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FINAL

Prepared for: Prepared by: Henry Cox

Cassidy + Ashton Tier Environmental Ltd

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EXECUTIVE SUMMARY

1.111	True Comment of the C
Introduction	Tier Environmental was commissioned by Cassidy + Ashton on behalf of Chester Wool Company Ltd to undertake a Ground Investigation of 11 Factory Road, Sandycroft, Deeside. The purpose of the investigation was to determine the nature and extent of soil, bedrock and groundwater beneath the site for the purposes of environmental and geotechnical assessment.
Proposed land use	It is proposed that the site will be developed as commercial/industrial warehouse unit. Proposed development plans are yet to be finalised.
Site location and surrounding land uses	The site is located at 11 Factory Road, Sandycroft, Deeside, CH5 2QJ. The site is situated within the wider Deeside Industrial Estate
Site history	Prior to 1938 the site was unoccupied and situated within a wider fielded area. Following 1938 a small number of buildings were constructed on site, with anecdotal information suggesting the possibility of a munitions factory on site although this cannot be independently confirmed. Between 1962/63 3 No. properties were constructed adjacent to Factory Road (Dundas House, Hawarden View and Burley House) by 2010 these had been demolished. From 1992 an above ground storage tank was situated within the central area of site anecdotally suggested to contain diesel.
Potential contaminative features	 Due to the pre-2000 development of existing and pre-existing buildings on site, there is a possibility of ACMs either within a soil matrix or as intact pieces within existing buildings.
	 An above ground storage tank from circa 1992 (understood to contain diesel from anecdotal information) and possibly an underground tank.
	 Due to processes used by Gainland International Ltd, chemicals are stored on site, localised to the southwest corner within the hardstanding area. These chemicals include acids, glycols and alcohols.
	 From 1938 swathes of industrial development have taken place in the areas surrounding site. Notably from 1938 a former Tarmacadam manufacturer. Other uses include vehicle repairs, electricity sub stations and unspecified tanks.
Mining and quarrying	The Coal Authority has stated that the property lies within the potential zone of influence of recorded workings in 1 seam(s) of coal. The most recent underground working in the area was in 1913. These workings lie approximately 90 metres below surface. Any ground movement due to this coal mining activity should have stopped.
	The site is not situated within a Coal Authority Development High Risk Area. The nearest former Colliery is situated 953m SW.
Previous investigations	No previous desk study or site investigation reports pertaining to this site have been made available.
Fieldwork	3 No. Cable Percussive boreholes (CP01 to CP03 to 8.15m bgl
	 5 No. Window Sample boreholes (WS01 to WS05) between 1.20m bgl and 5.45m bgl 2 No. Hand Dug Pits (HDP01 & HDP02) to 1.20m bgl
Laboratory testing	Samples of soil and groundwater were submitted for analysis of a range of metal, other inorganic and organic components including asbestos. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground conditions	The site is underlain by hardstanding of concrete and asphalt in the south and south-western areas of the site to a maximum depth of 0.30m bgl. Made Ground was proven to depths of between 0.70m and 2.00m bgl, described as a brown clayey gravel and gravelly clay with brick, limestone and mudstone. A black gravelly Ash was also recorded in the south and east of the site, with medium to coarse coal fragments. Soils described as 'possible Made Ground' were recorded to between 1.50m and 2.00m bgl comprised of sandy silt. Natural soils comprised generally of granular (sand) Tidal Flat Deposits interbedded with silty/clayey bands and were proven to 8.15m bgl.
Ground stability	Excavations into existing Made Ground and the underlying natural soils should be assumed to be unstable. No man entry into unsupported excavations should be allowed without an appropriate risk assessment. It is recommended that all excavations to greater than 1.20 metres depth, or for shallower excavations where groundwater is encountered above this level are closely supported, especially where man entry is required. Alternatively, where space permits, the excavations might be battered back to an appropriate angle. Standing groundwater levels of between 1.70m and 3.00m were encountered in the boreholes. Should groundwater seepages occur, and water accumulate in shallow excavations it should be able to be removed by pumping from a filtered sump. However, groundwater control by more robust means, such as well pointing, may be required locally.
Foundations and floor slabs	Portions of the site are covered by former or existing facilities on the site, e.g., hardstanding, floor slabs and foundations. This material is unsuitable for foundations and relict foundations and floor slabs should be broken out to avoid the formation of hard spots. Due to potentially low strength shallow soils is recommended that vibro stone columns are used to support the foundations and floor slab across the building footprint. A safe bearing capacity of circa 125kPa to 150kPa could likely be achieved using this method however, this should be confirmed by a specialist ground improvement contractor.



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Sulphate class	It is considered that a Design Sulphate Class of DS-3 and ACEC Class AC-3 is appropriate for buried concrete at the site. Due to the presence of localised hydrocarbon contamination at the site, a concrete specialist should review the TPH results and ground conditions summary within this report to ensure appropriate concrete design against retardation / degradation due to hydrocarbons.
Phosphorus	The site does not fall within a Phosphorus Sensitive SAC Freshwater catchment area and no further action is required.
Contamination – Human Health	Measured localised concentrations of lead and dibenzo(ah)anthracene have been reported in excess of the GAC protective of Human Health for a commercial/industrial land use. These contaminants of concern pose a risk to human health through direct contact, dust inhalation and ingestion. A 300mm clean cover should be implemented to break these pathways.
	Of the 11 No. Made Ground samples submitted for asbestos screening, 2 No. were reported to contain asbestos in the form of asbestos cement sheeting and chrysotile fibre bundles of <0.001% w/w.
Contamination – Controlled Waters	From a conceptual site model perspective, the Tidal Flat Deposits are a Secondary Undifferentiated Aquifer, and the underlying Etruria formation is a Secondary A Aquifer. The anticipated groundwater flow direction has been inferred to be a northeast direction towards the River Dee. The site is not within a source protection zone and there are no nearby potable/Non potable water abstractions. The Tidal Flat Deposits (proven to 8.15m bgl) will offer some dilution and attenuation for any shallow contaminative impacts before they reach the deeper Secondary A Aquifer. The site is within a larger industrial area. On this basis the sensitivity of the controlled waters environment is low to low/moderate.
	Measured groundwater concentrations of total ammonia, cadmium, lead, zinc, fluoranthene, benzo(a)pyrene and select TPHs reported in excess of the WQS protective of the controlled waters environment are not considered to present a risk following multiple lines of evidence.
	An assessment of the relative mobility hydrocarbon fraction EC21-EC35, which recorded the highest exceedance localised within the vicinity of a historic tank, has determined a very low mobility Furthermore, there is no evidence of hydrocarbon contamination down gradient of site with other samples reporting a majority of TPH levels below the laboratory limit of detection. Nevertheless, it is considered possible that localised grossly TPH impacted soils associated with historical tanks may need to be removed to reduce a potential ongoing source mass.
Gas protection	A gas screening value of 0.0054l/hr has been calculated, derived using the maximum peak recorded Carbon Dioxide concentration of 1.7%v/v and the maximum recorded flow rate of 0.3l/hr. Assessment of this screening value alone places the site in a Characteristic Situation 1 – Very Low Risk Scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. Given the presence of gross hydrocarbon contamination in the vicinity of the historic tank, a precautionary vapour
Radon Requirements	protection membrane should be considered. The Site lies within an area where between 3% and 5% of properties are above the Radon Action Level. On this basis
	basic radon protection measures are required likely in the form of a radon barrier/ membrane.
Further works	 Following the determination of the Flood Risk Assessment, the FFL may need to be raised for flood protection; this may require importation of suitable soils.
	 Following finalised development plans, NRW may require attenuation drainage for the proposed development, given the area of site covered by building/hardstanding will increase.
	 Detailed UXO risk assessment, including whether the site was historically part of the Sandycroft Munitions Works during WWI.
Waste Soils Classification	Basic waste characterisation of 12 No. samples has determined that 7 No. samples would be considered non-hazardous, with 6 No. considered hazardous waste driven by elevated lead, zinc and TPH (C6 to C40) petroleum group. The results of WAC testing carried out on 2 No. samples determined that soils at WS03 0.30 would be suitable for disposal to an inert waste landfill, and soils at CP03 at 0.30m should be disposed of at non-hazardous waste landfill due to sulphate and Total Dissolved Solids in excess of the inert landfill threshold.
	Coal tar testing on a single sample (WS01 at 0.10m) has determined that the coal tar concentration is at or exceeds 0.1% and the concentration of BaP is >0.005% of the coal tar concentration, and thus asphalt would be classed as hazardous waste in accordance with WM3. The hazardous EWC code 17 03 01* bituminous mixtures containing coal tar, therefore applies.
Materials re-use	It is anticipated that natural uncontaminated soils will be suitable for disposal to an inert landfill. Subject to volumetric cut and fill requirements the majority of Made Ground materials and the majority of natural
	soil materials and may be considered chemically suitable for potential re-use subject to the implementation of remedial measures summarised below and careful management and placement of materials and in line with an appropriate end-of-waste protocol such as wrap quality protocol for aggregates from inert waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Suitability for re-use would also be subject to confirmation of the geotechnical suitability depending on whether the materials are to be re-used in load bearing areas. This would need to be detailed in a supporting document.



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	Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand.
	In addition, Section 13.3 of this report includes statements with respect to re-use of excavated and stockpiled clean naturally occurring soils within the site and re-use on other sites. These statements are designed to provide a clear intention to reuse any clean, naturally occurring soils derived from future excavations at this site (which may also include temporary future stockpiling these materials).
Outline Remediation Strategy	 As asbestos, as well as localised elevated levels of Lead and Dibenzo(ah)anthracene, have been identified on site, it is recommended that when the development plans have been finalised that any proposed areas of soft landscaping are protected with a 300mm clean cover underlain by a Hi-Viz geotextile membrane. Due to the presence of asbestos containing materials (ACMs) hand picking of ACMs should take place prior to any earthworks on site. It is also anticipated that asbestos maybe present in existing buildings that will also require removal prior to demolition. Localised removal of grossly contaminated soils in the vicinity of the historic above ground diesel storage tank. Natural Resources Wales (NRW) are likely to require removal of potential source of hydrocarbons that have been identified in the shallow soils as well as assuming hydrocarbon/volatile resistant membrane. Implementation and verification of basic radon protection measures, likely in the form of a radon barrier/membrane linked to a damp-proof course (DPC) within the walls of the building.



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1. INTRODUCTION

Tier Environmental was commissioned by Cassidy + Ashton on behalf of the Chester Wool Company Ltd to undertake a Land Contamination Risk Management (LCRM) combined Preliminary Risk Assessment and Ground Investigation for an area of land referred to as 11 Factory Road, Sandycroft, located at 11 Factory Road, Sandycroft, Deeside, CH5 2QJ (the "site").

The title of this report is in accordance with that described in the Land Contamination Risk Management guidance (available at https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm) which has superseded CLR 11:

Stage 1:

- LCRM Tier 1 Preliminary Risk Assessment Report
- LCRM Tier 2 Generic Quantitative Risk Assessment Report

1.1. Proposed Development

Under current proposals the development will comprise of an industrial warehouse development however at the time of report issue, no development plans have been finalised. As such, in accordance with the 'Updated technical background to the CLEA model' (Environment Agency, 2009) and 'Suitable 4 Use Levels' (LQM / CIEH 2015) the proposed generic land use for this development is commercial / industrial.

At the time of writing the final proposed development layout has not been confirmed.

1.2. Previous Reports

No previous pertinent reports pertaining to this site have been made available.

1.3. Objectives

Taking into account the proposed development of the site, the objectives of this appraisal were:

- To determine the historical and current land use.
- To establish the environmental setting of the site.
- To evaluate whether past mining or other extractive industries could have an influence on the site.
- To determine current ground and groundwater conditions.
- To determine the potential risks to human health and the wider environment.
- To provide a preliminary waste soils classification.
- To determine potential risks posed to the site from hazardous ground gases and / or vapours.
- Provide preliminary outline remedial measures to manage any identified risks.
- To provide preliminary geotechnical parameters to inform floor slab and foundation recommendations.



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1.4. Assumptions

The following assumptions are made in this report:

- It is assumed that ground levels will not change significantly from those described in this report or a shown on proposed development drawings. If this is not the case, then amendments to the recommendations made in this report may be required.
- The ground investigation has been designed with due consideration of known or suspected constraints (including underground services and access constraints).
- Any references to observations of suspected asbestos-containing materials are for information only and should be verified by a suitably qualified asbestos specialist and/or confirmed by laboratory analysis.
- The use of the term 'Topsoil' within this report is based on a visual identification only and that these materials have not been classified in accordance with BS3882:2015.
- The use of the terms 'shallow' and 'deep' within this report (from a geotechnical perspective) assume typically between ground level to circa 3.00m below ground level (bgl) for 'shallow' and greater than 3.00m bgl regarded as 'deep';
- The comments and opinions presented in this report are based on the findings of the desk study, ground conditions encountered during intrusive investigation works performed by Tier Environmental and the results of tests carried out within one or more laboratories. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report.
- Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of the findings is conjectural and given for guidance only. Confirmation of intermediate ground conditions should be undertaken if deemed necessary.

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2. SITE DETAILS AND DESCRIPTION

Table 2.1 Current Site Overview.

Site name	11 Factory Road, Sandycroft, Deeside
Site address	11 Factory, Road, Sandycroft, Deeside, CH5 2QJ. A site location plan is included as Drawing No. TE1799-TE-00-XX-GE-DR-001-V01 within Appendix A.
National Grid Reference (NGR)	332961 367737
Approximate site area	0.83 ha
site shape	Approximately rectangular
Current land use on the site	The site is currently occupied by Gainland International Ltd, a reagent chemicals manufacturer. The site is in the process of being demobilised by Gainland staff.
	The site has a mixture of hardstanding, buildings and vegetated areas. The existing buildings and hardstanding is located to the southwest of corner of site with the vegetated areas taking up the surrounding areas. The hardstanding comprises of concrete to the west and asphalt to the east.
	Due to processes used by Gainland International Ltd, chemicals are stored on site, localised to the southwest corner within the hardstanding area. These chemicals include acids, glycols and alcohols.
Surrounding land uses	The site is set within the commercial area of Deeside Industrial Estate.
General topography and ground levels	Site topography is generally level, between 6m-7m AOD.

An aerial photograph (from the Groundsure report) of the site and site boundary is shown below. Relevant site photographs are presented in Appendix G.

Figure 2.1 Recent Aerial Photograph from Groundsure





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3. SITE HISTORY

3.1. Site History Review

Extracts of Ordnance Survey (OS) plans dated from 1899 to 2023 were reviewed. These were obtained as part of the Groundsure report for the site, which is presented in Appendix H.

Table 3.1 below presents a summary of the main aspects of the site relevant to the current and proposed future end uses. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the site, where these are not relevant to the land use.



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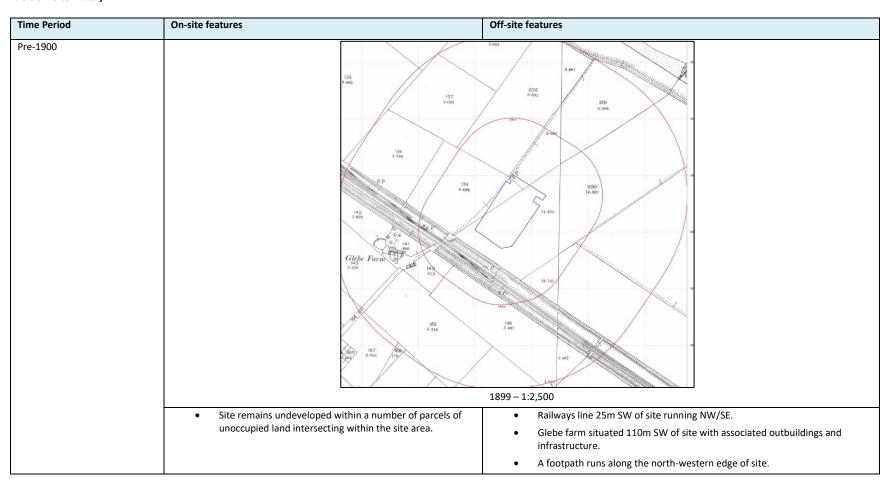
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Table 3.1 Site History.





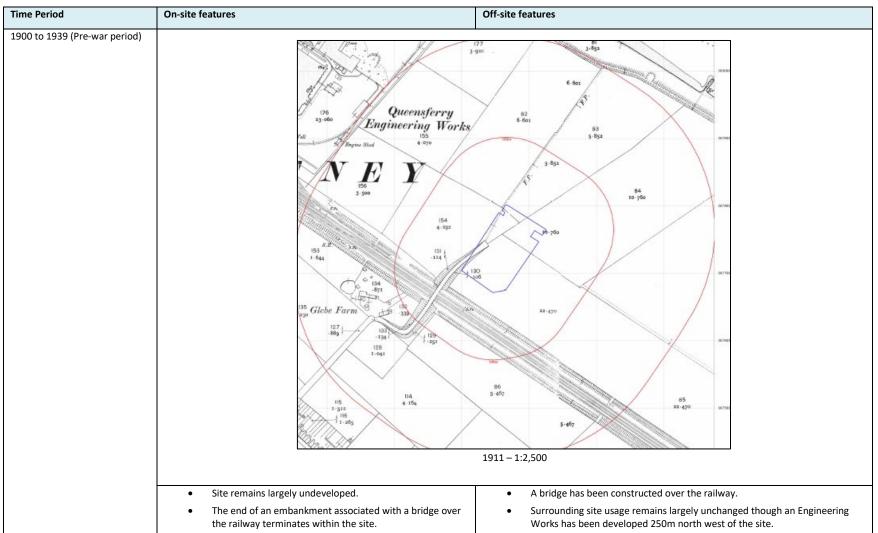
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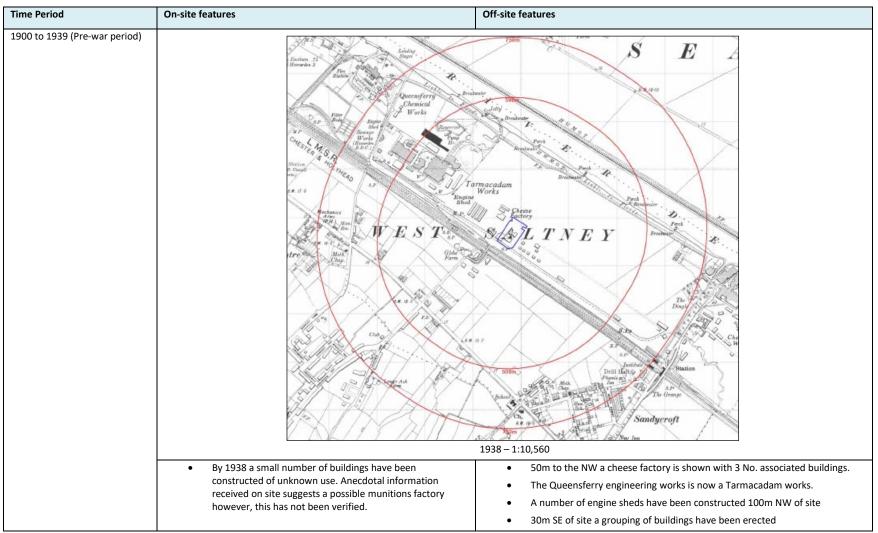


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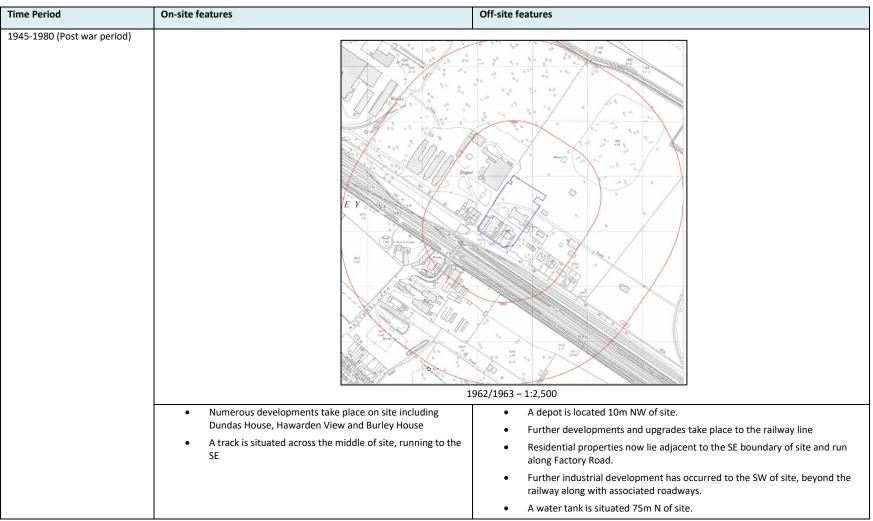


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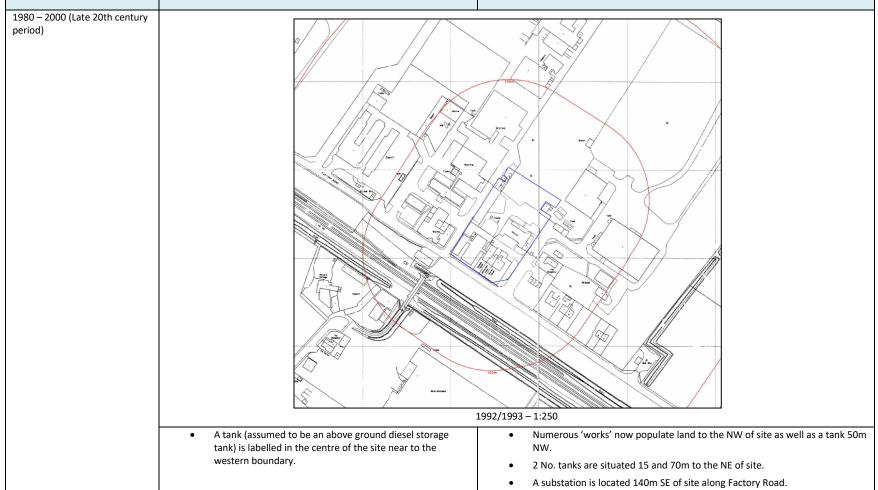


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Time Period On-site features Off-site features



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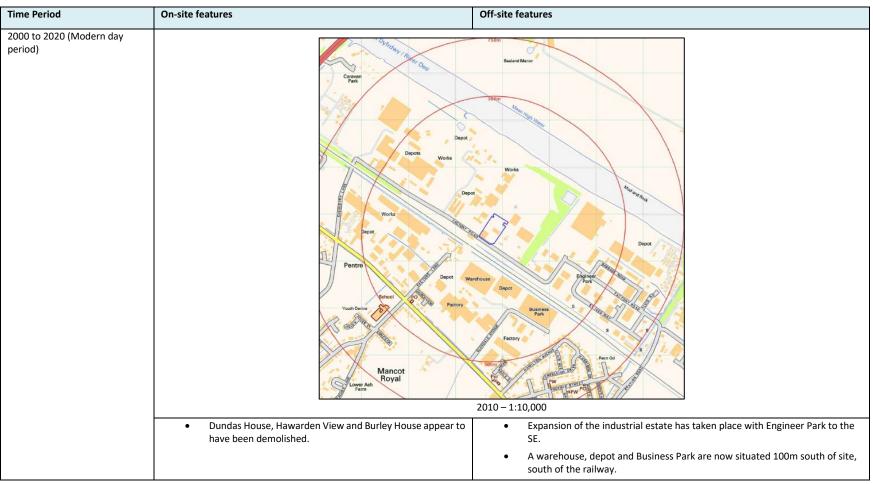


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3.2. Preliminary Unexploded Ordnance Risk Assessment

From the historical and anecdotal evidence, the site wasn't a target for bombing historically. Publicly available UXO risk level mapping from Zetica maps indicates the site is within a Low risk area.

Table 3.2 Preliminary UXO Risk Assessment.

	Yes/no	Comments
Is the site indicated to have been directly bombed?	No	No records of direct impacts
Is the site within an area recorded to have been bombed?	No	No records of bombing within close vicinity to the site.
Could the site have been a high-risk target?	No	Anecdotal information received on site suggest that there was a possible munition factory on site, however, there is no evidence to prove this.
Any development cycles since 1945?	Yes	Widespread post war development on site.
Mitigating Factors	No	
Preliminary assessment of UXO Risk	Low	Low risk area according to Zetica online maps. Anecdotal evidence, however, suggests that the site was part of a munitions factory.
Further works?	Yes	Detailed UXO risk assessment, including whether the site was historically part of the Sandycroft Munitions Works during WWI.



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4. ENVIRONMENTAL SETTING

4.1. Geology

Table 4.1 Geological Summary.

Maps and publications	Groundsure, BGS
referenced	
Made ground / artificial	The site isn't shown to be located within an area of artificial ground according to the Groundsure report.
ground	Given the history of development on the site, the presence of Made Ground is anticipated.
Drift geology	Tidal Flat Deposits of Clays, Silts and Sands
Solid geology	Etruria Formation – Mudstone, Sandstone and Conglomerate. 70m W, Pennine Middle Coal Measures.
Dip of solid strata	N/A
Faults	70m W and 204m NE (Normal faults – inferred)
Coal seams	None shown to outcrop or subcrop on or in the immediate vicinity of the site.

4.2. Mining and Quarrying

Table 4.2 Coal Mining Activities.

	Yes/No	Comments
Is the site in an area of potential shallow coal workings?	No	Source: Groundsure
Is the site in a high risk development area?	No	Source: Coal Authority
Are there any known shafts, adits, tips, lagoons, or opencast workings likely to affect the site?	No	Nearest colliery is situated 953m SW of site.
Is exploratory work required to investigate the potential risk from shallow mining or quarrying?	No	Source: Groundsure
CON29M Coal Mining Risk Assesment	Yes	Past underground coal mining has been identified due to the site lying within the potential zone of influence of recorded workings in 1 No. coal seam. Most recent workings in the area was in 1913 and lie approximately 90m BGL.



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Table 4.3 Other Extractive Industries.

	Yes/No	Comments		
Superficial drift deposits	Superficial drift deposits			
Evidence of extraction on or within 250 m of the site?	No	Source: Groundsure		
Action required?	No	Source: Groundsure		
Solid Strata				
Any evidence of mineral extraction on or within 250 m of the site?	Yes	On site: Vein Mineral		
Action required?	No	Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.		

Other, undocumented mineral workings on or close to the site cannot be completely dismissed.

4.3. Hydrogeology

Table 4.4 Groundwater Occurrence and Abstraction.

	Presence/location	Comments
Environment Agency aquifer designation – Superficial Deposits	Tidal Flat Deposits	Secondary Undifferentiated
Environment Agency aquifer designation – Bedrock	Etruria Formation	Secondary A
Groundwater vulnerability	Superficial	Vulnerability: High
		Aquifer type: Secondary
		Thickness: >10m
		Patchiness value: >90%
		Recharge potential: Low
	Bedrock	Vulnerability: Low
		Aquifer type: Secondary
		Flow mechanism: Well-connected fractures
Anticipated groundwater depth(s)	2.4-2.8m bgl	Anticipated based on nearby BGS logs
Direction of flow	NR	Possibly to the northeast in the direction of the River Dee. Local topography is relatively level where groundwater flow direction is difficult to determine.
Current licensed abstractions – potable	NR	Source: Groundsure
Current licensed abstractions – non- potable	NR	Source: Groundsure
Private wells	NR	Source: Groundsure
Source Protection Zones	NR	Source: Groundsure
Springs	NR	Source: Groundsure

NR - none recorded.

For definition of Source Protection Zones, see Appendix M.



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4.4. Hydrology

Table 4.5 Surface Water Features.

	Presence/location	Comments
Nearest surface water feature	32m SW	Unnamed stream/drain
Other surface water features	259m NE	River Dee, within the tidal influence zone.
Canals, ponds, lakes, etc.	NR	Source: Groundsure
Water Framework Directive (WFD)	761m SE	Sandycroft Drain
Surface Water Bodies		Overall rating: Moderate
		Chemical rating: Good
		Ecological rating: Moderate
Licensed surface water abstractions	NR	Source: Groundsure
Surface run-off and site drainage	On site	The full nature and extent of underground drainage system is unknown at this stage.

NR - none recorded. Environment Agency GQA assessments: A = very good to E = poor

4.5. Flood Risk Summary

Table 4.6 below represents a summary of the flood risk data contained within the Groundsure report obtained for the site.

Table 4.6 Flood Risk Summary

	Presence/location	Comments
Risk of Flooding from Rivers and Sea (RoFRaS)	NR	Source: Groundsure
Historical Flood Events	NR	Source: Groundsure
Flood Defences	NR	Source: Groundsure
Areas Benefiting from Flood Defences	57m NE	Source: Groundsure
Flood Storage Areas	NR	Source: Groundsure
Records of Flood Zone 2	On site	Zone 2 – (Fluvial/Tidal Models)
Records of Flood Zone 3	On site	Zone 3 – (Fluvial/Tidal Models)
Surface water flooding	On site	Highest risk on site (1 in 100 year, 0.1m - 0.3m)
	Within 50m	Highest risk (1 in 30 year, 0.1m – 0.3m)
Groundwater flooding	On site	Low
	Within 50m	Low

NR - none recorded.

4.6. Environmental Designations

Table 4.7 Summary of Environmental Designations.

	Presence/location	Comments
Sites of Special Scientific Interest (SSSI)	NR	Source: Groundsure



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	Presence/location	Comments
Conserved wetland sites (Ramsar sites)	NR	Source: Groundsure
Special Areas of Conservation (SAC)	NR	Source: Groundsure
Special Protection Areas (SPA)	NR	Source: Groundsure
National Nature Reserves (NNR)	NR	Source: Groundsure
Local Nature Reserves (LNR)	NR	Source: Groundsure
Designated Ancient Woodland	NR	Source: Groundsure
Biosphere Reserves	NR	Source: Groundsure
Forest Parks	NR	Source: Groundsure
Marine Conservation Zones	NR	Source: Groundsure
Green Belt	NR	Source: Groundsure
Proposed Ramsar sites	NR	Source: Groundsure
Possible Special Areas of Conservation (pSAC)	NR	Source: Groundsure
Potential Special Protection Areas (pSPA)	NR	Source: Groundsure
Nitrate Sensitive Areas	NR	Source: Groundsure
Nitrate Vulnerable Zones	NR	Source: Groundsure
SSSI Units	NR	Source: Groundsure

NR - none recorded.

4.7. Landfill and Waste Management Activity

Table 4.8 Waste Management Activities.

	Presence/location	Comments
Active or recent landfill	NR	Source: Groundsure
Historical landfill (BGS records)	NR	Source: Groundsure
Historical landfill (LA/mapping records)	NR	Source: Groundsure
Historical landfill (EA/NRW records)	NR	Source: Groundsure
Historical waste sites	13m W	Scrap yard
		Date: 1980
	103m W	Scrap yard
		Date: 1993
Licensed waste sites	79m N -174m N	Trident Commercial Holdings Ltd (Trident Metals)
		Metal Recycling Site
		Issue date 30/06/1993
		Status: Effective
Waste exemptions	42m NW (85 No. records)	Treating waste exemption (Recovery, treatment and storage), Treatment of waste wood and waste plant matter, Using waste exemption, Storing waste exemption, Storing, treating and using waste exemptions
	46mm W (9 No. records)	Storing Waste, Treating Wast, Using Waste



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	Presence/location	Comments
	121m SE	
	191m N (7 No records)	Using, treating and storing waste
	222m S	Storing and treating waste exemption
Evidence of other landfilling or potential infilling on or within 250m of site	NR	
Walkover evidence of fly-tipping on site?	NR	
Is a landfill/ground gas risk assessment required?	Yes	Considering historical site uses as well as wider industrial heritage in the vicinity of site.

NR - none recorded.

4.8. Local Industrial Land Uses

Other potentially contaminative activities are shown in Table 4.9 below with those features considered pertinent to the conceptual site model highlighted in <u>bold</u>. The entries relate to activities within *circa* 250 m of the site, with the exception of COMAH facilities where the assessment is extended to a distance of *circa* 500m from the site.

Table 4.9 Other Potentially Contaminative Processes in the Locality

	Location	Comments
Recent industrial land uses	On site, 25m E, 54m E, 58m E, 76m N, 99m NW, 102m SW, 166m NW, 244m S	Tanks (Generic)
	4m E	Trade Effluent Services Ltd (Waste storage, Processing and Disposal)
	25m E	P P A ltd (Aeroplanes)
	46m NW	C M A (Vehicle repair, testing and servicing)
	46m W	The Powerhouse Auto Ltd (Vehicle repair, testing and servicing)
	46m N, 90m NW, 233m W	Works (Unspecified)
	57m N	Chestnut Motors (New vehicles)
	89m SW	Dynamix Concrete
	95m NW	Tident Metals (Scrap Metals Merchants)
	109m W, 174m SE, 181m NE, 206m S, 226m SW	Electricity Sub Station (Electrical Features)
	116m SW	Sealand Van Hire (Vehicle Hire and Rental)
	126m N	Hoppers (Hoppers and Silos)
	134m SW	F M C Agro Ltd (Agricultural Contractors)
	143m NW, 198m W, 249m S	Chimney
	156m NW	Fireprotect Chester Ltd (Special Purpose Machinery and Equipment)
	171m W	Sandycroft MOT Centre (Vehicle Repair, Testing and Servicing)
	206m S	Allan Morris Transport Ltd (Distribution and Haulage)
	221m N	Endurmeta (Recycling, Reclamation and Disposal)
Current or recent petrol stations	NR	Source: Groundsure
Electricity cables	NR	Source: Groundsure



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	Location	Comments
Gas pipelines	NR	Source: Groundsure
Sites determined as Contaminated Land	NR	Source: Groundsure
Control of Major Accident Hazards	74m SW	Headland Agrochemicals Ltd
(COMAH)	78m SW	FMC Agro Ltd
	79m SW	Shopspec
	220m N	Cambrian Gas Ltd
Regulated explosive sites	NR	Source: Groundsure
Hazardous substance storage/usage	205m SW	FMC Agro Ltd
Historical licensed industrial activities (IPC)	NR	Source: Groundsure
Licensed industrial activities (Part	144m SW	Headland Agrochemicals Ltd
A(1))		Status: Effective
	144m SW	FMC Agro Ltd
		Status: Effective
Licensed pollutant release (Part	40m NW	Mcalpine Business Services
A(2)/B)		Historical Permit
	51m NW	Waste Oil Burner, Carillion
		New legislation applies
	86m NW	Trident Metals Ltd
Padia ativa Culatana	ND	Current Permit
Radioactive Substance Authorisations	NR	Source: Groundsure
Licensed Discharges to controlled waters	NR	Source: Groundsure
Pollutant release to surface waters (Red List)	NR	Source: Groundsure
Pollutant release to public sewer	NR	Source: Groundsure
List 1 Dangerous Substances	NR	Source: Groundsure
List 2 Dangerous Substances	NR	Source: Groundsure
Pollution Incidents (EA/NRW)	32m E	Incident Date: 09/08/2003
		Pollutant: Atmospheric Pollutants and Effects
		Water Impact: Category 4 (No Impact)
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 3 (Minor)
	51m NW	Incident Date: 22/07/2014
		Pollutant: Sewage Materials
		Water Impact: -
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 3 (Minor)
	74m S	Incident Date: 13/10/2016
		Pollutant: -NR
		Water Impact: Category 3 (Minor)
		Land Impact: No Details
		Air Impact: Category 3 (Minor)



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Location	Comments
74m S	Incident Date: 13/10/2016
	Pollutant: Sewage Material
	Water Impact: Category 3 (Minor)
	Land Impact: No Details
	Air Impact: Category 3 (Minor)
74m S	Incident Date: 27/08/2015
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
80m S	Incident Date: 30/10/2002
	Pollutant: Agricultural Materials and Wastes
	Water Impact: Category 3 (Minor)
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
83m E	Incident Date: 14/06/2021
	Pollutant: Oils and Fuels
	Water Impact: Category 2 (Significant)
	Land Impact: Category 2 (Significant)
	Air Impact: No Details
123m NW	Incident Date: 29/04/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
145m W	Incident Date: 06/06/2002
	Pollutant: Atmospheric
	Water Impact: Category 4 (No Impact)
	Land Impact: Category 3 (Minor)
	Air Impact: Category 3 (Minor)
146m W	Incident Date: 11/05/2002
	Pollutant: Inert Materials and Wastes
	Water Impact: Category 4 (No Impact)
	Land Impact: Category 3 (Minor)
	Air Impact: Category 4 (No Impact)
163m SW	Incident Date: 26/04/2002
	Pollutant: Other Pollutant
	Water Impact: Category 4 (No Impact)
	Land Impact: Category 3 (Minor)
	Air Impact: Category 3 (Minor)
170m W	Incident Date: 27/03/2015
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Water Impact: - Land Impact: Category 4 (No Impact)



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Location	Comments
172m W	Incident Date: 31/05/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
175m SW	Incident Date: 05/11/2001
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: Category 4 (No Impact)
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 3 (Minor)
178m W	Incident Date: 25/07/2015
	Pollutant: Other Pollutant
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
179m W	Incident Date: 19/09/2014
1,5111 11	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
185m SW	Incident Date: 08/09/2014
163111344	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
100 111	Air Impact: Category 4 (No Impact)
193m W	Incident Date: 15/10/2015
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
197m W	Incident Date: 27/09/2013
	Pollutant: Multiple Pollutants
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
197m W	Incident Date: 18/08/2015
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
197m N	Incident Date: 30/12/2016
	Pollutant: -
	Water Impact: No Details
	Land Impact: Category 3 (Minor)
	Air Impact: No Details



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 Location	Comments
199m W	Incident Date: 23/06/2014
	Pollutant: Multiple Pollutants
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
200m W	Incident Date: 10/08/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
201m W	Incident Date: 16/07/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
204m W	Incident Date: 27/04/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
205m W	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
206m W	Incident Date: 12/03/2014
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
207m W	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
211m W	Incident Date: 11/07/2014
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
214m W	Incident Date: 28/11/2013
	Pollutant: Atmospheric Pollutants and Effects
	Water Impact: -
	Land Impact: Category 4 (No Impact)
	Air Impact: Category 4 (No Impact)
215m W	Incident Date: 18/04/2014
	Pollutant: Other Pollutant
	Water Impact: -
	Land Impact: Category 4 (No Impact)



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	Location	Comments
	230m W	Incident Date: 28/09/2015
		Pollutant: Atmospheric Pollutants and Effects
		Water Impact: -
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 4 (No Impact)
	232m W	Incident Date: 17/02/2016
		Pollutant: Atmospheric Pollutants and Effects
		Water Impact: -
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 4 (No Impact)
	233m W	Incident Date: 23/01/2014
		Pollutant: Atmospheric Pollutants and Effects
		Water Impact: -
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 4 (No Impact)
	235m W	Incident Date: 26/04/2013
		Pollutant: Multiple Pollutants
		Water Impact: -
		Land Impact: Category 4 (No Impact)
		Air Impact: Category 4 (No Impact)
Pollution inventory substances	NR	Source: Groundsure
Pollution inventory waste transfers	NR	Source: Groundsure
Pollution inventory radioactive waste	NR	Source: Groundsure

NR - none recorded.

COMAH – Control of Major Accident Hazards (regulations); NIHHS – Notification of Installations Handling Hazardous Substances (regulations)

4.9. Radon Risk

Table 4.10 Radon Risk Status.

	Comments
Estimated properties affected	Between 3% and 5% of properties above the Action Level
Radon Protection Measures required?	Basic radon protection measures are required likely in the form radon barrier/ membrane laid within the floor or solum construction, which is linked to a damp-proof course (DPC) within the walls of the building.

4.10. Regulator Provided Information

Relevant searches for the site have been conducted by the Environment Agency / Local Authority / Fire Service / Petroleum Licencing Officer. At the time of writing no responses pertaining to the site had been received.



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5. PRELIMINARY CONCEPTUAL SITE MODEL

Based on the information provided in the previous sections of this report a combined preliminary conceptual site model and conceptual exposure model has been developed for the proposed future land use. This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors. In assessing the likely contaminants of concern present at the site, reference has also been made to Defra and Environment Agency supporting documentation. A preliminary qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance in accordance with CIRIA C552.

The potential pollutant linkages identified and the qualitative risk assessment for these are presented in Table 5.1 below. The terms used in the preliminary qualitative risk assessment are defined in Appendix K.

5.1. Uncertainties

The following uncertainties exist in the preliminary conceptual model:

- The presence of any features unrecorded by the historic maps.
- Any unrecorded geological features.
- Any unrecorded pollution events during the site's history.



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Table 5.1 Preliminary Assessment of Potential Pollutant Linkages (Continued on Next Page).

Justification / Comments

- The site is currently occupied by Gainland International Ltd, a reagent chemicals manufacturer. Their occupation of site is in the process of being demobilised by Gainland staff. The site has a mixture of hardstanding, buildings and vegetated areas. The existing buildings and hardstanding are located to the south and southwest corner of site with the vegetated areas taking up the surrounding land. The hardstanding comprises of concrete to the west and asphalt to the east.
- Due to the pre-2000 development of existing and pre-existing buildings on site there is a possibility of ACMs either within a soil matrix or as intact pieces within existing buildings. First shown in 1992 an overground tank suggested by site to contain diesel, and possibly an underground tank from anecdotal evidence. Due to processes used by Gainland International Ltd chemicals are stored on site, localised to the southwest corner within the hardstanding area. These chemicals include Acids. Glycols and alcohols.
- From 1938 swathes of industrial development have taken place in the areas surrounding site. Notably from 1938 a former Tarmacadam manufacturer. Other uses include vehicle repairs, electricity sub stations and unspecified tanks.
- The site isn't shown to be located within an area of artificial ground according to BGS records. Given the history of development on the site, the presence of Made Ground is anticipated. Superficial deposits are of Tidal Flat Deposits (Secondary Undifferentiated Aquifer) of Clays, Silts and Sands, with bedrock of the Etruria Formation Mudstone (Secondary A Aquifer), Sandstone and Conglomerate. Bedrock 70m W is of the Pennine Middle Coal Measures, with a known coal seam at c.90m bgl.
- The site is not shown to be within a source protection zone. There are no nearby potable or non-potable water abstractions. Due to the level topography of site, flow direction is currently undetermined
- The site is within an area where between 3 and 5% of properties are above the radon Action Level.
- The site is situated with a Coal Mining Areas as defined by the Coal Authority. however, it is not situated within a High Development Risk Area. The nearest former Colliery is situated 953m SW and there are no records of coal mining within the near vicinity of site.
- The site is not located within an ecologically sensitive area.



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Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
Anticipated Made Ground in the southern and western areas of site in association with historic and current land uses	Metals	Direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	PAHs pH Hexavalent chromium		Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Unlikely	Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Low Likelihood	Moderate / Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Medium	Low Likelihood	Moderate / Low Risk
			River Dee located approximately 259m northeast.	Medium	Low Likelihood	Moderate / Low Risk
	Naphthalene (a semi-volatile PAH)	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Unlikely	Low Risk
	TPH / BTEX / MTBE		Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	VOCs / SVOCs Phenols		Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
	Glycols Coal tar	Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Low Likelihood	Low Risk
	Free phase product	Migration via water pipes	Future site users (commercial)	Medium	Unlikely	Low Risk
	Tree phase product	Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Low Likelihood	Moderate / Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Medium	Low Likelihood	Moderate / Low Risk
			River Dee located approximately 259m northeast.	Medium	Low Likelihood	Moderate / Low Risk
	Asbestos	(Dust migration and) dust inhalation	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
Below ground storage tank in the southern part of the site	TPH / BTEX / MTBE Free phase product	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Unlikely	Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate / Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Low Likelihood	Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Low Likelihood	Moderate / Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Medium	Low Likelihood	Moderate / Low Risk
			River Dee located approximately 259m northeast.	Medium	Low Likelihood	Moderate / Low Risk
Made Ground associated with off site industrial development		Direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk



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Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
	Metals PAHs	Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	рН	Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	Hexavalent chromium	Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Medium	Low Likelihood	Moderate / Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Low Likelihood	Moderate / Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Medium	Low Likelihood	Moderate / Low Risk
			River Dee located approximately 259m northeast.	Medium	Low Likelihood	Moderate / Low Risk
	Naphthalene (a semi-volatile PAH)	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	TPH / BTEX / MTBE		Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
	VOCs / SVOCs Phenols		Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
	Glycols	Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Medium	Unlikely	Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Medium	Low Likelihood	Moderate / Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Low Likelihood	Moderate / Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Medium	Low Likelihood	Moderate / Low Risk
			River Dee located approximately 259m northeast.	Medium	Unlikely	Low Risk
	Hazardous ground gasses (methane, carbon dioxide, hydrogen sulphide, carbon monoxide and depleted oxygen)	Inhalation (indoor and outdoor)	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of hazardous ground gases from beneath the site to adjacent sites along services or other preferential conduits	Adjacent site users (commercial)	Medium	Unlikely	Low Risk
		Migration of ground gas / explosion	Buildings and services	Severe	Low Likelihood	Moderate Risk
The site is within an area where between 3 and 5% of properties are	e Radon	Inhalation (indoor and outdoor)	Future site users (commercial)	Medium	Likely	Moderate Risk
above the radon Action Level.			Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of hazardous ground gases from beneath the site to adjacent sites along services or other preferential conduits	Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk

For definition of the terms used in the qualitative risk assessment, please see Appendix K.



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6. FIELDWORK

The information contained in this report is limited to areas of land accessible during the ground investigation within the site boundary, as indicated on the site plan, presented in Appendix A as Drawing No. TE1799-TE-00-XX-GE-DR-001-V01.

Tier Environmental scoped the intrusive ground investigation using guidance presented in:

- BS 10175:2011+A2:2017;
- Land Contamination Risk Management (LCRM) https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm;
- BS 5930:2015+A1:2020;
- BS EN 1997:2004 and 2007.

Tier Environmental's standard strata description criteria are compliant with the above guidance.

6.1. Scope of Ground Investigation

The ground investigation was conducted between 4th and 5th December 2023 and was supervised by a suitably qualified Tier Environmental engineer. Table 6.1 below provides a summary of the exploratory holes completed and rationale. Exploratory hole locations are presented on Drawing No. TE1799-TE-00-XX-GE-DR-001-V01.

Table 6.1 Scope of Ground Investigation and Rationale

Exploratory Hole Type	Exploratory Hole Reference	Exploratory Hole Depths (m bgl)	Rationale
Window sample boreholes	WS01 to WS05	1.20 to 5.45m bgl	To confirm the shallow ground conditions across the site, conduct in situ geotechnical tests, facilitate soil sampling for geotechnical and/or geoenvironmental parameters and installation of gas/groundwater monitoring wells.
Cable percussion boreholes	CP01 to CP03	0.30 to 8.15m bgl	To confirm the ground conditions across the site, conduct in situ geotechnical tests, facilitate soil sampling for geotechnical and/or geoenvironmental parameters and installation of gas/groundwater monitoring wells.
Hand Dug Pits	HDP01 to HDP02	1.20m bgl	To confirm shallow ground conditions and facilitate soil sampling for geoenvironmental parameters.

The following constraints were identified during the ground investigation works:

- Cable percussion borehole CP02a was terminated at 0.30m bgl on suspected metal. It is possible this could be in association with a potential underground tank that was historically situated within this area.
- Dense vegetation to the north of site denied access for the window sample rig. As a result, 2 No. hand dug pits were carried out instead.
- Both heavy vegetation and demolition rubble restricted access to the area to the northeast of site for manned entry.



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Table 6.2 Scope of Monitoring Installations

Exploratory Hole Location	Strata Targeted	Slotted Response Zone (m bgl)	Rationale	
CP01	Made Ground/Tidal Flat Deposits	1.00 to 8.00	Targeting shallow ground gas Made	
CP02b	Made Ground/Tidal Flat Deposits	1.00 to 6.00	Ground source and perched groundwater body.	
CP03	Made Ground/Tidal Flat Deposits	1.00 to 7.00	groundwater body.	
WS02	Made Ground/Tidal Flat Deposits	1.00 to 3.00		

Depths and accurate descriptions of strata and groundwater observations made during investigation works, together with details of the samples recovered, are presented on the Engineer's exploratory hole records in Appendix B.

6.2. Geoenvironmental Testing

Sampling and QA/QC protocols are presented in Appendix O. Tier Environmental's schedule of chemical laboratory testing is presented in Table 6.3. and Table 6.4. The testing was carried out by Element Materials Technology, a UKAS and MCerts (where appropriate for soils analysis) accredited laboratory.

Human Health and Preliminary Waste Classification Laboratory Testing

Based upon the conclusions of the preliminary risk assessment, Tier Environmental scheduled chemical laboratory testing on selected soil samples. The purpose of the testing was to:

- Determine the concentration and spatial distribution of potential contaminants of concern in the Made Ground;
- Determine the chemical composition and properties of the shallow natural soils;
- Determine the nature and extent of any hydrocarbon impacts in the vicinity of a possible underground storage tank;
- Undertake a *preliminary* soils waste classification and waste disposal route determination.

Table 6.3 Schedule of Chemical Testing for Human Health Risk Assessment and Preliminary Waste Soils Assessment.

