD	Plant Used: Comacchio 205	Print Date: 25/01/2017	Scale: 1:50					
	Weather:		Termination:								
Coring Details					Strata Details					Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation	
10.00 - 11.00	13	0	0	AZCL	95.39 95.26	(0.87)		Assumed zone of core loss, driller notes yellow sandstone cobbles.	11		
				NI		10.87 11.00					
11.00 - 12.50	43	9	0	AZCL	94.41	(0.85)		Brown, slightly sandy, clayey, subangular, fine to coarse GRAVEL of sandstone and mudstone. Assumed zone of core loss, driller notes dark grey weathered mudstone.	12		
				NI		11.85					
12.50 - 14.00	43	4	0	AZCL				Weak to moderately strong, blackish grey MUDSTONE. Discontinuities are 1) 0- 25 degrees, extremely closely spaced to very closely spaced, planar and undulating, smooth, clean and unstained. 2) 80-90 degrees, rare, spacing not discernable, planar, smooth, clean and stained brown. 3) Random, closely to medium spaced, planar and undulating, smooth, clean and unstained.	13		
				NI							
14.00 - 15.50	67	16	0	AZCL					14		
				NI							
15.50 - 17.00	86	29	0	AZCL					15		
				NI							
17.00 - 18.50	33	0	0	AZCL					16		
				NI							
18.50 - 20.00	73	25	0	AZCL					17		
				NI							
				33	87.56	18.70		Assumed zone of core loss, driller notes void/seam.	18		
				40		(0.40)					
				AZCL	87.16	19.10		Weak to moderately strong, blackish grey MUDSTONE (Probably from above void/coal seam). Discontinuities are 1) 0-10 degrees, extremely to very closely spaced, planar, smooth, clean and unstained. 2) 90 degrees, spacing not discernable, planar, smooth, clean and unstained.	19		
				40+		19.37					
				27	86.89	(0.49)		Extremely weak to medium strong, grey SILTSTONE with	20		
				33							
				NI	86.40	19.86					
				14		20.00					
				29	86.26						
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m.		
					20.00	92	12.50	121			
Water Strikes											
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks						
Flush Information					Installation						
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)			
11.00	10.00	Water	40%						Fracture spacing as FI or Min, Average and Max in mm. TCR, SCR and RQD reported in %		
12.50	11.00	Water	60%								
14.00	12.50	Water	50%								
IFA RC Issue Number: 2 Issue Date: 13/07/16											

					Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH106							
					Contract Number: 42009		Date Started: 06/01/2017		Logged By: JM		Checked By: MHW		Status: DRAFT					
Rotary Core Drilling Log					Easting: 414119.8		Northing: 416855.4		Ground Level: 106.26mOD		Plant Used: Comacchio 205		Print Date: 25/01/2017		Scale: 1:50			
Weather:					Termination:													
Coring Details					Strata Details										Groundwater			
Depth	TCR	SCR	RQD	Fracture Spacing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation			
								frequent plant fossils and weathered clayey bands <25mm. Discontinuities are 1) 0-20 degrees, extremely to closely spaced, planar, rough, clean and unstained. 2) 70-90 degrees, very closely spaced, planar, rough, clean and unstained. Strong, blackish grey MUDSTONE. Discontinuities are 1) 0-20 degrees, very closely spaced, undulating, smooth, clean and stained brown. End of Borehole at 20.00m						21				
														22				
														23				
														24				
														25				
														26				
														27				
														28				
														29				
														30				
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:									
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m.									
Flush Information					Installation													
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)										
11.00	10.00	Water	40%						Fracture spacing as FI or Min, Average and Max in mm. TCR, SCR and RQD reported in %									
12.50	11.00	Water	60%						IFA RC Issue Number: 2 Issue Date: 13/07/16									
14.00	12.50	Water	50%															

	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting			Borehole ID: BH102			
	Contract Number: 42009	Date Started: 13/01/2017	Logged By: N/A	Checked By: MHW	Status: DRAFT						
Rotary Drilling Log	Easting: 414063.0	Northing: 416937.6	Ground Level: 109.50	Plant Used: Comacchio 205	Print Date: 26/01/2017	Sheet 1 of 3 Scale: 1:50					
	Weather:		Termination:								
Samples & In Situ Testing						Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
						109.40	0.10	MADE GROUND: Tarmacadam.	MADE GROUND: Dark grey, slightly clayey, gravelly, fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse including brick, ash, sandstone and wood.	1	
					D2 0.50 ES1 0.50	(1.10)					
						108.30	1.20	MADE GROUND: Brick, ash fill (driller's description)		2	
					D4 1.00 ES3 1.00	(0.90)					
						107.40	2.10	Yellow, weathered SANDSTONE (driller's description).		3	
						(2.30)					
						105.10	4.40				
							(1.30)	Dark, yellow SANDSTONE (driller's description).		5	
						103.80	5.70				
								Dark grey MUDSTONE (driller's description).		6	
										7	
										8	
										9	
										10	
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 20.50m.	
Flush Information						Installation		Water Strikes			
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)
										Sealed (m)	Time (mins)
										Rose to (m)	Remarks
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %											
RC SPT Issue Number: 1 Issue Date: 08-12-16											

	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH102					
	Contract Number: 42009		Date Started: 13/01/2017		Logged By: N/A		Checked By: MHW		Status: DRAFT					
	Easting: 414063.0		Northing: 416937.6		Ground Level: 109.50		Plant Used: Comacchio 205		Print Date: 26/01/2017					
Rotary Drilling Log										Sheet 2 of 3				
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
									Dark grey MUDSTONE (driller's description).					
												11		
												12		
												13		
												14		
												15		
												16		
												17		
												18		
									Void/coal seam (driller's description).					
												19		
									Dark grey MUDSTONE (driller's description).					
												20		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 20.50m.					
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH102							
		Contract Number: 42009		Date Started: 13/01/2017		Logged By: N/A		Checked By: MHW		Status: DRAFT					
Rotary Drilling Log		Easting: 414063.0		Northing: 416937.6		Ground Level: 109.50		Plant Used: Comacchio 205		Print Date: 26/01/2017		Scale: 1:50			
Weather:				Termination:											
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation	
						89.00	20.50		Dark grey MUDSTONE (driller's description).						
									End of Borehole at 20.50m						
												21			
												22			
												23			
												24			
												25			
												26			
												27			
												28			
												29			
												30			
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 20.50m.					
13-01-2017	12:30	20.50	6.00												
Flush Information						Installation				Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %															
RC SPT Issue Number: 1 Issue Date: 08-12-16															

Core Photographs BH101

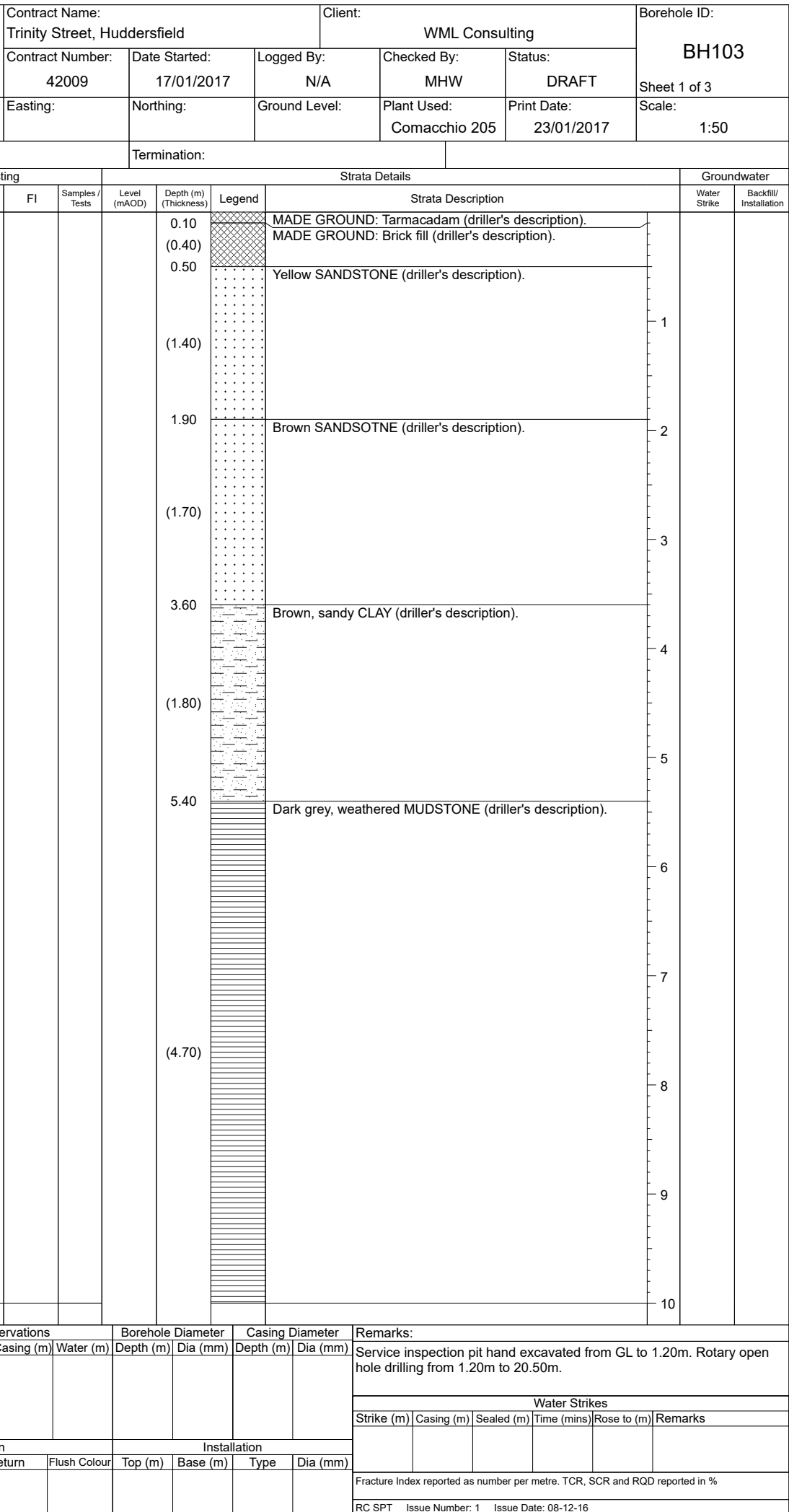
Run 1+2: 15.00m-18.00m



Core Photographs BH101

Run 3+4: 18.00m-21.00m





	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH103						
	Contract Number: 42009		Date Started: 17/01/2017		Logged By: N/A		Checked By: MHW				Status: DRAFT				
Rotary Drilling Log		Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017		Scale: 1:50			
Weather:						Termination:									
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
							10.10		Dark grey, weathered MUDSTONE (driller's description). Dark grey MUDSTONE (driller's description).						
							(3.60)					11			
												12			
												13			
							13.70		Grey MUDSTONE (driller's description).			14			
												15			
							(4.20)					16			
												17			
							17.90		Dark grey MUDSTONE (driller's description).			18			
							(1.20)					19			
							19.10		Void/coal seam (driller's description).						
							(1.10)					20			
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 20.50m.					
Flush Information						Installation				Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %															
RC SPT Issue Number: 1 Issue Date: 08-12-16															

		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH103						
		Contract Number: 42009		Date Started: 17/01/2017		Logged By: N/A		Checked By: MHW		Status: DRAFT				
Rotary Drilling Log		Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017		Sheet 3 of 3 Scale: 1:50		
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
							20.20		Void/coal seam (driller's description).					
							(0.30)		Grey MUDSTONE (driller's description).					
							20.50		End of Borehole at 20.50m					
												21		
												22		
												23		
												24		
												25		
												26		
												27		
												28		
												29		
												30		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 20.50m.					
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

	Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH105															
	Contract Number: 42009	Date Started: 05/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT																	
Rotary Core Drilling Log	Easting: 414120.9	Northing: 416879.9	Ground Level: 105.80mOD	Plant Used: Comacchio 205	Print Date: 25/01/2017	Sheet 1 of 2 Scale: 1:50																
	Weather:		Termination:																			
Coring Details					Strata Details				Groundwater													
Depth	TCR	SCR	RQD	Fracture Spacing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation												
					105.50	(0.30)		MADE GROUND: Grass over dark brown, silty, slightly gravelly, fine and medium SAND with rootlets. Gravel is angular to subrounded, fine to coarse including brick, sandstone and occasional tarmacadam.														
					105.40	0.30																
						(0.80)		MADE GROUND: Tarmacadam. Firm, yellow brown, gravelly, slightly sandy CLAY with medium cobble content. Gravel is subangular to rounded, fine to coarse including sandstone.	1													
					104.60	1.20																
						(2.70)		Yellow brown, clayey SAND with yellow sandstone cobbles (driller's description).	2													
						(2.70)			3													
					101.90	3.90		Grey CLAY (driller's description).	4													
						(2.50)			5													
					99.40	6.40		Dark grey weathered MUDSTONE (driller's description).	6													
						(3.60)			7													
									8													
									9													
					95.80	10.00			10													
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:													
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m.													
					Water Strikes <table border="1"> <tr> <th>Strike (m)</th> <th>Casing (m)</th> <th>Sealed (m)</th> <th>Time (mins)</th> <th>Rose to (m)</th> <th>Remarks</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks						
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks																	
Flush Information					Installation																	
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)														
11.00	10.00	Water	90%						Fracture spacing as FI or Min, Average and Max in mm. TCR, SCR and RQD reported in %													
12.50	11.00	Water	90%																			
14.00	12.50	Water	70%						IFA RC Issue Number: 2 Issue Date: 13/07/16													

[illegible]