Laboratory analysis	Possible ACMs	Hardstanding - Asphalt	Made Ground 1	Made Ground 2	(Possible) Made Ground	Natural Soils DD1	Natural Soils DD2
Tier Environmental soil suite*	0	0	7	1	1	1	1
Asbestos screen	1	0	8	1	1	0	0
Speciated TPH / BTEX / MTBE	0	0	9	1	2	1	1
VOCs / SVOCs	0	0	3	0	1	0	0
Waste Acceptance Criteria (WAC)	0	1	1	0	0	0	0
Coal tar suite	0	1	0	0	0	0	0

^{*}For definition of Tier Environmental analytical suites, please see Appendix O. NA - not applicable.



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Controlled Waters Laboratory Testing

Based upon the conclusions of the preliminary risk assessment, Tier Environmental scheduled chemical laboratory testing on selected groundwater samples. The purpose of the testing was to:

- Determine the dissolved phase concentrations of potential contaminants of concern within groundwater beneath the site;
- Determine the nature and extent of dissolved phase potential hydrocarbon contaminants of concern within groundwater in the vicinity of
 a possible underground storage tank.
- Determine the presence of any organic sulphurs in line with onsite observation of Dimethyl sulfoxide

Table 6.4 Schedule of Chemical Testing for Controlled Waters Risk Assessment.

Laboratory analysis	Groundwater
Tier Environmental groundwater suite*	3
Speciated TPH / BTEX / MTBE	3
VOCs / SVOCs (+TICS)	3
Glycols	3

^{*}For definition of Tier Environmental analytical suites, please see Appendix O. NA - not applicable.

6.3. Geotechnical Testing

Geotechnical laboratory testing was scheduled by Tier Environmental on selected samples as presented in Table 6.5. The testing was performed by Murray Rix a UKCAS accredited laboratory. Test certificates including details of appropriate testing standards are presented in Appendix E and discussed in Section 8, below.

Table 6.5 Geotechnical Laboratory Testing Schedule.

Test	Stratum type	Number of tests	Rationale
1. General		_	
Moisture content	Tidal Flat Deposits	1	a) Assist with the determination of consistency of soil with depth.
			b) Assess desiccation of soils.
			c) Suitability of materials for reuse within earthworks.
2. Classification			
Atterberg limit	Tidal Flat Deposits	1	a) Volume change potential.
			b) Plasticity assessment (comply with Eurocode 7 description)
			c) Consistency Index.
			d) Determine soil type (e.g., clay/silt).
			e) Use as an empirical guide to soil shear strength
Particle size distribution (wet/dry	Tidal Flat Deposits	4	a) Classify soils for earthworks purposes.
sieve)			b) Establish type of soil (comply with Eurocode 7 description).
3. Chemical tests	,	•	
	MG1	6	



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Test	Stratum type	Number of tests	Rationale
pH (soil and groundwater), Water-	MG2	1	Determine correct class of concrete for both
soluble sulphate (soil and groundwater), Acid-soluble sulphate	Possible MG	1	natural and made ground with specific tests for sites potentially containing sulphides (e.g., pyrite
(soil only), Total sulphur (total potential sulphur; soil only), Chloride and nitrate (soil and groundwater), Magnesium (soil and groundwater)	DD1	1	or at low ph.



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7. GROUND CONDITIONS

The following section provides a summary of the ground conditions encountered during the ground investigation including strata profile, obstructions and visual / olfactory evidence of contamination. Exploratory hole logs are provided in Appendix B.

Photographs of ground investigation works are provided in Appendix G.

7.1. Strata Profile

Figure 7.1 presented below provide a schematic summary of the ground conditions beneath the site. The distinct populations of strata identified have been numbered and correspond with the more detailed descriptions below.



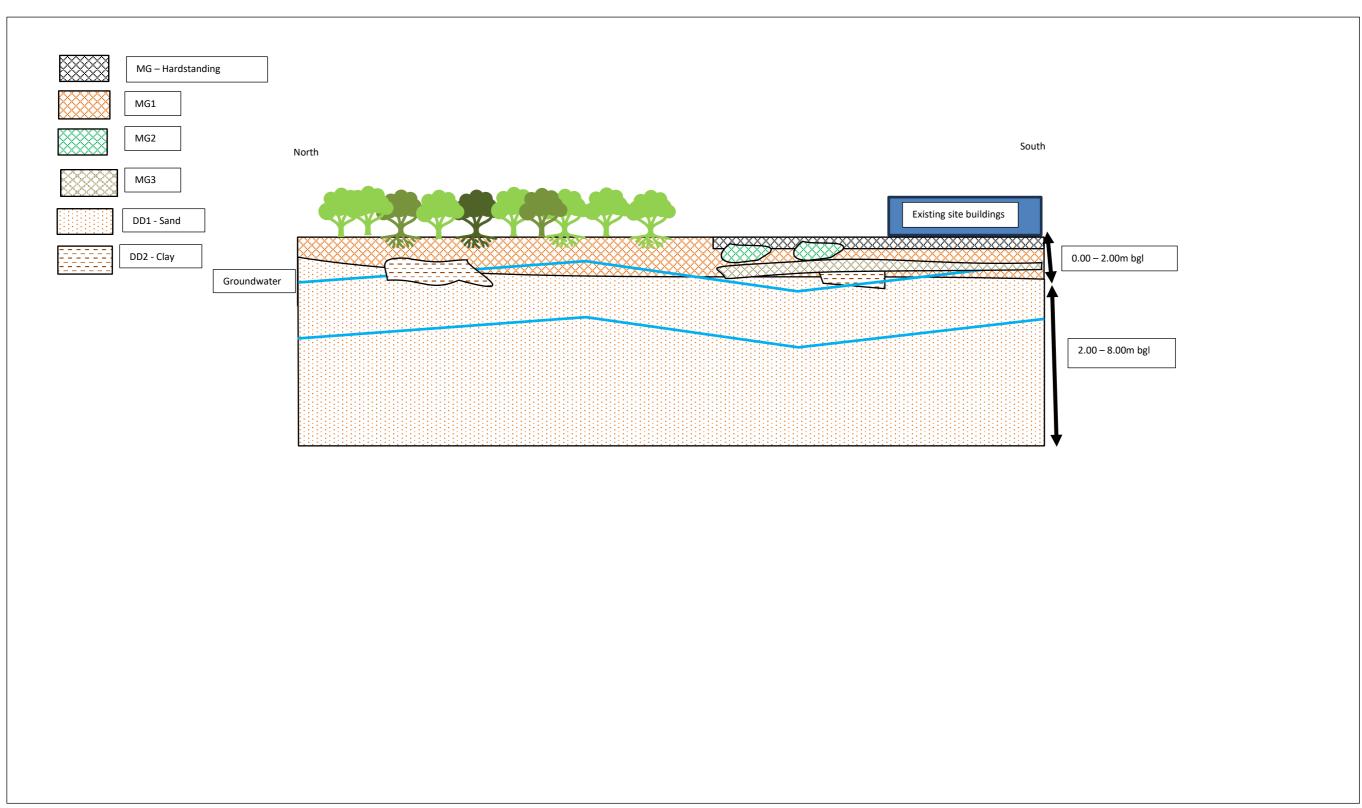
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Figure 7.1 Schematic Drawing of Ground Conditions





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7.2. Strata Descriptions

Made Ground – Hardstanding

Concrete			
Grey CONCRETE comprising of 45% aggregate of subangular limestone and mixed natural lithologies.			
Locations encountered	CP02a, CP02b, CP03		
Depths encountered from top of stratum (range)	Ground level		
Depths encountered to base of stratum (range)	0.15m to 0.30m bgl		
Thickness (range)	0.15m to 0.30m		
Spatial location on site	Southwestern area of the site		
Asphalt			
Locations encountered	WS01, WS02		
Depths encountered from top of stratum (range)	Ground level		
Depths encountered to base of stratum (range)	0.05m to 0.10m bgl		
Thickness (range)	0.05m to 0.10m		
Spatial location on site	Southern areas of site		

Made Ground - MG1

Locations encountered	CP01, CP02b, WS01 to WS05
Depths encountered from top of stratum (range)	Ground level to 0.30m bgl
Depths encountered to base of stratum (range)	0.60m to 1.40m bgl
Thickness (range)	0.55m to 1.20m
Spatial location on site	Widespread across the site
General description	Brown/pinkish sandy clayey Gravel/ sandy Gravel/Gravel/Gravelly Clay.
	Gravel of mudstone and limestone and occasional brick fragments.

Made Ground - MG2

Locations encountered	CP03, WS02
Depths encountered from top of stratum (range)	0.15 0.40m bgl
Depths encountered to base of stratum (range)	0.60m to 2.00m bgl
Thickness (range)	0.20m to 1.85m
Spatial location on site	Encountered in the west and south of the site only.
General description	Black gravelly ASH. Gravel of fine to coarse, subrounded coal.



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MG3 - Possible MG

Locations encountered	CP02b, WS02 & WS03
Depths encountered from top of stratum (range)	0.60 to 1.40m bgl
Depths encountered to base of stratum (range)	1.50m to 2.00m bgl
Thickness (range)	0.40m to 1.30m
Spatial location on site	Southwestern area of site
General description	Light brown, mottled grey silts and clays

Drift Deposits – DD1

Tidal Flat Deposits - Sands	
Locations encountered	CP01, CP02b, CP03, WS01 to WS04
Depths encountered from top of stratum (range)	1.00 to 2.10m bgl
Proven depths encountered to base of stratum (range)	5.45m to 8.15m bgl
Proven thickness (range)	3.35m to 6.80m
Spatial location on site	Widespread across the site
General description	Grey silty/sightly silty Sand

Drift Deposits – DD2

Tidal Flat Deposits – Sandy Clays		
Locations encountered	WS01, HDP01 & HDP02	
Depths encountered from top of stratum (range)	0.20 to 1.25m bgl	
Proven depths encountered to base of stratum (range)	1.20m to 2.10m bgl	
Proven thickness (range)	1.20m to 2.10m	
Spatial location on site	Eastern area of site	
General description	Grey sandy Clay.	

7.3. Obstructions

The following potential structures were encountered during the ground investigation works.

Table 7.1 Structures Summary Table

Exploratory Hole Location	Location on Site	Depth of Base of Feature (m bgl)	General description and comments
CP02a	Southwest	0.30	Initial concrete coring of cable percussive borehole terminated on suspected metal structure. Perhaps in association with possible underground tank in this area.



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7.4. Visual and Olfactory Evidence of Contamination

A summary of visual and olfactory evidence of contamination noted during Tier Environmental investigations is summarised in Table 7.2 below:

Table 7.2 Visual and Olfactory Evidence of Contamination Summary

Exploratory Hole Location	Depth Range (m bgl) Encountered From	Depth Range (m bgl) Encountered To	Location on Site	Description
CP02b	1.40	8.15 (base)	Southwest, centre of concrete hardstanding area	Moderate to slight hydrocarbon odour and sheen.
HDP02	0.40	0.40	Northeast	Possible hydrocarbon/organic odour
WS02	1.70	5.45	Southwest edge of site	Moderate to slight hydrocarbon odour
WS05	0.30	1.20	Southwest	Slight hydrocarbon odour

7.5. Groundwater Observations During Fieldwork

Table 7.3 below provides a summary of the groundwater observations during the fieldworks. Further information of groundwater observed is presented in the exploratory hole logs in Appendix B.

Table 7.3 Field Observations of Groundwater.

Exploratory hole	Strike (m bgl)	Rise in groundwater after 20 mins. (m bgl)	Formation	Observations
CP01	2.20	1.70	Tidal Flat Deposits	Moderate groundwater ingress
CP02b	2.20	1.80	Tidal Flat Deposits	Moderate groundwater ingress
CP03	2.20	1.80	Tidal Flat Deposits	Moderate groundwater ingress
WS01	2.00	N/A	Tidal Flat Deposits	Slight groundwater ingress
WS02	1.70, 2.80 and 3.30m	N/A	Tidal Flat Deposits	Slight groundwater ingress
WS03	0.70 and 2.00	N/A	Tidal Flat Deposits	Slight groundwater ingress
WS04	2.10 and 3.00	N/A	Tidal Flat Deposits	Slight groundwater ingress

7.6. Groundwater Monitoring

Table 7.4 below provides a summary of the groundwater monitoring results conducted to date. In total, 3 No, visits have been carried out between 11th December 2023 and 12th January 2024.

Table 7.4 Groundwater Monitoring Results Summary

Exploratory hole	Response Zone (m bgl)	Depth range (m bgl)	Formation	Observations
CP01	1.00 to 8.00	1.30-1.65	Tidal Flat Deposits	N/A
CP02b	1.00 to 6.00	1.09-1.56	Made Ground	Slight discoloration noted in bailer. Interface probe did not detect any evidence of free phase product.
CP03	1.00 to 7.00	0.56-1.69	Made Ground	N/A
WS04	1.00 to 3.00	1.20-1.42	Tidal Flat Deposits	N/A



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8. PRELIMINARY GEOTECHNICAL ASSESSMENT

8.1. Determination of pH and Water-Soluble Sulphate

Consideration of Chloride and Nitrate

In accordance with BRE SD1 for ground suspected of containing mineral acids of industrial origin, a determination must be made as to whether Chloride (Cl) and Nitrate (NO3) need to be analysed. In the event that they do, and elevated concentrations of Cl and NO3 are reported, this may indicate that hydrochloric and nitric acids (HCl and HNO3) are present. The effect of these acids on concrete is likely to be similar to that of sulfuric acid; so, for classification purposes, their chemically equivalent sulphate concentration should be calculated and added to any actual soluble sulphate present (as SO4 mg/l) in the respective samples: SO4 equivalent of Cl = Cl x 1.35 mg/l SO4 equivalent of NO3 = NO3 x 0.77 mg/l.

Firstly, a determination has been made as to whether a significant number of reported pH values are lower than pH 5.5. If they are, then amounts of chloride and nitrate (NO3) should also be determined (in mg/l) in addition to sulphate content.

The conclusion of this assessment is that a significant number of pH values are <u>not</u> lower than pH 5.5 and so no further consideration of Chloride (CI) and Nitrate (NO3) needs to be conducted.

Consideration of Magnesium Levels

In accordance with BRE SD1, when the water-soluble sulphate concentration or groundwater sulphate concentration is greater than 3000 mg/l, an additional consideration of the level of magnesium is required.

In this instance, no reported concentrations of water-soluble sulphate or sulphate in groundwater have been reported above 3,000 mg/l and therefore no further consideration of magnesium has been made.

In accordance with BRE SD1, there is no need to take magnesium levels into account for natural ground – the 'm' suffix Design Sulphate Classes only apply to brownfield locations. This is because, in natural ground conditions in the UK, magnesium levels are invariably well below values that may significantly affect concrete.

Sulphide Bearing / Pyritic Ground Assessment

In accordance with 'Concrete in aggressive ground' Special Digest 1:2005 (Third Edition), Tier Environmental has first sought to establish whether the site lies within an area where pyrite bearing natural ground exists that could result in additional sulphate being converted from sulphides (particularly pyrite) during enabling works, earthworks and/or construction activities.

Firstly, the site location has been plotted on the extracted figure from BRE SD1 that shows the Principal Sulphate and Sulphide Bearing Strata in England and Wales, as shown on Figure 8.1 below.



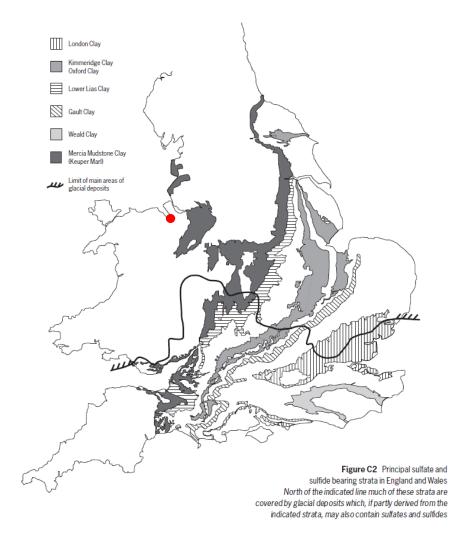
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Figure 8.1 Site Location Plotted on Principal Sulphate and Sulphide Bearing Strata in England and Wales (Extracted from BRE SD1)



Secondly, an assessment has been made of the site's location relative to coal mining areas of Great Britain on the figure below. This has been done because these represent areas where sulphate bearing coal mining wastes and metal processing slags are most likely to be encountered.



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Figure 8.2 Site Location Plotted Relative to Coal Mining Areas of Great Britain (Extracted from BRE SD1)

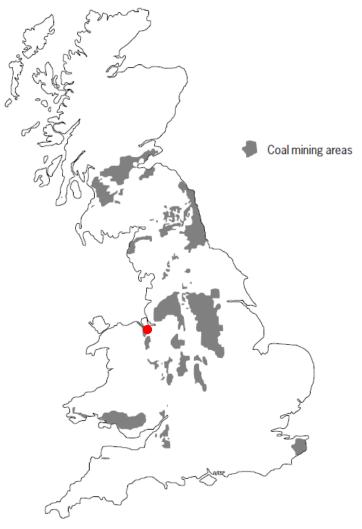


Figure C3 Coal mining areas of Great Britain where sulfate bearing, coal mining wastes and metal processing slags are most likely to be encountered

The table below has been developed to determine whether, based on the above assessment whether there is a possibility of sulphides in the ground (e.g. pyritic ground):



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Table 8.1 Assessment for Potential Sulphide Bearing (e.g. Pyritic) Ground

Question 1:	Question 2:	Question 3 (only relevant if answer to Question 2 is 'Yes'):	Question 4:	Conclusion of Assessment for Potential Sulphide Bearing Ground
From Figure 8.1, Does the Site Lie Within a Principal Sulphate and Sulphide Bearing Area?	From Figure 8.1, Does the Site Lie <u>North</u> of the Black Line Indicating Extent of Glacial Deposits ?	Is it considered that the Glacial Deposits beneath the Site are Partly Derived (even if the answer to Question 1 is 'No')?	From Figure 8.2, Does the Site Lie Within a Coal Mining Area?	
No	Yes	Yes	Yes	The conclusion of the assessment is that there <u>is</u> the potential for sulphide (e.g. pyritic) bearing ground and further assessment of this is required in accordance with BRE SD-1.

Oxidisable Sulphides Calculation

The table below has been prepared in order to further assess, based on the laboratory data, whether there is likely to be pyrite present which may oxidise if the ground is disturbed:

Table 8.2 Oxidisable Sulphides Calculations

Exploratory Hole Location	Depth (m bgl)	Total Sulphur (TS) Concentration (%)	Calculated Total Potential Sulphate (TPS) (%)*	Acid-Soluble Sulfate (AS) Concentration (%)	Calculated Oxidisable Sulphides (OS) (%)#
Made Ground					
CP01	0.20	0.21	0.63	0.140	0.49
CP01	0.50	0.03	0.09	0.03	0.06
CP02	0.30	0.22	0.66	0.43	0.23
CP03	0.30	0.57	1.71	1.36	0.35
WS02	0.70	0.05	0.15	0.03	0.12
WS05	0.50	0.12	0.36	0.04	0.32

Note: * TPS = = 3 x total sulphur (TS % S). # OS = TPS - AS

Conclusion

A determination has been made as to whether the calculated Oxidisable Sulphides (%) are "greater than 0.3% for a significant number of samples", in accordance with BRE SD1. The conclusion of this assessment is that a significant number of samples <u>are</u> in excess of 0.3% with respect to calculated Oxidisable Sulphides (%).

On this basis, **this does indicate** pyrite is present which may oxidise if ground is disturbed.

Design Sulphate Classification

Representative samples of the soils encountered during the Tier Environmental ground investigation, were tested to determine their pH and concentrations of water-soluble sulphate (SO_4^{2-}). The results are presented in Appendix C and summarised in Table 8.3 below. It is assumed that the site is a 'brownfield' site, and the groundwater is 'mobile' in accordance with BRE SD1.



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The conclusion of the assessment is that a DS-3 and ACEC Class AC-3 is appropriate for buried concrete design purposes, with due consideration of the sub-sections above (which include consideration of chloride, nitrate, magnesium and potential for sulphide bearing (e.g. pyritic) ground).

It is also noted that there is evidence of gross hydrocarbon contamination at the site and as such, a concrete specialist should review the TPH results and ground conditions summary within this report to ensure appropriate concrete design against retardation / degradation due to hydrocarbons.

Table 8.3 Results of Soil pH Testing and Water-Soluble Sulphate Determination

Exploratory Hole Location	Depth (m bgl)	рН	Total Potential Sulphate % (used as potenially pyritic)	Design sulphate class	ACEC sulphate class
MADE GROUND					
CP01	0.20	8.52	0.63	5-9 samples: Mean of	>5 No. samples mean of
CP01	0.50	8.32	0.09	highest two results rounded to nearest 100%:	lowest 20% is used as the Characteristic value:
CP02	0.30	10.33	0.66	= 1.2%	=7.7
CP03	0.30	7.7	1.71	= DS-3	=AC-3
WS02	0.70	7.94	0.15		-Ac 3
WS05	0.50	8.47	0.36		

ACEC - Aggressive Chemical Environment for Concrete (see BRE, 2005).

8.2. Geotechnical Parameters

The data obtained during the Ground Investigation has been assessed for the recorded soil types in order to provide characteristic values in order to aid the final foundation design.

Soil Classification

Cohesive Soils

Moisture content and Atterberg Limit testing was undertaken on samples from cohesive superficial material at the site. A summary of the results is shown in Table 8.4 below.

Table 8.4 Soil Classification Test Results for Tidal Flat Deposits

Exploratory hole	Depth (m bgl)	MC (%)	LL (%)	PL (%)	PI (%) (Modified)	Class	Volume Change Potential	Consistency Index
CP02	2.2-2.65	31	40	15	24	Medium	Medium	0.37

ND - Not determined; MC - Moisture content, LL - Liquid limit, PL - Plastic limit, PI - Plasticity index.

Consistency index (CI) is obtained from Atterberg limits and is allowed by Eurocode 7 as a scientific means of determining consistency of clays over and above an engineer merely sticking a thumb in (CI = 1-(mc-(PL/PI)) using unmodified PI).

An Atterberg Limit Test was performed on a sample of identified cohesive soil, confirming that the material is medium plasticity clay and of medium volume change potential.



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Granular Soils

A total of 4 No. samples of were submitted for Particle Size Distribution tests. Tests confirmed soils as silty Sand, with consistent fines proportions between samples, and slight sandy, slightly gravelly Clay/Silt.

Density Parameters

The results of Standard Penetration Tests undertaken within the Made Ground are considered to be slightly variable, ranging from N = 11 to N = 14 in the granular soils, with most N values falling in the medium dense categories, and N=9 and N=10 in cohesive soils. Any variability in results is likely attributed heterogeneous composition and obstructions and tends to indicate that these materials may have been placed with limited engineering control.

The results of 1 No. Standard Penetration Test undertaken within the cohesive natural strata show an SPT N Value of N=9, falling in the firm category. The remaining SPTs were taken within granular soils and ranged between N= 5 at circa 2.00m bgl increasing to N = 35 at 4.00m bgl, with most N values falling in the medium dense categories. Results generally increase with depth with localised lower values possibly attributed to softening from ground water influence or variable silty/clayey bands within the granular soils.



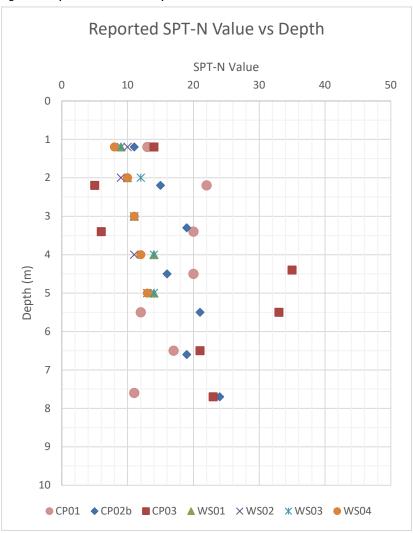
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Figure 8.3 Reported SPT Value vs Depth



Foundation Recommendations

Portions of the site are covered by former or existing facilities on the site, e.g., hardstanding, floor slabs and foundations. This material is unsuitable for foundations and relict foundations and floor slabs should be broken out to avoid the formation of hard spots.

Due to potentially low strength shallow soils, with an anticipated bearing of 60kPa at 1.20m bgl based on localised low SPT values, it is recommended that Vibro Stone Columns are used to support the foundations and floor slab across the building footprint. a bearing capacity of circa 125kPa to 150kPa could likely be achieved using this method however, this should be confirmed by a specialist ground improvement contractor.

Consideration should be given to any increase in ground levels which may be required as part of flood protection measures.



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8.3. Earthworks

Based upon a visual inspection of on site materials, the Made Ground could be used as an engineered fill, subject to other suitability considerations. It should be noted that suitability for compaction is highly dependent on the initial moisture content of the material to be compacted. Some processing of the material (including screening and crushing of unsuitable elements) may be required during the enabling works phase to remove over-sized or unsuitable material, such as metal, plastic, fabric and timber. Where Made Ground is to be reused as an engineered fill, it would be sensible to select granular fills only and subject them to a confirmatory testing regime where they were required to achieve a compaction specification as a structural fill. Compaction testing should be completed during earthworks to confirm material suitability.

Construction plant should be provided with an adequate working platform in line with the requirements of BRE report, "BR 470: Working Platforms for Tracked Plant". Again, further advice should be sought from the temporary works designer. However, the following factors should be considered.

8.4. Groundworks, Excavation Stability and Groundwater Dewatering

In our opinion, there should be no particular difficulties in excavating the strata indicated in the boreholes utilising an appropriate and suitably sized mechanical excavator. Excavations into existing Made Ground and the underlying natural soils should be assumed to be unstable. No man entry into unsupported excavations should be allowed without an appropriate risk assessment. Reference to CIRIA report 097 (1983) should be made to establish suitable means of support or battering of excavation sides.

It is recommended that all excavations to greater than 1.20 metres depth, or for shallower excavations where groundwater is encountered above this level are closely supported, especially where man entry is required. Alternatively, where space permits, the excavations might be battered back to an appropriate angle. Standing groundwater levels of between 1.70m and 3.00m were encountered in the boreholes. Should groundwater seepages occur, and water accumulate in shallow excavations it should be able to be removed by pumping from a filtered sump. However, groundwater control by more robust means, such as well pointing, may be required locally.

It should be noted that should deep basements be constructed as part of the development then we would recommend that the standpipes are monitored for groundwater levels for an extended period of time and take into consideration seasonal variations and periods of very wet weather to measure the fluctuation of the standing water levels. It should be noted that groundwater inflows and levels are likely to be subject to seasonal and climatic variations.

Great care will need to be taken if reducing groundwater levels to ensure that adjoining nearby buildings, structures and services are not affected.



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9. HUMAN HEALTH RISK ASSESSMENT

Results of chemical analysis are presented in full in Appendix C

9.1. Data Interpretation Approach

The analytical data obtained were reviewed for completeness and consistency. The data for each sample type was then compiled, screened against the Generic Assessment Criteria (GACs) for a commercial/industrial land use and those potential contaminants of concern which were found to exceed the GACs were then subjected to detailed analysis as described below.

Previously, it was possible for results from soil (and leachate) samples to be subject to statistical assessment in accordance with a 2008 guidance document (CL:AIRE / CIEH Guidance on Comparing Soil Contamination Data with a Critical Concentration). This guidance has now been withdrawn and replaced with the following document:

Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration (CL:AIRE 2020)

The purpose behind statistical assessment is ultimately to determine whether concentrations of contaminants are at levels that present potential risk to the future site users (and the wider environment if the statistical assessment is conducted on leachate test results).

The new guidance places even greater emphasis and reliance on the desk study being carried out first, appropriately detailed sampling strategies, collection and testing of samples for contamination and use of appropriate screening criteria.

The guidance requires an increased number of criteria to be met before a robust statistical assessment can be conducted and introduces the principle of the Central Limit Theorem (CLT); a key tool of statistics that is used in the comparison of confidence intervals with the critical concentration. A common 'rule of thumb' is that the CLT will apply provided your sample size is between 20 and 50.

On this basis, Tier Environmental considers that statistical assessment in accordance with the CL:AIRE 2020 guidance may not be applied in this instance given that the number of samples obtained is below 20 No. for any given identified soil population.

Due consideration of the ground conditions, distinct identifiable populations of soil and proposed development layout has been undertaken and, where appropriate, laboratory results associated with discrete populations or 'hotspots' have been assessed separately.

9.2. Selection of Generic Assessment Criteria (GAC)

In short, for the majority of the contaminants of concern, LQM/CIEH Suitable 4 Use Levels (S4ULs) published in 2015 have been adopted as GACs for a commercial/industrial land use; however, further details on the hierarchal approach for the selection of the GACs used as screening criteria for this assessment is provided in Appendix L.

These values are considered as appropriate screening criteria as they incorporate updated assumption exposures derived for the production of C4SLs but within the context of deriving screening criteria above which assessment of the risks or remedial action may be needed (i.e. within the context of the planning regime rather than Part 2A context for which C4SLs were derived).

For those potential contaminants of concern where the selected GAC is dependent on Soil Organic Matter content (SOM), an assumed SOM of 1% has been selected based on the reported Total Organic Carbon (TOC) concentrations (which have been converted to SOM by dividing by a conversion



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factor of 0.58). It should be noted; however, that for any soil samples where the TOC may be artificially driven by the presence of petroleum hydrocarbons, that these TOC results have been removed from the data set when determining an appropriate characteristic SOM. For this purpose, Tier Environmental have notionally considered that any TOC results from soil samples where the measured total TPH concentration exceeds 500mg/kg should be removed.

9.3. Human Health Risk Assessment

Measured concentrations of the following contaminants of concern have been reported in excess of the respective GACs:



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Table 9.1 Measured Concentrations of Potential Contaminants of Concern Reported in Excess of the Respective GACs

Contaminant of Concern	Exploratory Hole Location	Depth (m bgl)	Soil Population	Units	Measured Concentration	GAC	Comments
Metals	•						
Lead	CP01	0.20	MG1	mg/kg	11580	2330	Currently, proposed layout plans have not been finalised however should these areas be within
Dibenzo(ah)anthracene	WS03	0.30	MG1	mg/kg	4.53	3.5	proposed soft landscaping, any remaining risks to end users associated with direct contact, dust inhalation and ingestion pathways could be mitigated by a 300mm clean cover system.



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Localised Impacts

Measured localised concentrations of lead and dibenzo(ah)anthracene have been reported in excess of the GAC protective of human health for a commercial/industrial land use. Tier Environmental have reviewed the exploratory hole logs to confirm that the soil type at these locations is described as a gravelly limestone sub-base. No metallic objects/materials were observed whilst undertaking the ground investigation. Currently, proposed layout plans have not been finalised and therefore the location of this GAC exceedance within the building footprint is not known. A 300mm clean cover system should be adopted for the site should these areas fall within proposed soft landscaping areas.

It should be noted that hydrocarbon impacts were recorded within the vicinity of a historic tank. Whilst measured concentrations of TPH were reported below the GACs for a commercial/industrial land use, there remains the potential for risks to human health via a vapour inhalation pathway, and as such a hydrocarbon resistant membrane may need to be considered for the development.

Measured Potential Contaminant of Concern Concentrations without Publicly Available GACs

Table 9.2 summarises the measured concentrations of potential contaminants of concern have been reported in excess of the laboratory method detection limit for which there are no current publicly available GACs and provides qualitative commentary / discussion as to whether they may represent a potential risk to human health with due consideration of the Conceptual Site Model.



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Table 9.2 Measured Concentrations of Potential Contaminants of Concern Reported in Excess of the Laboratory Method Detection Limit

Contaminant of Concern	Exploratory Hole Location	Depth (m bgl)	Soil Population	Units	Measured Concentration	Comments		
SVOC MC						L		
2-Methylnaphthalene	CP02	0.30	MG1	mg/kg	0.496	An assessment has been made of VOCs/SVOCs for which there are publicly		
	WS03	0.30	MG1	mg/kg	0.157	available GACs. The conclusion of this assessment is that the site does not present a risk to the end user from VOCs / SVOCs.		
Carbazole	CP02	0.30	MG1	mg/kg	0.092	Nevertheless, there remains the potential for VOC vapour protection		
	WS03	0.30	MG1	mg/kg	0.854	measures to be required due to the presence of these reported		
Dibenzofuran	CP02	0.30	MG1	mg/kg	0.155	concentrations of VOC/SVOC for which there are no publicly available GAC.		
	WS03	0.30	MG1	mg/kg	0.339			
Others	1	l		L				
Ammoniacal Nitrogen as	CP01	0.20	MG1	mg/kg	1	Ammoniacal nitrogen primarily affects human health indirectly through its		
NH4	CP01	0.50	MG1	mg/kg	5.4	impact on the environment and the food chain. Concentrations reported are not significantly widespread and are anticipated to located within low		
	CP02	3.20	Tidal Flat Deposits	mg/kg	3.2	sensitivity proposed hardstanding or building footprint areas (subject to		
	CP03	0.80	MG2	mg/kg	0.8	finalisations of development plans). On this basis, and given the low		
	WS02	1.40	MG3	mg/kg	1.4	sensitivity use of the site in these areas it is not considered that these reported concentrations are likely to be representative of a significant		
	WS05	0.50	MG1	mg/kg	4.8	source that would present a risk to human health.		

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Asbestos

Asbestos can be present in soil as fragments of bulk Asbestos Containing Materials (ACMs) (e.g. asbestos cement sheeting) and also as discrete asbestos fibres within the soil matrix. This investigation has carried out assessments to determine whether both bulk fragments and / or fibres are present in the soil at the site. The asbestos assessment commenced on site with inspection of the Made Ground by our suitably qualified supervising engineer for the presence of bulk ACMs.

ACM materials were reported during fieldworks as summarised in Table 9.3 below.

Of the 11 No. of Made Ground samples submitted for asbestos screening, 2 No. were reported to contain asbestos. Those positive identifications are summarised in Table 9.3, below.

Table 9.3 Summary of Asbestos Assessment

Exploratory Hole Location	Depth (m bgl)	Location on Site Description	Soil Population	Asbestos Type	Quantification (% w/w)
ACMs Encountered	ed During Fie	ldworks			
AS1	N/A	Centrally south of site	N/A	Chrysotile fibre bundles	N/A
Asbestos in Soil S	amples				
CP02b	1.0	Central to the concrete hardstanding to the west of site	MG1	Chrysotile fibre bundles	>0.001 (Below Limit of Detection)

Groundwater

Results of groundwater testing have been compared to commercial land use thresholds derived from "Development of Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Organic compounds in Water" (SoBRA, February 2017) for which there were no exceedances.

9.4. Utilities

It is recommended that the results of the chemical testing and details of the proposed remedial works are provided to the appropriate utility companies to determine the necessity for service protection.

9.5. Construction and Maintenance Workers

Contamination may pose a short-term (acute) or long-term (chronic) risk to workers during construction and maintenance. The potential risks must be specifically assessed as part of the health and safety evaluation for the works to be performed in accordance with prevailing legislation. Site practices must conform to the specific legislative requirements and follow appropriate guidance (e.g., HSE, 1991; CIRIA, 1996).

On the basis of the results obtained, the following potential exposure risks to construction and maintenance workers have been highlighted:

- Localised asbestos in the Made Ground
- Localised elevated levels of lead and dibenzo(ah)anthracene



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As ACMs (Asbestos cement) have been reported the Control of Asbestos Regulations 2012 should be adhered to. A summary of complying with CAR: risk assessments, licensing and training is provided in Appendix Q.

Whilst asbestos has been reported during the ground investigation works, the measured concentrations have been reported <0.001% w/w i.e. at 'trace' levels which are unlikely to trigger requirements during earthworks / construction works in accordance Control of Asbestos Regulations 2012. However, in the event that previously unidentified asbestos is identified during future earthworks / construction works at concentrations above 0.001% w/w (i.e. above 'trace' levels), the Control of Asbestos Regulations 2012 should be adhered to. A summary of complying with CAR: risk assessments, licensing and training is therefore provided in Appendix Q.



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10.CONTROLLED WATERS RISK ASSESSMENT

10.1. Introduction

In order to assess whether there is a potentially unacceptable risk of pollution of controlled waters, samples of groundwater have been submitted for laboratory chemical analysis as per the summary presented in Table 6.4 within this report. Analytical data from groundwater sample testing undertaken by Tier Environmental have been evaluated against Water Quality Standard (WQS) values appropriate to the Conceptual Site Model.

In accordance with Part 2A of the Environmental Protection Act 1990, Tier Environmental has made regard to all of the WQS values that are relevant to the site and a judgment has been made against the most stringent of those relevant standards. Further details are provided, along with the approach for selection of TPH / BTEX WQS values, in Appendix M.

In some instances, the laboratory method detection limit is greater than the appropriate WQS value. In these instances, only measured concentrations in excess of the laboratory method detection limit have been considered likely to potentially represent a possible significant risk to controlled waters.

For those potential contaminants of concern for which the WQS values are dependent on hardness (e.g. cadmium EQS values), a hardness of >200 mg CaCO3/I has been selected based on the reported values in the groundwater beneath the site.

10.2. Controlled Waters Environment Conceptual Site Model Summary

From a conceptual site model perspective, the Tidal Flat Deposits are a Secondary Undifferentiated Aquifer and the Etruria Formation bedrock is classified as a Secondary A Aquifer. Groundwater flow direction beneath the site is most likely towards the northeast in the direction of the River Dee. The site is not within a Source Protection Zone and there are no active non-potable/potable groundwater abstractions within 250m of the site. The site is set within an area of significant wider historical commercial/industrial heritage. On this basis the controlled waters sensitivity is regarded as being low to low/moderate.

10.3. Groundwater Testing

Table 10.1 below summarises the measured concentrations of contaminants of concern from groundwater samples at the site that have been reported in excess of the respective WQS values.

Table 10.1 Summary of Measured Concentrations of Dissolved Phase Groundwater Potential Contaminants of Concern in Excess of WQS Values

Potential Contaminant of Concern	Units	LoD*	wqs	Maximum Concentration	No. samples >WQS	Monitoring Well Location
Total Ammonia as N	mg/l	<0.03	0.6	0.67	1 of 3	CP02b
Dissolved Cadmium	μg/l	<0.03	0.25	0.43	1 of 3	CP02b
Dissolved Lead	μg/	<0.4	1.3	1.6	1 of 3	CP01
Dissolved Zinc	μg/l	<1.5	6.8	309.2	2 of 3	CP01 and CP02b
Fluoranthene	μg/l	<0.005	0.0063	1.351	3 of 3	CP01, CP02b, CP03
Benzo(a)pyrene	μg/l	<0.005	0.00017	0.206	2 of 3	CP01, CP03
TPH CWG (C12-C16)	μg/l	<10	300	1960	1 of 3	CP02b
TPH CWG (EC12-EC16)	μg/l	<10	100	1310	1 of 3	CP02b
TPH CWG (EC16-EC21)	μg/l	<10	100	2840	1 of 3	CP02b



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Potential Contaminant of Concern	Units	LoD*	WQS	Maximum Concentration	No. samples >WQS	Monitoring Well Location
TPH CWG (EC21-EC35)	μg/l	<10	90	1040	1 of 3	CP02b

^{*} LOD= Laboratory Method Limit of Detection

Measured groundwater concentrations of total ammonia, cadmium and lead have been reported marginally above the respective WQS protective of the controlled waters environment by the same order of magnitude. Given the marginal nature of these exceedances, the historical commercial and industrial heritage of site and wider area surrounding the Site, and the conservative selection of salt water WQS, the distance from the site to the nearest surface water receptor and the potential for dilution and dispersion beneath the site, these exceedances are not representative of a significant risk to the controlled waters environment.

Additional dissolved phase groundwater concentrations of zinc have been reported in excess of the WQS protective of the controlled waters environment by 2 No. orders of magnitude, in 2 No. locations. This exceedance is not considered to present a risk to the controlled waters environment for the following reasons:

- When sensitivity analysis against the freshwater EQS value is conducted, the exceedance reduces to a single order of magnitude;
- The exceedances are considered localised, and concentrations recorded in the hydraulically downgradient CP03 are reported below the selected GAC;
- The site is situated beyond 300m for the River Dee and circa. 6km from the river mouth so there is the likelihood for further dilution between the site and this water body, which is considered the most sensitive receptor.
- At least 8.00m of variable granular/cohesive Tidal Flat Deposits underly the site which would further provide dilution and attenuation between the groundwater body and the deeper Secondary A aquifer.

Further specific consideration of the reported groundwater concentrations of fluoranthene and benzo(a)pyrene concentrations have been made. The EQS values for fluoranthene and benzo(a)pyrene are derived assuming bioaccumulation in fish and ultimately consumption of the fish by humans which is an exposure scenario that is not viable for this site given the urban setting and the distance to the River Dee. Subsequent sensitivity analysis has demonstrated that no measured groundwater concentrations of benzo(a)pyrene have been reported in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario, it is therefore considered that the reported groundwater concentrations of benzo(a)pyrene do not present a potential risk to the controlled waters environment.

Subsequent sensitivity analysis has demonstrated that measured groundwater concentrations of fluoranthene have been reported only marginally in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters by up to one order of magnitude. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario and given historical commercial and industrial heritage of site and wider area surrounding the Site, the absence of any potable/non potable groundwater abstractions within 2km of the site, and the fact that it is anticipated the site will incorporate buildings / hardstanding and a dedicated drainage system that shall reduce infiltration rates through the soils, it is considered that the reported groundwater concentration of fluoranthene are unlikely to present a potential risk to the controlled waters environment.

Elevated concentrations of select TPHs as indicated in Table 10.1, have also been reported localised within the vicinity of a historic tank between 1No. and up to 2 No. orders of magnitude. An assessment of the relative mobility hydrocarbon fraction EC21-EC35, which recorded the highest exceedance, has determined a very low mobility. With this in mind, and in light of the qualitative arguments outlined above, these concentrations are not considered to present a risk to the controlled waters environment. Furthermore, there is no evidence of hydrocarbon contamination down gradient of site with other samples reporting a majority of TPH levels below the laboratory limit of detection. Nevertheless, there may be the requirement to



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excavate and remove from site any localised grossly impacted TPH materials observed during earthworks to reduce the source mass of any ongoing hydrocarbon sources on site and an allowance should be made for this.



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11.GROUND GAS RISK ASSESSMENT

11.1. Introduction

The ground gas risk assessment has been undertaken in accordance with the following guidance:

- BS 8485:2015+A1:2019;
- CIRIA C665, 2007;
- Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide Are Present, NHBC, 2007;
- A Pragmatic Approach to Ground Gas Risk Assessment RB17. CL:AIRE, 2012; and,
- Ground Gas Monitoring and 'Worst-Case' Conditions TB17, CL:AIRE, 2018

The ground gas risk assessment has been conducted with full consideration of the viable sources, pathways and receptors included within the Preliminary Conceptual Site Model presented in Section 5.

Ground gas monitoring was conducted in conjunction with groundwater monitoring (and sampling); however, it should be noted during the gas monitoring was conducted first, prior to any groundwater monitoring / sampling works. The monitoring well locations and construction were designed with due consideration of the proposed development layout and preliminary conceptual site model. Further information pertaining to monitoring wells is provided in Table 6.2.

11.2. In situ Photo Ionisation Detection (PID) Testing Results

Using Photo Ionisation Detector (PID) initial VOC screening took place whilst undertaking the ground investigation. As summarised by the table below, no elevated VOC concentrations were recorded.

Table 11.1 - In-situ PID Testing

Exploratory Hole Location	Depth (m bgl)	PID VOC reading (ppm)
CP01	0.5	0 ppm
CP01	1	0 ppm
CP02	0.3	0 ppm
CP02	1.5	0 ppm
CP02	2.5	0 ppm
CP03	0.3	0 ppm
WS01	0.3	0 ppm
WS01	1	0 ppm
WS02	0.8	0 ppm
WS02	2	0 ppm
WS03	0.5	0 ppm
WS03	1	0 ppm
WS03	2	0 ppm
WS03	3	0 ppm
WS04	0.5	0 ppm



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Exploratory Hole Location	Depth (m bgl)	PID VOC reading (ppm)
WS04	1	0 ppm

11.3. Ground Gas Monitoring Results

The full ground gas monitoring results from the installations are presented in Appendix F and summarised below:



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Table 11.2 Ground Gas Monitoring Results Summary - 4 No. Visits of Proposed Monitoring Programme of 4 No. Visits

Strata targeted by response zone	Monitoring well reference	Maximum peak CH ₄ (%v/v)	Maximum steady state CH ₄ (%v/v)	Maximum peak CO₂ (%v/v)	Maximum steady state CO₂ (%v/v)	Lowest O ₂ recorded (%v/v)	Maximum peak gas flow rate (I/h)	Maximum steady state gas flow (I/h)
MG/TFD	CP01	0.3	0.3	1.5	1.5	0.3	ND	ND
MG/TFD	CP02b	ND	ND	1.8	1.7	16.7	ND	ND
MG/TFD	CP03	ND	ND	1.4	1.4	2.6	ND	ND
MG/TFD	WS02	ND	ND	1.6	1.6	19.0	ND	ND

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Bold = maximum value reported across all visits.



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Ground Gas Risk Assessment 11.4.

Table 11.3 and Table 11.4 demonstrate how, in accordance with CIRIA C665, the periods and frequency of monitoring have been selected for the site.

Table 11.3 From Table 5.5a CIRIA C665 - Typical/idealised periods of monitoring (after Wilson et al, 2005)

		Generation Potential of the Source					
	2	Very Low	Low	Moderate	High	Very High	
opment	Low (commercial)	1 month	2 months	3 months	6 months	12 months	
Sensitivity of development	Moderate (flats)	2 months	3 months	6 months	12 months	24 months	
	High (residential with gardens)	3 months ¹	6 months	6 months	12 months ¹	24 months	

Notes:

Table 11.4 From Table 5.5b CIRIA C665 - Typical/idealised frequency of monitoring (after Wilson et al, 2005)

		Generation Potential of the Source					
	2	Very Low	Low	Moderate	High	Very High	
opment	Low (commercial)	4	6	6	12	12	
Sensitivity of development	Moderate (flats)	6	6	9	12	24	
Sensitivi	High (residential with gardens)	6 ¹	9	12	24 ¹	24	

Notes:

The total atmospheric pressure range of the ground gas monitoring data included in this report was between 974 mbar and 1004 mbar. this range covers low (<1000 mbar) to high (>1015 mbar) atmospheric pressures. monitoring events included periods of falling pressure trends.

¹ NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).

² There is no industry consent over "high", "medium" or "low" generation potential of source.

 $^{{\}bf 1}\,{\bf NHBC}\,{\bf guidance}\,{\bf also}\,{\bf recommends}\,{\bf this}\,{\bf period}\,{\bf of}\,{\bf monitoring}\,{\bf (Boyle}\,{\bf and}\,{\bf Witherington},\,{\bf 2007)}.$

² There is no industry consent over "high", "medium" or "low" generation potential of source.



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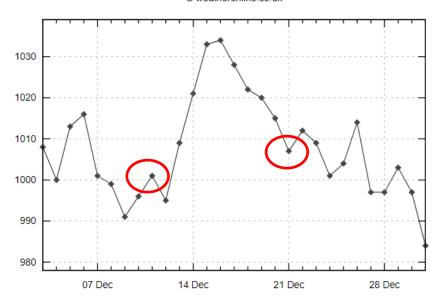
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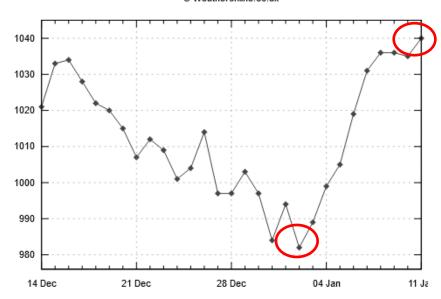
Visit 1 & 2 (11/12/23 & 21/12/23)

Hawarden
Pressure [hPa]: 03.12.2023 - 31.12.2023
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Visit 3 & 4 (02/01/24 & 12/01/24)

Hawarden
Pressure [hPa]: 14.12.2023 - 11.01.2024
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Consideration of Groundwater Effects

An assessment has been made to determine whether groundwater levels beneath the site lie at a shallow depth at, or above, the plain section of the monitoring well or within cohesive strata. In those instances where shallow groundwater is located within the plain section of the monitoring well



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pipe or within cohesive strata this can result in 'groundwater pumping' or a 'piston effect' where the measured peak (and in some cases steady) flow rates reported at these monitoring well locations are significantly (and artificially) influenced by the pressures formed in the void above the groundwater in the plain section of the pipe or within the pipework installed within cohesive strata, as opposed to being truly representative of the ground gas flow rates. In such instances, this scenario can create 'artificial' negative and /or relatively high peak positive readings depending on whether the groundwater levels have increased or decreased in between monitoring events or since installation of the monitoring wells.

The results of the ground gas monitoring within this report have indicates that there have been no instances of artificial groundwater pumping.