	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting			Borehole ID: BH104					
	Contract Number: 42009		Date Started: 11/01/2017		Logged By:		Checked By: MHW		Status: DRAFT				
Rotary Drilling Log		Easting: 414100.2		Northing: 416906.9		Ground Level: 107.11		Plant Used: Comacchio 205		Print Date: 25/01/2017		Scale: 1:50	
Weather:				Termination:									
Samples & In Situ Testing							Strata Details					Groundwater	
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
						106.99	0.12		MADE GROUND: Tarmacadam.				
					D2 0.30	106.86	0.25		MADE GROUND: Orange brown, slightly sandy, angular to subrounded, fine to coarse GRAVEL including brick.				
					ES1 0.30	106.61	0.50		MADE GROUND: Firm, dark brown, slightly sandy, slightly gravelly CLAY with rootlets. Gravel is subangular to subrounded, fine to coarse including sandstone, occasional brick and ash.				
					B3 0.50		(0.70)		Firm, light yellow brown, slightly sandy, slightly gravelly CLAY with low cobble content. Gravel is subangular to rounded, fine to coarse including sandstone.			1	
					D4 0.70	105.91	1.20		Yellow, brown, sandy CLAY (driller's description).				
							(0.90)						
						105.01	2.10		Yellow SANDSTONE (driller's description).			2	
												3	
												4	
												5	
												6	
												7	
						100.31	6.80		Grey MUDSTONE (driller's description).				
												8	
												9	
												10	
						97.11	10.00						
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:			
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m and 18.50m to 19.20m.				
					19.20	92							
Flush Information										Water Strikes			
Installation										Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks			
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)					
11.00	10.00	Water	80%						Fracture Index reported as number per metre. TCR, SCR and RQD reported in %				
12.50	11.00	Water	90%										
14.00	12.50	Water	90%						RC SPT Issue Number: 1 Issue Date: 08-12-16				

		Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: BH104						
		Contract Number: 42009	Date Started: 11/01/2017	Logged By:	Checked By: MHW	Status: DRAFT								
Rotary Drilling Log		Easting: 414100.2		Northing: 416906.9		Ground Level: 107.11		Plant Used: Comacchio 205		Print Date: 25/01/2017		Scale: 1:50		
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
10.00 - 11.00	80	42	11	AZCL		96.51	10.60		Weak, dark grey MUDSTONE. Discontinuities are subhorizontal (0-15 degrees), planar, smooth, tight to partly open. <i>Between 10.00m and 10.18m: assumed zone of core loss.</i> <i>Between 10.42m and 10.51: smooth planar, subhorizontal.</i> <i>Non intact recovered as angular, fine to coarse, tabular gravel.</i> <i>Between 10.51m and 10.93m: subhorizontal, smooth planar, rough undulating.</i>			11		
				NI										
				28										
				15										
				NI										
11.00 - 12.50	62	33	0	AZCL		96.31	10.80		Moderately strong, dark yellow brown, fine and medium grained SANDSTONE. Discontinuities are subhorizontal (5-20 degrees) very closely spaced rough undulating, partly open. Weak, dark grey MUDSTONE. Discontinuities are subhorizontal (0-5 degrees) very closely spaced, smooth planar, tight to partly open. <i>Between 10.93m and 11.00mm: Highly fractured recovered as angular, fine to coarse gravel.</i> <i>Between 11.00m and 11.50m: assumed zone of core loss.</i> <i>Between 11.50m and 12.09m: highly fractured recovered as angular, fine to coarse gravel.</i>			12		
				NI										
				15										
12.50 - 14.00	91	60	0	AZCL		(7.70)			<i>Between 12.50m and 12.59m: assumed zone of core loss.</i> <i>Between 12.59m and 12.87m: highly fractured recovered as angular, fine to coarse gravel.</i> <i>Between 13.18m and 13.28m: non intact recovered as angular, fine and medium gravel.</i> <i>Between 13.77m and 13.83m: non intact recovered as angular, fine to coarse gravel.</i> <i>Between 14.00m and 14.20m: assumed zone of core loss.</i> <i>Between 14.20m and 14.68m: highly fractured, recovered as angular, fine to coarse gravel.</i>			13		
				NI										
				18										
				NI										
				20										
14.00 - 15.50	86	48	9	AZCL		(7.70)			<i>Between 14.00m and 14.20m: assumed zone of core loss.</i> <i>Between 14.20m and 14.68m: highly fractured, recovered as angular, fine to coarse gravel.</i>			14		
				NI										
				20										
				NI										
				20										
15.50 - 17.00	96	93	43	15		(7.70)			<i>Between 15.50m and 17.00m: discontinuities are subhorizontal and subvertical.</i>			15		
				20										
				NI										
17.00 - 18.50	53	30	0	12		(7.70)			<i>Between 17.44m and 17.64m: highly fractured, recovered as angular, fine to coarse gravel.</i> <i>Between 17.90m and 18.50m: assumed zone of core loss. Driller notes void/coal seam.</i>			16		
				AZCL										
						88.61	18.50		Void/coal seam (driller's description).			17		
						87.91	19.20		End of Borehole at 19.20m			18		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole from 1.20m to 10.00m and 18.50m to 19.20m.					
11-01-2017	16:30	14.00	11.00	3.90	19.20	92								
12-01-2017	08:00	14.00	11.00	9.20										
12-01-2017	15:00	19.20	11.00	18.50										
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
11.00	10.00	Water	80%											
12.50	11.00	Water	90%											
14.00	12.50	Water	90%											
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

Core Photographs BH105

Run 1+2: 10.00m-12.50m



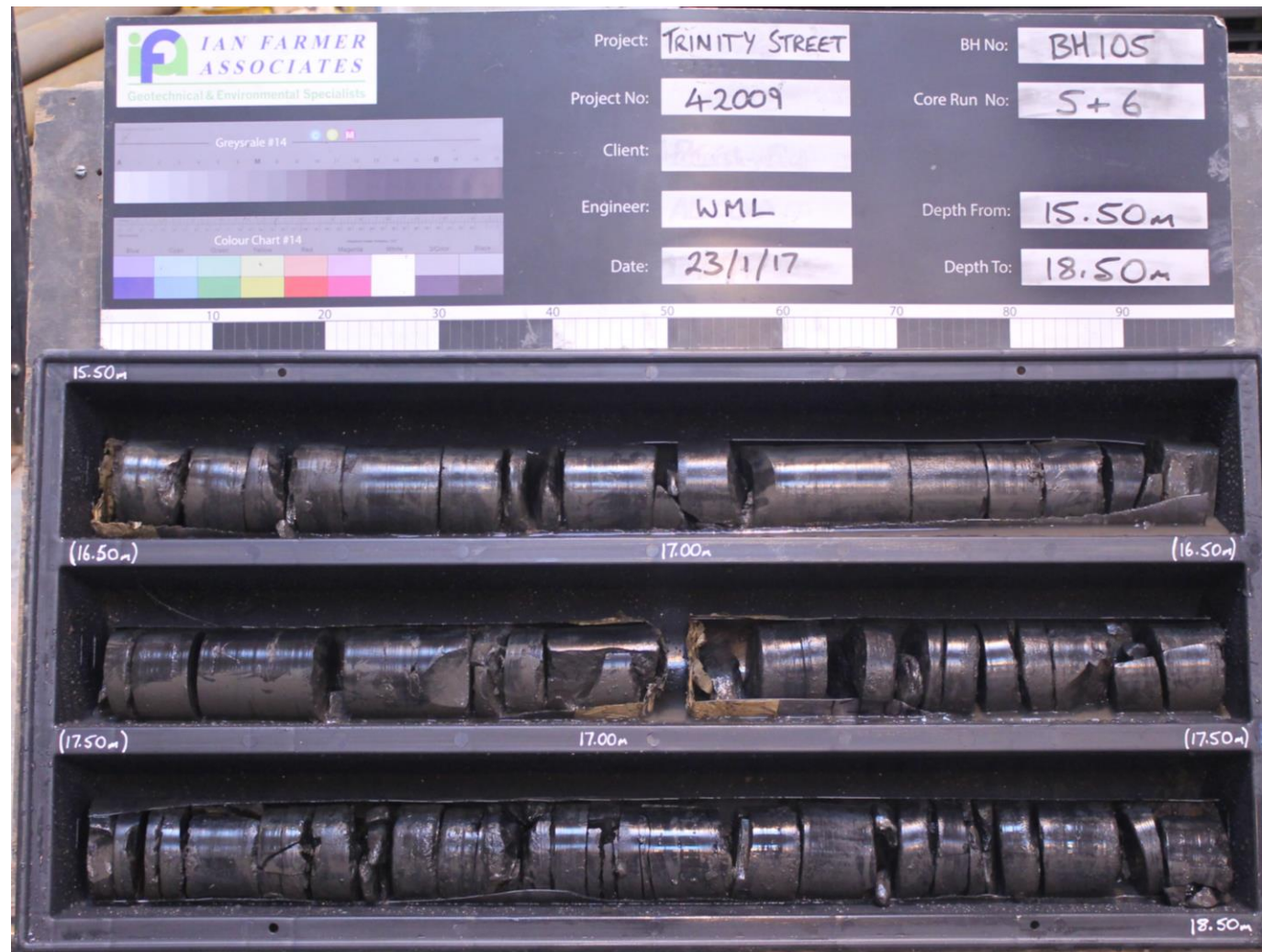
Core Photographs BH105

Run 3+4: 12.50m-15.50m



Core Photographs BH105

Run 5+6, 15.50m-18.50m



Core Photographs BH105

Run 7: 18.50m-20.00m



Core Photographs BH106

Run 1+2: 10.00m-12.50m



Core Photographs BH106

Run 3+4: 12.50m-15.50m



Core Photographs BH106

Run 5+6: 15.50m-18.50m



Core Photographs BH106

Run 7: 18.50m-20.00m



[illegible]

	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH107					
	Contract Number: 42009		Date Started: 18/01/2017		Logged By: JM		Checked By:		Status: DRAFT					
	Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017					
Rotary Drilling Log										Scale: 1:50				
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
							10.80		Dark grey, weathered MUDSTONE (driller's description).					
							(3.40)		Dark grey MUDSTONE (driller's description).			11		
							14.20		Grey MUDSTONE (driller's description).			12		
							(1.90)		Dark grey MUDSTONE (driller's description).			13		
							16.10		Dark grey MUDSTONE (driller's description).			14		
							(2.80)		Dark grey MUDSTONE (driller's description).			15		
							18.90		COAL seam (driller's description).			16		
							(0.80)		Light grey MUDSTONE (driller's description).			17		
							19.70					18		
												19		
												20		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 21.00m.					
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									6.00	6.00		20	5.80	Slow
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

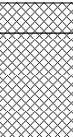
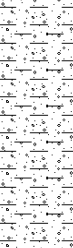
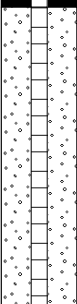
	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH107					
	Contract Number: 42009		Date Started: 18/01/2017		Logged By: JM		Checked By:		Status: DRAFT					
	Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017					
Rotary Drilling Log										Scale: 1:50				
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
							(1.30)		Light grey MUDSTONE (driller's description).					
							21.00		End of Borehole at 21.00m			21		
												22		
												23		
												24		
												25		
												26		
												27		
												28		
												29		
												30		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 21.00m.				
18-01-2017	15:00	21.00	10.50	5.10										
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									6.00	6.00		20	5.80	Slow
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

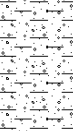
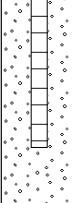
	Contract Name: Trinity Street, Huddersfield		Client: WML Consulting			Borehole ID: BH108					
	Contract Number: 42009	Date Started: 19/01/2017	Logged By: JM	Checked By:	Status: DRAFT	Sheet 1 of 3					
	Easting:	Northing:	Ground Level:	Plant Used: Comacchio 205	Print Date: 23/01/2017	Scale: 1:50					
Rotary Drilling Log		Weather:		Termination:							
Samples & In Situ Testing						Strata Details		Groundwater			
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
					B1 0.10		0.10		MADE GROUND: Tarmacadam.		
					D3 0.50 ES2 0.50		(0.50)		MADE GROUND: Yellow brown, sandy, angular to subangular, fine to coarse GRAVEL of sandstone		
							0.60		Firm, grey brown, slightly sandy, slightly gravelly, silty CLAY. Gravel is subangular to subrounded, fine and medium including sandstone.	1	
					D5 1.00 ES4 1.00		(0.60)				
							1.20		Brown, sandy CLAY (driller's description).		
							(0.50)				
							1.70		Dark brown, sandy CLAY (driller's description).	2	
							(2.20)				
										3	
							3.90				
									Dark grey, weathered MUDSTONE (driller's description).	4	
							(5.70)				
										5	
										6	
										7	
										8	
										9	
										10	
							9.60		Dark grey MUDSTONE (driller's description).		
											
											
											
											
											
											
											
											
											
											
											

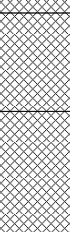
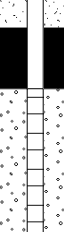
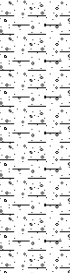
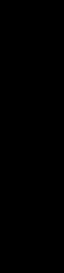
	Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH108					
	Contract Number: 42009		Date Started: 19/01/2017		Logged By: JM		Checked By:		Status: DRAFT					
	Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017					
Rotary Drilling Log										Scale: 1:50				
Weather:				Termination:										
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
									Dark grey MUDSTONE (driller's description).					
							(3.70)					11		
												12		
												13		
							13.30		Grey MUDSTONE (driller's description).					
							(1.30)					14		
							14.60		Dark grey MUDSTONE (driller's description).					
							(2.00)					15		
												16		
							16.60		Grey MUDSTONE (driller's description).					
							(0.50)					17		
							17.10		Dark grey MUDSTONE (driller's description).					
							(1.20)					18		
							18.30		Void/coal seam (driller's description).					
							(0.60)					19		
							18.90		Light grey MUDSTONE (driller's description).					
							(2.10)					20		
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 21.00m.					
Flush Information						Installation				Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									3.90	0.00		20	3.40	Medium
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %														
RC SPT Issue Number: 1 Issue Date: 08-12-16														

IAN FARMER ASSOCIATES						Contract Name: Trinity Street, Huddersfield				Client: WML Consulting				Borehole ID: BH108							
						Contract Number: 42009		Date Started: 19/01/2017		Logged By: JM		Checked By:		Status: DRAFT		Sheet 3 of 3					
Rotary Drilling Log						Easting:		Northing:		Ground Level:		Plant Used: Comacchio 205		Print Date: 23/01/2017		Scale: 1:50					
Weather:										Termination:											
Samples & In Situ Testing										Strata Details										Groundwater	
Depth	TCR	SCR	RQD	FI	Samples / Tests	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation					
							21.00		Light grey MUDSTONE (driller's description).												
									End of Borehole at 21.00m						21						
															22						
															23						
															24						
															25						
															26						
															27						
															28						
															29						
															30						
Start & End of Shift Observations										Borehole Diameter		Casing Diameter		Remarks:							
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Service inspection pit hand excavated from GL to 1.20m. Rotary open hole drilling from 1.20m to 21.00m.											
19-01-2017	15:00	21.00	10.50	6.20																	
Flush Information										Installation		Water Strikes									
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks						
										3.90	0.00		20	3.40	Medium						
Fracture Index reported as number per metre. TCR, SCR and RQD reported in %																					
RC SPT Issue Number: 1 Issue Date: 08-12-16																					