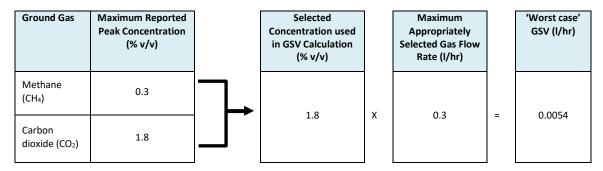
The results of the ground gas monitoring have been assessed in accordance with the criteria specified for this site, which were derived as described in Appendix N.

Initial 'Worst-Case' GSV Calculation - Carbon Dioxide and Methane

An initial conservative assessment has been made by calculating a 'worst-case' Gas Screening Value (GSV) for the site by using:

- the maximum reported methane or carbon dioxide concentration (whichever is highest) from any monitoring well and during any ground gas monitoring visit; and,
- the remaining maximum peak positive flow rate (after any negative flow rates or 'artificially' high flow rates have been discounted as described above) from any monitoring well and during any ground gas monitoring visit.

Table 11.5 Initial Worst-Case GSV Calculation



CIRIA C665 provides two separate methods to 'characterise' a site that firstly requires the assessor to distinguish between two fundamental development 'situations':

- **Situation A** Any development other than Situation B (e.g. factories, shops, commercial, warehouses, schools, cinemas, sports centres, stadiums, high rise housing, housing with basements, etc) for which the **Modified Wilson and Card 'Characteristic Situation' classification system** is applied; and,
- Situation B Low rise building with minimum ventilated under floor void (min 150 mm) for which the NHBC Traffic light classification system is applied.

In this instance, as the site is due to be developed as commercial warehouse/unit it shall be regarded as a 'Situation A' scenario for the purposes of the ground gas risk assessment.

Table 11.5 demonstrates that the site is placed in a Characteristic Situation 1– Very Low scenario on the basis of the 'worst case' GSV alone.



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CIRIA C665 indicates that in the event that the reported methane concentrations are 'typically' >1% v/v and/or the reported carbon dioxide concentrations are 'typically' >5% then consideration should be made to increase the determination of the site to a Characteristic Situation 2 – Low Risk scenario.

In this instance, as no maximum peak or steady methane or carbon dioxide concentrations have been reported in excess of 1% v/v or 5% v/v respectively, the site can be reasonably classified as a Characteristic Situation 1 – Very Low Risk scenario for which no basic ground gas protection measures are required.

Hydrocarbon/Volatile Resistant Membrane

Given the presence of localised gross hydrocarbon contamination in the vicinity of the historic tank, a precautionary hydrocarbon/volatile resistant membrane should be considered for the development to mitigate against potential vapour inhalation pathways.

Carbon Monoxide and Hydrogen Sulphide

There is no current UK risk assessment guidance available for carbon monoxide and hydrogen sulphide derived from ground gases.

A maximum peak carbon monoxide concentration of 6 ppm has been reported which is below the workplace long term exposure limit (30ppm) and the workplace short term exposure limit (200ppm) published by the Health and Safety Executive (EH40/2005 Workplace Exposure Limits) but slightly above the WHO long term (24 hours) indoor exposure guideline value (5.68 ppm). Carbon monoxide is not considered to pose a ground gas risk for the following reasonings:

- From a conceptual site model perspective there is no viable source for carbon monoxide within the locations where elevation have been detected:
- Only 1 No. values is recorded to exceed 5.68 ppm with all other locations below the limit of detection.
- There are no significant flow rates associated with the carbon monoxide concentrations and no elevated carbon dioxide or methane concentrations across site;
- All remaining values are below the workplace long term exposure limit of 30ppm.

Considerations for Construction and Maintenance Workers

During engineering and construction activities, the ground gas data indicate that the following aspects are to be considered during the preparation of relevant site H&S plans, method statements and related documents, and appropriate working methods adopted:

Carbon dioxide concentrations in ground gas: The measured CO2 concentrations in ground gas reported are elevated relative to
background levels and could present an asphyxiation risk in excavations and other confined spaces. The Health & Safety Executive has
published information defining safe occupational exposure levels for CO2 and the latest guidance must be consulted to determine whether
the ground gas regime necessitates specific precautions during site works.

11.5. Radon Gas

Between 3% and 5% of properties in the area are above the radon action level. As a result, basic radon protection measures are required. likely in the form radon barrier/ membrane laid within the floor or solum construction, which is linked to a damp-proof course (DPC) within the walls of the building.



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12.REVISED CONCEPTUAL SITE MODEL AND GENERIC QUANTITATIVE RISK ASSESSMENT OF POLLUTANT LINKAGES

The preliminary combined conceptual site model and conceptual exposure model, developed from the desk study information and presented in Section 5, has been revised in light of the ground investigation and the chemical analysis results presented above in Table 12.1, below.

A revised qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance in accordance with CIRIA C552.



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Table 12.1 Revised Assessment of Potential Pollutant Linkages (Continued on Next Page).

Justification / Comments

• The site is underlain by hardstanding of concrete and asphalt to the south and southwestern areas of site to a maximum depth of 0.30n bgl. Made Ground was proven to depths of between 0.70m and 2.00m bgl, described as a brown clayey gravel and gravelly clay with brick, limestone and mudstone. A black gravelly Ash was also recorded in the south and east of the site, with as medium to coarse coal fragments. Soils described as 'possible Made Ground' were recorded to between 1.50m and 2.00m bgl comprised of sandy silt. Natural soils comprised generally of granular (sand) Tidal Flat Deposits interbedded with silty/clayey bands and were proven to 8.15m bgl.

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- Measured localised concentrations of lead and dibenzo(ah)anthracene have been reported in excess of the GAC protective of Human Health for a commercial/industrial land use. These contaminants of concern pose a risk to human health through direct contact, dust inhalation and ingestion. A 300mm clean cover should be implemented to break these pathways. Of the 11 No. Made Ground samples submitted for asbestos screening, 2 No. were reported to contain asbestos in the form of asbestos cement sheeting and chrysotile fibre bundles of <0.001% w/w.
- From a conceptual site model perspective, the Tidal Flat Deposits are a Secondary Undifferentiated Aquifer, and the underlying Etruria formation is a Secondary A Aquifer. The anticipated groundwater flow direction has been inferred to be a northeast direction towards the River Dee. The site is not within a source protection zone and there are no nearby potable/Non potable water abstractions. The suitably thick Tidal Flat Deposits (proven to 8.15m bgl) will offer protection from vertical migration of any shallow contaminative impacts. The site is within a larger industrial area. On this basis the risk to the controlled waters is considered low.
- Measured groundwater concentrations of total ammonia, cadmium and lead have been reported in slight excess of the WQS protective of the controlled waters environment by the same order of magnitude. Given the marginal nature of these exceedances, the historical commercial and industrial heritage of site and wider area surrounding the Site, and the conservative selection of salt water GACs these exceedances are not seen as a risk to the controlled waters environment. Additional dissolved phase groundwater concentrations of zinc have been reported in excess of the WQS protective of the controlled waters environment by 2 No. orders of magnitude, in 2 No. locations. Following multiple lines of evidence, this exceedance is also considered to present a risk to the controlled waters environment,
- Subsequent sensitivity analysis has demonstrated that no measured groundwater concentrations of benzo(a) pyrene have been reported in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario, it is therefore considered that the reported groundwater concentrations of benzo(a) pyrene do not present a potential risk to the controlled waters environment. Measured groundwater concentrations of fluoranthene have been reported only marginally in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters by up to one order of magnitude. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario and given historical commercial and industrial heritage of site and wider area surrounding the Site, the absence of any potable/non potable groundwater abstractions within 2km of the site, and the fact that it is anticipated the site will incorporate buildings / hardstanding and a dedicated drainage system that shall reduce infiltration rates through the soils, it is therefore considered that the reported groundwater concentration of fluoranthene are unlikely to present a potential risk to the controlled waters environment.
- Elevated concentrations of select TPHs have also been reported localised within the vicinity of a historic tank between 1No. and up to 2 No. orders of magnitude. An assessment of the relative mobility hydrocarbon fraction EC21-EC35, which recorded the highest exceedance, has determined a very low mobility. With this in mind, and in light of the qualitative arguments outlined above, these concentrations are not considered to present a risk to the controlled waters environment. Furthermore, there is no evidence of hydrocarbon contamination down gradient of site with other samples reporting a majority of TPH levels below the laboratory limit of detection.
- Measured groundwater concentrations of total ammonia cadmium and lead have been reported in slight excess of the WQS protective of the controlled waters environment by less one order of magnitude. Given the marginal nature of these exceedances and the conservative selection of salt water GACs these exceedances are not seen as a risk to the controlled waters environment.
- A gas screening value of 0.0054l/hr has been calculated, derived using the maximum peak recorded Carbon Dioxide concentration of 1.7%v/v and the maximum recorded flow rate of 0.3l/hr. Assessment of this screening value alone places the site in a Characteristic Situation 1 Very Low Risk Scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. A hydrocarbon/volatile resistant membrane may be required to mitigate vapour inhalation pathways associated with localised TPHs.
- The Site lies within an area where between 3% and 5% of properties are above the Radon Action Level. On this basis basic radon protection measures are required.



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Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
Localised elevated lead and dibenzo(ah)anthracene	Metals	Direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
Localised asbestos in soils and presence of ACMS associated with	PAHs		Adjacent site users (commercial)	Medium	Unlikely	Low Risk
existing buildings			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits Adjacent site users (commercial)		Medium	Low Likelihood	Moderate / Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Superficial Tidal Flat Deposits	Mild	Unlikely	Very Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Etruria Mudstone Formation	Medium	Unlikely	Low Risk
			Inland river not influenced by tidal conditions located approximately 32m southwest.	Mild	Low Likelihood	Low Risk
			River Dee located approximately 259m northeast.	Medium	Low Likelihood	Moderate / Low Risk
	Asbestos	(Dust migration and) dust inhalation	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Unlikely	Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
Localised gross hydrocarbon contamination in vicinity of historic tank and select VOCs/SVOCs for which there are no GACs reported above the laboratory limit of detection	TPH and select VOCs/SVOCs	Inhalation (indoor and outdoor)	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
The site is within an area where between 3 and 5% of properties are	Radon	Inhalation (indoor and outdoor)	Future site users (commercial)	Medium	Likely	Moderate Risk
above the radon Action Level.			Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of hazardous ground gases from beneath the site to adjacent sites along services or other preferential conduits	Adjacent site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk

For definition of the terms used in the qualitative risk assessment, please see Appendix K.



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13.PRELIMINARY WASTE MATERIALS CLASSIFICATION AND WASTE DISPOSAL ROUTE DETERMINATION

13.1. Introduction

If the site is to be redeveloped and materials are disposed off site, the material exported from the site to Landfill should be hauled by a register waste carrier in accordance with Duty of Care Regulations 1991 and the Hazardous Waste Regulations 2005.

There will be requirement for the waste producer to provide appropriate Waste Acceptance Criteria (WAC) testing of the Soils for disposal to ensure that the soils are appropriately classified and that the landfill is licensed to receive such soils. Mixing of hazardous and non-hazardous waste is not permitted. For any hazardous wastes, a consignment note shall be completed, signed, and retained by all parties involved. The consignment note shall state the volume of waste, a physical description of the material and statement of its chemical composition. The waste consignment notes shall be kept by the contractor for a period of at least two years. For non-hazardous wastes, a Waste Transfer Note (WTN) shall be completed. The WTN should be signed and a copy should be kept by the contractor for a period of at least two years. Finally, consignment notes and WTNs shall be shown to an enforcement officer from the local council or the Environment Agency, if asked.

Approach to Assessing Hazard Properties

Flammability and Oxidisability

For any samples flagged as possessing hazardous properties flammability and oxidisability, for which there are no thresholds, Tier Environmental has used professional judgment and on-site observations to decide whether the waste soil, as a whole, is likely to be flammable or oxidising. It should be noted that flammability/oxidisability alone are unlikely to result in a hazardous classification for waste soil.

Worst Case Metal Compounds

The choice of an appropriate worst case metal compound in soil has been made on the basis of the available lines of evidence. For example, if laboratory chemical analysis has demonstrated that no measured concentrations of hexavalent chromium have been reported in excess of the laboratory method detection limit, there it would be regarded as evidence of an absence of a soil source of hexavalent chromium. In such an instance, the worst-case metal chromates may be replaced in favour of the next worst case metal compound.

рΗ

For samples that have been determined as hazardous based on pH alone and cement/concrete has been identified in the sample, Tier Environmental may assume that the high pH was due to the crushing process in the laboratory and is not representative of the waste as a whole. If further detailed determination of this is required, then Tier Environmental recommend that such assessment is carried out on these results in a manner described in the AGS Waste Classification for Soils – A Practitioners' Guide (dated 2019):

- Consideration of the acid/alkali reserve to be conducted (as described in WM3 Appendix C4 and C8).
- If large enough, the cement/concrete fraction may be separated manually before testing. Waste concrete from construction and demolition which doesn't contain hazardous substances is non-hazardous (LoW code 17-01-01).
- If cement/concrete has been identified in the sample, a second analysis may be conducted on an 'as received' sample, avoiding the need for crushing before testing. The high pH is typically associated with the finer fractions of cement. If the 'as received' sample has an



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acceptable pH, this provides additional confidence that the high pH was due to the crushing process and is not representative of the waste as a whole.

Asbestos

With respect to asbestos, If the waste contains fibres that are free and dispersed then the waste will be hazardous if the waste as a whole contains 0.1% w/w or more asbestos in accordance with WM3. If the waste contains any identifiable pieces of suspected asbestos containing material (i.e. any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye), then these pieces must be assessed separately. The waste is hazardous if the concentration of asbestos in the piece of asbestos containing material is 0.1% w/w or more. The waste shall then be regarded as a mixed waste and classified accordingly.

The following codes will then be assigned to the asbestos waste as appropriate:

- 17 06 05* Construction material containing asbestos.
- 17 06 01* Insulation material containing asbestos.

17 06 05* would normally be used in preference to 17 06 01* for the asbestos in asbestos contaminated soil and stones in accordance with WM3.

Tier Environmental Geoenvironmental engineers hold up to date UKATA Asbestos Awareness training certificates in order to demonstrate 'competence' that is required as described in WM3.

Flammable Liquid Waste

Tier Environmental consider that such a hazard property would apply if free phase product has been reported in the sample. As such, in those instances where materials are classified as hazardous based on this alone and no free phase product is encountered, it is considered that the materials may be regarded as being non-hazardous. Please note that the table below includes a column to show whether free phase product has been encountered within the sample location.

13.2. Preliminary Waste Materials Classification and Waste Disposal Route Determination

Tier Environmental have assessed the chemical results in terms of basic waste characterisation of materials on site. This provides a preliminary assessment of whether a material is potentially non-hazardous or hazardous waste. In addition, Waste Acceptance Criteria (WAC) testing has been carried out on selected samples with a determination made as to the appropriate waste disposal route in each case.

The results of this preliminary assessment are summarised in the following table.

Natural Soils / Bedrock

 $\label{lem:control_equation} \textbf{Representative samples of natural soils have been obtained during the investigation.}$

The results of basic waste characterisation are summarised in the table below.

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Table 13.1 Preliminary Materials Waste Classification and Waste Disposal Route Determination

Exploratory Hole Location	Sample Depth (m bgl)	Simplified Description of the Sample	Basic Waste Characterisation Result	If 'Potentially Hazardous': Is it Possible to Demonstrate the Material is Non-Hazardous?	If the material is Hazardous – What is the Driver for Hazardous Waste Classification?	Asbestos Presence, Type and Quantification	WAC Sample Available?	Soil Waste Disposal Route Determination
CP01	0.20	Made Ground: Greyish Brown slightly silty Gravel.	Hazardous	N/A	Lead and Zinc	No	No	No WAC testing undertaken
CP01	0.50	Made Ground: Bluish grey gravelly Clay	Potentially Hazardous	Yes. Driven by 'HP 3(i): Flammable "flammable liquid waste"' (hazard statement: Flam. Liq. 3; H226 "Flammable liquid and vapour."). However, Tier Environmental consider that such a hazard property would apply if free phase product has been reported in the sample. As no free phase product was encountered, it is considered that the materials above may be regarded as being nonhazardous.	N/A	No	No	No WAC testing undertaken
CP02	0.30	Made Ground: Brown slightly sandy Gravel	Hazardous	N/A	TPH (C6 to C40) petroleum group	No	No	No WAC testing undertaken
CP02	1.00	Made Ground: Brown slightly sandy Gravel	Hazardous	N/A	TPH (C6 to C40) petroleum group	Yes, Chrysotile bundles reported at <0.001%	No	No WAC testing undertaken
CP02	1.50	Made Ground: Grey slightly gravelly, slightly sandy Clay	Hazardous	N/A	TPH (C6 to C40) petroleum group	No	No	No WAC testing undertaken
CP03	0.30	Made Ground: Black gravelly Ash	Potentially Hazardous	Yes. Driven by 'HP 3(i): Flammable "flammable liquid waste"' (hazard statement: Flam. Liq. 3; H226 "Flammable liquid and vapour.").	N/A	No	Yes	Suitable for disposal to a non-hazardous landfill due to sulphate as S04 and Total Dissolved Solids in excess of inert landfill threshold.
HDP02	0.40	Made Ground: Black silty Gravel	Potentially Hazardous	However, Tier Environmental consider that such a hazard property would apply if free phase product has been reported in the sample. As no free phase product was encountered, it is considered that the materials above may be regarded as being non-hazardous.	N/A	No	No	No WAC testing undertaken
WS01	0.40	Made Ground: Pinkish brown slightly sandy Gravel	Hazardous	N/A	Zinc sulphate	No	No	No WAC testing undertaken
WS02	0.30	Made Ground: Brown slightly silty Gravel	Potentially Hazardous	Yes. Driven by 'HP 3(i): Flammable "flammable liquid waste"' (hazard statement: Flam. Liq. 3; H226 "Flammable liquid and vapour."). However, Tier Environmental consider that such a hazard property would apply if free phase product has been reported in the sample. As no free phase product was encountered, it is considered that the materials above may be regarded as being nonhazardous.	N/A	No	No	No WAC testing undertaken
WS02	0.70	Made Ground: Grey mottle brown sandy Silt	Non-Hazardous	N/A	N/A	No	No	No WAC testing undertaken
WS03	0.30	Made Ground: Black slightly silty Gravel	Potentially Hazardous	Yes. Driven by 'HP 3(i): Flammable "flammable liquid waste"' (hazard statement: Flam. Liq. 3; H226 "Flammable liquid and vapour."). However, Tier Environmental consider that such a hazard property would apply if free phase product has been reported in the sample. As no free phase product was encountered, it is considered that the materials above may be regarded as being nonhazardous.	N/A	No	Yes	Waste suitable for Inert Waste Landfill
WS05	0.50	Made Ground: Black slightly silty Gravel	Hazardous	N/A	Zinc sulphate	No	No	No WAC testing undertaken



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Table 13.2 Preliminary Asphalt Materials Waste Classification

Exploratory Hole Location	•	Is the sample Representative of 'Black Top' (Road Surface) Waste?	Coal Tar Concentration (%)	Concentration of Benzo(a)pyrene	Benzo(a)pyrene Units (μg/kg or mg/kg)	Does the Reported Concentration of Benzo(a)pyrene exceed 50ppm (50 mg/kg)	If Coal Tar Concentration Greater Than, or Equal To, 0.1%: Is Concentration of Benzo(a)pyrene less than 0.005% of the Concentration of the Coal Tar?	Asphalt Waste Classification
WS01	0.1	Yes	0.2	720	μg/kg	No	No	As the coal tar concentration is at or exceeds 0.1% and the concentration of BaP is >0.005% of the coal tar concentration, the asphalt would be classed as hazardous waste in accordance with WM3. The hazardous EWC code 17 03 01* bituminous mixtures containing coal tar, therefore applies



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13.3. Materials Re-Use

Subject to volumetric fill requirements and a future assessment of suitability of re-use (both chemically and geotechnically), some materials may be considered for potential re-use in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils on Other Sites

In addition, Tier Environmental are aware that CL:AIRE is classing stockpiled clean, naturally occurring soils as waste, unless their final destination is identified in a Materials Management Plan, before they are excavated. However, Tier Environmental consider that any clean naturally occurring soils arising from enabling works, earthworks or construction activities would be regarded as an asset and the default assumption for this site (prior to excavation and stockpiling) is not the intention to discard these materials where they may be reasonably re-used on this, or another, development site. Stockpiling is a recognised, recommended means of safely storing soils. Whilst there may be advantages to leaving soils in-situ, stripping topsoil and subsoil prior to earthworks is a routine construction activity. Tier Environmental consider that it is not unreasonable to state that in the event that the developer owns another site where the construction phase is ongoing, soils can be transferred between their sites as an owned product and never become waste.

The above paragraph above is therefore considered a clear intention to reuse any clean, naturally occurring soils derived from excavations at this site (which may also include temporary stockpilling these materials). It is considered; however, that in addition to this the following must be adhered to:

- Reuse does need to occur within a 'reasonable' timeframe (12 No. months); and,
- If soils are transferred to a third party (another developer), there needs to be some contractual agreement in place, as in this situation it is important to have something in place confirming that surplus soils are required by the third party.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils Within The Site They Are Excavated From

Further to the above, where soils are naturally occurring, uncontaminated and re-used on the site they are excavated from, they fall outside of the Waste Framework Directive (WFD) i.e. they will not be classified as a waste. Currently the CL:AIRE Definition of Waste Code of Practice states the following which appears to support this position: "If the material is waste an Environmental Permit will be required to lawfully deposit or re-use it unless the material is "uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated", which is excluded from waste regulation by the Waste Framework Directive (2008)."



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14. CONCLUSIONS AND RECOMMENDATIONS

14.1. Conclusions

- The site is underlain by hardstanding of concrete and asphalt to the south and southwestern areas of site to a maximum depth of 0.30n bgl. Made Ground was proven to depths of between 0.70m and 2.00m bgl, described as a brown clayey gravel and gravelly clay with brick, limestone and mudstone. A black gravelly Ash was also recorded in the south and east of the site, with as medium to coarse coal fragments. Soils described as 'possible Made Ground' were recorded to between 1.50m and 2.00m bgl comprised of sandy silt. Natural soils comprised generally of granular (sand) Tidal Flat Deposits interbedded with silty/clayey bands and were proven to 8.15m bgl.
- Measured localised concentrations of lead and dibenzo(ah)anthracene have been reported in excess of the GAC protective of Human
 Health for a commercial/industrial land use. These contaminants of concern pose a risk to human health through direct contact, dust
 inhalation and ingestion. A 300mm clean cover should be implemented to break these pathways. Of the 11 No. Made Ground samples
 submitted for asbestos screening, 2 No. were reported to contain asbestos in the form of asbestos cement sheeting and chrysotile fibre
 bundles of <0.001% w/w.
- From a conceptual site model perspective, the Tidal Flat Deposits are a Secondary Undifferentiated Aquifer, and the underlying Etruria formation is a Secondary A Aquifer. The anticipated groundwater flow direction has been inferred to be a northeast direction towards the River Dee. The site is not within a source protection zone and there are no nearby potable/Non potable water abstractions. The suitably thick Tidal Flat Deposits (proven to 8.15m bgl) will offer protection from vertical migration of any shallow contaminative impacts. The site is within a larger industrial area. On this basis the risk to the controlled waters is considered low.
- Measured groundwater concentrations of total ammonia, cadmium and lead have been reported in slight excess of the WQS protective of the controlled waters environment by the same order of magnitude. Given the marginal nature of these exceedances, the historical commercial and industrial heritage of site and wider area surrounding the Site, and the conservative selection of salt water GACs these exceedances are not seen as a risk to the controlled waters environment. Additional dissolved phase groundwater concentrations of zinc have been reported in excess of the WQS protective of the controlled waters environment by 2 No. orders of magnitude, in 2 No. locations. Following multiple lines of evidence, this exceedance is also considered to present a risk to the controlled waters environment,
- Subsequent sensitivity analysis has demonstrated that no measured groundwater concentrations of benzo(a)pyrene have been reported in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario, it is therefore considered that the reported groundwater concentrations of benzo(a)pyrene do not present a potential risk to the controlled waters environment. Measured groundwater concentrations of fluoranthene have been reported only marginally in excess of the respective Maximum Allowable Concentrations (MAC) EQS values for Inland Surface Waters by up to one order of magnitude. As such, and in the absence of viable 'bioaccumulation in fish and consumption of fish by humans' scenario and given historical commercial and industrial heritage of site and wider area surrounding the Site, the absence of any potable/non potable groundwater abstractions within 2km of the site, and the fact that it is anticipated the site will incorporate buildings / hardstanding and a dedicated drainage system that shall reduce infiltration rates through the soils, it is therefore considered that the reported groundwater concentration of fluoranthene are unlikely to present a potential risk to the controlled waters environment.
- Elevated concentrations of select TPHs have also been reported localised within the vicinity of a historic tank between 1No. and up to 2 No. orders of magnitude. An assessment of the relative mobility hydrocarbon fraction EC21-EC35, which recorded the highest exceedance, has determined a very low mobility. With this in mind, and in light of the qualitative arguments outlined above, these concentrations are not considered to present a risk to the controlled waters environment. Furthermore, there is no evidence of hydrocarbon contamination down gradient of site with other samples reporting a majority of TPH levels below the laboratory limit of detection



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Measured groundwater concentrations of total ammonia cadmium and lead have been reported in slight excess of the WQS protective
of the controlled waters environment by less one order of magnitude. Given the marginal nature of these exceedances and the
conservative selection of salt water GACs these exceedances are not seen as a risk to the controlled waters environment.

- A gas screening value of 0.0054l/hr has been calculated, derived using the maximum peak recorded Carbon Dioxide concentration of 1.7%v/v and the maximum recorded flow rate of 0.3l/hr. Assessment of this screening value alone places the site in a Characteristic Situation 1 Very Low Risk Scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. A hydrocarbon/volatile resistant membrane may be required to mitigate vapour inhalation pathways associated with localised TPHs.
- The Site lies within an area where between 3% and 5% of properties are above the Radon Action Level. On this basis basic radon protection measures are required likely in the form of a radon barrier/ membrane.
- Basic waste characterisation of 12 No. samples has determined that 7 No. samples would be considered non-hazardous, with 6 No. considered hazardous waste driven by elevated lead, zinc and TPH (C6 to C40) petroleum group. The results of WAC testing carried out on 2 No. samples determined that soils at WS03 0.30 would be suitable for disposal to an inert waste landfill, and soils at CP03 0.30m should be disposed of at non-hazardous waste landfill due to sulphate and Total Dissolved Solids in excess of the inert landfill threshold.
- Coal tar testing on a single sample (WS01 at 0.10m) has determined that the coal tar concentration is at or exceeds 0.1% and the concentration of BaP is >0.005% of the coal tar concentration, and thus asphalt would be classed as hazardous waste in accordance with WM3. The hazardous EWC code 17 03 01* bituminous mixtures containing coal tar, therefore applies.
- A design sulphate class of DS-3 and ACEC Class AC-3 is appropriate for buried concrete design purposes, with due consideration of chloride, nitrate, magnesium and potential for sulphide bearing (e.g. pyritic) ground. It is also noted that there is evidence of gross hydrocarbon contamination at the site and as such, a concrete specialist should review the TPH results and ground conditions summary within this report to ensure appropriate concrete design against retardation / degradation due to hydrocarbons.

14.2. Recommendations

- As asbestos, as well as localised elevated levels of Lead and Dibenzo(ah)anthracene have been identified on site, it is recommended that when the development plans have been finalised that any proposed areas of soft landscaping are protected with a 300mm clean cover underlain by a Hi-Viz geotextile membrane.
- Due to the presence of asbestos containing materials (ACMs) hand picking of ACMs should take place prior to any earthworks on site. It is also anticipated that asbestos maybe present in existing buildings that will also require removal prior to demolition.
- Localised removal of grossly contaminated soils in the vicinity of the historic above ground diesel storage tank. Natural Resources Wales (NRW) are likely to require removal of potential source of hydrocarbons that we have identified in the shallow soils. as well as assuming hydrocarbon/volatile resistant membrane.
- Implementation and verification of basic radon protection measures, likely in the form radon barrier/ membrane linked to a damp-proof course (DPC) within the walls of the building.
- Following finalised development plans NRW may require attenuation drainage for the proposed development, given the area of site covered by building/hardstanding will increase.
- It is recommended that a detailed UXO risk assessment be undertaken, including whether the site was historically part of the Sandycroft Munitions Works.



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15.REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.

It is recommended that conditions placed on any planning permission are discharged prior to commencement of site works.



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17.GLOSSARY OF TERMS

ACEC Aggressive Chemical Environment for Concrete (classification)

aOD Above Ordnance Datum
bgl Below ground level
BGS British Geological Survey
BRE Building Research Establishment
CBR California Bearing Ratio (test)

COMAH Control of Major Accident Hazards (regulations)

Designated location Site (and the ecosystem on that site) protected under national of international legislation. A

potential ecological receptor to be considered as part of the assessment of land contamination. Example designated locations include SSSIs (q.v.), SACs (q.v.), national

nature reserves, Ramsar sites and bird special protection areas.

DQA Data Quality Assessment DQO Data Quality Objective

DQRA Detailed Quantitative Risk Assessment

DWS Drinking Water Standard

EQS Environmental Quality Standard

GAC Generic Assessment Criterion

GQA General Quality Assessment (Environment Agency)

GSV Gas Screening Value
HCV Health Criteria Value

IPPC Integrated Pollution Prevention and Control (regulations)

Kow Octanol-water partition coefficient

LEL Lower Explosive Limit

LL Liquid Limit

LoD Limit of Detection (analytical)
LoQ Limit of Quantification (analytical)

Mean Value Test Statistical test (described in the CIEH Guidance) to estimate the mean value of a normally

distributed population of data at a given level of confidence. Normally for contaminated land assessment, the 95th percentile (referred to as the 95%UCL or US95) is applied as a reasonable but conservative estimate of the mean concentration for comparison with the

relevant assessment criteria.

Maximum Value Test Statistical test (described in the CIEH Guidance) to identify whether an elevated

concentration within a normally distributed data set forms part of the underlying population from which it has been sampled or whether it is an outlier (such as a localised

area of contamination) that merits further consideration.

MC Moisture Content
NGR National Grid Reference

NIHHS Notification of Installations Handling Hazardous Substances (regulations)

OS Ordnance Survey
PI Plasticity Index

PID Photoionisation Detector

PL Plastic Limit ppm Parts per million

ppmv Parts per million by volume

QA Quality Assurance
QC Quality Control

SAC Special Area of Conservation

SOM Soil Organic Matter



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Date:

SPT **Standard Penetration Test**

 SPZ Source Protection Zone (see Appendix M)

SSAC Site-Specific Assessment Criterion SSSI Site of Special Scientific Interest SVOC Semi-Volatile Organic Compound

TEF **Toxicity Equivalent Factor** TPH **Total Petroleum Hydrocarbons** TWA Time Weighted Average

US95 95th percentile estimate of the true mean value of a data population (also known as

95%UCL).

VOC Volatile Organic Compound **APPENDIX A - DRAWINGS**



Sandycroft, Deeside Exploratory Hole Location Plan

Contract Number: TE1799

Contract: Sandycroft, Deeside

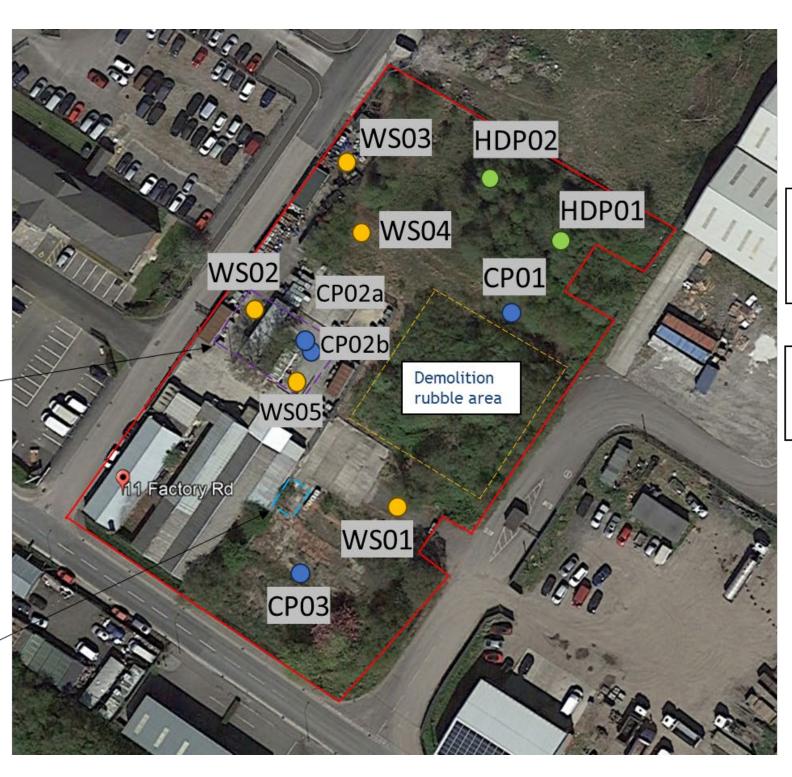
Client: Cassidy + Ashton

(WS02) Slight hydrocarbon odour observed within hand dug pit starter pit.

Known hydrocarbon impacted area

(WS05) Slight hydrocarbon odour observed within hand dug pit starter pit.

Possible ACM located



(CP02a) Concrete coring refused on suspected metal obstruction at 0.3m bgl. Location moved 1m SE to CP02b.

(CP02b) Moderate hydrocarbon odour becoming slight odour down to target depth of borehole.

Scale: NTS	
Drawn by:	Approved: SL
Drawing Number: TE1799-TE-00-XX-0	GE-DR-001-V01



									Borehole N	lo.
	TIER					Boı	reho	ole Log	CP01	
					5				Sheet 1 of	
Projec	t Name:	Factory Ro	oad, Sa	andverott	Project No. TE1799		Co-ords:	-	Hole Type CP	9
Locati	on:	Deeside					Level:		Scale 1:50	
Client	:	Cassidy a	nd Ash	ton			Dates:	04/12/2023 -	Logged By HC	y
Well	Water	Samples	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
****	Strikes	Depth (m)	Туре	Results	(m)	(m)	.xxxxxxxx	·		
		0.20 0.20 0.50 1.00 1.20 1.20 2.20 2.20	D ES ES D SPTL S B SPTL S	N=13 (1,1/3,3,3,4 N=22 (2,3/4,5,6,7				MADE GROUND: Vegetation over li brown, slightly silty GRAVEL. Grave angular to subangular limestone (St. MADE GROUND) MADE GROUND: Firm, dark brown, bluish grey, slightly sandy, gravelly Gravel is fine to medium mudstone, and occasional brick and coal fragm coarse. MADE GROUND Medium dense, brown, silty SAND. Sto medium	mottled CLAY. sandstone ents. Sand is	2
		3.40 3.40 3.50 - 3.80 4.50 4.50	SPTL S B SPTL S	N=20 (2,3/5,4,4,7 N=20 (3,4/4,5,5,6			× × × ×	Medium dense, light brown sand. Sa medium to coarse	and is	4 -
		5.50 5.50	SPTL S	N=12 (2,2/3,3,3,3)					5
		6.50 6.50 7.00 - 7.30	SPTL S	N=17 (2,2/3,3,4,7)					7 -
		7.60 7.60	SPTL S	N=11 (2,2/2,3,3,3	8.05			End of borehole at 8.05 m		8 -
										9 -
										10 -

Remarks
1) Groundwater ingress encountered at 2.20m rising to 1.70m 2) No visual or olfactory evidence of contamination.



Project Name: Factory Road, Sandycroft Project No. TE1799 Co-ords: - Hole Type CP										Borehole N	lo.
Project Name: Factory Road, Sandycroft TE1799 Co-ords: - Hollo Typo OP CP		TIER					Bor	eho	ole Log	CP02a	a
Cognition Deeside Level: Scale 1.50											
Content Deeside Cassidy and Ashton Dates Dates O5/12/2023 - Cassidy and Ashton O5/12/2023 - Cassidy and O5/12/2023 - Cassidy	Projec	t Name	Factory Ro	oad, Sa	andycroft			Co-ords:	-		9
Well Water Strikes Samples and in Situ Testing Strikes Depth (m) Type Results O.30 Stratum Description Stratum Description Made Ground: Grey CONRETE comprising of A55-90% aggregate of file for coarse subangular to subrounded limestone and mixed natural inthiotiges. No evidence of steer inforcement to be a sub-limiting transport of the coarse subangular to subrounded limestone and mixed natural inthiotiges. No evidence of steer inforcement to be a sub-limiting transport of the coarse subangular to subrounded limestone and mixed natural inthiotiges. No evidence of steer inforcement to be a sub-limiting transport of the coarse subangular to subrounded limestone and mixed natural inthiotiges. No evidence of steer inforcement to be a sub-limiting transport of the coarse subangular to subrounded limestone and mixed natural inthiotiges. No evidence of steer inforcement to be a sub-limiting transport of the coarse subangular to subrounded limestone and mixed natural introducement. The coarse subangular to subrounded limestone and mixed natural introducement to be a sub-limiting to subrounded limestone and mixed natural introducement. The coarse subangular to subrounded limestone and mixed natural introducement to be a sub-limiting to subrounded limestone and mixed natural introducement. The coarse sub-limiting to subrounded limestone and mixed natural introducement to be a sub-limiting to subrounded limestone and mixed natural introducement. The coarse sub-limiting to subrounded limestone and mixed natural introducement to sub-limiting to subrounded limestone and mixed natural introducement. The coarse sub-limiting to subrounded limestone and mixed natural introducement to subrounded limiting to subrounded limestone and mixed natural introducement. The coarse sub-limiting to subrounded limiting to subrounded limitin	_ocati	on:	Deeside			I		Level:		Scale	
Strikes Depth (m) Type Results (m) (m) (m)	Client		Cassidy ar	nd Ash	ton	·		Dates:	05/12/2023 -		y
Made Ground, Care Comparing of 45-00% aggregate of the lo costes subangular lithologies. No evidence of steel reinforcement bar. MADE GROUND And of brenkris at 0.30 m 1	Well	Water Strikes						Legend	Stratum Description		
			Depth (m)	Туре	Results				45-50% aggregate of fine to coarse to subrounded limestone and mixed lithologies. No evidence of steel rein bar. MADE GROUND	subangular natural	2 3 4 5 6 7 7 8

Remarks
1) Cable percussion for geoenvironmental purposes. 2) Concrete coring refusal on suspected metal obstruction. 3) No groundwater ingress. 4) No visual or olfactory evidence of contamination.



									Borehole N	lo.
	TIER					Bo	reho	ole Log	CP02k)
									Sheet 1 of	
Projec	t Name:	Factory Ro	oad, Sa	andverott	Project No. TE1799		Co-ords:	-	Hole Type CP	Э
Location	on:	Deeside					Level:		Scale 1:50	
Client:		Cassidy a	nd Ashi	ton			Dates:	05/12/2023 -	Logged B	У
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
	Strikes	Depth (m)	Туре	Results	(m)	(m)		MADE GROUND: Grey CONCRETI		-
		0.30	ES		0.20 0.40			of 45% aggregates of medium to co subangular limestone and mixed na	arse,	=
		0.60	D					lithologies. No rebar MADE GROUND		-
		1.00	ES					MADE GROUND: Brown, slightly sa GRAVEL. Gravel is fine to coarse, s subrounded concrete, brick and lime	ubangular to	1 -
		1.20 1.20	SPTL S	N=11 (1,2/2,3,3,3)	1.40			is coarse. Occasional cobbles and s		-
		1.50 1.70 - 2.00	ES B		1.80			MADE GROUND: Dark brown, sand	ly GRAVEL.	-
					1.00		X X X X	Gravel is fine to coarse concrete, br limestone. Sand is coarse.	ick and	2 -
		2.20 2.20	SPTL S	N=15 (2,2/3,3,4,5))		× × × × × ×	MADE GROUND POSSIBLE MADE GROUND: Firm, gravelly, slightly sandy CLAY. Grave	grey, slightly	-
							× × × × ×	to coarse, subrounded mudstone. POSSIBLE MADE GROUND	i is medium	-
							\(\times \(\times \) \(\time	Medium dense, light brown, silty SA fine to medium.	ND, Sand is	3 -
		3.30 3.30	SPTL S	N=19 (3,4/4,5,5,5)	3.30		**	Medium dense, slightly silty SAND.	Sand is fine	-
		3.70 - 4.00	В	- (-, - , -, -, -,			* * * * * * * * * * * * * * * * * * *	to medium.		-
							*			4 -
		4.50	SPTL				x			-
		4.50	S	N=16 (3,3/4,4,4,4))		× × × × × ×			-
							x			5 -
		5.50	SPTL				^x			-
		5.50	S	N=21 (3,3/4,5,5,7))		× × × × × × ×			-
							*			6 -
		0.00	ODTI				*			-
		6.60 6.60	SPTL S	N=19 (3,4/4,5,5,5))		×			-
		7.00 7.00 - 7.30	ES B				× × × × × ×			7 -
							× × × × × × ×			-
		7.70 7.70	SPTL S	N=24 (3,4/5,5,6,8))		× × × × × × ×			-
					8.15		x × x	End of borehole at 8.15 m		8 -
										-
										9 -
										9 -
										-
										-

Remarks

¹⁾ Cable percussion for geoenvironmental purposes 2) Groundwater encountered at 2.20m bgl rising to 1.80m bgl. 3) Moderate to slight hydrocarbon odour from 1.40m bgl to base of borehole.



									Borehole No	٥.
	TIER					Bo	reho	ole Log	CP03	
							1	<u> </u>	Sheet 1 of	
Projec	t Name:	Factory Ro	oad, Sa	and\/crott	Project No. ΓΕ1799		Co-ords:	-	Hole Type CP	
Locati	on:	Deeside					Level:		Scale 1:50	
Client		Cassidy a	nd Ash	ton			Dates:	05/12/2023 -	Logged By HC	′
Well	Water	Sample	s and	n Situ Testing	Depth	Level	Legend	Stratum Description		
	Strikes	Depth (m)	Туре	Results	(m) 0.15	(m)	PENNING.	MADE GROUND: Pinkish grey CON		
		0.30 0.50 1.20 1.20	ES D SPTL S	N=14 (2,2/3,3,4,4)				comprising of 40-45% aggregate of subangular, medium to coarse limes mixed natural lithologies. MADE GROUND MADE GROUND: Black, gravelly Asmedium to coarse, coal fragments a plasterboard MADE GROUND	angular to stone and SH. Gravel is	1 -
		2.20 2.20 2.50 2.70 - 3.00	SPTL S ES B	N=5 (1,2/1,2,1,1)	2.00			Loose, greyish brown, silty SAND. S medium.	Sand is fine to	2
		3.40 3.40	SPTL S	N=6 (1,1/2,2,1,1)						4 —
		4.40 4.40 5.00 - 5.30	SPTL S	N=35 (4,4/6,7,10,12	4.40			Dense, greyish brown, slightly silty	SAND. Sand	5 —
		5.50 5.50	SPTL S	N=33 (4,5/7,8,9,9)						6
		6.50 6.50 7.00 - 7.30	SPTL S	N=21 (4,5/5,5,5,6)	6.50			Medium dense, greyish brown, sligh SAND. Sand is fine to medium.	ntly silty	7 —
		7.70 7.70	SPTL S	N=23 (4,5/5,5,6,7)	8.15			End of borehole at 8.15 m		8 -
										9

Remarks
1) Cable percussion for geoenvironmental purposes 2) Groundwater ingress encountered at 2.20m bgl. 3) Terminated at target depth 4) No visual or olfactory evidence of contamination.



								Trialpit	No
	TIER : NEUFT					Tr	ial Pit Log	HDP	01
D!.	1			Projec			Co-ords: -	Sheet 1	
Projec Name:	Factory	Road, S	andycroft	TE179			Level:	05/12/2	
Locatio	on: Deeside						Dimensions (m):	Scale 1:25	
Client:	Cassidy	and Ash	nton				Depth 1.20	Logge	
je e	Sample	es and I	n Situ Testing	Depth	Level			110	
Water Strike	Depth	Туре	Results	(m)	(m)	Legend			
> 00	0.40	ES		1.20			MADE GROUND: Dark brown, slightly grave Gravel is fine to medium, subrounded sandst MADE GROUND Firm, light brown, sandy CLAY. Sand is fine End of pit at 1.20 m	lly SILT. one.	2
									5 —

Remarks:

1) Hand dug pit to 1.20m 2) No groundwater ingress encountered 3) No visual or olfactory evidence of contamination.

Stability:



									_	
								Trialpit No		
•	TIER					Tr	ial Pit Log	HDP02		
Project Name:	t Factory F	Road, S	andycroft	Projec			Co-ords: -	Sheet 1 of 1 Date	_	
				TE179	99		Level: Dimensions	05/12/2023 Scale	_	
Locatio	on: Deeside						(m):	1:25		
Client:	Cassidy a	and Asl	nton			ı	Depth 1.20	Logged HC		
Water Strike			n Situ Testing	Depth	Level	Legend	d Stratum Description			
<u>₩</u> ₩	Depth 0.40	Type ES	Results	(m)	(m)		MADE GROUND: Black, silty GRAVEL. Gravel coarse mudstone. MADE GROUND	is fine to		
				1.00			Firm, light brown, sandy CLAY. Sand is fine to r	medium. 1 -	-	
				1.20			End of pit at 1.20 m		-	
								3 -		
								5 -	-	

Remarks:

1) Hand dug pit to 1.20m 2) No groundwater ingress encountered 3) Possible hydrocarbon odour at 0.40m bgl



									Borehole No.	
	TIER					Bor	eho	ole Log	WS01	
									Sheet 1 of 1	
Projec	t Name:	Factory Ro	oad, Sa		Project No. TE1799		Co-ords:	-	Hole Type WS	
Locatio	on:	Deeside					Level:		Scale 1:50	
Client:		Cassidy ar	nd Asht	on			Dates:	04/12/2023 -	Logged By HC	
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description		
(//:\(//	Olines	Depth (m) 0.01	Type C	Results	0.10	(111)	**********	MADE GROUND: Black ASPHALT		_
		0.40	ES		0.80			MADE GROUND: Pale pinkish brow MADE GROUND: Pale pinkish brow sandy GRAVEL. Gravel is medium to angular to subangular limestone. Fre subangular cobbles. Rare cobbles o slag.	o coarse, equent	
		1.20 1.20 1.50	SPTL S ES	N=9 (5,4/3,2,2,2)	1.25			MADE GROUND MADE GROUND: Dark reddish brow clayey GRAVEL. Gravel is fine to collimestone and brick. MADE GROUND Firm grey, sandy CLAY.	vn, slightly	
		2.00 2.00	SPTL S	N=10 (3,2/2,3,2,3	2.10			Medium dense, grey, silty SAND. Sa medium.	and is fine to	
		3.00 3.00	SPTL S	N=11 (3,2/3,3,3,2)				3	1111111
		4.00 4.00	SPTL S	N=14 (4,3/3,3,4,4)				4	111111
		5.00 5.00	SPTL S	N=14 (3,3/3,4,3,4	5.45				5	1111111
								End of borehole at 5.45 m	6	1111111111
									7	
									8	
									9	11111111
									10	11111

Remarks
1) Groundwater ingress at 2.20m bgl. terminated at target depth 3) No visual or olfactory evidence of contamination



									Borehole No	ο.
	TIER					Bo	reho	ole Log	WS02	
					D : (N				Sheet 1 of	
Projec	t Name:	Factory Ro	oad, Sa	naverott I	Project No. TE1799		Co-ords:	-	Hole Type WS	
Locati	on:	Deeside					Level:		Scale 1:50	
Client:		Cassidy ar	nd Ash	ton			Dates:	04/12/2023 -	Logged By HC	,
Well	Water	Samples	and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
VVCII	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	•		
		0.30 0.70	ES ES		0.05 0.20 0.40 0.60			MADE GROUND: Black ASPHALT MADE GROUND MADE GROUND: Whitish grey, sligi GRAVEL. Gravel is fine to coarse, a subrounded limestone. MADE GROUND MADE GROUND: Brown, slightly sil	ingular to	- - - - - - -
	•	1.20 1.20	SPTL S	N=10 (2,1/2,3,2,3	1.50		× × ×	Gravel is fine to coarse, subrounded subangular limestone, sandstone ar fragments, MADE GROUND MADE GROUND: Black, gravelly AS fine to coarse, subangular to subrounds.	d to nd coal SH. Gravel is	· -
		2.00 2.00	SPTL S	N=9 (2,3/2,3,2,2)				fragments and sandstone MADE GROUND POSSIBLE MADE GROUND: Firm, mottled grey, very sandy SILT. Sand medium.	light brown,	2 -
	Y	3.00 3.00	SPTL S	N=11 (3,3/3,2,3,3)			POSSIBLE MADE GROUND Medium dense, light brown, slightly Sand is fine to coarse.	silty SAND.	3 -
		4.00 4.00	SPTL S	N=11 (2,3/2,3,3,3)		*			4 -
		5.00 5.00	SPTL S	N=13 (4,3/3,3,4,3	5.45		× × × × × × × × × × × × × × × × × × ×	End of borehole at 5.45 m		5 -
										6 -
										7 -
										8 -
										9 -
										10 -

Remarks
1) Groundwater ingress at 1.70m, 2.80m and 3.30mm bgl. 2) Terminated at target depth 3) No visual or olfactory evidence of contamination 4) Moderate to slight hydrocarbon odour at 1.70m bgl onwards



									Borehole N	lo.
	TIER					Boi	reho	ole Log	WS03	}
		l							Sheet 1 of	
Projec	t Name:	Factory Ro	oad, Sa		Project No. TE1799		Co-ords:	-	Hole Type WS	e
Locatio	nn.	Deeside			121700		Level:		Scale	
Locain	JII.	Deeside					Level.		1:50 Logged B	v
Client:		Cassidy ar	nd Asht	ton			Dates:	05/12/2023 -	HC	y
Well	Water Strikes			n Situ Testing	Depth	Level	Legend	Stratum Description		
	Strikes	Depth (m)	Туре	Results	(m)	(m)	**********	MADE GROUND: Vegetation over b		
		0.30	ES					silty GRAVEL. Gravel is fine to coars subangular to subrounded limestone	se,	-
		0.80	ES		0.70			fragments. MADE GROUND POSSIBLE MADE GROUND: Soft b	pecoming	=
								firm, slightly sandy SILT. Sand is fine MADE GROUND	e to medium.	1 =
		1.20 1.20	SPTL S	N=9 (1,2/2,2,2,3)			WADE ORGOND		=
										-
		2.00	SPTL		2.00			Medium dense, light brown, silty SA	ND	2 —
		2.00	S	N=12 (2,3/3,3,3,3	3)		×	Medium dense, light brown, silty SA	ND.	-
							x			_
		0.00	ODTI				* * * * *			
		3.00 3.00	SPTL S	N=11 (2,3/2,3,3,3	3)		$\times \times $			3 —
							*			=
							× × × × × ×			
		4.00 4.00	SPTL S	N=14 (3,3/4,4,3,3	3)		x			4 =
				, , , , , ,			× × × × × ×			-
							* * * * * * * * * * * * * * * * * * *			=
		5.00	SPTL	N. 44 (4 0/0 4 4 6			× × × ×			5 -
		5.00	S	N=14 (4,3/3,4,4,3	´		× × × × × × ×			-
					5.45			End of borehole at 5.45 m		_
										6 —
										-
										=
										7 —
										_
										8 —
										=
										=
										9 -
										=
										-
										10 —

Remarks
1) Groundwater ingress at 0.70m and 2.00m bgl 2) Terminated at target depth 3) No visual or olfactory evidence of contamination.