[illegible]

	Contract Name: Trinity Street, Huddersfield		Client: WML Consulting			Borehole ID: WS102		
	Contract Number: 42009	Date Started: 06/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT	Sheet 1 of 1		
Dynamic Sample Borehole Log	Easting:		Northing:	Ground Level:	Plant Used:	Print Date: 12/01/2017	Scale: 1:50	
Weather:		Termination: Terminated on possible sandstone rockhead or cobble.			SPT Hammer: N/R, Energy Ratio: N/R			
Samples & In Situ Testing				Strata Details			Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.20 - 1.00	B1	SPT(S) N=3 (1,1/0,1,1,1)		0.20		MADE GROUND: Tarmacadam.	1	
0.50 0.50	D3 ES2			(1.10)		MADE GROUND: Soft, light brown, sandy, gravelly CLAY with medium cobble content of sandstone and brick. Gravel is angular to subangular, fine to coarse including sandstone, brick, ash, clinker and wood. <i>Below 0.70m: dark brown.</i>		
1.00 1.00	D5 ES4			1.30		Soft, light brown, sandy, gravelly CLAY. Gravel is angular to subrounded, fine to coarse including sandstone.		
1.20 - 1.65 1.20	D6			(1.70)		End of Borehole at 3.00m		
2.00 2.00	D8 ES7							
2.00 - 2.45 2.00	D9	SPT(S) N=33 (2,6/6,6,10,11) SPT(S) 50 (8,14/50 for 165mm)	3.00			2		
2.60 - 3.00 2.60	D10							
3.00	D11							
							3	
							4	
							5	
							6	
							7	
							8	
							9	
							10	
Borehole Diameter		Installation		Remarks:				
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type	Service inspection pit hand excavated from GL to 1.20m.		
		0.00 1.00	1.00 3.00		PLAIN SLOTTED			
Water Strikes								
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks			
IFA DS Template Issue Number: 3 Issue Date: 20-12-16								

	Contract Name: Trinity Street, Huddersfield			Client: WML Consulting			Borehole ID: WS103			
	Contract Number: 42009	Date Started: 06/01/2017	Logged By: JM	Checked By: NHW	Status: DRAFT		Sheet 1 of 1			
Dynamic Sample Borehole Log	Easting:		Northing:		Ground Level:		Plant Used:	Print Date: 12/01/2017	Scale: 1:50	
Weather:			Termination: Terminated due to refusal.				SPT Hammer: N/R, Energy Ratio: N/R			
Samples & In Situ Testing				Strata Details					Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
0.10 - 0.75	B1	SPT(S) N=24 (2,3/6,6,6,6)		0.10		MADE GROUND: Tarmacadam.			1	
0.50	D3			MADE GROUND: Soft, dark brown, sandy, gravelly CLAY.						
0.50	ES2			Gravel is angular to subrounded, fine to coarse including brick, sandstone, occasional ash and concrete.						
0.75 - 1.20	B4									
1.00	D6			Firm, light brown, slightly sandy, slightly gravelly CLAY.						
1.00	ES5	SPT(S) N=50 (7,7/50 for 265mm)		(1.65)		Gravel is subangular to subrounded, fine to coarse including sandstone.			2	
1.20 - 1.65	D7									
1.20										
2.00	D9	SPT(S) N=50 (7,7/50 for 265mm)		2.40		End of Borehole at 2.40m			3	
2.00	ES8									
2.00 - 2.40	D10									
2.00										
									4	
									5	
									6	
									7	
									8	
									9	
									10	
Borehole Diameter		Installation		Remarks:						
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type	Service inspection pit hand excavated from GL to 1.20m.				
		0.00	1.00		PLAIN					
		1.00	2.00		SLOTTED					
Water Strikes										
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks					
IFA DS Template Issue Number: 3 Issue Date: 20-12-16										

		Contract Name: Trinity Street, Huddersfield		Client: WML Consulting		Borehole ID: WS104							
		Contract Number: 42009	Date Started: 06/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT	Sheet 1 of 1						
Dynamic Sample Borehole Log		Easting:		Northing:		Ground Level:		Plant Used:		Print Date: 12/01/2017		Scale: 1:50	
Weather:				Termination: Terminated due to refusal.				SPT Hammer: N/R, Energy Ratio: N/R					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/Installation		
0.10 - 0.75	B1	SPT(S) N=20 (2,3/5,5,5,5)		0.10		MADE GROUND: Dark grey, sandy, angular to subangular, fine to coarse GRAVEL including tarmacadam, limestone and occasional concrete.							
0.50	D3			(0.65)		MADE GROUND: Dark grey, gravelly, slightly clayey, fine to coarse SAND. Gravel is angular to subangular, fine to coarse including tarmacadam, limestone, occasional concrete and sandstone.							
0.50	ES2			0.75		Firm, brown, gravelly, slightly sandy CLAY. Gravel is subangular to subrounded, fine to coarse including sandstone, brick, occasional ash and concrete.							
1.00	D5			(0.85)		Below 1.20m: very gravelly.							
1.00	ES4			1.60		Firm, light brown, gravelly, slightly sandy CLAY. Gravel is subangular to subrounded, fine to coarse including sandstone.							
1.20 - 1.65	D6	SPT(S) N=26 (2,3/6,6,7,7)		(1.85)		End of Borehole at 3.45m							
1.20	D6											3.45	
2.00	D8												
2.00	ES7												
2.00	D9												
2.40 - 2.45	D9	SPT(S) 50 (8,12/50 for 275mm)				End of Borehole at 3.45m							
2.80	D10												
3.00 - 3.45	D11												
3.00	D11												
Borehole Diameter		Installation		Remarks:									
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type	Service inspection pit hand excavated from GL to 1.20m.							
		0.00	0.60		PLAIN								
		0.60	1.60		SLOTTED								
Water Strikes													
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks								
IFA DS Template Issue Number: 3 Issue Date: 20-12-16													