									Borehole No.	
	TIER					Bor	eho	ole Log	WS04	
									Sheet 1 of 1	
Projec	t Name:	: Factory Ro	oad, Sa	andycroft	Project No. TE1799		Co-ords:	: -	Hole Type WS	
					IEIIBB				Scale	-
ocatio	on:	Deeside					Level:		1:50	
Client:		Cassidy ar	nd Asht	ton			Dates:	05/12/2023 -	Logged By HC	
Well	Water Strikes		Type	In Situ Testing Results	Depth (m)	Level (m)	Legend	Stratum Description		
		Debui (iii)	Турс	Nosuns	0.05	, ,		MADE GROUND: Vegetation over d	ark brown,	_
		 						slightly gravelly SILT. Gravel is fine, limestone, frequent rootlets.	subrounded	
								MADE GROUND	0 94 -	-
		 			0.70			MADE GROUND: Light brown, sligh GRAVEL. Gravel is fine to coarse, s	ubangular to	
		l			1.00		× ×	subrounded limestone. Occasional of subangular limestone.	and the later of t	1 -
		1.20 1.20	SPTL S	N=8 (2,2/2,2,2,2	3		× × ×	MADE GROUND		
		- I			´		× × × ×	MADE GROUND: Medium dense, b gravelly SILT. Gravel is fine sandsto	luish grey, ne.	4
		 					$\begin{pmatrix} \times & \times & \times \\ \times & \times & \times \end{pmatrix}$	MADE GROUND Loose becoming medium dense, ligh		=
		2.00 2.00	ES SPTL				$\begin{pmatrix} \times & \times & \times \\ \times & \times & \times \end{pmatrix}$	brown, silty SAND. Sand is fine to m	nedium. 2	2 -
		2.00	SPIL	N=10 (2,3/3,3,2,2	2)		××××			=
		 					$\times \times $			-
		 					××××			-
		3.00	SPTL				××××		3	3 –
		3.00	S	N=11 (3,3/3,2,3,3	3)		××××			=
		 					××××			=
		 					××××			-
		4.00	SPTL				××××		4	4 —
		4.00	S	N=12 (4,3/3,3,3,3	3)		××××			
		 					$\times \times $			_
							$\times \times $			
		5.00	SPTL				$\times \times $		Ę	5 —
		5.00	S	N=13 (4,3/4,3,3,3	3)		$\times^{\times}\times^{\times}$			
		 			5.45		×××	End of borehole at 5.45 m		-
		 							6	٠ -
		 							-	´ ‡
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				I			1		10	ر —

Remarks

1) Groundwater ingress at 2.10m and 3.00m bgl 2) Terminated at target depth 3) No visual or olfactory evidence of contamination.



									Borehole N	lo.
	TIER					Bor	eho	ole Log	WS05	;
									Sheet 1 of	
Projec	t Name:	Factory Ro	ad, Sa	andycroft	Project No. TE1799		Co-ords:	-	Hole Type WS	9
					161799				Scale	
Locati	on:	Deeside					Level:		1:50	
Client:		Cassidy ar	nd Ash	ton			Dates:	05/12/2023 -	Logged By HC	у
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description		
	Cuntoo	Depth (m)	Туре	Results	()	()	PENDAN.	MADE GROUND: Grey CONCRETE	E comprising	
					0.30			of 45% aggregate of subangular lim- mixed natural lithologies. MADE GROUND MADE GROUND: Black, slightly silt Gravel is fine to coarse, angular to s	estone and y GRAVEL.	-
								limestone.	dubangulai	1 -
	•				1.20			MADE GROUND End of borehole at 1.20 m		
										2 -
										3 —
										_
										4 -
										5 —
										5 -
										6 —
										7 -
										8 —
										9 —
										-
										10 —

Remarks

1) Hand dug pit to 1.20m 2) Slight hydrocarbon odour 3) Slight groundwater seepage at 1.20m. 3) Terminated due to on site time constraints.



APPENDIX C - GEOENVIRONI	MENTAL SOIL LABORATORY RESULT	S



Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA P: +44 (0) 1244 833780

F: +44 (0) 1244 833781

W: www.element.com

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE







Attention: Sean Lee

Date: 12th January, 2024

Your reference : TE1799

Our reference : Test Report 23/20548 Batch 1

Location : Deeside, Sandycroft

Date samples received : 5th December, 2023

Status : Final Report

Issue: 202401121544

Twenty four samples were received for analysis on 5th December, 2023 of which sixteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 56.544 kg of CO2

Scope 1&2&3 emissions - 133.629 kg of CO2

Authorised By:

Bruce Leslie

Project Manager

Please include all sections of this report if it is reproduced

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report : Solid

EMT Job No:	23/20548										_		
EMT Sample No.	2-5	6-9	10	13-15	16-18	19-20	23-27	36-37	38	39-42			
Sample ID	CP01	CP01	CP01	CP02b	CP02b	CP02b	CP03	HDP02	WS01	WS01			
Depth	0.20	0.50	1.00	0.30	1.00	1.50	0.30	0.40	0.10	0.40	Please se	e attached n	otes for all
COC No / misc											abbrevi	ations and a	cronyms
Containers	VJT	VJT	Т	VJT	VJT	۸٦	VJT	۸٦	Т	VJT			
Sample Date	04/12/2023	04/12/2023	05/12/2023	04/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	LOD/LOR	Units	No.
Arsenic#	4.7	16.5	-	8.6	10.2	-	17.9	26.2	-	2.2	<0.5	mg/kg	TM30/PM15
Cadmium #	56.3 _{AA}	<0.1	-	<0.1	<0.1	-	0.5	0.2	-	14.3	<0.1	mg/kg	TM30/PM15
Chromium #	13.5	32.3	-	38.9	33.8	-	65.3	46.8	-	20.0	<0.5	mg/kg	TM30/PM15
Copper#	29	8	-	49	39	-	81	101	-	14	<1	mg/kg	TM30/PM15
Lead #	11580 _{AA}	38	-	95	348	-	1897	289	-	281	<5	mg/kg	TM30/PM15
Mercury#	0.3	<0.1	-	<0.1	<0.1	-	<0.1	0.7	-	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	9.6	22.7	-	24.7	33.3	-	63.3	81.5	-	5.3	<0.7	mg/kg	TM30/PM15
Selenium#	<1	<1	-	<1	<1	-	<1	2	-	2	<1	mg/kg	TM30/PM15
Sulphur as S	0.21	0.03	0.04	0.22	-	-	0.57	-	-	-	<0.01	%	TM30/PM15
Total Sulphate as SO4 #	1444	261	-	4338	1067	-	13630 _{AA}	1014	-	11460 _{AA}	<50	mg/kg	TM50/PM29
Total Sulphate as SO4 BRE	0.14	0.03	0.03	0.43	-	-	1.36 _{AA}	-	-	-	<0.01	%	TM50/PM29
Zinc [#]	4357 _{AA}	64	-	130	141	-	513	514	-	2010	<5	mg/kg	TM30/PM15
Magnesium	0.0010	0.0048	0.0013	<0.0001	-	-	0.0075	-	-	-	<0.0001	g/l	TM30/PM20
PAH MS													
Naphthalene [#]	<0.04	<0.04	_	1.06	0.13	_	0.16	0.15	_	0.06	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.22	<0.03	_	<0.03	<0.03	_	<0.03	<0.03	_	0.08	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	_	0.50	0.54	_	0.09	<0.05	_	0.25	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	_	0.49	2.78	_	0.05	<0.04	_	0.11	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.17	<0.03	_	3.66	4.52	_	1.26	0.46	_	0.59	<0.03	mg/kg	TM4/PM8
Anthracene #	0.35	<0.04	_	0.97	<0.04	_	0.33	0.11	_	0.42	<0.04	mg/kg	TM4/PM8
Fluoranthene #	2.61	0.04	_	3.50	0.29	_	2.43	0.81	_	3.41	<0.03	mg/kg	TM4/PM8
Pyrene #	2.83	0.04	_	2.82	0.52	_	1.92	0.73	_	3.48	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene#	2.33	<0.06	_	1.45	0.10	_	1.04	0.46	_	2.29	<0.06	mg/kg	TM4/PM8
Chrysene#	2.38	<0.02	_	1.35	0.18	_	0.99	0.49	_	2.27	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene#	7.62	<0.07	_	2.06	0.12	_	1.72	0.81	_	7.82	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene#	4.89	<0.04	-	1.26	<0.04	_	1.03	0.45	_	5.21	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene#	6.07	<0.04	-	0.88	0.06	-	0.91	0.43	-	5.52	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene#	0.74	<0.04	-	0.09	<0.04	-	0.91	0.36	-	0.67	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	3.24	<0.04	-	0.09	0.05	-	0.13	0.06	-	3.71	<0.04	mg/kg	TM4/PM8
Coronene	-	-	_	-	-	_	0.12	- 0.23	_	-	<0.04	mg/kg	TM4/PM8
PAH 16 Total	33.5	<0.6	-	20.7	9.3	-	12.7	5.2	-	35.9	<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-0.0	_	-	-	_	12.79	-	_		<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	5.49	<0.05	_	1.48	0.09	-	1.24	0.58	_	5.63	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	2.13	<0.02	_	0.58	0.03	_	0.48	0.23	-	2.19	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	107	107	-	107	101	-	107	103	-	104	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	-	-	-	<2	-	-	-	-	-	-	<2	ug/kg	TM15/PM10
Benzene #	-	-	-	<3	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Toluene#	-	-	-	8	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene #	-	-	-	<3	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
m/p-Xylene [#]	-	-	-	6	-	-	-	-	-	-	<5	ug/kg	TM15/PM10
o-Xylene#	-	-	-	<3	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	69	-	-	-	-	-	-	<0	%	TM15/PM10

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No:	23/20548												
EMT Sample No.	2-5	6-9	10	13-15	16-18	19-20	23-27	36-37	38	39-42			
Sample ID	CP01	CP01	CP01	CP02b	CP02b	CP02b	CP03	HDP02	WS01	WS01			
Depth	0.20	0.50	1.00	0.30	1.00	1.50	0.30	0.40	0.10	0.40	Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	VJT	VJT	Т	VJT	VJT	۸٦	VJT	۸٦	Т	VJT			
Sample Date	04/12/2023	04/12/2023	05/12/2023	04/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			Method
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	LOD/LOR	Units	No.
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	60	-	-	-	-	-	-	<0	%	TM15/PM10
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	-	-	-	-	-	<30	-	-	-	<30	mg/kg	TM5/PM8/PM16
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	-	<0.1	<0.1	<0.1 ^{sv}	<0.1 ^{sv}	<0.1 ^{sv}	-	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	-	<0.1	2.0	1.0 sv	<0.1 ^{SV}	<0.1 ^{sv}	-	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	-	<0.1	13.8	15.7 SV	<0.1 ^{SV}	<0.1 ^{sv}	-	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	-	5.6	326.7	154.1	<0.2	<0.2	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	-	31	2698	1269	<4	<4	-	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	-	288	5103	2386	<7	<7	-	14	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	30	<7	-	272	1466	690	<7	<7	-	54	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	-	<7	<7	<7	<7	<7	-	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	30	<26	-	597	9610	4516	<26	<26	-	68	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	-	<0.1	<0.1	<0.1 ^{sv}	<0.1 ^{SV}	<0.1 ^{sv}	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	-	<0.1	<0.1	<0.1 ^{SV}	<0.1 sv	<0.1 ^{SV}	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	-	<0.1	<0.1	<0.1 sv	<0.1 ^{sv}	<0.1 sv	-	<0.1	<0.1	mg/kg	TM36/PM12
*EC10-EC12 (EH_CU_1D_AR)	<0.2	<0.2	-	<0.2	136.7	67.8	<0.2	<0.2	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)*	<4	<4	-	20	2227	1086	<4	<4	-	10	<4	mg/kg	TM5/PM8/PM16
*EC16-EC21 (EH_CU_1D_AR)	49	<7	-	151	4165	2071	29	23	-	84	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	340	<7	-	423	1221	656	132	87	-	411	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)		<7	-	32	<7	<7	9	<7	-	30	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	414	<26	-	626	7750	3881	170	110	-	535	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	444	<52	-	1223	17360	8397	170	110	-	603	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE#	<5	<5	-	-	<5	<5 ^{sv}	<5 sv	<5 sv	-	<5	<5	ug/kg	TM36/PM12
Benzene #	<5	<5	-	-	<5	<5 sv	<5 ^{sv}	<5 ^{sv}	-	<5	<5	ug/kg	TM36/PM12
Toluene#	<5	13	-	-	<5	<5 ^{sv}	<5 ^{sv}	6 ^{sv}	-	<5	<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	<5	-	-	<5	<5 ^{sv}	<5 ^{sv}	<5 ^{sv}	-	<5	<5	ug/kg	TM36/PM12
m/p-Xylene #	<5	12	-	-	<5	<5 ^{sv}	<5 ^{SV}	<5 ^{sv}	-	<5	<5	ug/kg	TM36/PM12
o-Xylene#	<5	<5	-	-	<5	<5 sv	<5 sv	<5 ^{SV}	-	<5	<5	ug/kg	TM36/PM12
PCB 28 #	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 52#	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 153#	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
PCB 180#	-	-	-	-	-	-	<5	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs#	-	-	-	-	-	-	<35	-	-	-	<35	ug/kg	TM17/PM8

<0.15

<0.15

<0.15

<0.15

mg/kg

Total Phenols HPLC

<0.15

<0.15

<0.15

<0.15

<0.15

Tier Environmental Client Name:

TE1799 Reference:

Deeside, Sandycroft Location:

Contact: Sean Lee EMT Job No: 23/20548

Report: Solid

LIVIT JOD NO.	23/20340									
EMT Sample No.	2-5	6-9	10	13-15	16-18	19-20	23-27	36-37	38	39-42
Sample ID	CP01	CP01	CP01	CP02b	CP02b	CP02b	CP03	HDP02	WS01	WS01
Depth	0.20	0.50	1.00	0.30	1.00	1.50	0.30	0.40	0.10	0.40
COC No / misc										
Containers	VJT	VJT	Т	VJT	VJT	٧J	VJT	٧J	Т	VJT
Sample Date	04/12/2023	04/12/2023	05/12/2023	04/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023
Sample Type	Soil									
Batch Number	1	1	1	1	1	1	1	1	1	1
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023

Depth	0.20	0.50	1.00	0.30	1.00	1.50	0.30	0.40	0.10	0.40	Please see attached notes for all abbreviations and acronyms			
COC No / misc											abbreviations and acronyms			
Containers	VJT	VJT	Т	VJT	VJT	٧J	VJT	٧J	Т	VJT	33			
Sample Date	04/12/2023	04/12/2023	05/12/2023	04/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023				
Sample Type	Soil													
Batch Number	1	1	1	1	1	1	1	1	1	1			Method	
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023	LOD/LOR	Units	No.	
SEM#	-	-	-	-	-	-	-	-	52567	-	<110	mg/kg	TM7/PM6	
Saturates (Aliphatics)	-	-	-	-	-	-	-	-	9.86	-	<0.01	%	TM13/PM6	
Aromatics	-	-	-	-	-	-	-	-	15.37	-	<0.01	%	TM13/PM6	
Resins (Heterocyclics)	-	-	-	-	-	-	-	-	59.61	-	<0.01	%	TM13/PM6	
Asphaltenes	_	_	_	-	_	-	_	_	15.17	-	<0.01	%	TM13/PM6	
Natural Moisture Content	8.4	17.8	30.6	10.5	28.0	23.3	33.6	21.3	1.9	5.8	<0.1	%	PM4/PM0	
Triterpanes 191m/z	-	-	-	-	-	-	-	-	Present	-		None	TM16/PM6	
Triaromatic Steranes 231m/z	-	-	-	-	-	-	-	-	Present	-		None	TM16/PM6	
Coal Tar	-	-	-	-	-	-	-	-	0.2	-	<0.1	%	TM16/PM6	
Ammoniacal Nitrogen as NH4	1.0	5.4	3.3	3.2	-	-	0.8	-	-	-	<0.6	mg/kg	TM38/PM20	
Chloride (2:1 Ext BRE)#	0.029	0.005	-	0.058	-	-	0.004	-	-	-	<0.002	g/l	TM38/PM20	
Hexavalent Chromium#	NDP	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	mg/kg	TM38/PM20	
Nitrate as NO3 (2:1 Ext BRE)	<0.0025	<0.0025	<0.0025	0.3247	_	_	<0.0025	_	_	-	<0.0025	g/l	TM38/PM20	
Sulphate as SO4 (2:1 Ext)#	0.0208	0.0090	-	0.0463	0.0822	-	1.4533	0.0638	-	0.0156	<0.0015	g/I	TM38/PM20	
Total Organic Carbon #	0.67	1.13	-	3.59	3.56	-	20.72	16.52	-	0.65	<0.02	%	TM21/PM24	
ANC at pH4	-	-	-	-	-	-	0.28	-	-	-	<0.03	mol/kg	TM77/PM0	
ANC at pH7	-	-	-	-	-	-	NDP	-	-	-	<0.03	mol/kg	TM77/PM0	
Loss on Ignition #	-	-	-	-	-	-	12.0	-	-	-	<1.0	%	TM22/PM0	
pH#	8.52	8.32	-	10.33	8.11	-	7.70	7.91	-	9.95	<0.01	pH units	TM73/PM11	

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMIT COD IVO.	20/20010									
EMT Sample No.	46-47	48-51	52-55	58-60	61-64					
Sample ID	WS02	WS02	WS03	WS04	WS05					
Depth	0.30	0.70	0.30	2.00	0.50					
COC No / misc									e attached r ations and a	
Containers	٧J	VJT	VJT	VJT	VJT					
Sample Date				05/12/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1					Method
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023			LOD/LOR	Units	No.
Arsenic [#]	-	8.3	59.4	-	16.1			<0.5	mg/kg	TM30/PM15
Cadmium#	-	0.8	<0.1	-	6.3			<0.1	mg/kg	TM30/PM15
Chromium #	-	34.5	41.5	-	175.7			<0.5	mg/kg	TM30/PM15
Copper#	-	21	140	-	161			<1	mg/kg	TM30/PM15
Lead #	-	46	651	-	139			<5	mg/kg	TM30/PM15
Mercury [#]	-	<0.1	0.4	-	0.7			<0.1	mg/kg	TM30/PM15
Nickel [#]	_	29.7	76.0	_	96.8			<0.7	mg/kg	TM30/PM15
Selenium#	_	<1	2	_	2			<1	mg/kg	TM30/PM15
Sulphur as S	_	0.05	_	0.02	0.12			<0.01	%	TM30/PM15
Total Sulphate as SO4#	_	255	2630	-	427			<50	mg/kg	TM50/PM29
Total Sulphate as SO4 BRE	_	0.03	2030	0.03	0.04			<0.01	//////////////////////////////////////	TM50/PM29
Zinc#	-	339	398	0.03	2329			<5	mg/kg	TM30/PM15
	-	0.0015	390	0.0016	0.0017			<0.0001		TM30/PM20
Magnesium	-	0.0015	-	0.0016	0.0017			<0.0001	g/l	TM30/PM20
PAH MS										
Naphthalene #	-	<0.04	0.92	-	0.30			<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	0.26	-	<0.03			<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	7.75	-	0.39			<0.05	mg/kg	TM4/PM8
Fluorene#	-	<0.04	6.88	-	0.30			<0.04	mg/kg	TM4/PM8
Phenanthrene [#]	-	<0.03	66.61	-	2.93			<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	21.68	-	0.71			<0.04	mg/kg	TM4/PM8
Fluoranthene#	-	<0.03	71.10	-	2.74			<0.03	mg/kg	TM4/PM8
Pyrene #	-	<0.03	59.15	-	2.18			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene#	-	<0.06	36.62	-	1.11			<0.06	mg/kg	TM4/PM8
Chrysene #	-	<0.02	30.99	-	1.02			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene#	-	<0.07	47.72	-	1.45			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	29.69	-	0.95			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene#	-	<0.04	23.11	-	0.82			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene#	-	<0.04	4.53	-	0.10			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	15.15	-	0.44			<0.04	mg/kg	TM4/PM8
Coronene	-	-	2.26	-	-			<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	422.2	-	15.4			<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	424.42	-	-			<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	34.36	-	1.04			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	13.36	-	0.41			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	103	104	-	104			<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	-	<2	<2	-	<2 ^{sv}			<2	ug/kg	TM15/PM10
Benzene #	-	<3	<3	-	<3 ^{sv}			<3	ug/kg	TM15/PM10
Toluene#	-	<3	5	-	7 ^{sv}			<3	ug/kg	TM15/PM10
Ethylbenzene #	-	<3	<3	-	<3 ^{SV}			<3	ug/kg	TM15/PM10
					_SV			.5		TM45/DM40

<5^{SV}

<3^{SV}

<5

<3

88

<5

<3

70

Surrogate Recovery Toluene D8

m/p-Xylene#

o-Xylene#

TM15/PM10

TM15/PM10

TM15/PM10

<5

<3

<0

ug/kg

ug/kg

%

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report : Solid

EWI JOD NO:	23/20346						 	 •1		
EMT Sample No.	46-47	48-51	52-55	58-60	61-64					
Sample ID	WS02	WS02	WS03	WS04	WS05					
Depth	0.30	0.70	0.30	2.00	0.50					
·	0.00	0.70	0.00	2.00	0.00				e attached n ations and a	
COC No / misc										
Containers	۸٦	VJT	VJT	VJT	VJT					
Sample Date	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023					
Sample Type	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1					Method
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023			LOD/LOR	Units	No.
Surrogate Recovery 4-Bromofluorobenzene	_	77	58	_	_			<0	%	TM15/PM10
,								-		
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	-	70	-	-			<30	mg/kg	TM5/PM8/PM16
TPH CWG										
Aliphatics										
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1 ^{sv}	-	<0.1 ^{sv}			<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1 sv	-	<0.1 ^{sv}			<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	0.1	<0.1	<0.1 sv	-	<0.1 ^{sv}			<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	-	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	10	-	<4			<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	19	-	<7			<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	64	<7	41	-	<7			<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	-	<7			<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	64	<26	70	-	<26			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics										
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1 ^{sv}	-	<0.1 ^{sv}			<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1 ^{SV}	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1 ^{SV}	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	1.3	-	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4 10	<4 <7	20 136	-	9 46			<4 <7	mg/kg	TM5/PM8/PM16 TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)# >EC21-EC35 (EH_CU_1D_AR)#	179	<7	335	-	112			<7	mg/kg mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	24	<7	25	-	<7			<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	213	<26	517	_	167			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	277	<52	587	_	167			<52	mg/kg	TM5/TM36/PM8/PM12/PM16
	2	02	001						99	
MTBE#	<5	-	-	-	-			<5	ug/kg	TM36/PM12
Benzene #	<5	-	-	-	-			<5	ug/kg	TM36/PM12
Toluene [#]	<5	-	-	-	-			<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	-	-	-	-			<5	ug/kg	TM36/PM12
m/p-Xylene [#]	<5	-	-	-	-			<5	ug/kg	TM36/PM12
o-Xylene #	<5	-	-	-	-			<5	ug/kg	TM36/PM12
PCB 28#	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 52#	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 101 #	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 118#	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 138#	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 153#	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
PCB 180 #	-	-	<50 _{AB}	-	-			<5	ug/kg	TM17/PM8
Total 7 PCBs [#]	-	-	<350 _{AB}	-	-			<35	ug/kg	TM17/PM8
Total Phenols HPLC	-	<0.15	<0.15	<0.15	<0.15			<0.15	mg/kg	TM26/PM21B

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report : Solid

EMT Job No:	23/20548									
EMT Sample No.	46-47	48-51	52-55	58-60	61-64					
Sample ID	WS02	WS02	WS03	WS04	WS05					
Depth	0.30	0.70	0.30	2.00	0.50			Diagram	e attached n	-4
COC No / misc									e attached nations and a	
Containers		VJT	VJT	VJT	VJT					
Sample Date			05/12/2023							
Sample Type		Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt		05/12/2023	05/12/2023	05/12/2023						
SEM#	-	-	-	-	-			<110	mg/kg	TM7/PM6
Saturates (Aliphatics) Aromatics	-	-	-	-	-			<0.01 <0.01	%	TM13/PM6 TM13/PM6
Resins (Heterocyclics)	-	_	-	-	-			<0.01	%	TM13/PM6
Asphaltenes	-	-	-	-	-			<0.01	%	TM13/PM6
Natural Moisture Content	3.0	23.0	25.6	21.9	30.6			<0.1	%	PM4/PM0
Triterpanes 191m/z	-	-	-	-	-				None	TM16/PM6
Triaromatic Steranes 231m/z	-	-	-	-	-				None	TM16/PM6
Coal Tar	-	-	-	-	-			<0.1	%	TM16/PM6
Ammoniacal Nitrogen as NH4 Chloride (2:1 Ext BRE)#	-	1.4 0.006	-	3.0	4.8 0.004			<0.6 <0.002	mg/kg g/l	TM38/PM20 TM38/PM20
Hexavalent Chromium#	-	<0.3	<0.3	-	<0.3			<0.002	mg/kg	TM38/PM20
Nitrate as NO3 (2:1 Ext BRE)	-	0.0048	-	<0.0025	0.0049			<0.0025	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)#	-	0.0388	0.1330	-	0.0695			<0.0015	g/l	TM38/PM20
Total Organic Carbon #	-	2.90	15.90	-	16.06			<0.02	%	TM21/PM24
ANC at pH4	-	-	0.10	-	-			<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-	NDP	-	-			<0.03	mol/kg	TM77/PM0
Loss on Ignition#	-	-	9.4	-	-			<1.0	%	TM22/PM0
pH #	-	7.94	8.12	-	8.47			<0.01	pH units	TM73/PM11

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

Report: CEN 10:1 1 Batch

EWI JOD NO:	23/20546		 			 	 			
EMT Sample No.	23-27	52-55								
Sample ID	CP03	WS03								
Depth	0.30	0.30						Please se	e attached n	otes for all
COC No / misc								abbrevi	ations and a	cronyms
Containers	VJT	VJT								
Sample Date	05/12/2023	05/12/2023								
Sample Type	Soil	Soil								
Batch Number	1	1						LOD/LOR	Units	Method
Date of Receipt										No.
Mass of raw test portion Mass of dried test portion	0.1179 0.09	0.1163 0.09							kg kg	NONE/PM17 NONE/PM17
iviass of difed test portion	0.09	0.09							ĸg	NONE/I WIT
		<u> </u>	l	l	l					

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

SVOC Report : Solid

EMT Job No:	23/20548									
EMT Sample No.	13-15	38	48-51	52-55						
Sample ID	CP02b	WS01	WS02	WS03						
Depth	0.30	0.10	0.70	0.30				Diagon	e attached n	otoo for all
COC No / misc	0.00	0.10	0.70	0.00					ations and a	
Containers	VJT	Т	VJT	VJT						
Sample Date	04/12/2023	05/12/2023		05/12/2023						
Sample Type	Soil	Soil	Soil	Soil						
Batch Number Date of Receipt	1 05/12/2023	1 05/12/2023	1 05/12/2023	1 05/12/2023				LOD/LOR	Units	Method No.
SVOC MS	03/12/2023	03/12/2023	03/12/2023	03/12/2023						110.
Phenois										
2-Chlorophenol#	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2-Methylphenol	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2-Nitrophenol	<10 <10	-	<10 <10	<10 <10				<10 <10	ug/kg	TM16/PM8 TM16/PM8
2,4-Dichlorophenol # 2,4-Dimethylphenol	<10	-	<10	<10				<10	ug/kg ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Methylphenol	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Nitrophenol Pentachlorophenol	<10 <10	-	<10 <10	<10 <10				<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Phenol #	<10	-	<10	<10				<10	ug/kg ug/kg	TM16/PM8
PAHs			.,	.,					33	1 2.7 1.1.0
2-Chloronaphthalene#	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	496	-	<10	157				<10	ug/kg	TM16/PM8
Phthalates	-400		-100	.400				.400		T1440/D140
Bis(2-ethylhexyl) phthalate Butylbenzyl phthalate	<100 <100	-	<100 <100	<100 <100				<100 <100	ug/kg ug/kg	TM16/PM8 TM16/PM8
Di-n-butyl phthalate	<100	-	<100	<100				<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	-	<100	<100				<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	-	<100	<100				<100	ug/kg	TM16/PM8
Dimethyl phthalate * Other SVOCs	<100	-	<100	<100				<100	ug/kg	TM16/PM8
1,2-Dichlorobenzene	<10	_	<10	<10				<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene#	<10	-	<10	<10				<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	-	<10	<10				<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2-Nitroaniline 2,4-Dinitrotoluene	<10	-	<10	<10				<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene 2,6-Dinitrotoluene	<10 <10	-	<10 <10	<10 <10				<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
3-Nitroaniline	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	-	<10	<10				<10	ug/kg	TM16/PM8
4-Nitroaniline Azobenzene	<10 <10	-	<10 <10	<10 <10				<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Bis(2-chloroethoxy)methane	<10	-	<10	<10				<10	ug/kg ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	-	<10	<10				<10	ug/kg	TM16/PM8
Carbazole	92	-	<10	854				<10	ug/kg	TM16/PM8
Dibenzofuran #	155	-	<10	339				<10	ug/kg	TM16/PM8
Hexachlorobenzene Hexachlorobutadiene#	<10 <10	-	<10 <10	<10 <10				<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Hexachlorocyclopentadiene	<10	-	<10	<10				<10	ug/kg ug/kg	TM16/PM8
Hexachloroethane	<10	-	<10	<10				<10	ug/kg	TM16/PM8
Isophorone #	<10	-	<10	<10				<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10	-	<10	<10				<10	ug/kg	TM16/PM8
Nitrobenzene # Surrogate Recovery 2-Fluorobiphenyl	<10 109	-	<10 103	<10 105				<10 <0	ug/kg %	TM16/PM8 TM16/PM8
Surrogate Recovery p-Terphenyl-d14	111	-	94	108				<0	%	TM16/PM8
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		·	i							

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

SVOC Report : Solid

EMT Job No:	23/20548												
EMT Sample No.	13-15	38	48-51	52-55							1		
Comple ID	OD001	14/004	WOOO	W000									
Sample ID	CP02b	WS01	WS02	WS03									
Depth	0.30	0.10	0.70	0.30							Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	VJT	Т	VJT	VJT									
Sample Date			05/12/2023										
		Soil	Soil	Soil									
Sample Type	Soil												
Batch Number	1	1	1	1							LOD/LOR	Units	Method No.
Date of Receipt	05/12/2023	05/12/2023	05/12/2023	05/12/2023									NO.
SVOC MS													
PAHs													
Naphthalene	-	<10	-	-							<10	ug/kg	TM16/PM6
Acenaphthylene	-	444	-	-							<10	ug/kg	TM16/PM6
Acenaphthene	-	122	-	-							<10	ug/kg	TM16/PM6
Fluorene	-	164	-	-							<10	ug/kg	TM16/PM6
Phenanthrene	-	453	-	-							<10	ug/kg	TM16/PM6
Anthracene	-	333	-	-							<10	ug/kg	TM16/PM6
Fluoranthene	-	425	-	-							<10	ug/kg	TM16/PM6
Pyrene	-	719	-	-							<10	ug/kg	TM16/PM6
Benzo(a)anthracene	-	254	-	-							<10	ug/kg	TM16/PM6
Chrysene	-	608	-	-							<10	ug/kg	TM16/PM6
Benzo(bk)fluoranthene	_	897	-	_							<10	ug/kg	TM16/PM6
Benzo(a)pyrene	-	720	-	-							<10	ug/kg ug/kg	TM16/PM6
Indeno(123cd)pyrene	-	305											TM16/PM6
			-	-							<10	ug/kg	
Dibenzo(ah)anthracene	-	105	-	-							<10	ug/kg	TM16/PM6
Benzo(ghi)perylene	-	589	-	-							<10	ug/kg	TM16/PM6
													-
													-
													-
													-
													ļ
			_	_	_	_	_	_	_	_			

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee EMT Job No: 23/20548

VOC Report : Solid

## PATS Sumple D										1	ľ		
Part	EMT Sample No.	13-15	48-51	52-55									
Part													
COC No Interest	Sample ID	CP02b	WS02	WS03									
COC No Interest													
COC No Interest	Denth	0.20	0.70	0.20							DI		
Container Sample type Sa		0.30	0.70	0.30									
Sample Date National Patch Nationa											abbievie	ations and a	oronymo
Stample Types													
Batich Number 1	·												
Date of Receipt 0.0722025 0.122025		Soil	Soil	Soil									
Debts of Receipt 091/20030 971/2003	Batch Number	1	1	1							LOD/LOR	Units	
Discissional Author 1969	Date of Receipt	05/12/2023	05/12/2023	05/12/2023							LOD/LOIX	Office	No.
Mode Testing Day Clay	VOC MS												
Medy Turny Dal/Elber	Dichlorodifluoromethane	<2	<2	<2							<2	ug/kg	TM15/PM10
Chountermaine	Methyl Tertiary Butyl Ether#	<2	<2	<2							<2	ug/kg	TM15/PM10
Vary Chronics		<3	<3	<3							<3		TM15/PM10
Secondameno													TM15_A/PM10
Concombane*	·												
Transcriptomerations													
11.1.Dictorostheme (1.1 DCE)													
Debloomethane (CDM)													
Lames 1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0													
1.1-Delicocombrane*	` '												
Sementificomentemen													
22-Delichopropropens	·												
Bemochkoroverhame*													
Chardrom*	2,2-Dichloropropane	<4	<4	<4							<4	ug/kg	
1.1-Trichlorosthame* 1.3	Bromochloromethane #	<3	<3	<3							<3	ug/kg	TM15/PM10
11.1-Trichtorochane*	Chloroform#	7	<3	<3							<3	ug/kg	TM15/PM10
1.5-Dichlopropopene*	1,1,1-Trichloroethane#	<3	<3	<3							<3		TM15/PM10
Carbon tetrachordens		<3	<3	<3							<3		TM15/PM10
1.2.Delitrocephane		<4		<4									TM15/PM10
Benzane*													
Trichtorothene (TCE)*	·												
1.2.Delchoropropane													
Distromethane*													
Bomodichtcomethane*													
Cantago Cant													
Toluene "													
Tans-13-Dichloropropene												ug/kg	
1,1,2-Trichloroethane* 43	Toluene #	8	<3	5							<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE)	trans-1-3-Dichloropropene	<3	<3	<3							<3	ug/kg	TM15/PM10
1,3_Dichloropropane	1,1,2-Trichloroethane#	<3	<3	<3							<3	ug/kg	TM15/PM10
Dibromochloromethane	Tetrachloroethene (PCE)#	<3	<3	<3							<3	ug/kg	TM15/PM10
1.2-Dibromethane	1,3-Dichloropropane #	<3	<3	<3							<3	ug/kg	TM15/PM10
1,2-Dibromoethane	Dibromochloromethane#	<3	<3	<3							<3	ug/kg	TM15/PM10
Chlorobenzene 8		<3		<3									TM15/PM10
1,1,1,2-Tetrachloroethane	<i>'</i>												
Ethylenzene*													
m/p-Xylene* 6 <5 <5 <5 ug/kg TMISPM10 XMISPM10													
o-Xylene* <3													
Syrene				-									
Bromoform													
Sopropylbenzene	•												
1,1,2,2-Tetrachloroethane													
Bromobenzene													
1,2,3-Trichloropropane* <4													
Propylbenzene #		<2	<2	<2							<2	ug/kg	
2-Chlorotoluene		<4	<4	<4							<4	ug/kg	TM15/PM10
2-Chlorotoluene	Propylbenzene #	<4	<4	<4							<4	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene # <3		<3	<3	<3							<3	ug/kg	TM15/PM10
4-Chlorotoluene	1,3,5-Trimethylbenzene#	<3	<3	<3							<3		TM15/PM10
tert-Butylbenzene # <5 <5 <5 <5 ug/kg TM15/PM10 1,2,4-Trimethylbenzene # <6							1						
1,2,4-Trimethylbenzene # <6													
sec-Butylbenzene * <4	-												
4-Isopropyltoluene													
1,3-Dichlorobenzene * <4													
1,4-Dichlorobenzene # <4													
n-Butylbenzene <4													
1,2-Dichlorobenzene # <4	•												
1,2-Dibromo-3-chloropropane <4													
1,2,4-Trichlorobenzene <7													
Hexachlorobutadiene <4												ug/kg	
Naphthalene <27 <27 <27 <27 <27 ug/kg TM15/PM10 1,2,3-Trichlorobenzene <7	1,2,4-Trichlorobenzene	<7	<7	<7							<7	ug/kg	TM15/PM10
Naphthalene <27 <27 <27 <27 ug/kg TM15/PM10 1,2,3-Trichlorobenzene <7	Hexachlorobutadiene	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene <7	Naphthalene	<27	<27	<27							<27		TM15/PM10
Surrogate Recovery Toluene D8 69 88 70 TM15/PM10	· ·												
	-g		,	J-0	<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>	۰۰	/0	TIMITO/I IVITO

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	0.1179		Moisture Content Ratio (%) =		31.5	
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		76.0	
Particle Size <4mm =	>95%					
EMT Job No			23/20548	Land	fill Waste Ac	ceptance
Sample No			27		Criteria Lim	nits
Client Sample No			CP03		Stable	
Depth/Other			0.30	Inert	Non-reactive	Hazardous
Sample Date			05/12/2023	Waste	Hazardous Waste in Non-	Waste
Batch No			1	Landfill	Hazardous	Landfill
Solid Waste Analysis					Landfill	
Total Organic Carbon (%)	20.72			3	5	6
Loss on Ignition (%)	12.0			-	-	10
Sum of BTEX (mg/kg)	<0.025			6	-	-
Sum of 7 PCBs (mg/kg)	<0.035			1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30			500	-	-
PAH Sum of 17(mg/kg)	12.79			100	-	-
pH (pH Units)	7.70			-	>6	-
ANC to pH 7 (mol/kg)	NDP			-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.28			-	to be evaluated	to be evaluated
Eluate Analysis		conc ⁿ ched		le	values for co aching test 12457-2 at I	using
	mg/l	mg/kg			mg/kg	
Arsenic	<0.0025	<0.025		0.5	2	25
Barium	0.065	0.65		20	100	300
Cadmium	<0.0005	<0.005		0.04	1	5
Chromium	0.0016	0.016		0.5	10	70
Copper	<0.007	<0.07		2	50	100
Mercury	<0.001	<0.01		0.01	0.2	2
Molybdenum	0.006	0.06		0.5	10	30
Nickel	0.007	0.07		0.4	10	40
Lead	<0.005	<0.05		0.5	10	50
Antimony	<0.002	<0.02		0.06	0.7	5
Selenium	<0.003	<0.03		0.1	0.5	7
Zinc	0.043	0.43		4	50	200
Chloride	<0.3	<3		800	15000	25000
I				40	450	500
Fluoride	0.5	5		10	150	500
Fluoride Sulphate as SO4	0.5 705.0	7053		1000	20000	50000
Sulphate as SO4	705.0	7053		1000	20000	50000

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	0.1163		Moisture Content Ratio (%) =		28.9	
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		77.6	
Particle Size <4mm =	>95%					
EMT Job No			23/20548	Land	ill Waste Ac	•
Sample No			55		Criteria Lin	nits
Client Sample No			WS03		Stable	
Depth/Other			0.30	Inert	Non-reactive	Hazardous
Sample Date			05/12/2023	Waste	Hazardous Waste in Non-	
Batch No			1	Landfill	Hazardous Landfill	Landfill
Solid Waste Analysis					Landilli	
Total Organic Carbon (%)	15.90			3	5	6
Loss on Ignition (%)	9.4			-	-	10
Sum of BTEX (mg/kg)	<0.017			6	-	-
Sum of 7 PCBs (mg/kg)	<0.350			1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	70			500	-	-
PAH Sum of 17(mg/kg)	424.42			100	-	-
pH (pH Units)	8.12			-	>6	-
ANC to pH 7 (mol/kg)	NDP			-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.10			-	to be evaluated	to be evaluated
Eluate Analysis		conc ⁿ ched A ₁₀		le	values for co aching test 12457-2 at l	using
	mg/l	mg/kg			mg/kg	
Arsenic	<0.0025	<0.025		0.5	2	25
Barium	0.031	0.31		20	100	300
Cadmium	<0.0005	<0.005		0.04	1	5
Chromium	<0.0015	<0.015		0.5	10	70
Copper	<0.007	<0.07		2	50	100
Mercury	<0.001	<0.01		0.01	0.2	2
Molybdenum	0.014	0.14		0.5	10	30
Nickel	<0.002	<0.02		0.4	10	40
Lead	<0.005	<0.05		0.5	10	50
Antimony	0.002	0.02		0.06	0.7	5
Selenium	<0.003	<0.03		0.1	0.5	7
Zinc	<0.003	<0.03		4	50	200
Chloride	0.3	3		800	15000	25000
Fluoride	0.8	8		10	150	500
Sulphate as SO4	8.7	87		1000	20000	50000
Total Dissolved Solids	72	720		4000	60000	100000
Phenol	<0.01	<0.1		1	-	-
Dissolved Organic Carbon	<2	<20		500	800	1000

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos subsamples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/20548	1	AS1		1	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Cement
					Anthony Carman	14/12/2023	Asbestos Fibres	Fibre Bundles
					Anthony Carman	14/12/2023	Asbestos ACM	Asbestos Cement
					Anthony Carman	14/12/2023	Asbestos Type	Chrysotile
23/20548	1	CP01	0.20	5	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
23/20548	1	CP01	0.50	9	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
23/20548	1	CP01	1.00	10	Catherine Coles	10/01/2024	General Description (Bulk Analysis)	brown soil
					Catherine Coles	10/01/2024	Asbestos Fibres	NAD
					Catherine Coles	10/01/2024	Asbestos ACM	NAD
					Catherine Coles	10/01/2024	Asbestos Type	NAD
23/20548	1	CP02b	0.30	15	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
23/20548	1	CP02b	1.00	18	Charlotte Taylor	14/12/2023	General Description (Bulk Analysis)	grey soil/stones
					Charlotte Taylor	14/12/2023	Asbestos Fibres	Fibre Bundles
					Charlotte Taylor	14/12/2023	Asbestos ACM	NAD
					Charlotte Taylor	14/12/2023	Asbestos Type	Chrysotile
					Remigiusz Blichowski	18/12/2023	Total ACM Gravimetric Quantification (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	18/12/2023	Total Detailed Gravimetric Quantification (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	18/12/2023	Total Gravimetric Quantification (ACM + Detailed) (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	18/12/2023	Asbestos PCOM Quantification (Fibres)	<0.001 (mass %)
					Remigiusz Blichowski	18/12/2023	Asbestos Gravimetric & PCOM Total	<0.001 (mass %)
23/20548	1	CP03	0.30	26	Charlotte Taylor	14/12/2023	General Description (Bulk Analysis)	grey soil/stones
					Charlotte Taylor	14/12/2023	Asbestos Fibres	NAD
					Charlotte Taylor	14/12/2023	Asbestos ACM	NAD
					Charlotte Taylor	14/12/2023	Asbestos Type	NAD

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee

Contac								
EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/20548	1	WS01	0.40	41	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
20,20010			0.40	71				
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
23/20548	1	WS02	0.70	50	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
					7 thanony Carman	14/12/2023	Assested Type	IVAL
		14/000						
23/20548	1	WS03	0.30	54	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD
23/20548	1	WS05	0.50	64	Anthony Carman	14/12/2023	General Description (Bulk Analysis)	Brown Soil/Stones
20,20040	'	.,,,,,,,	0.50	07				
					Anthony Carman	14/12/2023	Asbestos Fibres	NAD
					Anthony Carman	14/12/2023	Asbestos ACM	NAD
					Anthony Carman	14/12/2023	Asbestos Type	NAD

NDP Reason Report

Client Name: Tier Environmental Matrix : Solid

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Method No.	NDP Reason
23/20548	1	CP01	0.20	2-5	TM38/PM20	Sample unsuitable for this test
23/20548	1	CP03	0.30	23-27	TM77/PM0	Sample received is below pH7
23/20548	1	WS03	0.30	52-55	TM77/PM0	Sample received is below pH7

Client Name: Tier Environmental

Reference: TE1799

Location: Deeside, Sandycroft

Contact: Sean Lee

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
					No deviating sample report results for job 23/20548	

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/20548

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BI ANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

EMT Job No.: 23/20548

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation. Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).

Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ос	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis. Extractable Hydrocarbons - i.e. everything extracted by the solvent.
	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
ТМ7	Modified USEPA 3540C:1996 and 9071B:1998 for oily wastes. In house method for the gravimetric determination of a sample following solvent extraction.	PM6	Samples are extracted using Soxtec apparatus and solvent.	Yes		AR	Yes
TM13	Determination of Saturates, Aromatics, Resins and Asphaltenes by Thin Layer Chromatography with Flame Ionisation Detection.	PM6	Samples are extracted using Soxtec apparatus and solvent.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM6	Samples are extracted using Soxtec apparatus and solvent.			AR	Yes
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM6	Samples are extracted using Soxtec apparatus and solvent.			AR	
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
ТМ36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID coelutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
ТМ36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID coelutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
ТМ38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), 0-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), O-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), O-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.			AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
ТМ77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM131	Quantification of Asbestos Fibres and ACM based on HSG 248 Second edition:2021, HSG 264 Second edition:2012, HSE Contract Research Report No.83/1996, MDHS 87:1998, WM3 1st Edition v1.1:2018	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
TM15_A	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes





Waste Classification Report

HazWasteOnline[™] classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- a) understand the origin of the waste
- b) select the correct List of Waste code(s)
- c) confirm that the list of determinands, results and sampling plan are fit for purpose
- d) select and justify the chosen metal species (Appendix B)
- e) correctly apply moisture correction and other available corrections
- f) add the meta data for their user-defined substances (Appendix A)
- g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)





V0G51-C2M6X-ULAL

Job name

EMT-23-20548-Batch-1-202401121544

Description/Comments

Project Site

TE1799 Factory Road, Sandycroft, Deeside

Classified by

Name: Company: Adrian Read Tier Environmental

Date: Suite 414

12 Jan 2024 16:08 GMT Chadwick House Warrington

Telephone: Warrington 01925 818388 WA3 6AE

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification Most recent 3 year Refresher **Date** 03 Dec 2020 05 Dec 2023

Next 3 year Refresher due by Dec 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

11 Factory Rd, Sandycroft, Deeside, Post Code CH5 2QJ

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Proposed redevelopment of land

Description of the specific process, sub-process and/or activity that created the waste

Waste created during excavation of soils during development

Description of the waste

Made ground and/or natural soils



HazWasteOnline™ Report created by Adrian Read on 12 Jan 2024

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	CP01-04/12/2023-0.20m		Hazardous	HP 3(i), HP 7, HP 10, HP 14	3
2	CP01-04/12/2023-0.50m		Potentially Hazardous	HP 3(i)	6
3	CP01-05/12/2023-1.00m		Non Hazardous		8
4	CP02b-04/12/2023-0.30m		Hazardous	HP 3(i), HP 7, HP 11	9
5	CP02b-05/12/2023-1.00m		Hazardous	HP 3(i), HP 7, HP 11	15
6	CP02b-05/12/2023-1.50m		Hazardous	HP 3(i), HP 7, HP 11	18
7	CP03-05/12/2023-0.30m		Potentially Hazardous	HP 3(i)	20
8	HDP02-05/12/2023-0.40m		Potentially Hazardous	HP 3(i)	22
9	WS01-05/12/2023-0.10m		Hazardous	HP 7	24
10	WS01-05/12/2023-0.40m		Hazardous	HP 3(i), HP 14	26
11	WS02-05/12/2023-0.30m		Potentially Hazardous	HP 3(i)	29
12	WS02-05/12/2023-0.70m		Non Hazardous		30
13	WS03-05/12/2023-0.30m		Potentially Hazardous	HP 3(i)	36
14	WS04-05/12/2023-2.00m		Non Hazardous		42
15	WS05-05/12/2023-0.50m		Hazardous	HP 3(i), HP 14	43

Related documents

# Name	Description
1 EMT-23-20548-Batch-1-202401121544.HWOL	Element .hwol file used to populate the Job
Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Adrian Read Created date: 12 Jan 2024 16:08 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	46
Appendix B: Rationale for selection of metal species	50
Appendix C: Version	50

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Classification of sample: CP01-04/12/2023-0.20m

A Hazardous Waste Classified as 17 05 03 * in the List of Waste

Sample details

LoW Code: Sample name:

CP01-04/12/2023-0.20m Chapter: Moisture content:

8.4% Entry:

(dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 2; H351 "Suspected of causing cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard].'

Because of determinand:

lead di(acetate): (Note 1 conc.: 1.068%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead di(acetate): (Note 1 conc.: 1.068%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead di(acetate): (Note 1 conc.: 1.068%) zinc sulphate: (compound conc.: 0.993%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.041%)

Determinands

Moisture content: 8.4% Dry Weight Moisture Correction applied (MC)

#			Determinand		Note	User entered data	Conv.	Compound conc.	Classification value	Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP		acioi		value	MC,	
1	_	arsenic { arsenic tri	oxide } 215-481-4	1327-53-3		4.7 mg/kg	1.32	5.725 mg/kg	0.000572 %	√	



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048-002-00-0 215-146-2 1306-19-0	nc. Classifica value ng/kg 0.00593 % ng/kg 0.00283 % ng/kg 0.00301 %	WC Ap	
EU CLP index number	ng/kg 0.00593 %	6 🗸	
2	ng/kg 0.00283 %		,
Chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } 13.5 mg/kg 2.27 28.27 mg/kg 2.28 mg/kg 2.27 28.27 mg/kg 2.27 28.27 mg/kg 2.27 28.27 mg/kg 2.28 mg/kg 2.27 28.27 mg/kg 2.28 mg/kg 2		6 🗸	
1	ng/kg 0.00301 %		
lead { lead di(acetate) } 1		6	
6 mercury { mercury dichloride }	ng/kg 1.068 %	√	
10 080-010-00-X 231-299-8 7487-94-7			
080-010-00-X 231-299-8 7487-94-7 080-010-00-X 231-299-8 7487-94-7 010 028-035-00-7 238-766-5 14721-18-7 028-035-00-7 238-766-5 14721-18-7 028-031-00-5 239-125-2 15060-62-5 028-031-00-5 239-125-2 15060-62-5 030-006-00-9 231-793-3 [1] 7446-19-7 [1] 231-793-3 [2] 7733-02-0 [2] 08-006-00-9 028-031-00-5	ng/kg 0.0000375	5 %	,
10		7,0	
10	ng/kg 0.00264 %	ί T,	,
8	ng/kg 0.00264 %	6 ✓	
8	ng/kg -0.00055	0/.	<lod< td=""></lod<>
2 zinc { zinc sulphate } 030-006-00-9 231-793-3 [1] 7446-19-7 [1] 231-793-3 [2] 7733-02-0 [2]	ng/kg <0.000255	/0	< LUD
9			
11 tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4 2 benzene 601-020-00-8 200-753-7 71-43-2 444 mg/kg 409.594 n 1 1 1 1 1 1 1 1 1	ng/kg 0.993 %	√	
2-methoxy-2-methylpropane	ng/kg 0.041 %	√	
12	ng/kg <0.0000005	5 %	<lod< td=""></lod<>
12			+
toluene	ng/kg <0.0000005	5 %	<lod< td=""></lod<>
13			+
e ethylpenzene	ng/kg <0.0000005	5 %	<lod< td=""></lod<>
14 etnylbenzene			
	ng/kg <0.0000005	5 %	<lod< td=""></lod<>
601-023-00-4 202-849-4 100-41-4 xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1]			
15 203-396-5 [2] 106-42-3 [2] <0.01 mg/kg <0.01 n 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]	ng/kg <0.000001	%	<lod< td=""></lod<>
16 PH 8.52 pH 8.52 p	9.52 pH		
17 naphthalene <0.04 mg/kg <0.04 n	ng/kg <0.000004	0/.	<lod< td=""></lod<>
17	11g/kg <0.000004	70	< LUD
18 acenaphthylene 0.22 mg/kg 0.203 n	ng/kg 0.0000203	3 %	
19 acenaphthene <0.05 mg/kg <0.05 n	ng/kg <0.000005	%	<lod< td=""></lod<>
a fluorene	ng/kg <0.000004	%	<lod< td=""></lod<>
nhenanthrene	ng/kg 0.0000157	7 % 🗸	,
anthracene	ng/kg 0.0000323	3 % 🗸	,
204-371-1 120-12-7			1
23 2 2.61 mg/kg 2.408 n	ng/kg 0.000241	% ✓	
24 pyrene 2.83 mg/kg 2.611 n	ng/kg 0.000261	% 🗸	
25 benzo[a]anthracene 2.33 mg/kg 2.149 n		1 -	,
26 chrysene 2.38 mg/kg 2.196 n	ng/kg 0.000215	% 🗸	
benzo[b]fluoranthene	ng/kg 0.000215 ng/kg 0.00022 %		
27 601-034-00-4 205-911-9 205-99-2 5.49 mg/kg 5.065 n		6 🗸	,

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#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered o	data	Conv. Factor	Compound conc		Compound conc.		Compound conc.		Classification value	MC Applied	Conc. Not Used
28		benzo[k]fluoranthe 601-036-00-5	ne 205-916-6	207-08-9		2.13 n	ng/kg		1.965	mg/kg	0.000196 %	✓					
29		benzo[a]pyrene; be	enzo[def]chrysene	50-32-8		4.89 n	ng/kg		4.511	mg/kg	0.000451 %	✓					
30	0	indeno[123-cd]pyre	ene 205-893-2	193-39-5		6.07 n	ng/kg		5.6	mg/kg	0.00056 %	✓					
31		dibenz[a,h]anthrac	ene 200-181-8	53-70-3		0.74 n	ng/kg		0.683	mg/kg	0.0000683 %	✓					
32	0	benzo[ghi]perylene	205-883-8	191-24-2		3.24 n	ng/kg		2.989	mg/kg	0.000299 %	✓					
33	4	sulfur { sulfur }	231-722-6	7704-34-9		2100 n	ng/kg		1937.269	mg/kg	0.194 %	✓					
	P									Total:	2.314 %						

K	ev

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Hazardous result

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration <LOD Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification





Classification of sample: CP01-04/12/2023-0.50m

* Potentially Hazardous Waste

Classified as **17 05 04** or **17 05 03** * in the List of Waste

Sample details

Sample name: LoW Code:

CP01-04/12/2023-0.50m Chapter: Moisture content:

17.8% Entry: (dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous substances)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 1.1e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand: xylene: (conc.: 1.02e-06%)

Determinands

Moisture content: 17.8% Dry Weight Moisture Correction applied (MC)

#		Determinand EU CLP index	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	-	arsenic { arsenic trioxide } 033-003-00-0 215-481-4 1327-53-3		16.5 mg/kg	1.32	18.494 mg/kg	0.00185 %	√	
2	-	cadmium { cadmium oxide } 048-002-00-0 215-146-2 1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<lod< td=""></lod<>
3	~	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }		32.3 mg/kg	2.27	62.242 mg/kg	0.00622 %	✓	
4	æ å	copper { dicopper oxide; copper (I) oxide } 029-002-00-X		8 mg/kg	1.126	7.646 mg/kg	0.000765 %	√	
5	l 1	lead { lead di(acetate) } 082-005-00-8 206-104-4 301-04-2	1	38 mg/kg	1.57	50.642 mg/kg	0.00323 %	√	
6	-	mercury { mercury dichloride } 080-010-00-X		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<lod< td=""></lod<>
7	-	nickel { nickel chromate } 028-035-00-7		22.7 mg/kg	2.976	57.352 mg/kg	0.00574 %	✓	
8	-	selenium { nickel selenate } 15060-62-5 028-031-00-5 239-125-2 15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<lod< td=""></lod<>
9	-	zinc { zinc sulphate } 030-006-00-9		64 mg/kg	2.469	134.155 mg/kg	0.0134 %	√	
10	0	TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<lod< td=""></lod<>

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			Determinand		ote			Conv.	0 1		Classification	polled	Conc. Not
#		EU CLP index number	EC Number	CAS Number	CLP Note	User entered	d data	Factor	Compound	conc.	value	MC Applied	Used
11		tert-butyl methyl etl 2-methoxy-2-methy	/lpropane	4004.04.4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
			216-653-1	1634-04-4	-							Н	
12		benzene 601-020-00-8	200-753-7	71-43-2	-	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
13		toluene	203-625-9	108-88-3		0.013	mg/kg		0.011	mg/kg	0.0000011 %	√	
	_	ethylbenzene	203-023-3	100-00-3	+								
14	0		202-849-4	100-41-4	-	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
		xylene	202 0 10 1	100 11 1	+								
15		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.012	mg/kg		0.0102	mg/kg	0.00000102 %	✓	
16	0	pН				8.32	рН		8.32	pН	8.32 pH		
				PH		0.02			0.02	рг г 	0.02 pri		
17		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3								Ш	
18	0	acenaphthylene				< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-917-1	208-96-8	-								
19	0	acenaphthene	100.4	loo oo o		<0.05	mg/kg		< 0.05	mg/kg	<0.000005 %		<lod< td=""></lod<>
			201-469-6	83-32-9	+				<u> </u>			Н	
20	Θ	fluorene	201-695-5	86-73-7	_	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
	_	phenanthrene	201-695-5	00-73-7	+							Н	
21	0	•	201-581-5	85-01-8	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		anthracene	201 001 0	po 01 0	+							Н	
22	ľ		204-371-1	120-12-7	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
20	0	fluoranthene		,		0.04			0.004	(1	0.0000004.0/	,	
23			205-912-4	206-44-0	-	0.04	mg/kg		0.034	mg/kg	0.0000034 %	✓	
24	0	pyrene				0.04	mg/kg		0.034	mg/kg	0.0000034 %	1	
24			204-927-3	129-00-0		0.04			0.034	ilig/kg	0.0000034 76	'	
25		benzo[a]anthracen	е			<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<lod< td=""></lod<>
		601-033-00-9	200-280-6	56-55-3								Ш	
26		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<lod< td=""></lod<>
			205-923-4	218-01-9	-							Н	
27		benzo[b]fluoranthe		005.00.0	-	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<lod< td=""></lod<>
\vdash		601-034-00-4 benzo[k]fluoranther	205-911-9	205-99-2	+							Н	
28			205-916-6	207-08-9	-	<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<lod< td=""></lod<>
		benzo[a]pyrene; be	1	E01-00-3	+							Н	
29			200-028-5	50-32-8	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
		indeno[123-cd]pyre	1	F- 0- 0	T							Н	
30			205-893-2	193-39-5	1	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
31		dibenz[a,h]anthrace	1		T	<0.04	ma/ka		<0.04	ma/ka	<0.000004 %	П	<lod< td=""></lod<>
31		601-041-00-2	200-181-8	53-70-3	L	<0.04	mg/kg		<0.04	mg/kg	<0.00004 %		\LUD
32	0	benzo[ghi]perylene	•			<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
_			205-883-8	191-24-2	1	.3.0 .					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Ц	
33	4		231-722-6	7704-34-9		300	mg/kg		254.669	mg/kg	0.0255 %	✓	
					,					Total:	0.0622 %	Г	



User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

₫ <LOD Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification





Classification of sample: CP01-05/12/2023-1.00m

Non Hazardous Waste Classified as 17 05 04 in the List of Waste

Sample details

Sample name: LoW Code: CP01-05/12/2023-1.00m Chapter:

Moisture content: 30.6%

(dry weight correction)

Entry:

from contaminated sites)
17 05 04 (Soil and stones other than those mentioned in 17 05 03)

17: Construction and Demolition Wastes (including excavated soil

Hazard properties

None identified

Determinands

Moisture content: 30.6% Dry Weight Moisture Correction applied (MC)

#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	value	MC Applied	Conc. Not Used
1	-	sulfur { sulfur }	231-722-6	7704-34-9		400 mg/kg		306.279 mg/kg	0.0306 %	√	
		1				1		Total:	0.0306 %	Г	

Key

User supplied data

æ.

Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

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Classification of sample: CP02b-04/12/2023-0.30m

A Hazardous Waste Classified as 17 05 03 *

in the List of Waste

Sample details

LoW Code: Sample name:

CP02b-04/12/2023-0.30m Chapter:

Moisture content:

10.5% Entry:

(dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites) 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.111%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.111%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 7.24e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.111%)

xylene: (conc.: 5.43e-07%)

Determinands

Moisture content: 10.5% Dry Weight Moisture Correction applied (MC)

#	<i>‡</i>		Determinand		Note	User entered d	User entered data Co		Compound	conc.	Classification value	Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP	Factor		1 doloi			valuo	MC	Cood
	ď	arsenic { arsenic tr	<mark>ioxide</mark> }			8.6 m	ng/kg	1.32	10.276	mg/kg	0.00103 %	/	
		033-003-00-0	215-481-4	1327-53-3			.99					*	
	2	cadmium { cadmiu	m oxide }			<0.1 m	ng/kg	1.142	<0.114	mg/kg	<0.0000114 %		<lod< th=""></lod<>
-	- -	048-002-00-0	215-146-2	1306-19-0			99						32



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#			Determinand		Note	User entere	ed data	Conv.	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			1 actor			value	MC,	Oseu
3	**	chromium in chrom compounds, with the of compounds spectors 024-017-00-8	ne exception of bar	ium chromate and		38.9	mg/kg	2.27	79.912	mg/kg	0.00799 %	<	
4	æ\$	copper { dicopper o	oxide; copper (I) ox 215-270-7	ide } 1317-39-1		49	mg/kg	1.126	49.926	mg/kg	0.00499 %	✓	
5	4	lead { • lead di(ac	etate) }	301-04-2	1	95	mg/kg	1.57	134.968	mg/kg	0.0086 %	✓	
6	a Ç	mercury { mercury 080-010-00-X	dichloride } 231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<lod< td=""></lod<>
7	4	nickel { nickel chror 028-035-00-7	<mark>mate</mark> } 238-766-5	14721-18-7		24.7	mg/kg	2.976	66.528	mg/kg	0.00665 %	~	
8	4		239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<lod< td=""></lod<>
9	4		231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		130	mg/kg	2.469	290.505	mg/kg	0.0291 %	✓	
10	0	TPH (C6 to C40) pe	etroleum group	TPH		1223	mg/kg		1106.787	mg/kg	0.111 %	√	
11		tert-butyl methyl etl 2-methoxy-2-methy 603-181-00-X		1634-04-4		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
12		benzene 601-020-00-8	200-753-7	71-43-2		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
13		toluene 601-021-00-3	203-625-9	108-88-3		0.008	mg/kg		0.0072	mg/kg	0.000000724 %	✓	
14	0	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
15			202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.006	mg/kg		0.0054	mg/kg	0.000000543 %	✓	
16	0	рН		PH		10.33	рН		10.33	рН	10.33 pH		
17		naphthalene 601-052-00-2	202-049-5	91-20-3		1.06	mg/kg		0.959	mg/kg	0.0000959 %	✓	
18	0		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
19	0	acenaphthene	201-469-6	83-32-9		0.5	mg/kg		0.452	mg/kg	0.0000452 %	✓	
20	0		201-695-5	86-73-7		0.49	mg/kg		0.443	mg/kg	0.0000443 %	✓	
21	0		201-581-5	85-01-8		3.66	mg/kg		3.312	mg/kg	0.000331 %	✓	
22	0	1	204-371-1	120-12-7		0.97	mg/kg		0.878	mg/kg	0.0000878 %	✓	
23	0		205-912-4	206-44-0		3.5	mg/kg		3.167	mg/kg	0.000317 %	✓	
24	0		204-927-3	129-00-0		2.82	mg/kg		2.552	mg/kg	0.000255 %	✓	
25			e 200-280-6	56-55-3		1.45	mg/kg		1.312	mg/kg	0.000131 %	✓	
26			205-923-4	218-01-9		1.35	mg/kg		1.222	mg/kg	0.000122 %	✓	
27			205-911-9	205-99-2		1.48	mg/kg		1.339	mg/kg	0.000134 %	✓	
28		benzo[k]fluoranther 601-036-00-5	ne 205-916-6	207-08-9		0.58	mg/kg		0.525	mg/kg	0.0000525 %	✓	

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#			Determinand		lote	User entere	d data	Conv.	Compound	conc	Classification	MC Applied	Conc. Not
#		EU CLP index number	EC Number	CAS Number	CLP Note	Oser entere	u data	Factor	Compound	conc.	value	MC Ap	Used
29		benzo[a]pyrene; be 601-032-00-3		50-32-8		1.26	mg/kg		1.14	mg/kg	0.000114 %	√	
30	0	indeno[123-cd]pyre		193-39-5	-	0.88	mg/kg		0.796	mg/kg	0.0000796 %	✓	
31		dibenz[a,h]anthrace	ene			0.09	mg/kg		0.0814	mg/kg	0.00000814 %	√	
32	0	601-041-00-2 benzo[ghi]perylene		53-70-3		0.61	mg/kg		0.552	mg/kg	0.0000552 %	√	
		phenol	205-883-8	191-24-2								'	
33		604-001-00-2 1,1-dichloroethane		108-95-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
34	0			107-06-2, 75-34-3		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
35		tetrachloroethylene	;			<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
36		carbon tetrachlorid	e; tetrachlorometha			<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
37		602-008-00-5 trichloroethylene; tr	1	56-23-5		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
		602-027-00-9 vinyl chloride; chlor		79-01-6					<u> </u>				
38			200-831-0	75-01-4		<0.002	mg/kg 		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
39		602-065-00-6		118-74-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
40	4		231-722-6	7704-34-9		2200	mg/kg		1990.95	mg/kg	0.199 %	✓	
41	9	dichlorodifluoromet		75-71-8		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
42		chloromethane; me		74-87-3		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
43		bromomethane; me	ethylbromide			<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<lod< td=""></lod<>
44		chloroethane		74-83-9		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
45	0	602-009-00-0 trichlorofluorometh	1	75-00-3		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
		1,1-dichloroethylen		75-69-4 de					0.000				
46		602-025-00-8 dichloromethane; n		75-35-4		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
47		602-004-00-3	200-838-9	75-09-2		0.027	mg/kg		0.0244	mg/kg	0.00000244 %	✓	
48	0	2,2-dichloropropan		594-20-7		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
49	9	bromochlorometha		74-97-5		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
50		chloroform; trichlor		67-66-3		0.007	mg/kg		0.0063	mg/kg	0.000000633 %	✓	
51		1,1,1-trichloroethar	ne; methyl chlorofor	m		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
52		1,1-dichloropropen	e	71-55-6		<0.003	mg/kg		<0.003	mg/kg	<0.000003 %		<lod< td=""></lod<>
53		602-031-00-0 1,2-dichloropropan		563-58-6 ride		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
		602-020-00-0 dibromomethane	201-152-2	78-87-5	1								
54	-			74-95-3		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
55	100		200-856-7	75-27-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
56				ropropene [2] 542-75-6 [1] 10061-01-5 [2]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
57	9	trans-1,3-dichlorop	ropene 431-460-4	10061-02-6		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>



HazWasteOnline™ Report created by Adrian Read on 12 Jan 2024

=	_				_						-	_	
#			Determinand		CLP Note	User entere	d data	Conv.	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			Factor			value	MC/	Used
58		1,1,2-trichloroethar 602-014-00-8	ne 201-166-9	79-00-5		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
59	0		205-531-3	142-28-9		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
60	0		204-704-0	124-48-1		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
61			203-444-5	106-93-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
62			203-628-5	108-90-7		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
63	0		211-135-1	630-20-6		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
64			200-854-6	75-25-2		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
65		cumene 601-024-00-X 1,1,2,2-tetrachloroe	202-704-5	98-82-8		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
66			201-197-8	79-34-5		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
67			203-623-8 ane	108-86-1		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
68			202-486-1	96-18-4		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
69	0		203-604-4	108-67-8		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
70		1,2,4-trimethylbenz	202-632-4 zene	98-06-6		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod <lod< td=""></lod<></lod
72	0	601-043-00-3 sec-butylbenzene	202-436-9	95-63-6		<0.006	mg/kg mg/kg		<0.006	mg/kg	<0.0000006 %		<lod <lod< td=""></lod<></lod
73	0	4-isopropyltoluene	205-227-0	135-98-8		<0.004	mg/kg		<0.004	mg/kg ——— mg/kg	<0.0000004 %		<lod <lod< td=""></lod<></lod
74		1,3-dichlorbenzene	202-796-7	99-87-6		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
75		602-067-00-7 1,4-dichlorobenzen	208-792-1 ne; p-dichlorobenze	541-73-1 ene		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
76	0	602-035-00-2 n-butylbenzene	203-400-5	106-46-7		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
77		1,2-dichlorobenzen				<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
78		1,2-dibromo-3-chlo		95-50-1		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
79		1,2,4-trichlorobenz		96-12-8		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
80	9	hexachlorobutadier		120-82-1		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
81	0	1,2,3-trichlorobenz	201-765-5 ene 201-757-1	87-68-3 87-61-6		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
82		styrene	202-851-5	100-42-5		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
83		2-chlorophenol; [1] [3] chlorophenol [4] 604-008-00-0	4-chlorophenol; [2			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
84	0	2-nitrophenol	201-857-5	88-75-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
85		2,4-dichlorophenol	204-429-6	120-83-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
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#			Determinand		CLP Note	User entere	d data	Conv.	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			Factor	·		value	MC/	Usea
86		3,4-xylenol; [1] 2,5- 2,3-xylenol; [4] 2,6- 2,5)-xylenol [7] 604-006-00-X	xylenol; [5] xylenol 202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
_		2,4,5-trichlorophen	276-245-4 [7] ol	71975-58-1 [7]	\vdash								
87		•	202-467-8	95-95-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
88		2,4,6-trichlorophen 604-018-00-5	ol 201-795-9	88-06-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
89		chlorocresol; 4-chloro-3-methylpl	henol	59-50-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
90		4-nitrophenol; p-nit	1	100-02-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
91		pentachlorophenol		87-86-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
92	0	2-chloronaphthalen	ne	91-58-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
93	0	2-methyl naphthale	ene	91-57-6		0.496	mg/kg		0.449	mg/kg	0.0000449 %	1	
94		bis(2-ethylhexyl) ph DEHP		1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
95		BBP; benzyl butyl p	ohthalate			<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
96		dibutyl phthalate; D		85-68-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
97	0	607-318-00-4 di-n-octyl phthalate	201-557-4	84-74-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
98	0	diethyl phthalate	204-214-7	117-84-0		<0.1			<0.1		<0.00001 %		<lod< td=""></lod<>
		dimethyl phthalate	201-550-6	84-66-2			mg/kg			mg/kg			
99			205-011-6	131-11-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
100		609-007-00-9		121-14-2 [1] 25321-14-6 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
101		2,6-dinitrotoluene 609-049-00-8	210-106-0	606-20-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
102	0	4-bromophenylphe	nylether 202-952-4	101-55-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
103		4-chloroaniline 612-137-00-9	203-401-0	106-47-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
104	0	4-chlorophenylpher	nylether 230-281-7	7005-72-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
105		azobenzene	203-102-5	103-33-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
106	0	bis(2-chloroethoxy)		111-91-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %	П	<lod< td=""></lod<>
107		bis(2-chloroethyl) e	ther			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %	П	<lod< td=""></lod<>
108	0	carbazole	203-870-1	111-44-4		0.092	mg/kg		0.0833	mg/kg	0.00000833 %	√	
109	0	dibenzofuran	201-696-0	86-74-8		0.155	mg/kg		0.14	mg/kg	0.000014 %	√	
110		hexachlorocyclope		132-64-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %	Н	<lod< td=""></lod<>
'		602-078-00-7	201-029-3	77-47-4			39			J			





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#		EU CLP index	Determinand EC Number	CAS Number	P Note	User entered	data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		number	EC Number	CAS Number	CLP							ĭ	
111	0	hexachloroethane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			200-666-4	67-72-1		10.0.					40.000001 70		1202
112		3,5,5-trimethylcyclo	ohex-2-enone; iso	phorone		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
112		606-012-00-8	201-126-0	78-59-1		40.01	mg/kg		VO.01	mg/kg	Q0.000001 70		, LO
113		nitrosodipropylamir	ne			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		612-098-00-8	210-698-0	621-64-7	1	<0.01	mg/kg		\(\delta\)	mg/kg	Q0.000001 78		\LOD
114		nitrobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		609-003-00-7	202-716-0	98-95-3		10.01			10.01		10.000001 /0		,101
		1,2-dichloroethylen trans-dichloroethyle	/ L 2	ethylene; [2]									
115			208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
		2-chlorotoluene; [1] 4-chlorotoluene; [3]											
116			202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
		m-cresol; [1] o-cres	sol; [2] p-cresol; [3] mix-cresol [4]									
117			203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<lod< td=""></lod<>
		o-nitroaniline; [1] m	n-nitroaniline; [2] p	-nitroaniline [3]									
118			201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
										Total:	0.37 %		

Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Hazardous result

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Speciated DeteminandLODBelow limit of detection

CLP: Note 1 Only the metal concentration has been used for classification

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17: Construction and Demolition Wastes (including excavated soil

Classification of sample: CP02b-05/12/2023-1.00m

Hazardous Waste Classified as 17 05 03 * in the List of Waste

Sample details

Sample name: LoW Code:

CP02b-05/12/2023-1.00m Chapter:

Moisture content: from contaminated sites)

8% Entry: 17 05 03 * (Soil and stones containing hazardous substances)

(dry weight correction)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.356%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.356%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.356%)

Determinands

Moisture content: 28% Dry Weight Moisture Correction applied (MC)

#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	æ	arsenic { arsenic tr		1327-53-3		10.2 mg/kg	1.32	10.521 mg/kg	0.00105 %	✓	
2	4	cadmium { cadmiu 048-002-00-0	,	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<lod< th=""></lod<>
3	4	chromium in chrom compounds, with the of compounds speed 024-017-00-8	ne exception of bar	ium chromate and		33.8 mg/kg	2.27	59.942 mg/kg	0.00599 %	✓	
4	4	copper { dicopper of the dicop		ide }		39 mg/kg	1.126	34.304 mg/kg	0.00343 %	✓	



HazWasteOnline[™] Report created by Adrian Read on 12 Jan 2024

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#		511.01.01	Determinand		P Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP							MC	
5	4	load (load di(do	etate) } 206-104-4	301-04-2	1	348	mg/kg	1.57	426.815	mg/kg	0.0272 %	✓	
6	4			001 04 2		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %	П	<lod< td=""></lod<>
Ĺ			231-299-8	7487-94-7	-							Н	
7	4	,	238-766-5	14721-18-7		33.3	mg/kg	2.976	77.429	mg/kg	0.00774 %	✓	
8	4	selenium { nickel so 028-031-00-5	elenate } 239-125-2	15060-62-5	-	<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<lod< td=""></lod<>
	4	zinc { zinc sulphate	}			444		0.400	070.000	,	0.0070.0/	1	
9			231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		141	mg/kg	2.469	272.008	mg/kg	0.0272 %	√	
10	0	TPH (C6 to C40) p	etroleum group	TPH		17360	mg/kg		13562.5	mg/kg	1.356 %	√	
11		tert-butyl methyl etl 2-methoxy-2-methy				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
			216-653-1	1634-04-4	1							Ш	
12		benzene 601-020-00-8	200-753-7	71-43-2	-	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
13		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
14	0	ethylbenzene	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
H		601-023-00-4 xylene	202-849-4	100-41-4	1	10.000			10.000		10.0000000 /0	Н	<u> </u>
15		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
16	0	рН		PH		8.11	рН		8.11	рН	8.11 pH		
17		naphthalene 601-052-00-2	202-049-5	91-20-3		0.13	mg/kg		0.102	mg/kg	0.0000102 %	√	
18	0	acenaphthylene	205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
19	0	acenaphthene	201-469-6	83-32-9		0.54	mg/kg		0.422	mg/kg	0.0000422 %	✓	
20	0	fluorene		86-73-7		2.78	mg/kg		2.172	mg/kg	0.000217 %	√	
21	0	phenanthrene	201-695-5			4.52	mg/kg		3.531	mg/kg	0.000353 %	√	
22	0	anthracene	201-581-5	85-01-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %	Н	<lod< td=""></lod<>
23	0	fluoranthene	204-371-1	120-12-7		0.29	mg/kg		0.227	mg/kg	0.0000227 %	✓	
24	0	pyrene	205-912-4	206-44-0		0.52	mg/kg		0.406	mg/kg	0.0000406 %	√	
25		benzo[a]anthracen	204-927-3 e	129-00-0	+	0.1	mg/kg		0.0781	mg/kg	0.00000781 %	· ✓	
26		601-033-00-9 chrysene	200-280-6	56-55-3	-	0.18			0.141		0.0000141 %		
		601-048-00-0 benzo[b]fluoranthe	205-923-4 ne	218-01-9	+		mg/kg			mg/kg		✓	
27			205-911-9	205-99-2	+	0.09	mg/kg		0.0703	mg/kg	0.00000703 %	✓	
28			205-916-6	207-08-9		0.03	mg/kg		0.0234	mg/kg	0.00000234 %	✓	
29		benzo[a]pyrene; be 601-032-00-3	enzo[def]chrysene 200-028-5	50-32-8	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
30	0	indeno[123-cd]pyre	ene 205-893-2	193-39-5		0.06	mg/kg		0.0469	mg/kg	0.00000469 %	√	
31		dibenz[a,h]anthrace	ene			<0.04	mg/kg		<0.04	mg/kg	<0.000004 %	П	<lod< td=""></lod<>
	$oxed{oxed}$	pu1-041-00-2	200-181-8	53-70-3									

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HazWasteOnline[™]
Report created by Adrian Read on 12 Jan 2024

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered	l data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
32	0	benzo[ghi]perylene	e 205-883-8	191-24-2		0.05	mg/kg		0.0391	mg/kg	0.00000391 %	✓	
33		asbestos 650-013-00-6		12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<10	mg/kg		<10	mg/kg	<0.001 %		<lod< th=""></lod<>
										Total:	1.431 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
0	Determinand defined or amended by HazWasteOnline (see Appendix A)
4	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<lod< th=""><th>Below limit of detection</th></lod<>	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification





17: Construction and Demolition Wastes (including excavated soil

Classification of sample: CP02b-05/12/2023-1.50m

A Hazardous Waste

Classified as 17 05 03 * in the List of Waste

Sample details

Sample name: LoW Code:

CP02b-05/12/2023-1.50m Chapter: Moisture content:

23.3% Entry: 17 05 03 * (Soil and stones containing hazardous substances) (dry weight correction)

from contaminated sites)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.681%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.681%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.681%)

Determinands

Moisture content: 23.3% Dry Weight Moisture Correction applied (MC)

#		Determinand			Note	User entered data		Conv.	Compound conc.		Classification value	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		1 doloi			value	MC	Joseph	
1	0	TPH (C6 to C40) petroleum group				8397	mg/kg		6810.219	mg/kg	0.681 %	✓	
				TPH								Ť	
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
					1	<0.005							
		603-181-00-X	216-653-1	1634-04-4									
3		benzene				<0.005	mg/kg		< 0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
		601-020-00-8	200-753-7	71-43-2			3,9			3,119			
4		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
		601-021-00-3	203-625-9	108-88-3					70.000				

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#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
5	9	ethylbenzene 601-023-00-4	202-849-4	100-41-4	_	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
6			202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< th=""></lod<>
										Total:	0.681 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
0	Determinand defined or amended by HazWasteOnline (see Appendix A)
<lod< th=""><th>Below limit of detection</th></lod<>	Below limit of detection





Classification of sample: CP03-05/12/2023-0.30m

* Potentially Hazardous Waste

Classified as **17 05 04** or **17 05 03** * in the List of Waste

Sample details

Sample name: LoW Code: CP03-05/12/2023-0.30m Chapter:

CP03-05/12/2023-0.30m Chapter: Moisture content:

33.6% Entry: (dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous substances)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0127%)

Determinands

Moisture content: 33.6% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered	data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
1	4	arsenic { arsenic tr				17.9	mg/kg	1.32	17.69	mg/kg	0.00177 %	1	
			215-481-4	1327-53-3									
2	æ &	cadmium { cadmiui 048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.428	mg/kg	0.0000428 %	✓	
3	4	chromium in chrom compounds, with the of compounds special	nium(VI) compound ne exception of bar	ds { chromium (VI) ium chromate and		65.3	mg/kg	2.27	110.951	mg/kg	0.0111 %	√	
4	4	copper { dicopper o	I <mark>oxide; copper (I) ox</mark> 215-270-7	i <mark>ide</mark> } 1317-39-1		81	mg/kg	1.126	68.261	mg/kg	0.00683 %	✓	
5	4	lead {		301-04-2	1	1897	mg/kg	1.57	2229.111	mg/kg	0.142 %	√	
6	4	mercury { mercury		7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<lod< td=""></lod<>
7	4	nickel { nickel chro		14721-18-7		63.3	mg/kg	2.976	141.016	mg/kg	0.0141 %	√	
8	4	selenium { nickel s		15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<lod< td=""></lod<>
9	4	zinc { zinc sulphate		7446-19-7 [1] 7733-02-0 [2]		513	mg/kg	2.469	948.165	mg/kg	0.0948 %	✓	
10	0	TPH (C6 to C40) p	etroleum group	ТРН		170	mg/kg		127.246	mg/kg	0.0127 %	√	
11		tert-butyl methyl et 2-methoxy-2-methy 603-181-00-X		1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
12		benzene 601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>

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$\overline{}$	_				_							$\overline{}$	
#		FILOID: 1	Determinand	0.001	CLP Note	User entere	ed data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. No Used
		EU CLP index number	EC Number	CAS Number	딩							MC	
13		toluene 601-021-00-3	203-625-9	108-88-3	_	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
	_		203-023-9	100-00-3	+							Н	
14	0	ethylbenzene 601-023-00-4	202-849-4	100-41-4	-	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
$\overline{}$			202-045-4	100-41-4	+							Н	
15		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
16	0	pH				7.7	рН		7.7	рН	7.7 pH		
				PH								Ш	
17		naphthalene				0.16	mg/kg		0.12	mg/kg	0.000012 %	/	
		601-052-00-2	202-049-5	91-20-3	-					-		Щ	
18	Θ	acenaphthylene				< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		1.00	205-917-1	208-96-8	+							\sqcup	
19	•	acenaphthene	ha	loo oo o	_	0.09	mg/kg		0.0674	mg/kg	0.00000674 %	✓	
\vdash		a.	201-469-6	83-32-9	+							Н	
20	0	fluorene	004 605 5	00 70 7	4	0.05	mg/kg		0.0374	mg/kg	0.00000374 %	✓	
		phenanthrene	201-695-5	86-73-7	+							\vdash	
21	0	prienantinene	201-581-5	85-01-8	-	1.26	mg/kg		0.943	mg/kg	0.0000943 %	✓	
	0	anthracene	201-301-3	p3-01-0								Н	
22	0	antinacene	204-371-1	120-12-7	\dashv	0.33	mg/kg		0.247	mg/kg	0.0000247 %	✓	
		fluoranthene	204 371 1	120 12 1	+							\forall	
23	9	naoraninono	205-912-4	206-44-0	\dashv	2.43	mg/kg		1.819	mg/kg	0.000182 %	✓	
		pyrene			1							Н	
24		17	204-927-3	129-00-0	-	1.92	mg/kg		1.437	mg/kg	0.000144 %	√	
		benzo[a]anthracen											
25		601-033-00-9	200-280-6	56-55-3	1	1.04	mg/kg		0.778	mg/kg	0.0000778 %	√	
26		chrysene	1	1		0.00			0.744		0.0000744.0/		
26		601-048-00-0	205-923-4	218-01-9	-	0.99	mg/kg		0.741	mg/kg	0.0000741 %	√	
27		benzo[b]fluoranthe	ene			1.24	mg/kg		0.928	mg/kg	0.0000928 %		
		601-034-00-4	205-911-9	205-99-2	1	1.24	mg/kg		0.920	ilig/kg	0.0000928 /8	√	
28		benzo[k]fluoranthe	ne			0.48	mg/kg		0.359	mg/kg	0.0000359 %	√	
		601-036-00-5	205-916-6	207-08-9		0.40	g/itg		J.000	9/109	3.0000000 70	'	
29		benzo[a]pyrene; be				1.03	mg/kg		0.771	mg/kg	0.0000771 %	/	
		601-032-00-3	200-028-5	50-32-8	1					٠٠٠٠		Ľ	
30	0	indeno[123-cd]pyre				0.91	mg/kg		0.681	mg/kg	0.0000681 %	/	
			205-893-2	193-39-5	_							\coprod	
31		dibenz[a,h]anthrac				0.13	mg/kg		0.0973	mg/kg	0.00000973 %	/	
	_	601-041-00-2	200-181-8	53-70-3	-					- 3		Ш	
32	0	benzo[ghi]perylene		1.0.1.0.1.0		0.61	mg/kg		0.457	mg/kg	0.0000457 %	1	
			205-883-8	191-24-2	+							\sqcup	
33	•	polychlorobipheny		4000 00 0	4	<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<lod< td=""></lod<>
		602-039-00-4	215-648-1	1336-36-3	+							\vdash	
	-	sulfur { <mark>sulfur</mark> } 016-094-00-1	004 700 0	7704.04.0	_	5700	mg/kg		4266.467	mg/kg	0.427 %	✓	
34		DERM_DQ/L_DD_1	231-722-6	7704-34-9								Ш	
34					\neg						1	1	1
34 35	0	coronene	205-881-7	191-07-1		0.12	mg/kg		0.0898	mg/kg	0.00000898 %	√	



User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the Selow limit of detection

CLP: Note 1 Only the metal concentration has been used for classification





Classification of sample: HDP02-05/12/2023-0.40m

* Potentially Hazardous Waste

Classified as **17 05 04** or **17 05 03** * in the List of Waste

Sample details

Sample name: LoW Code: HDP02-05/12/2023-0.40m Chapter:

HDP02-05/12/2023-0.40m Chapter:
Moisture content:

21.3% Entry: (dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous substances)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand: toluene: (conc.: 4.95e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00907%)

Determinands

Moisture content: 21.3% Dry Weight Moisture Correction applied (MC)

#		Determinand EU CLP index	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	•	arsenic { arsenic trioxide } 033-003-00-0 215-481-4 1327-53-3		26.2 mg/kg	1.32	28.518 mg/kg	0.00285 %	1	
2	•	cadmium { cadmium oxide } 048-002-00-0		0.2 mg/kg	1.142	0.188 mg/kg	0.0000188 %	1	
3	•	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }		46.8 mg/kg	2.27	87.581 mg/kg	0.00876 %	1	
4	4	copper { dicopper oxide; copper (I) oxide } 029-002-00-X		101 mg/kg	1.126	93.747 mg/kg	0.00937 %	√	
5		lead { lead di(acetate) } 082-005-00-8 206-104-4 301-04-2	1	289 mg/kg	1.57	374.031 mg/kg	0.0238 %	√	
6	-	mercury { mercury dichloride } 080-010-00-X		0.7 mg/kg	1.353	0.781 mg/kg	0.0000781 %	√	
7	•	nickel { nickel chromate } 028-035-00-7		81.5 mg/kg	2.976	199.972 mg/kg	0.02 %	1	
8	•	selenium { nickel selenate } 15060-62-5 028-031-00-5 239-125-2 15060-62-5		2 mg/kg	2.554	4.211 mg/kg	0.000421 %	1	
9	•	zinc { zinc sulphate } 030-006-00-9		514 mg/kg	2.469	1046.347 mg/kg	0.105 %	✓	
10	0	TPH (C6 to C40) petroleum group		110 mg/kg		90.684 mg/kg	0.00907 %	✓	

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11 tert-bu 2-meth 603-18 12 benzei 601-02 13 toluen 601-02 14 ethylbo 601-02 xylene 601-02 15 PH 17 naphtt 601-05	ne 0-00-8 200-753-7 e 1-00-3 203-625-9 enzene 3-00-4 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] enalene	CAS Number [1634-04-4] [71-43-2] [108-88-3] [100-41-4] [95-47-6 [1] [106-42-3 [2] [108-38-3 [3] [1330-20-7 [4]] [PH]	CLP Note	<0.005 <0.005 0.006 <0.005 <0.01	mg/kg mg/kg mg/kg mg/kg	Factor	<0.005 <0.005 0.0049 <0.005	mg/kg mg/kg mg/kg mg/kg	value <0.0000005 % <0.0000005 % 0.000000495 % <0.0000005 %	AC Applied	<lod <lod<="" th=""></lod>
11	noxy-2-methylpropane 1-00-X 216-653-1 ne 0-00-8 200-753-7 e 1-00-3 203-625-9 enzene 3-00-4 202-849-4 202-849-4 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] enalene	71-43-2 108-88-3 100-41-4 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.005 0.006 <0.005	mg/kg mg/kg mg/kg		<0.005 0.0049 <0.005	mg/kg mg/kg mg/kg	<0.0000005 % 0.000000495 %	✓	<lod< th=""></lod<>
12 benzer 601-02 13 toluen 601-02 14 tethylbo 601-02 15 601-02 16 PH 17 naphtt 601-05 16 a genal	ne 0-00-8 200-753-7 e 1-00-3 203-625-9 enzene 3-00-4 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] enalene	71-43-2 108-88-3 100-41-4 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.006	mg/kg		0.0049	mg/kg	0.000000495 %	✓	
12 601-02 13 toluen 601-02 14 ethylbo 601-02 xylene 601-02 16 PH 17 naphtt 601-05	0-00-8 200-753-7 e 1-00-3 203-625-9 enzene 3-00-4 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] enalene	108-88-3 100-41-4 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.006	mg/kg		0.0049	mg/kg	0.000000495 %	✓	
13 601-02 14 ethylbe 601-02 xylene 601-02 15 PH 17 naphtt 601-05	1-00-3 203-625-9 enzene 3-00-4 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] enalene	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.005	mg/kg		<0.005	mg/kg		✓	<lod< td=""></lod<>
15 601-02 xylene 601-02	enzene 3-00-4 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.005	mg/kg		<0.005	mg/kg		V	<lod< th=""></lod<>
xylene 601-02 xylene 601-02 16 pH 17 naphth 601-05	2-00-9 202-849-4 2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	_						<0.0000005 %		<lod< th=""></lod<>
15 601-02 xylene 601-02 15 PH 17 naphtt 601-05 a acena	2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
15 601-02 16 PH 17 naphtt 601-05	2-00-9 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	ma/ka			
16 PH 17 naphtt 601-05	203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	ma/ka		1 1	1
17 naphth 601-05		PH						mg/kg	<0.000001 %		<lod< td=""></lod<>
601-05				7.91	рН		7.91	рН	7.91 pH		
601-05				0.45	ma a: //		0.404	m a /1	0.0000404.0/	,	
acena	2 00 2 202 073 3	91-20-3	1	0.15	mg/kg		0.124	mg/kg	0.0000124 %	✓	
	phthylene	1		0.00			0.00		0.000000.0/	\Box	1.00
	205-917-1	208-96-8	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
19 acena	phthene		İ	<0.05	ma/ka	Ì	<0.05	ma/ka	<0.00005 %		<lod< td=""></lod<>
19	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<lud< td=""></lud<>
20 a fluorer	ne			<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
20	201-695-5	86-73-7		<0.04	ilig/kg		\\0.04	mg/kg	<0.000004 78		\LOD
21 phena	nthrene			0.46	mg/kg		0.379	mg/kg	0.0000379 %	1	
	201-581-5	85-01-8		0.40			0.070	mg/kg	0.0000073 70	'	
22 anthra	cene			0.11	mg/kg		0.0907	mg/kg	0.00000907 %	/	
	204-371-1	120-12-7		0.11				mg/ng	0.00000007 70	*	
23 a fluorar	thene			0.81	mg/kg		0.668	mg/kg	0.0000668 %	1	
	205-912-4	206-44-0								•	
24 pyrene				0.73	mg/kg		0.602	mg/kg	0.0000602 %	1	
	204-927-3	129-00-0								ľ	
125	[a]anthracene			0.46	mg/kg		0.379	mg/kg	0.0000379 %	1	
601-03		56-55-3	-								
26 chryse				0.49	mg/kg		0.404	mg/kg	0.0000404 %	1	
601-04		218-01-9									
12/	[b]fluoranthene	ho= 00 0		0.58	mg/kg		0.478	mg/kg	0.0000478 %	✓	
601-03		205-99-2								\vdash	
1281	[k]fluoranthene	607.00.0	_	0.23	mg/kg		0.19	mg/kg	0.000019 %	✓	
601-03		207-08-9	-							\vdash	
29 benzo	[a]pyrene; benzo[def]chrysene	E0 22 0	_	0.45	mg/kg		0.371	mg/kg	0.0000371 %	✓	
\vdash		50-32-8	+							H	
30 Indend	[123-cd]pyrene 205-893-2	102 30 F	-	0.38	mg/kg		0.313	mg/kg	0.0000313 %	✓	
dibon	<u> </u>	193-39-5	+							H	
31 dibenz	[a,h]anthracene 1-00-2 200-181-8	53-70-3	-	0.06	mg/kg		0.0495	mg/kg	0.00000495 %	✓	
- henzo	1-00-2 <u>200-181-8</u> [ghi]perylene	μυ-10-υ	+							\vdash	
32 Denzo	205-883-8	191-24-2	-	0.25	mg/kg		0.206	mg/kg	0.0000206 %	✓	
	1							Total:	0.179 %		



User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration LOD
Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: WS01-05/12/2023-0.10m

△ Hazardous Waste

Classified as 17 05 03 * in the List of Waste

Sample details

Sample name: LoW Code:

WS01-05/12/2023-0.10m Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

1.9% Entry: 17 05 03 * (Soil and stones containing hazardous substances) (dry weight correction)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]: (conc.: 0.196%)

Determinands

Moisture content: 1.9% Dry Weight Moisture Correction applied (MC)

#		Determinand EU CLP index	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1		naphthalene 601-052-00-2 202-049-5 91-20-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<lod< th=""></lod<>
2	0	acenaphthylene 205-917-1 208-96-8		0.444 mg/kg		0.436 mg/kg	0.0000436 %	✓	
3	0	acenaphthene 201-469-6 83-32-9		0.122 mg/kg		0.12 mg/kg	0.000012 %	√	
4	0	fluorene 201-695-5 86-73-7		0.164 mg/kg		0.161 mg/kg	0.0000161 %	√	
5	0	phenanthrene 201-581-5 85-01-8		0.453 mg/kg		0.445 mg/kg	0.0000445 %	√	
6	0	anthracene 204-371-1 120-12-7		0.333 mg/kg		0.327 mg/kg	0.0000327 %	√	
7	0	fluoranthene 205-912-4 206-44-0		0.425 mg/kg		0.417 mg/kg	0.0000417 %	√	
8	0	pyrene		0.719 mg/kg		0.706 mg/kg	0.0000706 %	√	
9		benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3		0.254 mg/kg		0.249 mg/kg	0.0000249 %	√	
10		chrysene 601-048-00-0 205-923-4 218-01-9		0.608 mg/kg		0.597 mg/kg	0.0000597 %	√	
11		benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8		0.72 mg/kg		0.707 mg/kg	0.0000707 %	√	
12	Θ	indeno[123-cd]pyrene		0.305 mg/kg		0.299 mg/kg	0.0000299 %	√	
13		dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3		0.105 mg/kg		0.103 mg/kg	0.0000103 %	✓	