	Contract Name: Trinity Street, Huddersfield		Client: WML Consulting			Borehole ID: WS106	
	Contract Number: 42009	Date Started: 06/01/2017	Logged By: JM	Checked By: MHW	Status: DRAFT	Sheet 1 of 1	
Dynamic Sample Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date: 12/01/2017	Scale: 1:50	
Weather:		Termination: Terminated due to refusal.			SPT Hammer: N/R, Energy Ratio: N/R		
Samples & In Situ Testing			Strata Details				Groundwater
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike
0.30	D2	SPT(S) N=21 (2,4/5,5,5,6)		(0.40)		MADE GROUND: Dark grey, silty, slightly gravelly, fine and medium SAND with rootlets. Gravel is angular to subrounded, fine to coarse including sandstone, occasional brick and ash. Stiff, light brown, mottled grey, slightly sandy, slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse including sandstone.	1
0.30	ES1			0.40			
0.40 - 1.20	B3						
0.70	D5						
0.70	ES4						
1.20 - 1.65	D6	SPT(S) N=27 (4,6/6,6,7,8)		(2.20)		Dark grey MUDSTONE recovered as very stiff, slightly sandy, slightly gravelly clay. Gravel is subangular to rounded, fine to coarse of mudstone.	2
1.20							
1.70	D7						
1.70	D8						
2.00 - 2.45	D9	SPT(S) N=49 (6,7/49 for 285mm)		2.60		End of Borehole at 3.45m	3
2.00							
2.80	D10						
3.00 - 3.45	D11			(0.85)			4
3.00				3.45			
							5
							6
							7
							8
							9
							10
Borehole Diameter		Installation		Remarks:			
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type	Service inspection pit hand excavated from GL to 1.20m.	
		0.00	1.00		PLAIN		
		1.00	3.00		SLOTTED		
Water Strikes							
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks		
IFA DS Template Issue Number: 3 Issue Date: 20-12-16							

APPENDIX 07

Chemical Analyses

Scientific Analysis Laboratories Ltd

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 626869-1

Date of Report: 23-Jan-2017

Customer: Ian Farmer Associates
14-15 Rufford Court
Hardwick Grange
Warrington
Cheshire
WA1 4RF

Customer Contact: Ms Michelle Hirst-Watson

Customer Job Reference: 42009

Customer Site Reference: Trinity Lane, Huddersfield

Date Job Received at SAL: 12-Jan-2017

Date Analysis Started: 17-Jan-2017

Date Analysis Completed: 23-Jan-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with SAL SOPs

All results have been reviewed in accordance with Section 25 of the SAL Quality Manual



Report checked
and authorised by :
Stefan Kondziela
Project Manager

Issued by :
Stefan Kondziela
Project Manager



SAL Reference: 626869										
Project Site: Trinity Lane, Huddersfield										
Customer Reference: 42009										
Soil					Analysed as Soil					
MCERTS Preparation										
SAL Reference					626869 001	626869 002	626869 003	626869 004	626869 005	
Customer Sample Reference					WS101	WS101	WS101	WS102	WS103	
Bottom Depth					0.3	0.8	1.8	0.5	0.5	
Date Sampled					06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	
Type					Sandy Soil	Sandy Soil	Clay	Clay	Clay	
Determinand		Method	Test Sample	LOD	Units					
Moisture @105C		T162	AR	0.1	%	13	15	13	22	21
Retained on 10mm sieve		T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

SAL Reference: 626869 Project Site: Trinity Lane, Huddersfield Customer Reference: 42009 Soil Analysed as Soil MCERTS Preparation						
SAL Reference		626869 006		626869 007		
Customer Sample Reference		WS104		WS106		
Bottom Depth		0.5		0.3		
Date Sampled		06-JAN-2017		06-JAN-2017		
Type		Sandy Soil		Topsoil		
Determinand	Method	Test Sample	LOD	Units		
Moisture @105C	T162	AR	0.1	%	13	15
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1

SAL Reference: 626869									
Project Site: Trinity Lane, Huddersfield									
Customer Reference: 42009									
Soil					Analysed as Soil				
Miscellaneous									
SAL Reference					626869 001	626869 002	626869 003	626869 004	626869 005
Customer Sample Reference					WS101	WS101	WS101	WS102	WS103
Bottom Depth					0.3	0.8	1.8	0.5	0.5
Date Sampled					06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017
Type					Sandy Soil	Sandy Soil	Clay	Clay	Clay
Determinand	Method	Test Sample	LOD	Units					
Boron (water-soluble)	T6	AR	1	mg/kg	<1	<1	<1	<1	<1
Chromium VI	T6	AR	1	mg/kg	<1	<1	<1	<1	<1
Vanadium	T6	A40	1	mg/kg	14	28	18	19	24
Cyanide(Total)	T546	AR	1	mg/kg	<1	<1	<1	<1	<1
Phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	<0.01	0.01	0.01	<0.01	<0.01
Sulphur (total)	T21	AR	0.05	%	0.06	0.06	<0.05	<0.05	<0.05
Total Organic Carbon	T21	M40	0.1	%	0.4	4.6	0.3	1.6	2.2
Asbestos ID	T27	AR			N.D.	N.D.	N.D.	N.D.	N.D.
pH	T7	AR			11.1	8.4	7.5	8.0	7.9

SAL Reference: 626869 Project Site: Trinity Lane, Huddersfield Customer Reference: 42009						
Soil Miscellaneous						
Analysed as Soil						
SAL Reference				626869 006	626869 007	
Customer Sample Reference				WS104	WS106	
Bottom Depth				0.5	0.3	
Date Sampled				06-JAN-2017	06-JAN-2017	
Type				Sandy Soil	Topsoil	
Determinand	Method	Test Sample	LOD	Units		
Boron (water-soluble)	T6	AR	1	mg/kg	<1	<1
Chromium VI	T6	AR	1	mg/kg	<1	<1
Vanadium	T6	A40	1	mg/kg	45	38
Cyanide(Total)	T546	AR	1	mg/kg	<1	<1
Phenol	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	<0.1
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	0.05	0.06
Sulphur (total)	T21	AR	0.05	%	0.11	0.05
Total Organic Carbon	T21	M40	0.1	%	6.0	7.3
Asbestos ID	T27	AR			N.D.	N.D.
pH	T7	AR			7.8	7.2

SAL Reference: 626869 Project Site: Trinity Lane, Huddersfield Customer Reference: 42009										
Soil Analysed as Soil Heavy Metals(9)										
SAL Reference					626869 001	626869 002	626869 003	626869 004	626869 005	
Customer Sample Reference					WS101	WS101	WS101	WS102	WS103	
Bottom Depth					0.3	0.8	1.8	0.5	0.5	
Date Sampled					06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	
Type					Sandy Soil	Sandy Soil	Clay	Clay	Clay	
Determinand	Method	Test Sample	LOD	Units						
Arsenic	T6	M40	2	mg/kg	2	26	7	9	8	
Cadmium	T6	M40	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	T6	M40	1	mg/kg	15	20	16	16	17	
Copper	T6	M40	1	mg/kg	9	120	25	29	25	
Lead	T6	M40	1	mg/kg	16	340	38	74	37	
Mercury	T6	M40	1	mg/kg	<1	4	<1	<1	<1	
Nickel	T6	M40	1	mg/kg	10	20	10	12	12	
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3	
Zinc	T6	M40	1	mg/kg	43	160	37	61	46	

SCIENTIFIC ANALYSIS
LABORATORIES

SAL Reference: 626869 Project Site: Trinity Lane, Huddersfield Customer Reference: 42009						
Soil		Analysed as Soil				
PAH US EPA 16 (B and K split)						
SAL Reference					626869 006	626869 007
Customer Sample Reference					WS104	WS106
Bottom Depth					0.5	0.3
Date Sampled					06-JAN-2017	06-JAN-2017
Type					Sandy Soil	Topsoil
Determinand	Method	Test Sample	LOD	Units		
Naphthalene	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	0.2
Acenaphthylene	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	0.3
Fluorene	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	0.2
Phenanthrene	T207	M105	0.1	mg/kg	2.5	2.1
Anthracene	T207	M105	0.1	mg/kg	1.0	0.5
Fluoranthene	T207	M105	0.1	mg/kg	5.5	2.4
Pyrene	T207	M105	0.1	mg/kg	6.2	2.2
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	2.0	1.2
Chrysene	T207	M105	0.1	mg/kg	2.8	1.4
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	2.3	1.2
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	1.0	0.6
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	2.1	1.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	1.4	0.6
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	⁽⁹⁾ <1.0	0.2
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	1.7	0.7
PAH(total)	T207	M105	0.1	mg/kg	29	15