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#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered da	ta	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
14	0	benzo[ghi]perylene	205-883-8	191-24-2		0.589 mg	/kg		0.578	mg/kg	0.0000578 %	✓	
15		Tar, coal; Coal tar; distillation of coal. A combination of arou compounds, nitrogenerates 648-081-00-7	Almost black semis matic hydro-carbor	solid. A complex ns, phenolic	Н	2000 mg	ı/kg		1962.709	mg/kg	0.196 %	√	
									-1-	Total:	0.197 %		

n	е	y

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

<LOD Below limit of detection

CLP: Note H Known incomplete entry, should not be used as is





17: Construction and Demolition Wastes (including excavated soil

Classification of sample: WS01-05/12/2023-0.40m

A Hazardous Waste

Classified as 17 05 03 * in the List of Waste

Sample details

Sample name: LoW Code:

WS01-05/12/2023-0.40m Chapter: Moisture content:

17 05 03 * (Soil and stones containing hazardous substances) Entry:

from contaminated sites)

(dry weight correction)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc sulphate: (compound conc.: 0.469%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.057%)

Determinands

Moisture content: 5.8% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entere	ed data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
1	_	arsenic { arsenic tr 033-003-00-0	i <mark>oxide</mark> } 215-481-4	1327-53-3		2.2	mg/kg	1.32	2.745	mg/kg	0.000275 %	✓	
2	-	cadmium { <mark>cadmiu</mark> 048-002-00-0	<mark>m oxide</mark> } 215-146-2	1306-19-0		14.3	mg/kg	1.142	15.44	mg/kg	0.00154 %	✓	
3	4	chromium in chrom compounds, with the of compounds spe-	ne exception of bar	ium chromate and		20	mg/kg	2.27	42.911	mg/kg	0.00429 %	√	
		024-017-00-8		<u></u>									
4	4			-		14	mg/kg	1.126	14.898	mg/kg	0.00149 %	✓	
-	_	029-002-00-X	215-270-7	1317-39-1									
5	4	lead { • lead di(ac			1	281	mg/kg	1.57	416.957	mg/kg	0.0266 %	✓	
		082-005-00-8	206-104-4	301-04-2									
6	~		•			<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<lod< th=""></lod<>
		080-010-00-X	231-299-8	7487-94-7									
7	~		•			5.3	mg/kg	2.976	14.909	mg/kg	0.00149 %	1	
		028-035-00-7	238-766-5	14721-18-7									
8	_	selenium { nickel s				2	mg/kg	2.554	4.828	mg/kg	0.000483 %	1	
		028-031-00-5	239-125-2	15060-62-5									

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=	_				_			1				_	
#			Determinand		CLP Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			racio	,		Value	MC	0300
	æ	zinc { zinc sulphate) }										
9		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		2010	mg/kg	2.469	4691.196	mg/kg	0.469 %	✓	
10	0	TPH (C6 to C40) p	etroleum group	ТРН		603	mg/kg		569.943	mg/kg	0.057 %	✓	
11		tert-butyl methyl et 2-methoxy-2-methy	ylpropane			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
12		603-181-00-X benzene	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.000005 %		<lod< td=""></lod<>
		601-020-00-8	200-753-7	71-43-2									
13		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
13		601-021-00-3	203-625-9	108-88-3	1	<0.003	mg/kg		<0.003	ilig/kg	20.0000003 /6		\LUD
Ī.,	0	ethylbenzene	1	1									
14		601-023-00-4	202-849-4	100-41-4	-	<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< td=""></lod<>
		xylene	F02 0 .0 .		+							Н	
15		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
16	0	рН		PH		9.95	рН		9.95	рН	9.95 pH		
		nanhthalana		ГП	+								
17		naphthalene	haa a40 F	64.00.0	4	0.06	mg/kg		0.0567	mg/kg	0.00000567 %	✓	
-		601-052-00-2	202-049-5	91-20-3	-								
18	0	acenaphthylene				0.08	mg/kg		0.0756	mg/kg	0.00000756 %	✓	
			205-917-1	208-96-8								·	
19	0	acenaphthene	201-469-6	83-32-9		0.25	mg/kg		0.236	mg/kg	0.0000236 %	✓	
20	0	fluorene	201-695-5	86-73-7		0.11	mg/kg		0.104	mg/kg	0.0000104 %	√	
	0	phenanthrene											
21	9	prioriditationo	201-581-5	85-01-8	-	0.59	mg/kg		0.558	mg/kg	0.0000558 %	✓	
		anthracene	2010010	po 01 0	+							\vdash	
22	Θ	anunacene	004.074.4	400 40 7	4	0.42	mg/kg		0.397	mg/kg	0.0000397 %	✓	
-			204-371-1	120-12-7	-								
23	0	fluoranthene	205-912-4	206-44-0		3.41	mg/kg		3.223	mg/kg	0.000322 %	✓	
24	Θ	pyrene	204-927-3	129-00-0		3.48	mg/kg		3.289	mg/kg	0.000329 %	✓	
25		benzo[a]anthracen 601-033-00-9	e 200-280-6	56-55-3		2.29	mg/kg		2.164	mg/kg	0.000216 %	√	
\vdash		chrysene	F0 = 0		+							Н	
26		601-048-00-0	DOE 022 4	019 01 0	4	2.27	mg/kg		2.146	mg/kg	0.000215 %	✓	
\vdash			205-923-4	218-01-9	+							\vdash	
27		benzo[b]fluoranthe		ho= 00 5	4	5.63	mg/kg		5.321	mg/kg	0.000532 %	✓	
			205-911-9	205-99-2	1								
28		benzo[k]fluoranthe 601-036-00-5	ne 205-916-6	207-08-9		2.19	mg/kg		2.07	mg/kg	0.000207 %	✓	
29		benzo[a]pyrene; be	enzo[def]chrysene	50-32-8		5.21	mg/kg		4.924	mg/kg	0.000492 %	√	
		ł		PU-02-0	+							\vdash	
30	0	indeno[123-cd]pyre		400.00.5	4	5.52	mg/kg		5.217	mg/kg	0.000522 %	✓	
			205-893-2	193-39-5	-							Ш	
31		dibenz[a,h]anthrac				0.67	mg/kg		0.633	mg/kg	0.0000633 %	✓	
Ĺ	L	601-041-00-2	200-181-8	53-70-3		0.0.						*	
32	Θ	benzo[ghi]perylene	205-883-8	191-24-2		3.71	mg/kg		3.507	mg/kg	0.000351 %	√	
			1	1						Total:	0.566 %	П	
												Щ	





Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Hazardous result

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

₫ <LOD Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification

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Classification of sample: WS02-05/12/2023-0.30m

*** Potentially Hazardous Waste**

Classified as **17 05 04** or **17 05 03** * in the List of Waste

Sample details

Sample name: LoW Code:

WS02-05/12/2023-0.30m Chapter:

Moisture content:

3% (dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous

substances)

Hazard properties (substances considered hazardous until shown otherwise)

Entry:

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0269%)

Determinands

Moisture content: 3% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
1	0	TPH (C6 to C40) p	etroleum group	TPH		277	mg/kg		268.932	mg/kg	0.0269 %	✓	
2		tert-butyl methyl et 2-methoxy-2-methy	ylpropane	14004.04.4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
3		603-181-00-X benzene 601-020-00-8	216-653-1	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
4		toluene 601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
5	0	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<lod< th=""></lod<>
6		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< th=""></lod<>
										Total:	0.0269 %		

Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

<LOD Below limit of detection



Classification of sample: WS02-05/12/2023-0.70m

Non Hazardous Waste Classified as 17 05 04 in the List of Waste

Sample details

Sample name: LoW Code: WS02-05/12/2023-0.70m Chapter:

Moisture content:

23% Entry: (dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
17 05 04 (Soil and stones other than those mentioned in 17 05

03)

Hazard properties

None identified

Determinands

Moisture content: 23% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
1	ď	arsenic { arsenic tr 033-003-00-0	<mark>rioxide</mark> } 215-481-4	1327-53-3		8.3	mg/kg	1.32	8.91	mg/kg	0.000891 %	√	
2	ď	cadmium { cadmiu 048-002-00-0	m oxide }	1306-19-0		0.8	mg/kg	1.142	0.743	mg/kg	0.0000743 %	√	
3	4	of compounds spe	he exception of ba	rium chromate and		34.5	mg/kg	2.27	63.671	mg/kg	0.00637 %	√	
	_	024-017-00-8											
4	ď	copper { dicopper 029-002-00-X	215-270-7	1317-39-1		21	mg/kg	1.126	19.222	mg/kg	0.00192 %	✓	
5	ď	lead { • lead di(ad	cetate) }		1	46	mg/kg	1.57	58.712	mg/kg	0.00374 %	√	
	-	082-005-00-8	206-104-4	301-04-2	-								
6	e#	mercury { mercury 080-010-00-X	231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<lod< td=""></lod<>
7	ď	nickel { nickel chro	mate }			29.7	mg/kg	2.976	71.866	mg/kg	0.00719 %	/	
		028-035-00-7	238-766-5	14721-18-7									
8	ď	selenium { nickel s 028-031-00-5	elenate } 239-125-2	15060-62-5	-	<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<lod< td=""></lod<>
	e de	1	1	.0000 02 0									
9		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		339	mg/kg	2.469	680.562	mg/kg	0.0681 %	✓	
10	0	TPH (C6 to C40) p	etroleum group			<52	mg/kg		<52	mg/kg	<0.0052 %		<lod< td=""></lod<>
10				TPH		402	mg/kg				<0.0032 //		LOD
11		tert-butyl methyl et 2-methoxy-2-meth	ylpropane			<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4	-							Н	
12		benzene 601-020-00-8	200-753-7	71-43-2	-	<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
13		toluene				<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
		601-021-00-3	203-625-9	108-88-3	-								
14	0	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
15		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.011	mg/kg		<0.011	mg/kg	<0.0000011 %		<lod< td=""></lod<>

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#			Determinand		CLP Note	User entere	d data	Conv.	Compound	conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			actor			value	MC,	Oseu
16	0	рН		PH		7.94	рН		7.94	рН	7.94 pH		
-		1.4. 1		111	+							Н	
17		naphthalene				< 0.027	mg/kg		<0.027	mg/kg	<0.0000027 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3									
18	0	acenaphthylene				<0.03	ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
10			205-917-1	208-96-8	1	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lud< td=""></lud<>
19	0	acenaphthene		1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<lod< td=""></lod<>
			201-469-6	83-32-9	_								
20	0	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
			201-695-5	86-73-7									
	0	phenanthrene				0.00			0.00		0.000000.0/		1.00
21		-	201-581-5	85-01-8	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		anthracene			+								
22	0	anunacene	bo 4 074 4	1.00 1.0 =	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
			204-371-1	120-12-7	-								
23	Θ	fluoranthene				< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
-"			205-912-4	206-44-0	1	10.00	9/9		10.00	9,9	101000000 70		1202
Ī.,	8	pyrene	•										
24		p)	204-927-3	129-00-0	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
-			1	129-00-0	╆								
25		benzo[a]anthracen				< 0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<lod< td=""></lod<>
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				-0.02	ma/ka		<0.02	ma/ka	-0.000002.9/		<lod< td=""></lod<>
20		601-048-00-0	205-923-4	218-01-9	1	<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<lod td="" <=""></lod>
		benzo[b]fluoranthe		1	\vdash								
27		601-034-00-4		hoe oo o	-	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<lod< td=""></lod<>
			205-911-9	205-99-2	-								
28		benzo[k]fluoranthe	ne			<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<lod< td=""></lod<>
-"		601-036-00-5	205-916-6	207-08-9	1	10.02	9/9		10.02	9,9	10.000002 70		1202
		benzo[a]pyrene; be	enzo[def]chrysene							,			
29		601-032-00-3		50-32-8	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
			L	00-32-0	+								
30	0	indeno[123-cd]pyre				< 0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
			205-893-2	193-39-5									
31		dibenz[a,h]anthrac	ene			<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
31		601-041-00-2	200-181-8	53-70-3	1	<0.04	mg/kg		<0.04	mg/kg	<0.000004 / ₀		\LOD
	_	benzo[ghi]perylene	1	I.	\top								
32		benze[grii]peryiene		191-24-2	-	<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<lod< td=""></lod<>
_			200-000-0	191-24-2	╆								
33		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		604-001-00-2	203-632-7	108-95-2									
	0	1,1-dichloroethane	and 1,2-dichloroet	hane (combined)									
34			203-458-1,	107-06-2. 75-34-3		< 0.007	mg/kg		< 0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
			200-863-5										
		tetrachloroethylene		.1	T								
35		602-028-00-4		107 10 4	-	< 0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
-	_		1	127-18-4	+								
36			le; tetrachlorometha			<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
		602-008-00-5	200-262-8	56-23-5	L		88						
~~		trichloroethylene; t	richloroethene			0.000	/I		0.000	//	.0.0000000.00		1.00
37		602-027-00-9	201-167-4	79-01-6	-	<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
\vdash	\vdash		1		+								
38		vinyl chloride; chlo			4	< 0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
		602-023-00-7	200-831-0	75-01-4	_								
39		hexachlorobenzen	e			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		602-065-00-6	204-273-9	118-74-1	1								
	æ	sulfur { sulfur }				500			100 70 1		0.0407.01		
40	•	016-094-00-1	231-722-6	7704-34-9	-	500	mg/kg		406.504	mg/kg	0.0407 %	✓	
			1		+								
41	0	dichlorodifluorome		hr 74 °	-	< 0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
<u></u>				75-71-8	1								
42		chloromethane; me	ethyl chloride			<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
172		602-001-00-7	200-817-4	74-87-3	1	\0.003	mg/kg		\0.003	mg/kg	3.0000000 /8		`
		bromomethane; m	1	×									
43		602-002-00-2	200-813-2	74-83-9	-	<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<lod< td=""></lod<>
\vdash			E00-013-2	r +-00-3	+								
44		chloroethane				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
		602-009-00-0	200-830-5	75-00-3			5 5			_ J J			



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#			Determinand		CLP Note	User entered data	Conv	I Compound conc	Classification value	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		T doic		value	MC	Osca
45	0	trichlorofluorometh	ane 200-892-3	75-69-4		<0.002 mg/kg	3	<0.002 mg/k	g <0.0000002 %		<lod< td=""></lod<>
		1,1-dichloroethylen			+						\vdash
46			200-864-0	75-35-4	-	<0.006 mg/kg	3	<0.006 mg/kg	g <0.0000006 %		<lod< td=""></lod<>
-				75-55-4	+						\vdash
47		dichloromethane; n	*	75.00.0	4	<0.007 mg/kg	9	<0.007 mg/kg	g <0.0000007 %		<lod< td=""></lod<>
			200-838-9	75-09-2	-						
48	0	2,2-dichloropropan	e 209-832-0	594-20-7		<0.004 mg/kg	3	<0.004 mg/k	g <0.0000004 %		<lod< td=""></lod<>
49	0	bromochlorometha	ne			<0.003 mg/k	,	<0.003 mg/k	<0.000003 %		<lod< td=""></lod<>
			200-826-3	74-97-5	1	vo.ooo mg/k	,	vo.ooo mg/k	70.0000000 70		1200
50		chloroform; trichlor	omethane			<0.003 mg/k		<0.003 mg/k	<0.000003 %		<lod< td=""></lod<>
30		602-006-00-4	200-663-8	67-66-3	1	<0.003 mg/kg	9	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
-4		1,1,1-trichloroethar	ne; methyl chlorofo	rm		0.000		0.000 //	0.000000000		
51			200-756-3	71-55-6	+	<0.003 mg/k	3	<0.003 mg/k	g <0.0000003 %		<lod< td=""></lod<>
		1,1-dichloropropen			\dagger						
52		, , , , , , , , , , , , , , , , , , ,	209-253-3	563-58-6	-	<0.003 mg/k	3	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
\vdash		1,2-dichloropropan			+						
53					4	<0.006 mg/k	3	<0.006 mg/k	g <0.0000006 %		<lod< td=""></lod<>
-			201-152-2	78-87-5	+						
54		dibromomethane				<0.003 mg/k	9	<0.003 mg/k	g <0.0000003 %		<lod< td=""></lod<>
_			200-824-2	74-95-3	-						
55	0	bromodichlorometh				<0.003 mg/kg	1	<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			200-856-7	75-27-4							
١.		1,3-dichloropropen				_					
56				542-75-6 [1]	1	<0.004 mg/kg	3	<0.004 mg/kg	g <0.0000004 %		<lod< td=""></lod<>
			233-195-8 [2]	10061-01-5 [2]	\perp						
57	0	trans-1,3-dichlorop	ropene			<0.003 mg/kg	1	<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			431-460-4	10061-02-6		J		3			
58		1,1,2-trichloroethar	ne			<0.003 mg/kg	,	<0.003 mg/k	<0.0000003 %		<lod< td=""></lod<>
30		602-014-00-8	201-166-9	79-00-5		<0.005 Hig/K	9	<0.005 Hig/K	0.0000000 //		LOD
59	0	1,3-dichloropropan	е			-0.002 ma/k		-0.002 mg/k	-0.0000003.9/		<lod< td=""></lod<>
139			205-531-3	142-28-9	1	<0.003 mg/kg	9	<0.003 mg/kg	g <0.0000003 %		<lod td="" <=""></lod>
		dibromochlorometh	nane								
60			204-704-0	124-48-1	+	<0.003 mg/k	3	<0.003 mg/k	g <0.0000003 %		<lod< td=""></lod<>
		1,2-dibromoethane				_					
61		· '	203-444-5	106-93-4	+	<0.003 mg/k	3	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
		chlorobenzene	200 1110	100 00 1	+						
62			002 620 E	100 00 7	-	<0.003 mg/kg	9	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
				108-90-7	+						\vdash
63	•	1,1,1,2-tetrachloroe		logo oo c	-	<0.003 mg/kg	3	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
-			211-135-1	630-20-6	+						\vdash
64		bromoform; tribrom				<0.003 mg/k	3	<0.003 mg/k	g <0.0000003 %		<lod< td=""></lod<>
			200-854-6	75-25-2	1						igsquare
65		cumene				<0.003 mg/kg	1	<0.003 mg/k	<0.0000003 %		<lod< td=""></lod<>
L		601-024-00-X	202-704-5	98-82-8		971		9/10	,		
66		1,1,2,2-tetrachloroe	ethane			<0.003 mg/k	,	<0.003 mg/k	<0.0000003 %		<lod< td=""></lod<>
00		602-015-00-3	201-197-8	79-34-5	1	<0.003 Hig/k	9	<0.003 Hig/K	0.0000003 %		\
67		bromobenzene				-0.000 "		.0.000 - "	-0.0000000.00		1.00
67			203-623-8	108-86-1	1	<0.002 mg/kg	3	<0.002 mg/kg	g <0.0000002 %		<lod< td=""></lod<>
		1,2,3-trichloropropa			1	0.004		2 22 4	0.00005		
68			202-486-1	96-18-4	-	<0.004 mg/kg	3	<0.004 mg/kg	g <0.0000004 %		<lod< td=""></lod<>
\vdash		mesitylene; 1,3,5-tr			+						
69		-	203-604-4	108-67-8	-	<0.003 mg/kg	3	<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
			200-00 4-4	100-01-0	+						\vdash
70	0	tert-butylbenzene	000 000 4	ho oc c	-	<0.005 mg/kg	3	<0.005 mg/kg	g <0.0000005 %		<lod< td=""></lod<>
_			202-632-4	98-06-6	+						
71		1,2,4-trimethylbenz				<0.006 mg/kg	3	<0.006 mg/kg	g <0.0000006 %		<lod< td=""></lod<>
		601-043-00-3	202-436-9	95-63-6	1	3		J			
72	0	sec-butylbenzene				<0.004 mg/kg	1	<0.004 mg/k	g <0.0000004 %		<lod< td=""></lod<>
L			205-227-0	135-98-8	L			g/K	,		
73	0	4-isopropyltoluene				<0.004 mg/k	,	<0.004 mg/k	<0.0000004 %		<lod< td=""></lod<>
1'3			202-796-7	99-87-6	1	<0.004 mg/kg	9	<0.004 mg/kg	0.000004 %		\LUD
_					_		_				

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#			Determinand		CLP Note	User entere	d data	Conv.	Compound	conc.	Classification value	Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP			1 40101			Value	MC	0300
74		1,3-dichlorbenzene 602-067-00-7 208	8-792-1	541-73-1		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
	1	1,4-dichlorobenzene;		1	+								
75			3-400-5	106-46-7	_	<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
	-	n-butylbenzene	3-400-3	100-40-7	+								
76	0		3-209-7	104-51-8	-	<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
		1,2-dichlorobenzene;		1									
77			2-425-9	95-50-1	-	<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
		1,2-dibromo-3-chlorop		po 00 1	1								
78		•	2-479-3	96-12-8	-	<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
		1,2,4-trichlorobenzene		50 12 0	1								
79			4-428-0	120-82-1	-	<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
		hexachlorobutadiene	1 120 0	120 02 1									
80			1-765-5	87-68-3	-	<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
	0	1,2,3-trichlorobenzene		01-00-3									
81			1-757-1	87-61-6	_	<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
	H	styrene	1 101 1	01 01 0	+								
82		•	2-851-5	100-42-5	_	<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
-		2-chlorophenol; [1] 4-c		1									
		[3] chlorophenol [4]	omorophicnoi, [2	10 chlorophichol,									
83		604-008-00-0 202	2-433-2 [1]	95-57-8 [1]	1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			3-402-6 [2]	106-48-9 [2]		10.0	9,9		10.0	9,9	40.00000.70		1
			3-582-6 [3] 6-691-4 [4]	108-43-0 [3] 25167-80-0 [4]									
		2-nitrophenol	0-091-4 [4]	23107-00-0 [4]									
84	0		1-857-5	88-75-5	_	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
\vdash		2,4-dichlorophenol	1-037-3	00-73-3	+								
85		•	4-429-6	120-83-2	-	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
86	1	202 203				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< th=""></lod<>
		209 218		576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
87		•	2-467-8	95-95-4	-	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		2,4,6-trichlorophenol		1		0.04			0.04		0.000001.0/		100
88			1-795-9	88-06-2	-	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	İ	chlorocresol; 4-chloro-											
89		4-chloro-3-methylpher				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			0-431-6	59-50-7	1								
90		4-nitrophenol; p-nitrop				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
L			2-811-7	100-02-7	\perp		J g			55			
91		pentachlorophenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
L			1-778-6	87-86-5	_		J g			55			
92	0	2-chloronaphthalene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			2-079-9	91-58-7	1								
93	0	2-methyl naphthalene			_	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
				91-57-6	-								
		bis(2-ethylhexyl) phtha	alate; di-(2-ethyl	hexyl) phthalate;		-0.4	no c: /l		-0.4	ma e: //	-0.00004.0/		
94	1	DEHP	4 244 0	117 01 7	4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
_	\vdash		4-211-0	117-81-7	+								
95		BBP; benzyl butyl phth		05 60 7	4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
	1		1-622-7	85-68-7	+								
96		dibutyl phthalate; DBP		04.74.2	4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
	-		1-557-4	84-74-2	+								
97	0	di-n-octyl phthalate	4-214-7	117-84-0	-	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
\Box		202	7-214-1	1117-04-0									



#			Determinand		CLP Note	User entered data		onv.	Compound o	onc.	Classification	MC Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		Fac	ctor			value	MC A	Used
98	0	diethyl phthalate				<0.1 mg/k	9		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
	_		201-550-6	84-66-2	+	_		_					
99	0	dimethyl phthalate	bos 044 0	404 44 0		<0.1 mg/k	9		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
	-		205-011-6	131-11-3	+			-					
100		2,4-dinitrotoluene; 609-007-00-9	[1] ainitrotoluene [204-450-0 [1]	121-14-2 [1]		<0.01 mg/k	1		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		009-007-00-9	246-836-1 [2]	25321-14-6 [2]						0 0			
101		2,6-dinitrotoluene				<0.01 mg/k	1		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		609-049-00-8	210-106-0	606-20-2		vo.or mg/m	9			g/kg	40.000001 70		
102	0	4-bromophenylphe	nylether			<0.01 mg/k	2		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	_		202-952-4	101-55-3	1	3							
103		4-chloroaniline				<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	_		203-401-0	106-47-8	+	_		_					
104	0	4-chlorophenylphe		7005 70 0	_	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			230-281-7	7005-72-3	-			-					
105		azobenzene 611-001-00-6	203-102-5	103-33-3	4	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	_	bis(2-chloroethoxy)		103-33-3	+								
106	٦	` ,	203-920-2	111-91-1	+	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	-	bis(2-chloroethyl) e			+								
107			203-870-1	111-44-4	-	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
400	0	carbazole				0.04			0.04		0.000004.0/		1.00
108			201-696-0	86-74-8	1	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
109	a	dibenzofuran		*		-0.01 mg/k			-0.01	ma/ka	-0.000001.9/		<lod< td=""></lod<>
109	ı		205-071-3	132-64-9	1	<0.01 mg/k	3		<0.01	mg/kg	<0.000001 %		<lud< td=""></lud<>
110		hexachlorocyclope	ntadiene			<0.01 mg/k	,		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
110		602-078-00-7	201-029-3	77-47-4		CO.OT MIG/K	9			g/kg	Z0.000001 70		\LOD
111	0	hexachloroethane				<0.01 mg/k	2		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	_		200-666-4	67-72-1	_	3	_						
112		3,5,5-trimethylcyclo				<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	-		201-126-0	78-59-1	-			_					
113		nitrosodipropylamir		loo4 o4 =	4	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	-		210-698-0	621-64-7	+			-					
114		nitrobenzene 609-003-00-7	202-716-0	98-95-3	4	<0.01 mg/k	9		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		1,2-dichloroethylen trans-dichloroethyle	e; [1] cis-dichloro										
115			208-750-2 [1] 205-859-7 [2]	540-59-0 [1] 156-59-2 [2]	-	<0.006 mg/k	9		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
			205-860-2 [3]	156-69-2 [2]									
		2-chlorotoluene; [1] 4-chlorotoluene; [3]] 3-chlorotoluene;	[2]									
116		602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]		<0.006 mg/k	9		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
		m-cresol; [1] o-cres	sol; [2] p-cresol; [3										
117			203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]		<0.02 mg/k	3		<0.02	mg/kg	<0.000002 %		<lod< td=""></lod<>
		o-nitroaniline; [1] m	n-nitroaniline; [2] p										
118		612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]		<0.03 mg/k	9		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
				1 [-]						Total:	0.135 %		

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Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Determinand defined or amended by HazWasteOnline (see Appendix A)

₫ <LOD Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification





Classification of sample: WS03-05/12/2023-0.30m

* Potentially Hazardous Waste

Classified as **17 05 04** or **17 05 03** * in the List of Waste

Sample details

Sample name: LoW Code:

WS03-05/12/2023-0.30m Chapter:

Moisture content:
25.6% Entry:

(dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous substances)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 3.98e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0467%)

1,2,4-trimethylbenzene: (conc.: 7.17e-07%)

Determinands

Moisture content: 25.6% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered da	ta	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
1	~	arsenic { arsenic tri				59.4 mg	/kg	1.32	62.442	mg/kg	0.00624 %	√	
			215-481-4	1327-53-3	_							1	
2	~	cadmium { cadmiur 048-002-00-0	n oxide } 215-146-2	1306-19-0		<0.1 mg	/kg	1.142	<0.114	mg/kg	<0.0000114 %		<lod< td=""></lod<>
3	4	chromium in chrom compounds, with the of compounds spece 024-017-00-8	ium(VI) compound e exception of bar	Is { chromium (VI) ium chromate and		41.5 mg	/kg	2.27	75.004	mg/kg	0.0075 %	✓	
4	-	copper { dicopper c	oxide; copper (I) ox 215-270-7	ide }		140 mg	/kg	1.126	125.497	mg/kg	0.0125 %	✓	
5	l L	lead {	etate) }	301-04-2	1	651 mg	/kg	1.57	813.696	mg/kg	0.0518 %	✓	
6	-	mercury { mercury	dichloride } 231-299-8	7487-94-7		0.4 mg	/kg	1.353	0.431	mg/kg	0.0000431 %	✓	
7	-	nickel { <mark>nickel chror</mark> 028-035-00-7	<mark>nate</mark> } 238-766-5	14721-18-7		76 mg	/kg	2.976	180.092	mg/kg	0.018 %	✓	
8	-	selenium { nickel se 028-031-00-5	elenate } 239-125-2	15060-62-5		2 mg	/kg	2.554	4.067	mg/kg	0.000407 %	✓	
9	-		*	7446-19-7 [1] 7733-02-0 [2]		398 mg	/kg	2.469	782.468	mg/kg	0.0782 %	√	
10	0	TPH (C6 to C40) pe	etroleum group	TPH		587 mg	/kg		467.357	mg/kg	0.0467 %	√	

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11 te 2-600	EU CLP index number ert-butyl methyl et -methoxy-2-methy 03-181-00-X eenzene 01-020-00-8 oluene 01-021-00-3 ethylbenzene 01-023-00-4 ylene		CAS Number 1634-04-4 71-43-2	CLP Note	<0.002	ed data mg/kg	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
11 te 2-600	number ert-butyl methyl et ert-butyl methyl et ert-methoxy-2-methy 03-181-00-X enzene 01-020-00-8 bluene 01-021-00-3 ethylbenzene 01-023-00-4	her; MTBE; /lpropane 216-653-1 200-753-7	 1634-04-4 71-43-2	CLF		mg/kg					MC	
11 2- 60 12 60 60 13 to 60 60 14 et 60 xy 60 60	2-methoxy-2-methy 03-181-00-X lenzene 01-020-00-8 bluene 01-021-00-3 lethylbenzene 01-023-00-4	/lpropane 216-653-1 200-753-7	71-43-2	_		mg/kg						
12 be 60 13 to 60 14 et 60 xy 60	01-023-00-4	200-753-7	71-43-2		<0.003			<0.002	mg/kg	<0.0000002 %		<lod< td=""></lod<>
13 to 60 et 60 xy 60	01-021-00-3 ethylbenzene 01-023-00-4			-	10.000	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
14 et 60 xy 60	ethylbenzene 01-023-00-4	203-625-9	100 00 3		0.005			0.0000		0.0000000000000000000000000000000000000	,	
14 60 xy 60	01-023-00-4		100-00-3		0.005	mg/kg		0.0039	mg/kg	0.000000398 %	• √	
60	ylene	202-849-4	100-41-4	-	<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
15	01-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.011	mg/kg		<0.011	mg/kg	<0.0000011 %		<lod< td=""></lod<>
16 Pl	Н	1	PH		8.12	рН		8.12	рН	8.12 pH		
17 na	aphthalene		FII		0.92	mg/kg		0.732	mg/kg	0.0000732 %	√	
60	01-052-00-2 icenaphthylene	202-049-5	91-20-3		0.26	mg/kg		0.207	mg/kg	0.0000207 %	· ✓	
19 ac	cenaphthene	205-917-1	208-96-8	+	7.75	mg/kg		6.17	mg/kg	0.000617 %	· ✓	
20 a flu	uorene	201-469-6	83-32-9	_	6.88	mg/kg		5.478	mg/kg	0.000548 %	√	
21 ph	henanthrene	201-595-5	85-01-8		66.61	mg/kg		53.033	mg/kg	0.0053 %	√	
22 ar	inthracene	204-371-1	120-12-7		21.68	mg/kg		17.261	mg/kg	0.00173 %	√	
23 a flu	uoranthene	205-912-4	206-44-0		71.1	mg/kg		56.608	mg/kg	0.00566 %	✓	
24 Py	yrene	204-927-3	129-00-0		59.15	mg/kg		47.094	mg/kg	0.00471 %	✓	
125	enzo[a]anthracen 01-033-00-9	e 200-280-6	56-55-3		36.62	mg/kg		29.156	mg/kg	0.00292 %	√	
26	hrysene 01-048-00-0	205-923-4	218-01-9		30.99	mg/kg		24.674	mg/kg	0.00247 %	✓	
27	enzo[b]fluoranthe 01-034-00-4	ne 205-911-9	205-99-2		34.36	mg/kg		27.357	mg/kg	0.00274 %	✓	
1281	enzo[k]fluoranthe 01-036-00-5	ne 205-916-6	207-08-9		13.36	mg/kg		10.637	mg/kg	0.00106 %	✓	
29		enzo[def]chrysene 200-028-5	50-32-8		29.69	mg/kg		23.639	mg/kg	0.00236 %	✓	
30 in	ndeno[123-cd]pyre	ene 205-893-2	193-39-5		23.11	mg/kg		18.4	mg/kg	0.00184 %	✓	
131	libenz[a,h]anthrac 01-041-00-2	ene 200-181-8	53-70-3		4.53	mg/kg		3.607	mg/kg	0.000361 %	✓	
32 a be	enzo[ghi]perylene	205-883-8	191-24-2		15.15	mg/kg		12.062	mg/kg	0.00121 %	✓	
33 L	henol 04-001-00-2	203-632-7	108-95-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
34 1,	,1-dichloroethane	and 1,2-dichloroe 203-458-1, 200-863-5	thane (combined)	3	<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<lod< td=""></lod<>
35	etrachloroethylene 02-028-00-4	204-825-9	127-18-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
36 ca		e; tetrachlorometh 200-262-8	1		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<lod< td=""></lod<>
37	richloroethylene; to	1	79-01-6		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>



_	_				_	-					
#			Determinand		CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number	CLP		dotor		Value	MC	0300
38		vinyl chloride; chlor		75.04.4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<lod< td=""></lod<>
			200-831-0	75-01-4	+					-	
39		hexachlorobenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<lod< td=""></lod<>
		602-065-00-6	204-273-9	118-74-1		3 3		J			
40	0	polychlorobiphenyl	s; PCB			<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<lod< td=""></lod<>
40		602-039-00-4	215-648-1	1336-36-3		<0.55 Hig/kg		<0.55 Hig/K	7 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		LOD
41	0	dichlorodifluoromet	hane 200-893-9	75-71-8		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<lod< td=""></lod<>
				75-71-6	+					-	
42		chloromethane; me				<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			200-817-4	74-87-3	-						
43		bromomethane; me	ethylbromide			<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<lod< td=""></lod<>
		602-002-00-2	200-813-2	74-83-9		3 3		J ,			
44		chloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<lod< td=""></lod<>
44		602-009-00-0	200-830-5	75-00-3	1	<0.002 Hig/kg		<0.002 Hig/K	7 <0.0000002 /8		LOD
	0	trichlorofluorometh	ane			0.000 #		0.000 #			
45	_		200-892-3	75-69-4	-	<0.002 mg/kg		<0.002 mg/kg	g <0.0000002 %		<lod< td=""></lod<>
		1,1-dichloroethylen			+						
46					-	<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %		<lod< td=""></lod<>
			200-864-0	75-35-4	-					-	
47		dichloromethane; n				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %		<lod< td=""></lod<>
		602-004-00-3	200-838-9	75-09-2		0 0			1		
48	0	2,2-dichloropropan	e			<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<lod< td=""></lod<>
40			209-832-0	594-20-7	1	<0.004 Hig/kg		<0.004 Hig/K	70.0000004 70		LOD
40	0	bromochlorometha	ne			0.000		0.000	0.000000000		1.00
49			200-826-3	74-97-5	-	<0.003 mg/kg		<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
		chloroform; trichlor		, , , ,							
50			200-663-8	67-66-3	-	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
					+					+	
51		1,1,1-trichloroethar	· •		4	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
		602-013-00-2	200-756-3	71-55-6							
52		1,1-dichloropropen	е			<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
0_		602-031-00-0	209-253-3	563-58-6		10.000 mg/ng		10.000g/	, 10.0000000 /0		1202
53		1,2-dichloropropan	e; propylene dichlo	oride		<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %		<lod< td=""></lod<>
33		602-020-00-0	201-152-2	78-87-5		<0.006 mg/kg		<0.006 mg/kg	20.0000000 /8		\LOD
		dibromomethane	J.	,		_					
54		602-003-00-8	200-824-2	74-95-3	-	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
		bromodichlorometh		7 1 00 0	+						
55			200-856-7	75-27-4	-	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
		-			+					-	
56		1,3-dichloropropen				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<lod< td=""></lod<>
36			208-826-5 [1]	542-75-6 [1]		<0.004 Hig/kg		<0.004 mg/kg	0.0000004 %		<lod< td=""></lod<>
-			233-195-8 [2]	10061-01-5 [2]	+					-	
57	0	trans-1,3-dichlorop				<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			431-460-4	10061-02-6	\bot	3 0					
58		1,1,2-trichloroethar	ne			<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
L	L	602-014-00-8	201-166-9	79-00-5	1	111g/kg		111g/k(, 10.0000000 /0		1235
ΕΛ	0	1,3-dichloropropan	e			-0.000"		40.000 "	40.0000000.00		100
59			205-531-3	142-28-9	1	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
		dibromochlorometh									
60			204-704-0	124-48-1	-	<0.003 mg/kg		<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
\vdash				127 70-1	+						
61		1,2-dibromoethane		400.00.4	-	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			203-444-5	106-93-4	+					-	
62		chlorobenzene			_	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
		-	203-628-5	108-90-7	_	3 0					
63	0	1,1,1,2-tetrachloroe	ethane			<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
			211-135-1	630-20-6	1	10.000 mg/kg		10.000 mg/k(, 10.0000000 /8		-200
6.4		bromoform; tribrom	omethane			.0.000 "		-0.000 "	-0.0000000.00		.1.00
64			200-854-6	75-25-2	1	<0.003 mg/kg		<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
		cumene		, =	\top						_
65			202-704-5	98-82-8	-	<0.003 mg/kg		<0.003 mg/kg	g <0.0000003 %		<lod< td=""></lod<>
\vdash	\vdash			JU-UZ-U	+						
66		1,1,2,2-tetrachloroe		70.04.7	4	<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<lod< td=""></lod<>
	<u> </u>	602-015-00-3	201-197-8	79-34-5							

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The color of the
Commonstrate Comm
67
68
68
mesitylene; 1,3,5-trimethylbenzene
Sol
To a tert-butylbenzene
Total
Total
Sec-butylbenzene
2
205-227-0 135-98-8
1,3-dichlorbenzene
202-796-7 99-87-6
74
To To To To To To To To
Color Colo
602-035-00-2 203-400-5 106-46-7
78
1,2-dichlorobenzene; o-dichlorobenzene
77
1,2-dibromo-3-chloropropane
The image of the
Result R
Result R
No.00000000 No.000000000000000000000000000000000000
80 201-765-5 87-68-3 <0.004 mg/kg <0.004 mg/kg <0.0000004 mg/kg <0.0000004 mg/kg <0.0000004 mg/kg <0.00000004 mg/kg <0.00000004 mg/kg <0.00000004 mg/kg <0.00000007 mg/kg <0.00000007 mg/kg <0.00000007 mg/kg <0.00000003 mg/kg <0.000000003 mg/kg <0.00000003 mg/kg <0.000000003 mg/kg <0.000000003 mg/kg <0.000000003 mg/kg <0.0000000000000000000000000000000000
81
82 styrene
82 styrene <0.003
83 604-008-00-0 202-851-5 100-42-5 2-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]
2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]
203-402-6 [2] 106-48-9 [2] 203-582-6 [3] 108-43-0 [3]
203-582-6 [3] 108-43-0 [3]
D46 601 4 [4] D5167 90 0 [4]
246-691-4 [4] 25167-80-0 [4]
84 2-nitrophenol 201-857-5 88-75-5 <a href="https://www.ncbi.nlm.n</td></tr><tr><td>2.4 dichlorenhond</td></tr><tr><td> 85 <U.U1 mg/kg U.U1 m</td></tr><tr><td>604-011-00-7 204-429-6 120-83-2</td></tr><tr><td>3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or</td></tr><tr><td>2,5)-xylenol [7]</td></tr><tr><td>604-006-00-X 202-439-5 [1] 95-65-8 [1]</td></tr><tr><td>86 202-461-5 [2] 95-87-4 [2] <0.01 mg/kg <0.010 mg/kg <0.000001 %</td></tr><tr><td>208-395-3 [4] 526-75-0 [4]</td></tr><tr><td>209-400-1 [5] 576-26-1 [5]</td></tr><tr><td>215-089-3 [6] 1300-71-6 [6]</td></tr><tr><td>276-245-4 [7] 71975-58-1 [7]</td></tr><tr><td>87 2,4,5-trichlorophenol <0.01 mg/kg <0.000001 %</td></tr><tr><td>87 </td></tr><tr><td>2.4 6-trichlorophenol</td></tr><tr><td>88 2,4,5 the horsephoton <0.01 mg/kg <0.000001 % <0.01 mg/kg <0.000001 % </td></tr><tr><td>1 1 100 1 0 100 100 100 100 100 100 100</td></tr><tr><td></td></tr><tr><td>chlorocresol; 4-chloro-m-cresol;</td></tr><tr><td>chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol 4-chloro-3-methylphenol 4-chloro-3-methylphenol 4-chloro-3-methylphenol </td></tr><tr><td> Chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol Color-10-10-10-10-10-10-10-10-10-10-10-10-10-</td></tr><tr><td>chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol chloro-a-methylphenol co.01 mg/kg co.0000001 %co.0000001 %co.0000001 %co.00000001 %co.00000001 %co.00000001 %co.000000001 %co.000000001 %co.0000000001 %co.000000000001 %co.000000000000000000000000000000000000



# 91 92 93	-		minand		ø							ed	
92					Note	User entere	d data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not
92		EU CLP index	lumber	CAS Number	CLP			1 doloi			Value	MC	
92		pentachlorophenol 201-778	-6	87-86-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
93 6	1	2-chloronaphthalene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
93	-	202-079 2-methyl naphthalene	-9	91-58-7									
	-	202-078	-3	91-57-6		0.157	mg/kg		0.125	mg/kg	0.0000125 %	✓	
94		bis(2-ethylhexyl) phthalate; DEHP 507-317-00-9 204-211		hexyl) phthalate;		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
95		BBP; benzyl butyl phthalate	!			<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
_	-	607-430-00-3 201-622 dibutyl phthalate; DBP	-/	85-68-7									
96	- L	607-318-00-4 201-557	-4	84-74-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	Ш	<lod< td=""></lod<>
97	9	di-n-octyl phthalate	7	117 04 0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
98	0	diethyl phthalate		84-66-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<lod< td=""></lod<>
00 0	9	201-550 dimethyl phthalate	-0	04-00-2		0.4			0.4	//	0.00004.0/		
99 "	-	205-011		131-11-3		<0.1	mg/kg		<0.1	mg/kg 	<0.00001 %		<lod< td=""></lod<>
00		2,4-dinitrotoluene; [1] dinitro 509-007-00-9 204-450 246-836	-0 [1]	2] 121-14-2 [1] 25321-14-6 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
01		2,6-dinitrotoluene 609-049-00-8 210-106	-0	606-20-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
02	9	4-bromophenylphenylether	-4	101-55-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
03		4-chloroaniline 612-137-00-9 203-401		106-47-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
04	\rightarrow	4-chlorophenylphenylether	<u>-</u>			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		230-281 azobenzene	-7	7005-72-3									
05	L	611-001-00-6 203-102	-5	103-33-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
06	9	bis(2-chloroethoxy)methane		111-91-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
07	- L	bis(2-chloroethyl) ether	4			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	-	603-029-00-2 203-870 carbazole	-1	111-44-4									
08	-	201-696 dibenzofuran	-0	86-74-8		0.854	mg/kg		0.68	mg/kg	0.000068 %	✓	
09	-	205-071	-3	132-64-9	-	0.339	mg/kg		0.27	mg/kg	0.000027 %	√	
10		hexachlorocyclopentadiene 602-078-00-7 201-029		77-47-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
11	7	hexachloroethane		67-72-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
12		3,5,5-trimethylcyclohex-2-er	none; isop	horone		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
13		nitrosodipropylamine		78-59-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
14		612-098-00-8 210-698 nitrobenzene		621-64-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
	7	609-003-00-7 202-716 coronene	-0	98-95-3									
15	-	205-881	-7	191-07-1	-	2.26	mg/kg		1.799	mg/kg	0.00018 %	✓	
16		1,2-dichloroethylene; [1] cis trans-dichloroethylene [3] 602-026-00-3 208-750		thylene; [2]		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
\perp		205-859 205-860	-7 [2] -2 [3]	156-59-2 [2] 156-60-5 [3]									
17		2-chlorotoluene; [1] 3-chlorot 4-chlorotoluene; [3] chloroto 602-040-00-X 202-424	oluene [4]	2] 95-49-8 [1]		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<lod< td=""></lod<>
		203-580 40 of 51		108-41-8 [2]		2M6X-ULAL					www.hazwaste		



#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
			203-397-0 [3] 246-698-2 [4]	106-43-4 [3] 25168-05-2 [4]							
118	3		sol; [2] p-cresol; [3 203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	1 mix-cresol [4] 108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<lod< td=""></lod<>
119	9		n-nitroaniline; [2] p 201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	-nitroaniline [3] 88-74-4 [1] 99-09-2 [2] 100-01-6 [3]		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		•						Total:	0.256 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Potentially Hazardous result
0	Determinand defined or amended by HazWasteOnline (see Appendix A)
₫.	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<lod< th=""><th>Below limit of detection</th></lod<>	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification





Classification of sample: WS04-05/12/2023-2.00m

Non Hazardous Waste Classified as 17 05 04 in the List of Waste

Entry:

Sample details

Sample name: LoW Code: WS04-05/12/2023-2.00m Chapter:

Moisture content: 21.9%

(dry weight correction)

17: Construction and Demolition Wastes (including excavated soil from contaminated sites)

17 05 04 (Soil and stones other than those mentioned in 17 05 03) $\,$

Hazard properties

None identified

Determinands

Moisture content: 21.9% Dry Weight Moisture Correction applied (MC)

#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	licar antarad data	Conv. Factor	Compound conc.	Classification value	C Applied	Conc. Not Used
		number			Ö					Σ	
1	æ	sulfur { sulfur }				200 mg/kg		164.069 mg/kg	0.0164 %	/	
		016-094-00-1	231-722-6	7704-34-9		3 3		3 3		•	
								Total:	0.0164 %		

Key

User supplied data

e**c**

Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

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17: Construction and Demolition Wastes (including excavated soil

Classification of sample: WS05-05/12/2023-0.50m

Hazardous Waste Classified as 17 05 03 * in the List of Waste

Sample details

Sample name: LoW Code:

WS05-05/12/2023-0.50m Chapter:

Moisture content: from contaminated sites)

30.6% Entry: 17 05 03 * (Soil and stones containing hazardous substances)

(dry weight correction)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc sulphate: (compound conc.: 0.44%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 5.36e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0128%)

Determinands

Moisture content: 30.6% Dry Weight Moisture Correction applied (MC)

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	4	arsenic { arsenic trioxide } 033-003-00-0				16.1 mg/kg	1.32	16.277	mg/kg	0.00163 %	✓	
2	4	cadmium { cadmium oxide } 048-002-00-0 215-146-2 1306-19-0				6.3 mg/kg	1.142	5.51	mg/kg	0.000551 %	✓	
3	4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }			175.7 mg/kg	2.27	305.39	mg/kg	0.0305 %	√		
		024-017-00-8										
4	4		oxide; copper (I) ox	kide } 1317-39-1		161 mg/kg	1.126	138.796	mg/kg	0.0139 %	✓	
5	4	lead { • lead di(acetate) }		1	139 mg/kg	1.57	167.087	mg/kg	0.0106 %	√		
6	æ.	mercury { mercury		7487-94-7		0.7 mg/kg	1.353	0.725	mg/kg	0.0000725 %	√	



_	_											_	
#			Note			Conv.	Compound conc.		Classification value	MC Applied	Conc. Not Used		
		EU CLP index number	EC Number	CAS Number	CLP			l doto!		value	MC	l	
7	_	nickel { nickel chro				96.8	mg/kg	2.976	220.599	mg/kg	0.0221 %	√	
		028-035-00-7	238-766-5	14721-18-7	\perp								
8	æ	selenium { nickel se	elenate }			2	ma/ka	2.554	3.911	ma/ka	0.000391 %	,	1
0	•	028-031-00-5	239-125-2	15060-62-5	1		mg/kg	2.554	3.911	mg/kg	0.000391 /6	√	1
	_	zina (zina aulahata			\top								
	-	zinc { zinc sulphate }				0000		0.400	4400 540		0.44.0/	,	ı
9		030-006-00-9	231-793-3 [1]	7446-19-7 [1]		2329	mg/kg	2.469	4403.516	mg/kg	0.44 %	✓	1
			231-793-3 [2]	7733-02-0 [2]									ı
		TPH (C6 to C40) p	etroleum group										
10	-	(**********************************	1	TDU	4	167	mg/kg		127.871	mg/kg	0.0128 %	✓	1
				TPH	+								
		tert-butyl methyl et	her; MTBE;									ш	ı
11		2-methoxy-2-methy	/lpropane			< 0.002	mg/kg		< 0.002	mg/kg	<0.0000002 %	ш	<lod< td=""></lod<>
		603-181-00-X 216-653-1 1634-04-4			1							ш	1
			210 000 1	1001011	+								
12		benzene				< 0.003	mg/kg		< 0.003	mg/kg	<0.0000003 %	ш	<lod< td=""></lod<>
		601-020-00-8	200-753-7	71-43-2	7		99					ш	
		toluene			\top								
13			I		4	0.007	mg/kg		0.0053	mg/kg	0.000000536 %	✓	ı
		601-021-00-3	601-021-00-3 203-625-9 108-88-3										
آ . را	0	ethylbenzene	ethylbenzene			0.000		1	0.000		0.000000000		
14	_	601-023-00-4				<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<lod< td=""></lod<>
_	<u> </u>		ZUZ-043-4	100-41-4	+							Н	
		xylene										ш	ı
		601-022-00-9 202-422-2 [1] 95-47-6 [1]										ш	ı
15		001 022 00 0	203-396-5 [2]	106-42-3 [2]		<0.008	mg/kg		<0.008	mg/kg	<0.0000008 %	ш	<lod< td=""></lod<>
			203-576-3 [3]	108-38-3 [3]								ш	ı
												ш	ı
		215-535-7 [4] 1330-20-7 [4]										-	
16	0	pН				0.47	mI I		0.47	mI I	0.47 ml l		ı
סו				PH	-	8.47	рН		8.47	рН	8.47 pH		ı
				, , ,	+							\vdash	
17		naphthalene				0.3	mg/kg		0.23	mg/kg	0.000023 %	1	ı
''		601-052-00-2	202-049-5	91-20-3	1	0.0	mg/ng		0.20	mg/ng	0.000020 70	•	ı
					\top								
18	0	acenaphthylene				< 0.03	mg/kg		< 0.03	mg/kg	<0.000003 %	ш	<lod< td=""></lod<>
			205-917-1	208-96-8			0 0			0 0		ш	ı
		acenaphthene		*									
19		aconaphanone	004 400 0	00.00.0	4	0.39	mg/kg		0.299	mg/kg	0.0000299 %	✓	ı
			201-469-6	83-32-9									
20	0	fluorene 201-695-5 86-73-7				0.3	ma/ka		0.22 mg/kg 0.000022.9/	0.000023 %	١,	ı	
20						0.3	mg/kg		0.23	mg/kg	0.000023 %	√	ı
												\vdash	i
21	Θ	phenanthrene				2.93	mg/kg		2.243	ma/ka	0.000224 %	1	ı
		201-581-5 85-01-8			1	2.00	mg/ng		2.243 mg/kg 0.000224 %	•	ı		
		anthrasans			\top							\vdash	
22	0	anthracene				0.71	mg/kg		0.544	mg/kg	0.0000544 %	✓	ı
			204-371-1	120-12-7									ı
		fluoranthene											
23	0		005 040 4	000 44 0	-	2.74	mg/kg		2.098	mg/kg	0.00021 %	✓	1
			205-912-4	206-44-0	1							\sqcup	
	0	pyrene			0.10			4 000		0.0004.07.0/	,	ı	
24		204-927-3 129-00-0				2.18	mg/kg		1.669	mg/kg	0.000167 %	√	ı
												\vdash	
25		benzo[a]anthracene				1.11	mg/kg		0.85	mg/kg	0.000085 %	1	1
		601-033-00-9	200-280-6	56-55-3	1		9/9		3.00				1
		chrysene		*	T								
26		-	hor ooo :	040.04.6	4	1.02	mg/kg		0.781	mg/kg	0.0000781 %	✓	1
		601-048-00-0	205-923-4	218-01-9	1							Ш	
2		benzo[b]fluoranthe	ne			4.04	m ~ /l		0.700	m ~ //	0.0000700.0/	,	1
27			205-911-9	205-99-2	1	1.04	mg/kg		0.796	mg/kg	0.0000796 %	√	1
\vdash	\vdash			_00 00 2	+							\vdash	
28		benzo[k]fluoranthene				0.41	mg/kg		0.314	mg/kg	0.0000314 %	1	1
		601-036-00-5 205-916-6 207-08-9			1	2	.59			ə. ··ə			1
		benzo[a]pyrene; benzo[def]chrysene		T									
29				F0.00.3	-	0.95	mg/kg		0.727	mg/kg	0.0000727 %	✓	1
	_	601-032-00-3	601-032-00-3 200-028-5 50-32-8									\sqcup	
۱ ۵ ۵	0	indeno[123-cd]pyre	ene			2.00			0.000	"	0.0000000000		1
30			205-893-2	193-39-5	+	0.82	mg/kg		0.628	mg/kg	0.0000628 %	√	1
\vdash	\vdash			130-03-0	+							\vdash	
31		dibenz[a,h]anthrac	ene			0.1	mg/kg		0.0766	ma/ka	0.00000766 %	1	1
اٽ'		601-041-00-2	1	0.1	тід/кд		0.0766	mg/kg	3.5555576576		1		
		benzo[ghi]perylene	200-181-8	53-70-3	T							\Box	
32	0	penzo[grii]peryiene			_	0.44	mg/kg		0.337	mg/kg	0.0000337 %	✓	1
L	L		205-883-8	191-24-2	\perp			<u> </u>					
آء ا	æ	sulfur { sulfur }			1	4600			0105==		0.0010.01		
33		016-094-00-1	021 722 6	7704 24 0	-	1200	mg/kg		918.836	mg/kg	0.0919 %	√	1
<u> </u>	Щ.	p 10-034-00-1	231-722-6	231-722-6 7704-34-9								\vdash	
1								Total:	0.626 %	1			

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Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Hazardous result

Potentially Hazardous result

Determinand defined or amended by HazWasteOnline (see Appendix A)

₫ <LOD Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration

Below limit of detection

CLP: Note 1 Only the metal concentration has been used for classification





Appendix A: Classifier defined and non GB MCL determinands

• lead di(acetate) (EC Number: 206-104-4, CAS Number: 301-04-2)

GB MCL index number: 082-005-00-8

Description/Comments: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium,

following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2.