SAL Reference: 626869 Project Site: Trinity Lane, Huddersfield Customer Reference: 42009						
Soil		Analysed as Soil				
TPH UKCWG						
SAL Reference					626869 002	626869 003
Customer Sample Reference					WS101	WS101
Bottom Depth					0.8	1.8
Date Sampled					06-JAN-2017	06-JAN-2017
Type					Sandy Soil	Clay
Determinand	Method	Test Sample	LOD	Units		
Benzene	T54	AR	0.001	mg/kg	(13) <0.001	(13) <0.001
Toluene	T54	AR	0.001	mg/kg	<0.001	<0.001
EthylBenzene	T54	AR	0.001	mg/kg	<0.001	<0.001
M/P Xylene	T54	AR	0.001	mg/kg	<0.001	<0.001
O Xylene	T54	AR	0.001	mg/kg	<0.001	<0.001
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	<0.001	<0.001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	(9,13) <10	(13) <1
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	(13) 14	(13) <1
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	(13,9) <10	(13) <1
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	(13) 37	(13) 2
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	(13,9) <10	(13) <1
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	(13) 220	(13) <1
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	(13) 420	(13) <1
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	(13) 2000	(13) 2
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	(13) 3100	(13) 5
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	(13,9) <10	(13) <1

Index to symbols used in 626869-1

Value	Description
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
A40	Assisted dried < 40C
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
AR	As Received
N.D.	Not Detected
9	LOD raised due to dilution of sample
13	Results have been blank corrected.
S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos.

Method Index

Value	Description
T162	Grav (1 Dec) (105 C)
T7	Probe
T8	GC/FID
T21	OX/IR
T242	2:1 Extraction/ICP/OES (TRL 447 T1)
T546	Colorimetry (CF)
T27	PLM
T2	Grav
T6	ICP/OES
T54	GC/MS (Headspace)
T207	GC/MS (MCERTS)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Boron (water-soluble)	T6	AR	1	mg/kg	N	001-007
Chromium VI	T6	AR	1	mg/kg	N	001-007
Vanadium	T6	A40	1	mg/kg	U	001-007
Cyanide(Total)	T546	AR	1	mg/kg	M	001-007
Phenol	T207	M105	0.1	mg/kg	M	001-007
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	N	001-007
Sulphur (total)	T21	AR	0.05	%	N	001-007
Total Organic Carbon	T21	M40	0.1	%	N	001-007
Asbestos ID	T27	AR			SU	001-007
pH	T7	AR			M	001-007
Arsenic	T6	M40	2	mg/kg	M	001-007
Cadmium	T6	M40	1	mg/kg	M	001-007
Chromium	T6	M40	1	mg/kg	M	001-007
Copper	T6	M40	1	mg/kg	M	001-007
Lead	T6	M40	1	mg/kg	M	001-007
Mercury	T6	M40	1	mg/kg	M	001-007
Nickel	T6	M40	1	mg/kg	M	001-007
Selenium	T6	M40	3	mg/kg	M	001-007
Zinc	T6	M40	1	mg/kg	M	001-007
Moisture @105C	T162	AR	0.1	%	N	001-007
Retained on 10mm sieve	T2	M40	0.1	%	N	001-007
Naphthalene	T207	M105	0.1	mg/kg	M	001-007
Acenaphthylene	T207	M105	0.1	mg/kg	U	001-007
Acenaphthene	T207	M105	0.1	mg/kg	M	001-007
Fluorene	T207	M105	0.1	mg/kg	M	001-007
Phenanthrene	T207	M105	0.1	mg/kg	M	001-007
Anthracene	T207	M105	0.1	mg/kg	U	001-007

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Fluoranthene	T207	M105	0.1	mg/kg	M	001-007
Pyrene	T207	M105	0.1	mg/kg	M	001-007
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	001-007
Chrysene	T207	M105	0.1	mg/kg	M	001-007
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	M	001-007
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	M	001-007
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	001-007
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	001-007
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	001-007
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	001-007
PAH(total)	T207	M105	0.1	mg/kg	U	001-007
Benzene	T54	AR	0.001	mg/kg	U	002-003
Toluene	T54	AR	0.001	mg/kg	U	002-003
EthylBenzene	T54	AR	0.001	mg/kg	U	002-003
M/P Xylene	T54	AR	0.001	mg/kg	U	002-003
O Xylene	T54	AR	0.001	mg/kg	U	002-003
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	U	002-003
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	N	002-003
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	N	002-003
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	N	002-003
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	N	002-003
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	N	002-003
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	002-003
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	N	002-003
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	N	002-003
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	N	002-003
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	N	002-003
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	N	002-003



APPENDIX 08

Ground Gas Monitoring

>>> = Flow above detection limit of 30 l/hr, <<< = Negative flow greater than -10 l/hr. >Max = In excess of lower explosive limit.

Remarks: WS102 - unable to monitor as borehole covered by a car.

Contract Number: 42009						Gas Monitor: GA5000						
Contract Name: Trinity Street						Readings Taken By: JM						
Date: 20th January 2017						Checked By: MHW						
Background Readings:		Weather Conditions:				Cloudy Dry		O ₂ %	CO ₂ %	CH ₄ %	CO	H ₂ S
		Ground Conditions (dry / wet etc):				Damp		v/v	v/v	v/v	ppm	ppm
		Atmospheric Pressure (Start):				1026mb		20.9	0.0	0.0	0.0	0.0
		Atmospheric Pressure (Finish):				1026mb						
		Time (Start): 10:00		Time (Finish):		11:00						
Hole No:	VOC ppm	O ₂ % v/v	CO ₂ % v/v	CH ₄ % v/v		CO ppm	H ₂ S ppm	Rel Pressure (mb)	Gas flow Rate (l/hr)	Depth to base of well	SWL	LNAPI or DNAPI
	Steady	Steady	Steady	Peak	Steady	Steady	Steady	Steady	Range	mBGL	mBGL	mBGL
WS101	NR	20.2	0.5	0.0	0.0	0	0	0.23	0.0	1.43	DRY	NA
WS103	NR	19.6	0.4	0.0	0.0	0	0	0.23	0.0	2.14	2.10	ND
WS104	NR	19.5	1.5	0.0	0.0	0	0	0.23	0.0	1.74	DRY	NA
WS106	NR	20.2	0.8	0.0	0.0	0	0	0.23	0.0	3.15	DRY	NA
>>>> = Flow above detection limit of 30 l/hr, <<< = Negative flow greater than -10 l/hr. >Max = In excess of lower explosive limit.												
Remarks: WS102 - unable to monitor as borehole covered by a car.												