Additional Hazard Statement(s): Carc. 2; H351 Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium

www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015 Data source date: 25 May 2015

Hazard Statements: Flam. Lig. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2;

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351 Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

pH (CAS Number: PH)

Description/Comments: Appendix C4 Data source: WM3 1st Edition 2015 Data source date: 25 May 2015 Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2;

H411

• fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic

Chronic 1; H410, Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

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pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 06 Aug 2015 Hazard Statements: Carc. 2; H351

• benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015 Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

1,1-dichloroethane and 1,2-dichloroethane (combined) (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane

Data source: N/a

Data source date: 14 Oct 2016

 $Hazard\ Statements:\ Flam.\ Liq.\ 2;\ H225\ ,\ Acute\ Tox.\ 4;\ H302\ ,\ Skin\ Irrit.\ 2;\ H315\ ,\ Eye\ Irrit.\ 2;\ H319\ ,\ STOT\ SE\ 3;\ H335\ ,\ Carc.\ 1B;\ H350\ ,\ Aquatic$

Chronic 3: H412

dichlorodifluoromethane (EC Number: 200-893-9, CAS Number: 75-71-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Aquatic Chronic 3; H412 , Ozone 1; H420 , Press. Gas; H280

• trichlorofluoromethane (EC Number: 200-892-3, CAS Number: 75-69-4)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H312 , Ozone 1; H420

2,2-dichloropropane (EC Number: 209-832-0, CAS Number: 594-20-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332 , Flam. Liq. 2; H225 , Acute Tox. 4; H302 , Acute Tox. 4; H312 , Eye Irrit. 2; H319

• bromochloromethane (EC Number: 200-826-3, CAS Number: 74-97-5)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H312 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Ozone 1; H420

• bromodichloromethane (EC Number: 200-856-7, CAS Number: 75-27-4)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 1A; H360

• trans-1,3-dichloropropene (EC Number: 431-460-4, CAS Number: 10061-02-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Acute Tox. 3; H301 , Asp. Tox. 1; H304 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , Aquatic Chronic 1; H410





1,3-dichloropropane (EC Number: 205-531-3, CAS Number: 142-28-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332, Flam. Liq. 2; H225, Flam. Liq. 3; H226, Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335

dibromochloromethane (EC Number: 204-704-0, CAS Number: 124-48-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT SE 3; H336 , Muta. 2; H341 , Aquatic Chronic 2; H411

1,1,1,2-tetrachloroethane (EC Number: 211-135-1, CAS Number: 630-20-6)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , Carc. 2;

H351, Acute Tox. 4; H312, Aquatic Chronic 3; H412, Skin Irrit. 2; H315

• tert-butylbenzene (EC Number: 202-632-4, CAS Number: 98-06-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226, Skin Irrit. 2; H315, Eye Irrit. 2; H319, Acute Tox. 3; H331, Acute Tox. 4; H332, STOT SE 3; H335, Asp. Tox. 1;

H304, Aquatic Chronic 2; H411

sec-butylbenzene (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, Skin Irrit. 2; H315, Eye Irrit. 2; H319, Aquatic Chronic 2; H411

4-isopropyltoluene (EC Number: 202-796-7, CAS Number: 99-87-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Aquatic Chronic 2; H411

• n-butylbenzene (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

hexachlorobutadiene (EC Number: 201-765-5, CAS Number: 87-68-3)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 2; H310 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 2; H330 , Carc. 2; H351 , Repr. 2; H361 , STOT SE 2; H371 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• 1,2,3-trichlorobenzene (EC Number: 201-757-1, CAS Number: 87-61-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic Chronic 3; H410

^a 2-nitrophenol (EC Number: 201-857-5, CAS Number: 88-75-5)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT RE 2; H373 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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2-chloronaphthalene (EC Number: 202-079-9, CAS Number: 91-58-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

2-methyl naphthalene (EC Number: 202-078-3, CAS Number: 91-57-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic

Chronic 1; H410

di-n-octyl phthalate (EC Number: 204-214-7, CAS Number: 117-84-0)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Repr. 2; H361, Skin Sens. 1; H317, Resp. Sens. 1; H334, Eye Irrit. 2; H319, Aquatic Chronic 4; H413

diethyl phthalate (EC Number: 201-550-6, CAS Number: 84-66-2)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , STOT SE 3; H335 , STOT RE 2; H373 , Repr. 2; H361 , Acute Tox. 4;

H302, STOT SE 3; H336, Skin Sens. 1; H317, Aquatic Chronic 1; H410

dimethyl phthalate (EC Number: 205-011-6, CAS Number: 131-11-3)

Description/Comments: VOC: Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , STOT SE 3; H335 , STOT SE 3; H336 , Repr. 2; H361 , Aquatic Chronic

3; H412

4-bromophenylphenylether (EC Number: 202-952-4, CAS Number: 101-55-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 ,

Aquatic Chronic 1; H410

• 4-chlorophenylphenylether (EC Number: 230-281-7, CAS Number: 7005-72-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic

Acute 1; H400, Aquatic Chronic 1; H410

• bis(2-chloroethoxy)methane (EC Number: 203-920-2, CAS Number: 111-91-1)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 4; H312 , Acute Tox. 1; H330 , Acute Tox. 2; H330 , STOT SE 1; H370 , STOT RE 2; H373

carbazole (EC Number: 201-696-0, CAS Number: 86-74-8)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 2; H341 , Carc. 2; H351 , Aquatic Acute 1;

H400 , Aquatic Chronic 1; H410 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301

dibenzofuran (EC Number: 205-071-3, CAS Number: 132-64-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 4; H312, Acute Tox. 4; H332, Aquatic Chronic 2; H411





hexachloroethane (EC Number: 200-666-4, CAS Number: 67-72-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

Data source date: 02 Mar 2017

 $Hazard\ Statements:\ Skin\ Irrit.\ 2;\ H315\ ,\ Eye\ Irrit.\ 2;\ H319\ ,\ STOT\ SE\ 3;\ H335\ ,\ Carc.\ 2;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ STOT\ SE\ 3;\ H335\ ,\ Carc.\ 2;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ STOT\ SE\ 3;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ STOT\ SE\ 3;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ STOT\ SE\ 3;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ STOT\ SE\ 3;\ H351\ ,\ Aquatic\ Acute\ 1;\ H400\ ,\ Aquatic\ Chronic\ 1;\ H410\ ,\ Aquatic\ Acute\ 1;\ Aquatic\ Acute\$

RE 2; H373

polychlorobiphenyls; PCB (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350 Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A, H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

coronene (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich. 1907/2006 compliant. dated 2012 - no entries: IARC – Group 3. not carcinogenic.

Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en

Data source date: 16 Jun 2014 Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead di(acetate)}

Insuffient hexavalent chromium

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc sulphate}

Insuffient hexavalent chromium

sulfur {sulfur}

Worse case compound.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.9.5904.10918 (09 Jan 2024)

HazWasteOnline Database: 2024.9.5904.10918 (09 Jan 2024)

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This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021 CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014 Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015 8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

APPENDIX D - GE	EOENVIRONMENTAL (GROUNDWATER LA	ABORATORY RESULTS



Element Materials Technology

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA P: +44 (0) 1244 833780

F: +44 (0) 1244 833781

W: www.element.com

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE







Attention: Adrian Read

Date: 12th January, 2024

Your reference: TE1799 Sandycroft Deeside

Our reference: Test Report 23/21786 Batch 1

Location : Sandycroft Deeside

Date samples received: 21st December, 2023

Status: Final Report

Issue: 202401121541

Four samples were received for analysis on 21st December, 2023 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 9.846 kg of CO2

Scope 1&2&3 emissions - 23.27 kg of CO2

Authorised By:

Bruce Leslie

Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Tier Environmental

TE1799 Sandycroft Deeside Reference:

Location: Sandycroft Deeside Adrian Read Contact:

Report: Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

	Adrian Read 23/21786							Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle H=H ₂ SO ₄ , Z=ZnAc, N=NaOH, HN=HNO ₃								
		7.10	40.40				11 112004, .	210.00, 14		111103	I					
EMT Sample No.	1-6	7-12	13-18	19												
Sample ID	CP01	CP02b	CP03	WS02												
Depth	2.00	1.50	5.00	1.45m							Diagram	#				
COC No / misc												e attached r ations and a				
Containers	VUUNDO	V H HN B C	V H HN B C													
Sample Date																
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water												
Batch Number	1	1	1	1							LOD/LOR	Units	Method			
Date of Receipt	21/12/2023	21/12/2023	21/12/2023	21/12/2023									No.			
Dissolved Arsenic#	2.0	1.3	0.9	-							<0.9	ug/l	TM170/PM14			
Dissolved Cadmium #	0.08	0.43	0.05	-							<0.03	ug/l	TM170/PM14			
Total Dissolved Chromium#	<0.2	<0.2	0.8	-							<0.2	ug/l	TM170/PM14			
Dissolved Copper#	<1	<1	2	-							<1	ug/l	TM170/PM14			
Dissolved Lead #	1.6	<0.4	<0.4	-							<0.4	ug/l	TM170/PM14			
Dissolved Mercury#	<0.5	<0.5	<0.5	-							<0.5	ug/l	TM170/PM14			
Dissolved Nickel #	4.7	7.0	2.0	-							<0.2	ug/l	TM170/PM14			
Dissolved Selenium#	<1.2	<1.2	<1.2	-							<1.2	ug/l	TM170/PM14			
Dissolved Zinc [#]	113.1	309.2 _{AA}	4.0	-							<1.5	ug/l	TM170/PM14			
Total Hardness Dissolved (as CaCO3)	292	245	328	-							<1	mg/l	TM30/PM14			
PAH MS																
Naphthalene#	<0.1	<2.0 _{AB}	<0.1	_							<0.1	ug/l	TM4/PM30			
Acenaphthylene #	<0.005	<0.100 _{AB}	<0.005	_							<0.005	ug/l	TM4/PM30			
Acenaphthene #	<0.005	<0.100 _{AB}	0.015	-							<0.005	ug/l	TM4/PM30			
Fluorene #	<0.005	<0.100 _{AB}	0.017	-							<0.005	ug/l	TM4/PM30			
Phenanthrene#	0.007	<0.100 _{AB}	0.157	-							<0.005	ug/l	TM4/PM30			
Anthracene #	0.007	<0.100 _{AB}	0.043	-							<0.005	ug/l	TM4/PM30			
Fluoranthene #	0.011	1.351 _{AB}	0.385	-							<0.005	ug/l	TM4/PM30			
Pyrene #	0.012	3.199 _{AB}	0.368	-							<0.005	ug/l	TM4/PM30			
Benzo(a)anthracene#	0.011	0.320 _{AB}	0.176	-							<0.005	ug/l	TM4/PM30			
Chrysene#	0.006	1.139 _{AB}	0.186	-							<0.005	ug/l	TM4/PM30			
Benzo(bk)fluoranthene #	0.009	<0.160 _{AB}	0.386	-							<0.008	ug/l	TM4/PM30			
Benzo(a)pyrene #	0.005	<0.100 _{AB}	0.206	-							<0.005	ug/l	TM4/PM30			
Indeno(123cd)pyrene#	<0.005	<0.100 _{AB}	0.150	-							<0.005	ug/l	TM4/PM30			
Dibenzo(ah)anthracene#	<0.005	<0.100 _{AB}	0.029	-							<0.005	ug/l	TM4/PM30			
Benzo(ghi)perylene #	<0.005	<0.100 _{AB}	0.146	-							<0.005	ug/l	TM4/PM30			
PAH 16 Total #	<0.173	6.009 _{AB}	2.264	-							<0.173	ug/l	TM4/PM30			
Benzo(b)fluoranthene	<0.008	<0.160 _{AB}	0.278	-							<0.008	ug/l	TM4/PM30			
Benzo(k)fluoranthene	<0.008	<0.160 _{AB}	0.108	-							<0.008	ug/l	TM4/PM30			
PAH Surrogate % Recovery	94	91 _{AB}	89	-							<0	%	TM4/PM30			
VOC TICs	ND	ND	ND	-								None	TM15/PM10			
Methyl Tertiary Butyl Ether#	<0.1	<0.1	<0.1	-							<0.1	ug/l	TM15/PM10			
Benzene #	<0.5	<0.5	<0.5	-							<0.5	ug/l	TM15/PM10			
Toluene#	<5	<5	<5	-							<5	ug/l	TM15/PM10			
Ethylbenzene #	<1	<1	<1	-							<1	ug/l	TM15/PM10			
m/p-Xylene #	<2	<2	<2	-							<2	ug/l	TM15/PM10			
o-Xylene#	<1	<1	<1	-							<1	ug/l	TM15/PM10			
Surrogate Recovery Toluene D8	97	100	103	-							<0	%	TM15/PM10			
Surrogate Recovery 4-Bromofluorobenzene	94	103	109	-							<0	%	TM15/PM10			
SVOC TICs	ND	ND	ND	-								None	TM16/PM30			

Client Name: Tier Environmental

Reference: TE1799 Sandycroft Deeside

23/21786

Location: Sandycroft Deeside
Contact: Adrian Read

EMT Job No:

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

Report: Liquid

							 	_		
EMT Sample No.	1-6	7-12	13-18	19						
Sample ID	CP01	CP02b	CP03	WS02						
Depth	2.00	1.50	5.00	1.45m				Please se	e attached n	otes for all
COC No / misc									ations and a	
Containers	V H HN P G	V H HN P G	V H HN P G	G						
Sample Date	21/12/2023	21/12/2023	21/12/2023	21/12/2023						
Sample Type										
Batch Number	1	1	1	1				LOD/LOR	Units	Method No.
Date of Receipt	21/12/2023	21/12/2023	21/12/2023							
MTBE#	-	-	-	<5				<5	ug/l	TM36/PM12
Benzene #	-	-	-	<5				<5	ug/l	TM36/PM12
Toluene #	-	-	-	<5				< 5	ug/l	TM36/PM12
Ethylbenzene #	-	-	-	<5				<5	ug/l	TM36/PM12
m/p-Xylene #	-	-	-	<5				<5	ug/l	TM36/PM12 TM36/PM12
o-Xylene [#]	-	-	-	<5				<5	ug/l	TIVI30/PIVITZ
TPH CWG										
Aliphatics										
>C5-C6 (HS_1D_AL)#	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>C6-C8 (HS_1D_AL)#	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>C8-C10 (HS_1D_AL)#	<10	122	<10	<10				<10	ug/l	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<5	222	<5	<5				<5	ug/l	TM5/PM16/PM30
>C12-C16 (EH_CU_1D_AL)#	<10	1960	<10	140				<10	ug/l	TM5/PM16/PM30
>C16-C21 (EH_CU_1D_AL)#	<10	3670	<10	260				<10	ug/l	TM5/PM16/PM30
>C21-C35 (EH_CU_1D_AL)#	<10	1020	<10	<10				<10	ug/l	TM5/PM16/PM30
>C35-C40 (EH_CU_1D_AL)	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	<10	6994	<10	400				<10	ug/l	TM5/TM96/PM12/PM16/PM90
Aromatics										
>C5-EC7 (HS_1D_AR)#	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<5	118	<5	<5				<5	ug/l	TM5/PM16/PM30
>EC12-EC16 (EH_CU_1D_AR)#	<10	1310	<10	<10				<10	ug/l	TM5/PM16/PM30
>EC16-EC21 (EH_CU_1D_AR)#	<10	2840	<10	<10				<10	ug/l	TM5/PM16/PM30
>EC21-EC35 (EH_CU_1D_AR)#	<10	1040	<10	<10				<10	ug/l	TM5/PM16/PM30
>EC35-EC40 (EH_CU_1D_AR)	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
Total aromatics C5-40 (EH_CU+HS_1D_AR)	<10	5308	<10	<10				<10	ug/l	TM5/TM96/PM12/PM16/PM90
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	<10	12302	<10	400				<10	ug/l	TM5/TM36/PM12/PM16/PM30
T / I DI	0.45		0.45					0.45		T. 100 /D. 10
Total Phenols HPLC	<0.15	<0.15	<0.15	-				<0.15	mg/l	TM26/PM0
Sulphate as SO4 #	23.1	23.8	79.9	-				<0.5	mg/l	TM38/PM0
Managhylar		-40	-40					-40		TM470/D140
Monoethylene glycol	-	<10	<10	-				<10	ug/l	TM179/PM0
Propylene glycol Diethylene glycol	-	<10 <10	<10 <10	-				<10 <10	ug/l	TM179/PM0 TM179/PM0
Triethylene glycol	-	<10	<10	-				<10	ug/l ug/l	TM179/PM0
Thiodiglycol	-	<10	<10	-				<10	ug/l	TM179/PM0
Thiodigiyooi	-	-10	-10	-				10	ug/i	I IVI I 7 5/F IVIU
Total Ammonia as N [#]	0.04	0.67	0.07	-				<0.03	mg/l	TM38/PM0
Electrical Conductivity @25C #	620	524	645	-				<2	uS/cm	TM76/PM0
pH#	7.24	7.15	7.65	-				<0.01	pH units	TM73/PM0

Client Name: Tier Environmental

Reference: TE1799 Sandycroft Deeside **Location:** Sandycroft Deeside

Contact: Adrian Read EMT Job No: 23/21786

SVOC Report : Liquid

EMT Job No:	23/21786								
EMT Sample No.	1-6	7-12	13-18						
Sample ID	CP01	CP02b	CP03						
Depth	2.00	1.50	5.00				Please se	e attached r	otos for all
COC No / misc	2.00	1.00	0.00					ations and a	
Containers	V H HN P G	V H HN P G	V H HN P G						
Sample Date		21/12/2023							
Sample Type	Ground Water								
Batch Number	1	1	1				LOD/LOR	Units	Method No.
Date of Receipt SVOC MS	21/12/2023	21/12/2023	21/12/2023						140.
Phenois									
2-Chlorophenol#	<1	<1	<1				<1	ug/l	TM16/PM30
2-Methylphenol#	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol#	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol 2,4,5-Trichlorophenol #	<1 <0.5	<1 <0.5	<1 <0.5				<1 <0.5	ug/l ug/l	TM16/PM30 TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10				<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1				<1	ug/l	TM16/PM30
Phenol PAHs	<1	<1	<1				<1	ug/l	TM16/PM30
2-Chloronaphthalene#	<1	<1	<1				<1	ug/l	TM16/PM30
2-Methylnaphthalene#	<1	<1	<1				<1	ug/l	TM16/PM30
Phthalates									
Bis(2-ethylhexyl) phthalate	<5	<5	<5				<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1				<1	ug/l	TM16/PM30
Di-n-butyl phthalate # Di-n-Octyl phthalate	<1.5 <1	<1.5 <1	<1.5 <1				<1.5 <1	ug/l ug/l	TM16/PM30 TM16/PM30
Diethyl phthalate #	<1	<1	<1				<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1				<1	ug/l	TM16/PM30
Other SVOCs	<1	<1	<1				<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1				<1	ug/l	TM16/PM30
1,3-Dichlorobenzene#	<1	<1	<1				<1	ug/l	TM16/PM30
1,4-Dichlorobenzene#	<1	<1	<1				<1	ug/l	TM16/PM30
2-Nitroaniline	<1 <0.5	<1 <0.5	<1 <0.5				<1 <0.5	ug/l	TM16/PM30 TM16/PM30
2,4-Dinitrotoluene # 2,6-Dinitrotoluene	<1	<1	<1				<1	ug/l ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1				<1	ug/l	TM16/PM30
4-Bromophenylphenylether#	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chlorophenylphenylether#	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30 TM16/PM30
Azobenzene # Bis(2-chloroethoxy)methane #	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5				<0.5 <0.5	ug/l ug/l	TM16/PM30 TM16/PM30
Bis(2-chloroethyl)ether#	<1	<1	<1				<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Hexachlorobenzene#	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachloroputadiene #	<1	<1	<1 <1				<1	ug/l	TM16/PM30 TM16/PM30
Hexachlorocyclopentadiene Hexachloroethane#	<1 <1	<1 <1	<1 <1				<1 <1	ug/l ug/l	TM16/PM30 TM16/PM30
Isophorone #	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1				<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	112	107	95				<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	122	129	109				<0	%	TM16/PM30

Client Name: Tier Environmental

Reference: TE1799 Sandycroft Deeside

Location: Sandycroft Deeside
Contact: Adrian Read
EMT Job No: 23/21786

VOC Report : Liquid

Emil Cob ito.	20/2 00								
EMT Sample No.	1-6	7-12	13-18						
Sample ID	CP01	CP02b	CP03						
Depth	2.00	1.50	5.00					e attached n ations and a	
COC No / misc Containers	VUUNDO	V H HN P G	VHHNDC				abbievi	alions and a	Cionyms
Sample Date		21/12/2023							
Sample Type		Ground Water							
Batch Number	1	1	1						Method
Date of Receipt	21/12/2023	21/12/2023	21/12/2023				LOD/LOR	Units	No.
VOC MS									
Dichlorodifluoromethane	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether#	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride [#] Bromomethane	<0.1 <1	<0.1 <1	<0.1 <1				<0.1 <1	ug/l ug/l	TM15/PM10 TM15/PM10
Chloroethane #	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE)#	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM)#	<3	<3	<3				<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform#	<2	<2	<2 <2				<2	ug/l	TM15/PM10 TM15/PM10
1,1,1-Trichloroethane # 1,1-Dichloropropene #	<2 <3	<2 <3	<3				<2 <3	ug/l	TM15/PM10 TM15/PM10
Carbon tetrachloride #	<2	<2	<2				<2	ug/l ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene#	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE)#	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane#	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2 <2				<2	ug/l	TM15/PM10 TM15/PM10
1,1,2-Trichloroethane # Tetrachloroethene (PCE) #	<2 <3	<2 <3	<3				<2 <3	ug/l ug/l	TM15/PM10
1,3-Dichloropropane#	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene#	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane#	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1				<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2				<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1				<1	ug/l	TM15/PM10
Styrene #	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform # Isopropylbenzene #	<2 <3	<2 <3	<2 <3				<2 <3	ug/l ug/l	TM15/PM10 TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene#	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene#	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene#	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene#	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene#	<3 <3	<3 <3	<3 <3				<3 <3	ug/l	TM15/PM10 TM15/PM10
4-Isopropyltoluene # 1,3-Dichlorobenzene #	<3	<3	<3				<3	ug/l ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene#	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8 Surrogate Recovery 4-Bromofluorobenzene	97	100	103				<0	%	TM15/PM10
	94	103	109				<0	%	TM15/PM10

Notification of Deviating Samples

Matrix : Liquid

Client Name: Tier Environmental

Reference: TE1799 Sandycroft Deeside

Location: Sandycroft Deeside

Contact: Adrian Read

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
23/21786	1	CP01	2.00	1-6	Mercury MS	Sample holding time exceeded
23/21786	1	CP02b	1.50	7-12	Mercury MS	Sample holding time exceeded
23/21786	1	CP03	5.00	13-18	Mercury MS	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/21786

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BI ANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

EMT Job No.: 23/21786

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation. Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al.. (1996).

Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ос	Outside Calibration Range
AA	x5 Dilution
AB	x20 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/21786

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				

EMT Job No: 23/21786

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EMA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID coelutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
ТМ76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM179	Determination of Glycols using LCMS	PM0	No preparation is required.				

APPENDIX E	- GEOTECHNICAL IN SI	TU FIELDWORK AND	LABORATORY RESULTS



TEST REPORT

Client Tier Environmental Ltd

Address Suite 513

Chadwick House Warrington Road

Birchwood WA3 6AE

Contract TE1799 -

Sandycroft, Deeside

Job Number MRN 4625/58

Date of Issue 20 December 2023

Page 1 of 6

Approved Signatories

S J Hutchings, O P Davies

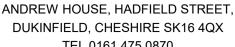
Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870 Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999





TEL 0161 475 0870
TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

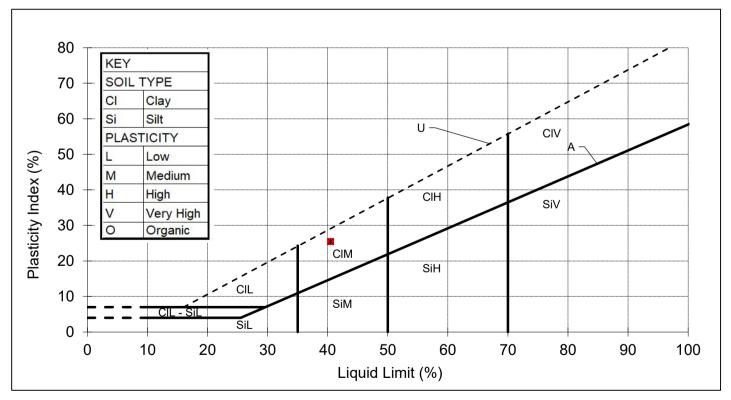
CLIENT	Tier Environmental Ltd
SITE	TE1799 - Sandycroft, Deeside
JOB NUMBER	MRN 4625/58

SAMPLE LABEL	CP02b 2.2-2.65	DATE SAMPLED	Not advised
SAMPLE No.	135106	DATE RECEIVED	15-Dec-23
DATE TESTED	16-Dec-23	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly grav	elly CLAY	
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings	mm (average)	Moisture Content %	Correction Factor	Correction factor
Determination 1 (avg)	18.5	39.5	1 033	from Clayton and
Determination 2 (avg)	18.9	39.7	1.022	Jukes 1978

Natural Moisture	Liquid Limit	Plastic Limit	Plasticity Index	Passing
Content (%)	(%)	(%)	(%)	425 micron (%)
30.7	40	15	25	



REMARKS

SIGNED

NAME O.P. Davies BA (Hons)

(Laboratory Manager)

DATE

20-Dec-23

Page 2 of 6

ANDREW HOUSE, HADFIELD STREET, DUKINFIELD, CHESHIRE SK16 4QX TEL 0161 475 0870



TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

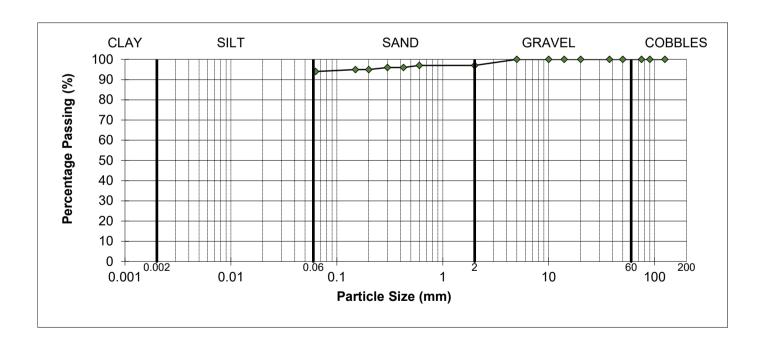
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	Tier Environmental Ltd
SITE	TE1799 - Sandycroft, Deeside
JOB NUMBER	MRN 4625/58

SAMPLE LABEL	CP02b 1.7-2.6	DATE SAMPLED	Not advised
LAB SAMPLE No	134048	DATE RECEIVED	13-Dec-23
DATE TESTED	15-Dec-23	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size	% Passing	Specification	Sieve Size	% Passing	Specification
(mm)	(%)	(%)	(mm)	(%)	(%)
125	100		5	100	
90	100		2	97	
75	100		0.6	97	
50	100		0.425	96	
37.5	100		0.3	96	
20	100		0.2	95	
14	100		0.15	95	
10	100		0.063	94	



REMARKS

As received water content = 23.6%

SIGNED

NAME O.P. Davies BA (Hons)

(Laboratory Manager)

DATE

20-Dec-23

Page 3 of 6

ANDREW HOUSE, HADFIELD STREET, DUKINFIELD, CHESHIRE SK16 4QX TEL 0161 475 0870



TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

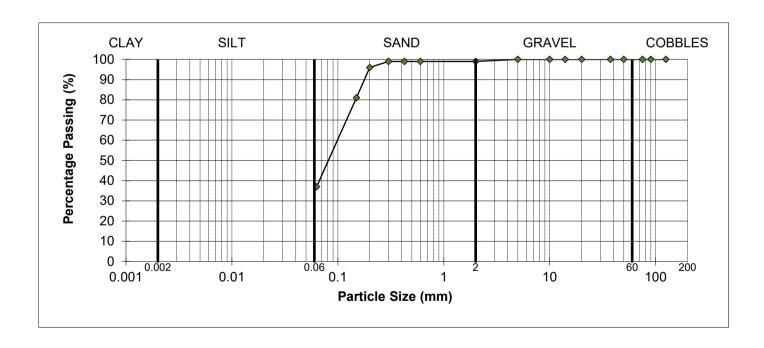
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

	7/
CLIENT	Tier Environmental Ltd
SITE	TE1799 - Sandycroft, Deeside
JOB NUMBER	MRN 4625/58

SAMPLE LABEL	CP01 3.5-3.8	DATE SAMPLED	Not advised
LAB SAMPLE No	134047	DATE RECEIVED	13-Dec-23
DATE TESTED	15-Dec-23	SAMPLED BY	Client

MATERIAL	Brown silty slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size	% Passing	Specification	Sieve Size	% Passing	Specification
(mm)	(%)	(%)	(mm)	(%)	(%)
125	100		5	100	
90	100		2	99	
75	100		0.6	99	
50	100		0.425	99	
37.5	100		0.3	99	
20	100		0.2	96	
14	100		0.15	81	
10	100		0.063	37	



REMARKS

As received water content = 24.3%

SIGNED

NAME O.P. Davies BA (Hons)

(Laboratory Manager)

DATE 20-Dec-23

Page 4 of 6

ANDREW HOUSE, HADFIELD STREET, DUKINFIELD, CHESHIRE SK16 4QX TEL 0161 475 0870



TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

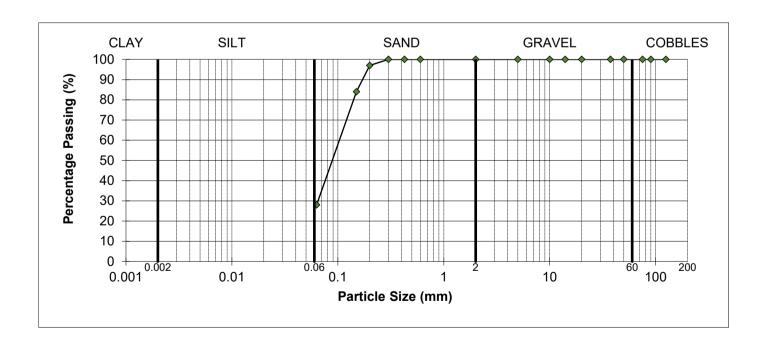
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

	7/
CLIENT	Tier Environmental Ltd
SITE	TE1799 - Sandycroft, Deeside
JOB NUMBER	MRN 4625/58

SAMPLE LABEL	CP03 5.0-5.3	DATE SAMPLED	Not advised
LAB SAMPLE No	134107	DATE RECEIVED	15-Dec-23
DATE TESTED	15-Dec-23	SAMPLED BY	Client

MATERIAL	Brown silty SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size	% Passing	Specification	Sieve Size	% Passing	Specification
(mm)	(%)	(%)	(mm)	(%)	(%)
125	100		5	100	
90	100		2	100	
75	100		0.6	100	
50	100		0.425	100	
37.5	100		0.3	100	
20	100		0.2	97	
14	100		0.15	84	
10	100		0.063	28	



REMARKS

As received water content = 24.1%

SIGNED

NAME O.P. Davies BA (Hons)

(Laboratory Manager)

DATE

20-Dec-23

ANDREW HOUSE, HADFIELD STREET, DUKINFIELD, CHESHIRE SK16 4QX TEL 0161 475 0870



TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

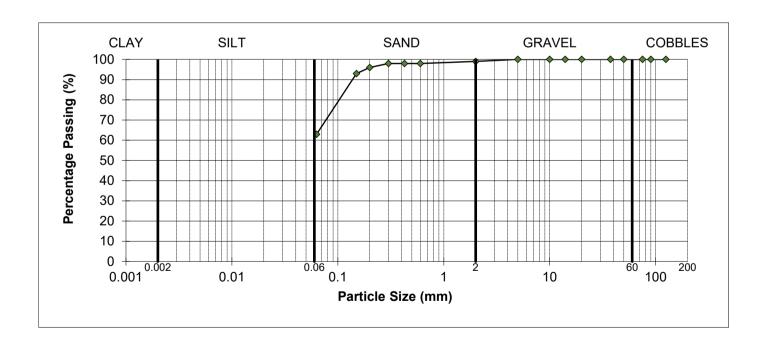
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

	7/
CLIENT	Tier Environmental Ltd
SITE	TE1799 - Sandycroft, Deeside
JOB NUMBER	MRN 4625/58

SAMPLE LABEL	CP03 2.7-3.0	DATE SAMPLED	Not advised
LAB SAMPLE No	134108	DATE RECEIVED	15-Dec-23
DATE TESTED	15-Dec-23	SAMPLED BY	Client

MATERIAL	Brown sandy slightly gravelly SILT
ADVISED SOURCE	Site Investigation Sample

Sieve Size	% Passing	Specification	Sieve Size	% Passing	Specification
(mm)	(%)	(%)	(mm)	(%)	(%)
125	100		5	100	
90	100		2	99	
75	100		0.6	98	
50	100		0.425	98	
37.5	100		0.3	98	
20	100		0.2	96	
14	100		0.15	93	
10	100		0.063	63	



REMARKS

As received water content = 28.6%

SIGNED

NAME O.P. Davies BA (Hons)

(Laboratory Manager)

DATE 20-Dec-23

Page 6 of 6

APPENDIX F -	GROUNDWATER AN	ID GAS MONITORI	NG RESULTS

GAS AND GROUNDWATER MONITORING ACROSS BOREHOLE LOCATIONS FIELD PROFORMA	
JOB DETAILS: Job No: TE1799	
Client: CASSIDY AND ASHTON Visit No: 1 of 4	
Site: FACTORY ROAD, SANDYCROFT Operator: Lee Hogg	CONSULT
Date: 11.12.2023 Project Manager: Sean Lee	GROUP
Ground Gas Instrument GA5000	
Ambient Gas Concentrations: CH ₄ ND CO ₂ ND O ₂ 20.9	
METEOROLOGICAL AND SITE INFORMATION	
State of ground: Dry Moist X Wet Snow Frozen	
Wind: Calm X Light Moderate Strong	
Cloud cover: None X Slight Cloudy Overcast	
Barometric pressure (mbar): 1003 Before 1002 After	
Pressure Trend Falling X Steady Rising	
FLOW DATA GAS CONCENTRATIONS WELL AND WATER DATA	
Monitoring Point Flow rate (I/hr) Methane (%v/v) CH4 CO2 O2 CO H2S Methane (%v/v) Methane (%v/v) Carbon monoxide (ppm) (ppm) Co2 CO H2S Water (ppm) Methane (mod (mod (mod (mod (mod (mod (mod (mod	COMMENTS
Peak Steady Peak Steady Peak Steady Lowest Steady Peak Steady Peak Steady	
CP01 NR NR 0.3 0.3 1.1 1.1 0.3 0.3 6 ND ND ND 1.30 2.26 Mg/TFD	
CP03 NR NR ND ND 1.3 1.3 18.3 18.3 ND ND ND 1.16 5.50 Mg/TFD	
CP02b NR NR ND ND 1.8 1.7 19.0 19.1 ND ND ND ND ND 1.15 4.94 MG/TFD	
WS02 NR NR ND ND 1.6 1.2 19.1 19.7 ND ND ND ND 1.20 1.76 MG/TFD	

Min	0.0	0.0	0.1	0.1	1.1	1.1	0.3	0.3	ND	ND	ND	ND	1.15	1.76	
Max	0.1	0.1	0.3	0.3	1.8	1.7	19.1	19.7	6	ND	ND	ND	1.30	5.50	
•															

		G	AS AN	ID GR	OUND	WATE	R MOI	NITOR	ING A	CROS	S BOR	REHOL	E LO	CATIO	NS FIE	ELD PF	ROFORMA				
		J	OB DET	AILS:					Ī			Job No	:		TE1799)					
Client:	CASSID	Y AND A	ASHTON						i			Visit No):			2	of	4	K		
Site:	FACTO	RY ROAI	D, SAND	YCROF	T				ľ			Operate	or:		Lee Ho	gg		C O N S U G R O U	L T		
Date:	21.12.20)23										Project	Manage	er:	Sean Le	ee					
Ground Gas Instrun	nent					GA:	5000														
Ambient Gas Conce	Gas Concentrations: CH ₄ ND							ID		CO ₂	N	D	Ī	O ₂	2	21					
METEOROLOGICAL	. AND SI	TE INFO	RMATIC	<u>N</u>		_	_					_			_						
State of ground:	,									Moist		Χ	Wet			Snow		Frozen			
Wind:							Calm			Light			Modera		Х	Strong					
Cloud cover:							None			Slight		Х	Cloudy			Overcas	st				
Preciptation:						Χ	None			Slight			Modera	ite							
Barometric pressur Pressure Trend	e (mbar)	:							1004	Before	i		104			After					
Pressure Trend										Falling		Х	Steady			Rising					
	FLOW	DATA				GA	S CONCE	NTRATIO	ONS				WE	LL AND \	NATER D	ATA					
Monitoring Point	Flow rate (I/hr)		Methane (%v/v)		Carbon dioxide (%v/v)		Oxygen (%v/v)		Carbon monoxide (ppm)												
	1101110	ite (I/hr)		, ,	(%	v/v)	, ,	, ,	(pp	om)	(pp	n sulphide om)	Water Depth	Depth of Well	Level	Level	RESPONSE ZONE	COMMENTS			
	Peak	te (I/hr) Steady	Methane CI Peak	, ,	(%		, ,	n (%v/v) 2 Steady	(pp		(pp				_		ZONE	COMMENTS			
CP01		` ′	CI	14	(% C	v/v) D2)2	(pp	om)	(pp	om) 2S	Depth	Well	Level	Level	ZONE	COMMENTS			
CP01 CP03	Peak	Steady	CI Peak	14 Steady	(% Ce Peak	v/v) 02 Steady	Lowest	Steady	(pp C Peak	om) Steady	(pp H2 Peak	om) Steady	Depth (mbgl)	Well (mbgl)	Level	Level	ZONE	COMMENTS			
	Peak ND	Steady	Peak 0.3	Steady 0.3	(% C Peak 1.5	v/v) O2 Steady 1.5	Lowest	Steady	(pr C Peak 1	om) Steady ND	Peak	Steady ND	Depth (mbgl)	Well (mbgl)	Level	Level	ZONE MG/TFD	COMMENTS			
CP03	Peak ND ND	Steady ND ND	Peak 0.3 ND	Steady 0.3 ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3	Lowest 10.3 6.1	Steady 10.3 20.5	Peak 1 ND	Steady ND ND	Peak ND ND	Steady ND ND	Depth (mbgl) 1.64 0.56	Well (mbgl) 2.25 5.53	Level	Level	ZONE MG/TFD MG/TFD	COMMENTS			
CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3 1.1	Lowest 10.3 6.1 17.7	Steady 10.3 20.5 20.4	Peak 1 ND ND	om) Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Depth (mbgl) 1.64 0.56 1.09	Well (mbgl) 2.25 5.53 4.96	Level	Level	ZONE MG/TFD MG/TFD MG/TFD	COMMENTS			
CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3 1.1	Lowest 10.3 6.1 17.7	Steady 10.3 20.5 20.4	Peak 1 ND ND	om) Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Depth (mbgl) 1.64 0.56 1.09	Well (mbgl) 2.25 5.53 4.96	Level	Level	ZONE MG/TFD MG/TFD MG/TFD	COMMENTS			
CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3 1.1	Lowest 10.3 6.1 17.7	Steady 10.3 20.5 20.4	Peak 1 ND ND	om) Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Depth (mbgl) 1.64 0.56 1.09	Well (mbgl) 2.25 5.53 4.96	Level	Level	ZONE MG/TFD MG/TFD MG/TFD	COMMENTS			
CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3 1.1	Lowest 10.3 6.1 17.7	Steady 10.3 20.5 20.4	Peak 1 ND ND	om) Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Depth (mbgl) 1.64 0.56 1.09	Well (mbgl) 2.25 5.53 4.96	Level	Level	ZONE MG/TFD MG/TFD MG/TFD	COMMENTS			
CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 0.3	v/v) O2 Steady 1.5 0.3 1.1	Lowest 10.3 6.1 17.7	Steady 10.3 20.5 20.4	Peak 1 ND ND	om) Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Depth (mbgl) 1.64 0.56 1.09	Well (mbgl) 2.25 5.53 4.96	Level	Level	ZONE MG/TFD MG/TFD MG/TFD	COMMENTS			

Min 0.1 0.1 0.1 0.1 0.3 0.3 6.1 10.3 ND ND ND ND 0.56 1.77	WS02	ND	ND	ND	ND	1.6	1.6	19.4	19.9	ND	ND	ND	ND	1.42	1.77		MG / TFD	
														•				
	Min	0.1	0.1	0.1	0.1	0.3	0.3	6.1	10.3	ND	ND	ND	ND	0.56	1 77			
Max 0.1 0.1 0.3 0.3 1.6 1.6 19.4 20.5 1 ND ND ND 1.64 5.53								19.4	20.5					1.64	5.53			

GAS AND GROUNDWATER MONITORING ACROSS BOREHOLE LOCATIONS FIELD PROFORMA

Client: Site: Date: Ground Gas Instrur Ambient Gas Conce METEOROLOGICAI State of ground: Wind: Cloud cover: Preciptation: Barometric pressur Pressure Trend	CH4 ND CH4 ND								974	CO ₂ Moist Light Slight Slight Before Falling	N	X X	o: Manage Wet Modera Cloudy Modera Steady	O ₂	Lee Hoo Sean Le	Snow Strong Overcas Heavy After Rising	of	Frozen			
Monitoring Point	CH4			, ,	(%	GA n dioxide v/v) O2 Steady		(%v/v) 2 Steady	Carbon (pp	monoxide pm)	(р	n sulphide pm) 2S Steady	Water Depth (mbgl)	Depth of Well (mbgl)	Ground Level (mAOD)	Water Level (mAOD)	RESPONSE ZONE		COMMENTS		
CP01	NR	NR	ND	ND	1.0	1.0	0.3	0.3	ND	ND	ND	ND	1.65	2.26			MG / TFD				
CP03	NR	NR	ND	ND	0.6	0.6	7.0	20.7	ND	ND	ND	ND	0.56	5.57			MG / TFD				
CP02b	NR	NR	ND	ND	1.1	1.1	16.7	20.4	ND	ND	ND	ND	1.09	4.98			MG / TFD				
WS02	NR	NR	ND	ND	1.2	1.1	19.0	20.0	ND	ND	ND	ND	1.42	1.77			MG / TFD				
																		1			
																		1			
																			•		