APPENDIX 09

Site Specific Assessment Criteria

Site Specific Assessment Criteria for Residential (without homegrown produce) based on 1% SOM

Contaminant	Criteria for 6% SOM (mg/kg)
Metals	
Arsenic	40
Boron	11000
Cadmium	85
Chromium III	910
Chromium VI	6
Copper	7100
Lead*	310
Mercury	1.2
Nickel	180
Selenium	430
Vanadium	1200
Zinc	40000
Non – Metals	
Phenol	440 ^{dir} (460)
Polyaromatic Hydrocarbons (PAH) 1% SOM	
Benz[a]anthracene	11
Benzo[a]pyrene	3.2
Benzo[b]fluoranthene	3.9
Benzo[ghi]perylene	360
Benzo[k]fluoranthene	110
Chrysene	30
Dibenz[ah]anthracene	0.31
Fluoranthene	1500
Indeno[123-cd]pyrene	45
Naphthalene	2.3
Pyrene	3700

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* Criteria for a limited number of contaminants have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

Contaminant	Criteria (mg/kg)
Volatile Organic Compounds – (VOCs) 1% SOM	
Benzene	0.38
Ethylbenzene	83
Toluene	880 ^{vap} (869)
Xylene	79
1,2-Dichloroethane	0.0092
1,1,1-Trichloroethane	9.0
Tetrachloroethane	3.9
Tetrachloroethene (PCE)	0.18
Tetrachloromethane	0.026
Trichloroethene (TCE)	0.017
Trichloromethane	1.2
Vinyl Chloride	0.00077
Semi-Volatile Organic Compounds (SVOCs) 1% SOM	
1,2-Dichlorobenzene	24
1,4-Dichlorobenzene	61
1,2,4-Trichlorobenzene	2.6
Hexachlorobenzene	4.1(0.2) ^{vap}
Total Petroleum Hydrocarbons – TPH	
Aliphatic C5-6	42
Aliphatic C6-8	100
Aliphatic C8-10	27
Aliphatic C10-12	130(48) ^{vap}
Aliphatic C12-16	1100(24) ^{sol}
Aliphatic C16-35	65,000(8.48) ^{sol}
Aliphatic C35 - 44	65,000(8.84) ^{sol}
Aromatic C5 – 7 (benzene)	370
Aromatic C7 – 8 (toluene)	860
Aromatic C8-10	47
Aromatic C10-12	250
Aromatic C12-16	1800
Aromatic C16-21	1900
Aromatic C21-35	1900
Aromatic C35 - 44	1900

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* Criteria for a limited number of contaminants have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

Screening Levels for “Commercial” end use

Contaminant	Screening Levels for Commercial End Use 6% SOM (mg/kg)
Metals	
Arsenic	640
Boron	240000
Cadmium	190
Chromium VI	33
Copper	68000
Lead*	2330
Mercury	58
Nickel	980
Selenium	12000
Vanadium	9000
Zinc	730000
Non – Metals	
Polyaromatic Hydrocarbons (PAHs) 1% SOM (mg/kg)	
Benz[a]anthracene	170
Benzo[a]pyrene	35
Benzo[b]fluoranthene	44
Benzo[ghi]perylene	3900
Benzo[k]fluoranthene	1200
Chrysene	350
Dibenz[ah]anthracene	3.5
Fluoranthene	23000
Indeno[123-cd]pyrene	500
Naphthalene	190
Phenol	440
Pyrene	54000

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

Contaminant	Screening Levels for Commercial End Use (mg/kg)
Volatile Organic Compounds – VOCs (1% SOM)	
Benzene	27
Ethylbenzene	16
Toluene	56000
Xylene	5900
Total Petroleum Hydrocarbons – TPH (1% SOM)	
Aliphatic C5-6	32000
Aliphatic C6-8	7800
Aliphatic C8-10	2000
Aliphatic C10-12	9700
Aliphatic C12-16	59000
Aliphatic C16-35	1600000
Aliphatic C35 - 44	1600000
Aromatic C5 - 7	26000
Aromatic C7 - 8	56000
Aromatic C8-10	3500
Aromatic C10-12	16000
Aromatic C12-16	36000
Aromatic C16-21	28000
Aromatic C21-35	28000
Aromatic C35 - 44	28000

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

APPENDIX 10

Qualitative Risk Assessment Guidance

Qualitative Risk Assessment Guidance

The Preliminary Contamination Risk Assessment methodology within the Phase 1 Desk Study Report is undertaken with reference to the following CIRIA guidance.

- Contaminated Land Risk Assessment - A Guide to Good Practice CIRIA C552:2001.

In practical terms, risk evaluation is undertaken in order to ascertain if potential risks are considered to be acceptable via classification following factors.

- The magnitude of the potential **consequences** (severity) of the risk occurring.
- The magnitude of the **probability** (likelihood) of the risks occurring.

The potential consequences of contamination risks occurring at the Site should be classified in accordance with the following table which is adapted from Table 6.3 in the CIRIA guidance.

Table 1 Classification of Consequence

Classification	Definition
Severe	Short term (acute) risk to human health likely to result in 'significant harm' as defined by the <i>Environment Protection Act 1990</i> , Part IIA. Short term risk of (significant) pollution of sensitive water resource or ecosystem. Catastrophic damage to building/property. Short term risk to a particular ecosystem, or organism forming part of such an ecosystem.
Medium	Chronic damage to human health (significant harm). Pollution of sensitive water resources. A significant change in a particular ecosystem, or an organism forming part of such an ecosystem.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, although not necessarily significant harm, which may results in a financial loss, or expenditure to resolve. Non-permanent, easily preventable effects to human health. Easily repairable damage to buildings, structures and services.

The probability or likelihood of a risk occurring is then classified in accordance with Table 6.4 in the CIRIA Guidance which is also reproduced in Table 2 below.

Table 2 Classification of Probability

Classification / Likelihood	Definition
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely	There is a pollutant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period that such an event would take place and is even less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

These classifications are then compared to indicate the risk to each pollution linkage. For each likelihood scenario, it will be assumed that a pollution linkage exists between the source and any potential receptors. The classification is not applied if no active pollution linkage is perceived to exist.

Upon classification of both the consequences and probability, the two can be compared in Table 6.5 within the guidance, in order to produce a risk category rating. The risk categories range from 'Very High Risk' to 'Very Low Risk' and should be determined for each potential pollutant linkage as oppose to each receptor or hazard as indicated above.

The matrix table is reproduced in Table 3 below.

Table 3 Consequence Vs Probability Matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

The outcome of the Consequence vs Probability matrix should be compared to the risk definitions and likely actions required in Table 4 (Table 6.6 in CIRIA C552).

The outcome will then determine the overall risk category for the site and should form the basis for any proposed investigation work and remedial actions to be determined. The assessment is based on a qualitative approach at the initial Phase 1 Desk Study, and should be updated following the results of any subsequent ground investigation results.

Table 4 Definitions of Classified Risks and Likely Required Actions

Risk Category	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard OR, there is evidence that severe harm to a designated receptor is currently happening. This risk (if realised) is likely to result in a substantial liability. <i><u>Required Actions</u></i> <i>Urgent investigation (if not undertaken already) and remediation are likely to be required.</i>
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. <i><u>Required Actions</u></i> <i>Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.</i>
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, if it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is likely that the harm would be relatively mild. <i>Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.</i>
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.