Min

Max

0.0

0.0

0.1

0.1

0.1

0.1

1.2

0.6

0.3

19.0

0.3

20.7

ND

ND

ND

ND

ND

ND

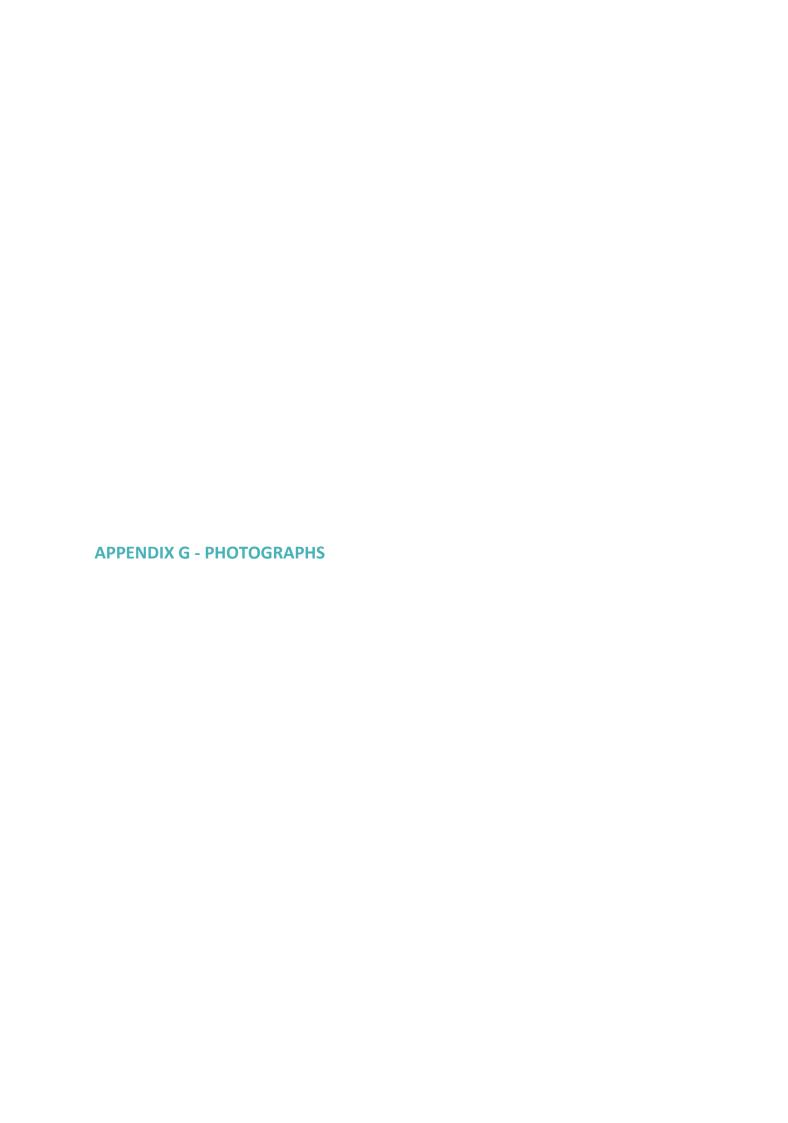
ND

0.56

1.65

		G	AS AN	ID GR	OUND	WATE	R MOI	NITOR	ING A	CROS	S BOR	REHOL	E LO	CATIO	NS FII	ELD PF	ROFORMA		
		J(OB DET	AILS:								Job No	:		TE1799				TIED
Client:		Y AND A										Visit No	o:			4	of	4	HER
Site: FACTORY ROAD, SANDYCROFT								Operate			Lee Ho	gg			C O N S U L T G R O U P				
Date:	12.01.20	024										Project	Manage	er:	Sean L	ee			
Ground Gas Instrun	nent					GA:	5000												
Ambient Gas Conce	ntration	s:				CH₄	N	D		CO ₂	0	.1	I	O ₂	2	0.9			
METEOROLOGICAL State of ground: Wind: Cloud cover: Preciptation: Barometric pressure Pressure Trend			PRMATIC	<u>DN</u>			Dry Calm None None		1039	Moist Light Slight Slight Before Falling		X	Wet Modera Cloudy Modera Steady		X 1039	Snow Strong Overcas Heavy After Rising		Frozen	
	FLOW	DATA				GA:	S CONCE	NTRATIO	ONS				WE	LL AND V	NATER C	A T A			
Monitoring Point	Flow ra	te (I/hr)	Methane CI	, ,	(%	dioxide v/v)	Oxyger		(pp	monoxide om)	Hydroger (pp		Water Depth	Depth of Well	Ground Level	Water Level	RESPONSE ZONE		COMMENTS
Monitoring Point	Flow ra	te (l/hr)		, ,	(%	v/v)			(pp	om)	(pp	om)	Water	Depth of	Ground	Water	ZONE		COMMENTS
Monitoring Point CP01		` ,	CI	14	(% C	v/v) O2	o	2	(pp	om)	(pp	om) 2S	Water Depth	Depth of Well	Ground Level	Water Level	ZONE		COMMENTS
	Peak	Steady	CH Peak	14 Steady	(% C Peak	v/v) O2 Steady	Lowest	Steady	(pp C Peak	om) Steady	(pp H2 Peak	om) Steady	Water Depth (mbgl)	Depth of Well (mbgl)	Ground Level	Water Level	ZONE		COMMENTS
CP01	Peak ND	Steady	Peak 0.3	Steady 0.3	(% C Peak 1.5	v/v) O2 Steady 1.5	Lowest 0.3	Steady 0.3	(pr C Peak ND	Steady ND	Peak	Steady ND	Water Depth (mbgl)	Depth of Well (mbgl)	Ground Level	Water Level	ZONE MG/TFD		COMMENTS
CP01 CP03	Peak ND ND	Steady ND ND	Peak 0.3 ND	Steady 0.3 ND	(% C Peak 1.5 1.4	v/v) O2 Steady 1.5 1.4	0.3 2.6	Steady 0.3 17.7	Peak ND ND	Steady ND ND	Peak ND ND	Steady ND ND	Water Depth (mbgl) 1.59	Depth of Well (mbgl) 2.17 5.51	Ground Level	Water Level	ZONE MG/TFD MG/TFD		COMMENTS
CP01 CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 1.4	v/v) O2 Steady 1.5 1.4 1.2	Lowest 0.3 2.6 17.6	Steady 0.3 17.7 18.3	Peak ND ND ND	Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Water Depth (mbgl) 1.59 1.69 1.56	Depth of Well (mbgl) 2.17 5.51 4.79	Ground Level	Water Level	ZONE MG/TFD MG/TFD		COMMENTS
CP01 CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 1.4	v/v) O2 Steady 1.5 1.4 1.2	Lowest 0.3 2.6 17.6	Steady 0.3 17.7 18.3	Peak ND ND ND	Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Water Depth (mbgl) 1.59 1.69 1.56	Depth of Well (mbgl) 2.17 5.51 4.79	Ground Level	Water Level	ZONE MG/TFD MG/TFD		COMMENTS
CP01 CP03 CP02b	Peak ND ND ND	Steady ND ND ND	Peak 0.3 ND ND	Steady 0.3 ND ND	(% C Peak 1.5 1.4	v/v) O2 Steady 1.5 1.4 1.2	Lowest 0.3 2.6 17.6	Steady 0.3 17.7 18.3	Peak ND ND ND	Steady ND ND ND	Peak ND ND ND	Steady ND ND ND	Water Depth (mbgl) 1.59 1.69 1.56	Depth of Well (mbgl) 2.17 5.51 4.79	Ground Level	Water Level	ZONE MG/TFD MG/TFD		COMMENTS

CP02b ND ND ND ND ND 1.2 1.2 17.6 18.3 ND ND ND ND 1.56 4.79 MG/TFD WS02 ND ND ND ND 1.0 1.0 18.6 20.0 ND ND ND ND ND ND MMG/TFD MG/TFD MG/TFD	
WS02 ND ND ND ND 1.0 1.0 18.6 20.0 ND ND ND ND ND ND MD 1.42 1.78 MG/TFD	
Min 0.1 0.1 0.1 1.0 1.0 0.3 0.3 ND ND ND ND 1.42 1.78	
Max 0.1 0.1 0.3 0.3 1.5 1.5 18.6 20.0 ND ND ND ND 1.69 5.51	



 ${\tt Photo}~1-{\tt Looking}~{\tt Northeast}~{\tt with}~{\tt hardstanding}~{\tt area}~{\tt located}~{\tt to}~{\tt the}~{\tt left}~{\tt behind}~{\tt palisade}~{\tt fencing}$



Photo 2 – Looking east into densely vegetated demolished area of former building



Photo 3 – Close up photo detailing demolished area



Photo 4 – Heavily vegetated area to the northeast of site







Enviro+Geo

GAINLAND INTERNATIONAL LTD, GAINLAND INTERNATIONAL LTD, FACTORY ROAD, SANDYCROFT, CH5 2QJ

Order Details

Date: 23/11/2023

Your ref: TE1799 PO2880

Our Ref: GS-9RM-2MD-293-VWR

Site Details

Location: 332961 367737

Area: 0.83 ha

Authority: Sir y Fflint - Flintshire County Council ↗



Summary of findings

<u>p. 2</u> > **Aerial image** p. 9 >

OS MasterMap site plan

groundsure.com/insightuserguide ↗ p.14 >





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

Summary of findings

00							
Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
<u>15</u> >	<u>1.1</u> >	<u>Historical industrial land uses</u> >	4	11	30	35	-
<u>19</u> >	<u>1.2</u> >	<u>Historical tanks</u> >	7	4	19	30	-
<u>21</u> >	<u>1.3</u> >	<u>Historical energy features</u> >	0	0	7	7	-
22	1.4	Historical petrol stations	0	0	0	0	-
22	1.5	Historical garages	0	0	0	0	-
22	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
<u>23</u> >	<u>2.1</u> >	<u>Historical industrial land uses</u> >	5	13	33	42	-
<u>27</u> >	<u>2.2</u> >	<u>Historical tanks</u> >	8	7	30	46	-
<u>30</u> >	<u>2.3</u> >	<u>Historical energy features</u> >	0	0	13	10	-
32	2.4	Historical petrol stations	0	0	0	0	-
32	2.5	Historical garages	0	0	0	0	_
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
Page	Section 3.1	Waste and landfill > Active or recent landfill	On site	0-50m	50-250m 0	250-500 m	500-2000m
							500-2000m - -
33	3.1	Active or recent landfill	0	0	0	0	500-2000m - -
33	3.1	Active or recent landfill Historical landfill (BGS records)	0	0	0	0	500-2000m
33 33 34	3.1 3.2 3.3	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records)	0 0	0 0	0 0	0 0	500-2000m
33 33 34 34	3.1 3.2 3.3 3.4	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records)	0 0 0	0 0 0	0 0 0	0 0 0	500-2000m
33 33 34 34 34	3.1 3.2 3.3 3.4 3.5 >	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites >	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	500-2000m
33 33 34 34 34 > 35 >	3.1 3.2 3.3 3.4 3.5 > 3.6 >	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites > Licensed waste sites >	0 0 0 0 0	0 0 0 0 1	0 0 0 0 1	0 0 0 0 3 22	500-2000m 500-2000m
33 33 34 34 34 34 > 35 > 43 >	3.1 3.2 3.3 3.4 3.5 > 3.6 > 3.7 >	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites > Licensed waste sites > Waste exemptions >	0 0 0 0 0	0 0 0 0 1 0 95	0 0 0 0 1 9	0 0 0 0 3 22 49	- - - -
33 34 34 34 34 > 35 > 43 > Page	3.1 3.2 3.3 3.4 3.5 > 3.6 > 3.7 > Section	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites > Licensed waste sites > Waste exemptions > Current industrial land use >	0 0 0 0 0 0	0 0 0 0 1 0 95	0 0 0 1 9 12	0 0 0 0 3 22 49	- - - -
33 34 34 34 34 > 35 > 43 > Page	3.1 3.2 3.3 3.4 3.5 > 3.6 > 3.7 > Section 4.1 >	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites > Licensed waste sites > Waste exemptions > Current industrial land use > Recent industrial land uses >	0 0 0 0 0 0 On site	0 0 0 0 1 0 95 0-50m	0 0 0 1 9 12 50-250m	0 0 0 0 3 22 49 250-500m	- - - -
33 34 34 34 34 35 > 43 > Page 60 > 62	3.1 3.2 3.3 3.4 3.5 > 3.6 > 3.7 > Section 4.1 > 4.2	Active or recent landfill Historical landfill (BGS records) Historical landfill (LA/mapping records) Historical landfill (EA/NRW records) Historical waste sites > Licensed waste sites > Waste exemptions > Current industrial land use > Recent industrial land uses > Current or recent petrol stations	0 0 0 0 0 0 0 On site	0 0 0 1 0 95 0-50m	0 0 0 1 9 12 50-250m 27	0 0 0 3 22 49 250-500m	- - - -





<u>63</u> >	<u>4.6</u> >	Control of Major Accident Hazards (COMAH) >	0	0	4	0	-
64	4.7	Regulated explosive sites	0	0	0	0	-
<u>64</u> >	<u>4.8</u> >	Hazardous substance storage/usage >	0	0	1	1	-
<u>64</u> >	<u>4.9</u> >	<u>Historical licensed industrial activities (IPC)</u> >	0	0	0	4	-
<u>65</u> >	<u>4.10</u> >	<u>Licensed industrial activities (Part A(1))</u> >	0	0	5	30	-
<u>72</u> >	<u>4.11</u> >	<u>Licensed pollutant release (Part A(2)/B)</u> >	0	1	2	2	-
73	4.12	Radioactive Substance Authorisations	0	0	0	0	-
<u>73</u> >	<u>4.13</u> >	<u>Licensed Discharges to controlled waters</u> >	0	0	0	5	-
74	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
<u>74</u> >	<u>4.15</u> >	Pollutant release to public sewer >	0	0	0	1	-
75	4.16	List 1 Dangerous Substances	0	0	0	0	-
75	4.17	List 2 Dangerous Substances	0	0	0	0	-
<u>75</u> >	<u>4.18</u> >	Pollution Incidents (EA/NRW) >	0	1	39	53	-
85	4.19	Pollution inventory substances	0	0	0	0	-
85	4.20	Pollution inventory waste transfers	0	0	0	0	-
85	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<u>86</u> >	<u>5.1</u> >	Superficial aquifer >	Identified (v	within 500m)		
<u>86</u> > <u>87</u> >	<u>5.1</u> > <u>5.2</u> >	Superficial aquifer > Bedrock aquifer >		within 500m within 500m	•		
			Identified (\		•		
<u>87</u> >	<u>5.2</u> >	Bedrock aquifer >	Identified (\	within 500m within 50m)	•		
<u>87</u> > <u>88</u> >	<u>5.2</u> > <u>5.3</u> >	Bedrock aquifer > Groundwater vulnerability >	Identified (v	within 500m within 50m) in 0m)	•		
87 > 88 > 89	5.2 > 5.3 > 5.4	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk	Identified (v	within 500m within 50m) in 0m)	•	1	5
87 > 88 > 89	5.2 > 5.3 > 5.4 5.5	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk Groundwater vulnerability- local information	Identified (v Identified (v None (within	within 500m within 50m) in 0m) in 0m))	1 0	5 8
87 > 88 > 89 89 90 >	5.2 > 5.3 > 5.4 5.5 5.6 >	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk Groundwater vulnerability- local information Groundwater abstractions >	Identified (v Identified (v None (within	within 500m within 50m) in 0m) in 0m)	0		
87 > 88 > 89 89 90 > 92 >	5.2 > 5.3 > 5.4 5.5 5.6 > 5.7 >	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk Groundwater vulnerability- local information Groundwater abstractions > Surface water abstractions >	Identified (v Identified (v None (withing None (withing)	within 500m within 50m) in 0m) 0 0	0	0	8
87 > 88 > 89 89 90 > 92 >	5.2 > 5.3 > 5.4 5.5 5.6 > 5.7 > 5.8	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk Groundwater vulnerability- local information Groundwater abstractions > Surface water abstractions > Potable abstractions	Identified (victorial None (within None (within 0) 0	within 500m within 50m) in 0m) 0 0	0 0	0	8
87 > 88 > 89 89 90 > 92 > 94	5.2 > 5.3 > 5.4 5.5 5.6 > 5.7 > 5.8 5.9	Bedrock aquifer > Groundwater vulnerability > Groundwater vulnerability- soluble rock risk Groundwater vulnerability- local information Groundwater abstractions > Surface water abstractions > Potable abstractions Source Protection Zones	Identified (victorial None (within None (within 0) 0 0	within 500m within 50m) in 0m) 0 0 0 0	0 0 0	0 0	8



<u>97</u> >	<u>6.2</u> >	<u>Surface water features</u> >	0	1	6	-	-			
<u>97</u> >	<u>6.3</u> >	WFD Surface water body catchments >	2	-	-	-	-			
<u>97</u> >	<u>6.4</u> >	WFD Surface water bodies >	0	0	0	-	-			
<u>98</u> >	<u>6.5</u> >	WFD Groundwater bodies >	1	-	-	-	-			
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m			
99	7.1	Risk of flooding from rivers and the sea	None (with	in 50m)						
<u>100</u> >	<u>7.2</u> >	<u>Historical Flood Events</u> >	0	0	1	-	-			
100	7.3	Flood Defences	0	0	0	-	-			
<u>100</u> >	<u>7.4</u> >	Areas Benefiting from Flood Defences >	0	0	1	-	-			
101	7.5	Flood Storage Areas	0	0	0	-	-			
<u>102</u> >	<u>7.6</u> >	Flood Zone 2 >	Identified (within 50m)						
<u>103</u> >	<u>7.7</u> >	Flood Zone 3 >	Identified (within 50m)							
Page	Section	Surface water flooding >								
<u>104</u> >	<u>8.1</u> >	Surface water flooding >	1 in 30 yea	r, 0.1m - 0.3r	m (within 50	m)				
Page	Section	Groundwater flooding >								
Page <u>106</u> >	Section <u>9.1</u> >	Groundwater flooding > Groundwater flooding >	Low (within	n 50m)						
			Low (within	n 50m) 0-50m	50-250m	250-500m	500-2000m			
<u>106</u> >	<u>9.1</u> >	Groundwater flooding >			50-250m	250-500m	500-2000m			
<u>106</u> >	<u>9.1</u> >	Groundwater flooding > Environmental designations >	On site	0-50m						
106 > Page 107 >	9.1 > Section 10.1 >	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) >	On site	0-50m	0	1	0			
106 > Page 107 >	9.1 > Section 10.1 > 10.2	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites)	On site 0	0-50m 0	0	1	0			
106 > Page 107 > 108 108 >	9.1 > Section 10.1 > 10.2 10.3 >	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) >	On site 0 0 0	0-50m 0 0	0 0	1 0 1	0 0			
106 > Page 107 > 108 108 >	9.1 > Section 10.1 > 10.2 10.3 >	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA)	On site 0 0 0 0	0-50m 0 0 0	0 0 0	1 0 1 0	0 0 0			
106 > Page 107 > 108 108 > 109	9.1 > Section 10.1 > 10.2 10.3 > 10.4 10.5	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA) National Nature Reserves (NNR)	On site 0 0 0 0 0	0-50m 0 0 0	0 0 0 0	1 0 1 0	0 0 0 0 0			
106 > Page 107 > 108 108 > 109 109	9.1 > Section 10.1 > 10.2 10.3 > 10.4 10.5 10.6	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA) National Nature Reserves (NNR) Local Nature Reserves (LNR)	On site 0 0 0 0 0 0 0	0-50m 0 0 0 0	0 0 0 0 0	1 0 1 0 0	0 0 0 0 0			
106 > Page 107 > 108 108 > 109 109 109	9.1 > Section 10.1 > 10.2 10.3 > 10.4 10.5 10.6 10.7 >	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA) National Nature Reserves (NNR) Local Nature Reserves (LNR) Designated Ancient Woodland >	On site 0 0 0 0 0 0 0 0	0-50m 0 0 0 0 0 0 0	0 0 0 0 0	1 0 1 0 0 0	0 0 0 0 0			
106 > Page 107 > 108 108 > 109 109 109 110	9.1 > Section 10.1 > 10.2 10.3 > 10.4 10.5 10.6 10.7 > 10.8	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA) National Nature Reserves (NNR) Local Nature Reserves (LNR) Designated Ancient Woodland > Biosphere Reserves	On site 0 0 0 0 0 0 0 0 0 0	0-50m 0 0 0 0 0 0 0 0	0 0 0 0 0	1 0 1 0 0 0	0 0 0 0 0 0 2			
106 > Page 107 > 108 108 > 109 109 109 110 110	9.1 > Section 10.1 > 10.2 10.3 > 10.4 10.5 10.6 10.7 > 10.8 10.9	Groundwater flooding > Environmental designations > Sites of Special Scientific Interest (SSSI) > Conserved wetland sites (Ramsar sites) Special Areas of Conservation (SAC) > Special Protection Areas (SPA) National Nature Reserves (NNR) Local Nature Reserves (LNR) Designated Ancient Woodland > Biosphere Reserves Forest Parks	On site 0 0 0 0 0 0 0 0 0 0 0	0-50m 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	1 0 1 0 0 0 0	0 0 0 0 0 0 2			





111	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
111	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
111	10.15	Nitrate Sensitive Areas	0	0	0	0	0
<u>111</u> >	<u>10.16</u> >	Nitrate Vulnerable Zones >	0	0	0	0	4
<u>113</u> >	<u>10.17</u> >	SSSI Impact Risk Zones >	1	-	-	-	-
114	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
115	11.1	World Heritage Sites	0	0	0	-	-
115	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
115	11.3	National Parks	0	0	0	-	-
115	11.4	Listed Buildings	0	0	0	-	-
116	11.5	Conservation Areas	0	0	0	-	-
116	11.6	Scheduled Ancient Monuments	0	0	0	-	-
116	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
. age	Section	Agricultural acsignations					
<u>117</u> >	<u>12.1</u> >	Agricultural Land Classification >		ithin 250m)			
				ithin 250m) 0	0	-	-
<u>117</u> >	<u>12.1</u> >	Agricultural Land Classification >	Grade 2 (wi		0	-	-
<u>117</u> >	12.1 > 12.2	Agricultural Land Classification > Open Access Land	Grade 2 (wi	0		-	- - -
117 > 118 118	12.1 > 12.2 12.3	Agricultural Land Classification > Open Access Land Tree Felling Licences	Grade 2 (wi	0	0	- - -	- - - -
117 > 118 118 118	12.1 > 12.2 12.3 12.4	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes	Grade 2 (wi	0 0	0	- - - - 250-500m	- - - - 500-2000m
117 > 118 118 118 118	12.1 > 12.2 12.3 12.4 12.5	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes	Grade 2 (wi	0 0 0	0 0	- - - - 250-500m	- - -
117 > 118 118 118 118 118 Page	12.1 > 12.2 12.3 12.4 12.5 Section	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations	Grade 2 (wi	0 0 0 0	0 0 0 50-250m	- - - 250-500m	- - -
117 > 118 118 118 118 118 119	12.1 > 12.2 12.3 12.4 12.5 Section 13.1	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory	Grade 2 (wi	0 0 0 0 0-50m	0 0 0 50-250m	- - - 250-500m - -	- - -
117 > 118 118 118 118 118 119 119	12.1 > 12.2 12.3 12.4 12.5 Section 13.1 13.2	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory Habitat Networks	Grade 2 (wi	0 0 0 0 0-50m	0 0 0 50-250m	- - - 250-500m - - -	- - -
117 > 118 118 118 118 118 119 119	12.1 > 12.2 12.3 12.4 12.5 Section 13.1 13.2 13.3	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory Habitat Networks Open Mosaic Habitat	Grade 2 (wind	0 0 0 0 0-50m 0	0 0 0 50-250m 0 0	- - - 250-500m - - - 250-500m	- - -
117 > 118 118 118 118 118 119 119 119	12.1 > 12.2 12.3 12.4 12.5 Section 13.1 13.2 13.3 13.4	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory Habitat Networks Open Mosaic Habitat Limestone Pavement Orders	Grade 2 (with a contract of the contract of th	0 0 0 0 0-50m 0 0	0 0 0 50-250m 0 0 0 50-250m	- - -	- - - 500-2000m - -
117 > 118 118 118 118 118 119 119 119 119 Page	12.1 > 12.2 12.3 12.4 12.5 Section 13.1 13.2 13.3 13.4 Section	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory Habitat Networks Open Mosaic Habitat Limestone Pavement Orders Geology 1:10,000 scale >	Grade 2 (with a contract of the contract of th	0 0 0 0 0-50m 0 0	0 0 0 50-250m 0 0 0 50-250m	- - -	- - - 500-2000m - -
117 > 118 118 118 118 118 119 119 119 119 120 >	12.1 > 12.2 12.3 12.4 12.5 Section 13.1 13.2 13.3 13.4 Section 14.1 >	Agricultural Land Classification > Open Access Land Tree Felling Licences Environmental Stewardship Schemes Countryside Stewardship Schemes Habitat designations Priority Habitat Inventory Habitat Networks Open Mosaic Habitat Limestone Pavement Orders Geology 1:10,000 scale > 10k Availability >	Grade 2 (wind of the control of the	0 0 0 0 0-50m 0 0 0-50m	0 0 0 50-250m 0 0 0 50-250m	- - - - 250-500m	- - - 500-2000m - -





122	14.4	Landslip (10k)	0	0	0	0	-
123	14.5	Bedrock geology (10k)	0	0	0	0	-
123	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	<u>Geology 1:50,000 scale</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<u>124</u> >	<u>15.1</u> >	50k Availability >	Identified (within 500m)		
<u>125</u> >	<u>15.2</u> >	Artificial and made ground (50k) >	0	1	0	1	-
<u>126</u> >	<u>15.3</u> >	Artificial ground permeability (50k) >	0	1	-	-	-
<u>127</u> >	<u>15.4</u> >	Superficial geology (50k) >	1	0	0	0	-
<u>128</u> >	<u>15.5</u> >	Superficial permeability (50k) >	Identified (within 50m)			
128	15.6	Landslip (50k)	0	0	0	0	-
128	15.7	Landslip permeability (50k)	None (with	in 50m)			
<u>129</u> >	<u>15.8</u> >	Bedrock geology (50k) >	1	0	3	4	-
<u>130</u> >	<u>15.9</u> >	Bedrock permeability (50k) >	Identified (within 50m)			
<u>130</u> >	<u>15.10</u> >	Bedrock faults and other linear features (50k) >	0	0	3	4	
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
<u>132</u> >	<u>16.1</u> >	BGS Boreholes >	0	0	23	-	-
Page	Section	Natural ground subsidence >					
<u>134</u> >	<u>17.1</u> >	Shrink swell clays >	Very low (w	vithin 50m)			
<u>135</u> >	<u>17.2</u> >	Running sands >	Moderate (within 50m)			
<u>137</u> >	<u>17.3</u> >	Compressible deposits >	Moderate (within 50m)			
<u>139</u> >	<u>17.4</u> >	Collapsible deposits >	Negligible (within 50m)			
<u>140</u> >	<u>17.5</u> >	<u>Landslides</u> >	Very low (w	vithin 50m)			
<u>141</u> >	<u>17.6</u> >	Ground dissolution of soluble rocks >	Negligible (within 50m)			
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
143	18.1	BritPits	0	0	0	0	-
<u>144</u> >	<u>18.2</u> >	Surface ground workings >	0	4	6	-	-
<u>144</u> >	<u>18.3</u> >	<u>Underground workings</u> >	0	0	0	0	2
145	18.4	Underground mining extents	0	0	0	0	-
145	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<u>145</u> >	<u>18.6</u> >	Non-coal mining >	1	0	2	2	4
<u>146</u> >	<u>18.7</u> >	JPB mining areas >	Identified (within 0m)			
147	18.8	The Coal Authority non-coal mining	0	0	0	0	-
147	18.9	Researched mining	0	0	0	0	-
147	18.10	Mining record office plans	0	0	0	0	-
148	18.11	BGS mine plans	0	-			
<u>148</u> >	<u>18.12</u> >	Coal mining >	Identified (within 0m)			
148	18.13	Brine areas	None (with	in 0m)			
148	18.14	Gypsum areas	None (with	in 0m)			
148	18.15	Tin mining	None (with	in 0m)			
149	18.16	Clay mining	None (with	in 0m)			
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
150	19.1	Natural cavities	0	0	0	0	-
150	19.2	Mining cavities	0	0	0	0	0
150	19.3	Reported recent incidents	0	0	0	0	-
150	19.4	Historical incidents	0	0	0	0	-
151	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
<u>152</u> >	<u>20.1</u> >	Radon >	Between 3	% and 5% (w	ithin 0m)		
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
<u>154</u> >	<u>21.1</u> >	BGS Estimated Background Soil Chemistry >	3	0	-	-	-
154	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
154	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	_
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
155	22.1	Underground railways (London)	0	0	0	-	-
155	22.2	Underground railways (Non-London)	0	0	0	-	-
156	22.3	Railway tunnels	0	0	0	-	-
<u>156</u> >	<u>22.4</u> >	Historical railway and tunnel features >	0	9	14	-	-
157	22.5	Royal Mail tunnels	0	0	0	-	-





157	22.6	Historical railways	0	0	0	-	-
<u>157</u> >	<u>22.7</u> >	Railways >	0	0	7	-	-
158	22.8	Crossrail 1	0	0	0	0	-
158	22.9	Crossrail 2	0	0	0	0	-
158	22.10	HS2	0	0	0	0	_





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 **Grid ref**: 332961 367737

Recent aerial photograph

Groundsure



Capture Date: 10/04/2020

Site Area: 0.83ha





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 **Grid ref**: 332961 367737

Recent site history - 2017 aerial photograph

Groundsure



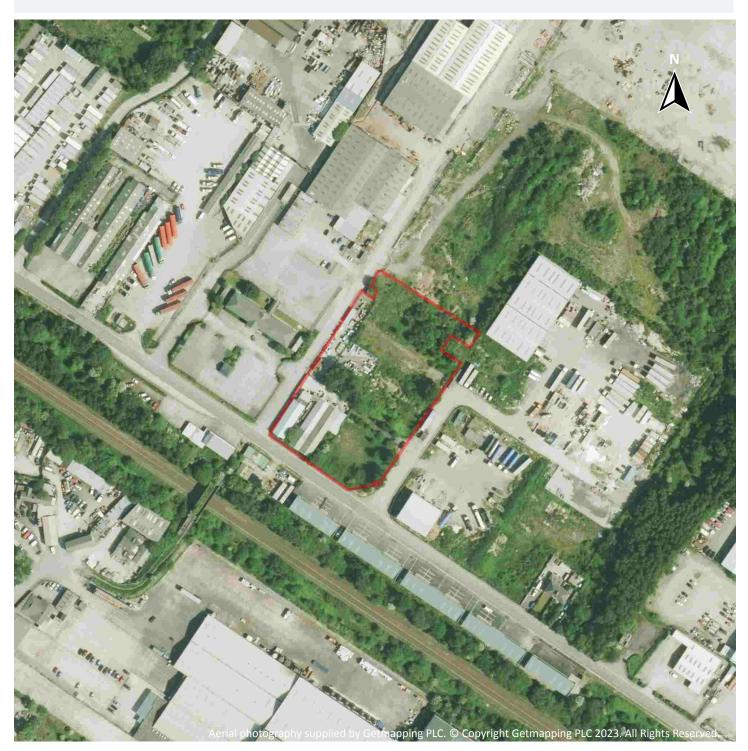
Capture Date: 07/05/2017

Site Area: 0.83ha





Recent site history - 2013 aerial photograph



Capture Date: 04/06/2013





Recent site history - 2009 aerial photograph

Groundsure



Capture Date: 20/04/2009





Recent site history - 2000 aerial photograph

Groundsure



Capture Date: 04/09/2000





OS MasterMap site plan

Groundsure







1 Past land use



1.1 Historical industrial land uses

Records within 500m 80

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
Α	On site	Unspecified Works	1989	881656





ID	Location	Land use	Dates present	Group ID
Α	On site	Unspecified Works	1976	982976
В	On site	Unspecified Depot	1989	920251
В	On site	Unspecified Depot	1969 - 1976	984152
Е	1m N	Unspecified Factory	1960	821305
В	8m S	Railway Sidings	1948	940526
В	10m N	Cheese Factory	1938 - 1948	939848
F	13m S	Railway Sidings	1989	868782
F	13m S	Railway Sidings	1960	890455
F	13m S	Railway Sidings	1969 - 1976	961262
G	21m S	Unspecified Pit	1914	839206
1	25m S	Cuttings	1948	795368
Н	29m S	Railway Sidings	1898	855202
Е	37m SW	Cuttings	1960	795402
Е	38m W	Unspecified Pit	1914	839204
G	55m SW	Unspecified Pit	1914	839205
2	64m SW	Unspecified Pit	1914	839209
3	74m SW	Unspecified Works	1969	830086
В	75m NW	Unspecified Tank	1989	882250
В	75m NW	Unspecified Tank	1976	858773
В	79m NW	Unspecified Tank	1969	926462
Е	93m W	Unspecified Pit	1914	839208
4	95m W	Railway Sidings	1869 - 1898	947817
Ι	105m SW	Unspecified Warehouse	1989	935972
I	105m SW	Unspecified Warehouse	1976	984849
J	121m W	Railway Sidings	1960	917177
J	121m W	Railway Sidings	1969	957506
J	128m W	Railway Sidings	1914	929950
Н	130m W	Railway Sidings	1909	977985





ID	Location	Land use	Dates present	Group ID
J	130m W	Railway Sidings	1938	986490
6	177m W	Railway Building	1938	819511
7	182m SW	Unspecified Works	1969	830087
9	232m SE	Unspecified Works	1976	856256
0	233m NW	Unspecified Works	1976	900908
10	234m SE	Unspecified Works	1989	852609
Н	237m NW	Unspecified Works	1969	939017
Н	237m NW	Unspecified Works	1938 - 1948	981335
Р	243m W	Unspecified Works	1989	892866
Р	244m W	Unspecified Works	1976	872879
Н	245m NW	Engineering Works	1909 - 1914	974477
0	245m NW	Unspecified Works	1989	914964
Р	245m W	Unspecified Works	1969	985990
0	247m NW	Unspecified Works	1969	890768
Q	248m NW	Unspecified Works	1969	940565
0	248m NW	Unspecified Works	1960	855852
R	250m NW	Unspecified Heap	1914	803604
Q	255m NW	Engine Shed	1948	902516
Q	255m NW	Engine Shed	1909 - 1914	903518
Q	256m NW	Engine Shed	1938	929283
S	286m E	Unspecified Works	1960	970833
Т	287m SW	Unspecified Depot	1989	875842
Н	298m NW	Unspecified Depot	1976	855482
Н	298m NW	Unspecified Depot	1989	928870
Т	298m SW	Unspecified Depot	1976	930588
Н	300m NW	Unspecified Depot	1969	928157
R	301m N	Unspecified Heaps	1938	851878
R	301m NW	Unspecified Ground Workings	1960	799529





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ID	Location	Land use	Dates present	Group ID
S	308m E	Unspecified Depot	1989	872045
S	308m E	Unspecified Depot	1969 - 1976	922778
0	367m NW	Railway Sidings	1976	871043
0	367m NW	Railway Sidings	1989	982771
Н	369m NW	Unspecified Tank	1948	824031
Н	388m NW	Unspecified Tank	1989	909772
Н	389m NW	Unspecified Tank	1976	920982
Н	392m NW	Unspecified Tank	1969	953119
V	403m W	Disused Wire Works	1869	832059
Н	410m NW	Unspecified Tank	1948	824032
0	430m NW	Pump House	1909 - 1914	927763
Χ	431m W	Unspecified Depot	1976	870383
Χ	431m W	Unspecified Depot	1989	892504
Υ	432m W	Sawmill	1948	808343
Υ	433m W	Unspecified Mill	1960	810203
0	433m NW	Pump House	1938	843819
V	454m W	Corn Mill	1898	904360
J	465m NW	Unspecified Depot	1989	917877
J	465m NW	Unspecified Depot	1976	973810
J	466m NW	Unspecified Depot	1969	987919
AB	472m E	Unspecified Tanks	1948 - 1960	961480
AB	481m E	Unspecified Tank	1989	889318
AB	481m E	Unspecified Tank	1969 - 1976	953940

This data is sourced from Ordnance Survey / Groundsure.



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

1.2 Historical tanks

Records within 500m 60

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
С	On site	Tanks	1993	134080
С	On site	Tanks	1993	140270
С	On site	Tanks	1981	140843
С	On site	Tanks	1984	142945
С	On site	Tanks	1981	145137
С	On site	Tanks	1984	146813
D	On site	Unspecified Tank	1969 - 1983	131426
D	16m E	Unspecified Tank	1969 - 1992	124339
В	44m NW	Tanks	1984	145107
В	48m NW	Tanks	1993	139164
В	49m NW	Tanks	1981	137883
D	55m E	Tanks	1969 - 1983	132559
D	55m E	Unspecified Tank	1988	147167
D	55m E	Unspecified Tank	1992	148133
D	57m E	Unspecified Tank	1983 - 1988	126629
D	57m E	Unspecified Tank	1992	144859
D	58m E	Unspecified Tank	1969	125987
В	59m N	Unspecified Tank	1981	111678
В	71m N	Unspecified Tank	1981 - 1993	131777
В	78m NW	Unspecified Tank	1962 - 1969	122394
Е	91m NW	Unspecified Tank	1981 - 1993	134714





ID	Location	Land use	Dates present	Group ID
I	103m SW	Tanks	1993	104610
5	157m NW	Tanks	1981 - 1993	129103
L	192m SW	Tanks	1962 - 1969	139550
M	194m SW	Tanks	1969	104608
M	198m SW	Tanks	1969	104609
M	215m SW	Unspecified Tank	1981	111675
M	215m SW	Tanks	1992	104611
M	217m SW	Unspecified Tank	1981	111676
Ν	241m S	Unspecified Tank	1981 - 1992	125184
11	250m W	Tanks	1984 - 1993	143263
14	279m SW	Unspecified Tank	1981 - 1984	132085
15	281m N	Unspecified Tank	1980 - 1992	124325
Т	309m SW	Tanks	1981 - 1984	123726
16	312m N	Tanks	1980 - 1992	147390
17	330m NW	Tanks	1981 - 1984	147347
Н	333m NW	Unspecified Tank	1911	111679
Т	354m SW	Unspecified Tank	1981 - 1993	123356
Н	366m NW	Tanks	1911	104601
U	376m W	Tanks	1984 - 1993	136717
U	377m W	Tanks	1981	134728
U	382m W	Tanks	1993	135609
U	383m W	Tanks	1984	122815
U	383m W	Tanks	1981	139798
Н	388m NW	Tanks	1981	138180
Н	389m NW	Tanks	1984	144093
Н	392m NW	Unspecified Tank	1962 - 1969	148213
Н	394m NW	Unspecified Tank	1981 - 1984	147924
U	397m W	Tanks	1993	131546



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Land use	Dates present	Group ID
U	397m W	Unspecified Tank	1981	111764
W	410m S	Unspecified Tank	1981 - 1992	138105
19	410m W	Unspecified Tank	1981 - 1995	126045
W	421m S	Unspecified Tank	1992	111673
AA	442m E	Unspecified Tank	1992	111677
AA	446m E	Tanks	1992	104606
Р	461m W	Unspecified Tank	1981	142759
Р	461m W	Unspecified Tank	1995	135792
Р	476m W	Unspecified Tank	1981 - 1995	129637
0	491m NW	Tanks	1980 - 1992	145734
20	498m W	Tanks	1981 - 1995	143841

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m 14

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
Е	106m W	Electricity Substation	1969 - 1993	71886
K	164m SE	Electricity Substation	1983 - 1988	78913
K	170m SE	Electricity Substation	1992	80472
8	182m N	Electricity Substation	1993	60063
Ν	204m S	Electricity Substation	1992	60062
L	219m SW	Electricity Substation	1969 - 1984	68467
L	220m SW	Electricity Substation	1993	76963





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Land use	Dates present	Group ID
12	259m NW	Electricity Substation	1980 - 1992	80721
13	275m S	Electricity Substation	1992	60061
18	342m E	Electricity Substation	1992	60066
Н	420m NW	Power House	1911	63660
Р	436m W	Electricity Substation	1981 - 1995	79243
Z	439m E	Electricity Substation	1983 - 1988	64128
Z	440m E	Electricity Substation	1992	79766

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m 0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m 0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

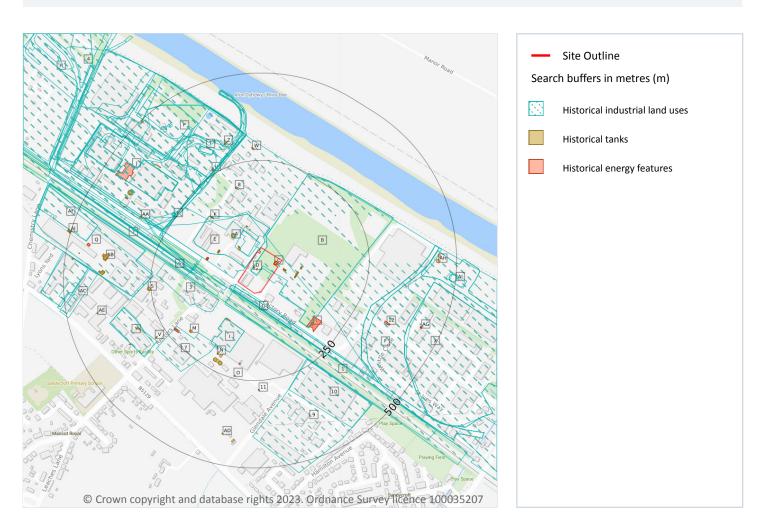
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.





2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m 93

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 23 >

ID	Location	Land Use	Date	Group ID
Α	On site	Unspecified Depot	1969	984152
Α	On site	Unspecified Depot	1989	920251
Α	On site	Unspecified Depot	1976	984152





ID	Location	Land Use	Date	Group ID
В	On site	Unspecified Works	1989	881656
В	On site	Unspecified Works	1976	982976
Е	1m N	Unspecified Factory	1960	821305
Α	8m S	Railway Sidings	1948	940526
А	10m N	Cheese Factory	1948	939848
F	13m S	Railway Sidings	1969	961262
F	13m S	Railway Sidings	1989	868782
F	13m S	Railway Sidings	1976	961262
F	13m S	Railway Sidings	1960	890455
Α	16m NW	Cheese Factory	1938	939848
G	21m S	Unspecified Pit	1914	839206
1	25m S	Cuttings	1948	795368
Н	29m S	Railway Sidings	1898	855202
Е	37m SW	Cuttings	1960	795402
Е	38m W	Unspecified Pit	1914	839204
G	55m SW	Unspecified Pit	1914	839205
2	64m SW	Unspecified Pit	1914	839209
3	74m SW	Unspecified Works	1969	830086
А	75m NW	Unspecified Tank	1989	882250
А	75m NW	Unspecified Tank	1976	858773
А	79m NW	Unspecified Tank	1969	926462
Е	93m W	Unspecified Pit	1914	839208
4	95m W	Railway Sidings	1869	947817
I	105m SW	Unspecified Warehouse	1989	935972
I	105m SW	Unspecified Warehouse	1976	984849
J	121m W	Railway Sidings	1969	957506
J	121m W	Railway Sidings	1960	917177
5	124m W	Railway Sidings	1898	947817





ID	Location	Land Use	Date	Group ID
J	128m W	Railway Sidings	1914	929950
Н	130m W	Railway Sidings	1909	977985
J	130m W	Railway Sidings	1938	986490
6	177m W	Railway Building	1938	819511
7	182m SW	Unspecified Works	1969	830087
9	232m SE	Unspecified Works	1976	856256
Р	233m NW	Unspecified Works	1976	900908
10	234m SE	Unspecified Works	1989	852609
Н	237m NW	Unspecified Works	1969	939017
Н	237m NW	Unspecified Works	1938	981335
Q	243m W	Unspecified Works	1989	892866
Н	244m NW	Unspecified Works	1948	981335
Q	244m W	Unspecified Works	1976	872879
Н	245m NW	Engineering Works	1914	974477
Р	245m NW	Unspecified Works	1989	914964
Q	245m W	Unspecified Works	1969	985990
Н	245m NW	Engineering Works	1909	974477
Р	247m NW	Unspecified Works	1969	890768
R	248m NW	Unspecified Works	1969	940565
Р	248m NW	Unspecified Works	1960	855852
Т	250m NW	Unspecified Heap	1914	803604
R	255m NW	Engine Shed	1948	902516
R	255m NW	Engine Shed	1914	903518
R	256m NW	Engine Shed	1938	929283
R	256m NW	Engine Shed	1909	903518
Χ	286m E	Unspecified Works	1960	970833
Υ	287m SW	Unspecified Depot	1989	875842
Н	298m NW	Unspecified Depot	1989	928870





ID	Location	Land Use	Date	Group ID
Н	298m NW	Unspecified Depot	1976	855482
Υ	298m SW	Unspecified Depot	1976	930588
Н	300m NW	Unspecified Depot	1969	928157
Т	301m N	Unspecified Heaps	1938	851878
Т	301m N	Unspecified Heaps	1938	851878
Т	301m NW	Unspecified Ground Workings	1960	799529
Χ	308m E	Unspecified Depot	1969	922778
Χ	308m E	Unspecified Depot	1989	872045
Χ	308m E	Unspecified Depot	1976	922778
Р	367m NW	Railway Sidings	1989	982771
Р	367m NW	Railway Sidings	1976	871043
Н	369m NW	Unspecified Tank	1948	824031
Н	388m NW	Unspecified Tank	1989	909772
Н	389m NW	Unspecified Tank	1976	920982
Н	392m NW	Unspecified Tank	1969	953119
AC	403m W	Disused Wire Works	1869	832059
Н	410m NW	Unspecified Tank	1948	824032
Р	430m NW	Pump House	1914	927763
AC	431m W	Unspecified Depot	1989	892504
AC	431m W	Unspecified Depot	1976	870383
Р	432m NW	Pump House	1909	927763
AF	432m W	Sawmill	1948	808343
AF	433m W	Unspecified Mill	1960	810203
Р	433m NW	Pump House	1938	843819
AC	454m W	Corn Mill	1898	904360
AC	461m W	Corn Mill	1898	904360
J	465m NW	Unspecified Depot	1989	917877
J	465m NW	Unspecified Depot	1976	973810



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Land Use	Date	Group ID
J	466m NW	Unspecified Depot	1969	987919
Al	472m E	Unspecified Tanks	1960	961480
Al	481m E	Unspecified Tank	1969	953940
Al	481m E	Unspecified Tank	1989	889318
Al	481m E	Unspecified Tank	1976	953940
ΑI	483m E	Unspecified Tanks	1948	961480

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m 91

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 23 >

ID	Location	Land Use	Date	Group ID
С	On site	Unspecified Tank	1969	131426
С	On site	Unspecified Tank	1983	131426
D	On site	Tanks	1993	140270
D	On site	Tanks	1993	134080
D	On site	Tanks	1981	145137
D	On site	Tanks	1981	140843
D	On site	Tanks	1984	142945
D	On site	Tanks	1984	146813
С	16m E	Unspecified Tank	1983	124339
С	16m E	Unspecified Tank	1988	124339
С	16m E	Unspecified Tank	1992	124339
С	17m E	Unspecified Tank	1969	124339
А	44m NW	Tanks	1984	145107
А	48m NW	Tanks	1993	139164





ID	Location	Land Use	Date	Group ID
А	49m NW	Tanks	1981	137883
С	55m E	Tanks	1983	132559
С	55m E	Unspecified Tank	1988	147167
С	55m E	Unspecified Tank	1992	148133
С	56m E	Tanks	1969	132559
С	57m E	Unspecified Tank	1983	126629
С	57m E	Unspecified Tank	1988	126629
С	57m E	Unspecified Tank	1992	144859
С	58m E	Unspecified Tank	1969	125987
Α	59m N	Unspecified Tank	1981	111678
Α	71m N	Unspecified Tank	1993	131777
Α	71m N	Unspecified Tank	1981	131777
Α	72m N	Unspecified Tank	1984	131777
Α	78m NW	Unspecified Tank	1969	122394
Α	78m NW	Unspecified Tank	1962	122394
Е	91m NW	Unspecified Tank	1993	134714
Е	91m NW	Unspecified Tank	1981	134714
Е	93m NW	Unspecified Tank	1984	134714
I	103m SW	Tanks	1993	104610
K	157m NW	Tanks	1981	129103
K	157m NW	Tanks	1993	129103
K	158m NW	Tanks	1984	129103
M	192m SW	Tanks	1962	139550
M	192m SW	Tanks	1969	139550
Ν	194m SW	Tanks	1969	104608
Ν	198m SW	Tanks	1969	104609
Ν	215m SW	Unspecified Tank	1981	111675
Ν	215m SW	Tanks	1992	104611





ID	Location	Land Use	Date	Group ID
Ν	217m SW	Unspecified Tank	1981	111676
0	241m S	Unspecified Tank	1992	125184
0	241m S	Unspecified Tank	1981	125184
S	250m W	Tanks	1993	143263
S	251m W	Tanks	1984	143263
V	279m SW	Unspecified Tank	1981	132085
V	279m SW	Unspecified Tank	1984	132085
W	281m N	Unspecified Tank	1980	124325
W	281m N	Unspecified Tank	1992	124325
Υ	309m SW	Tanks	1981	123726
Υ	310m SW	Tanks	1984	123726
Z	312m N	Tanks	1980	147390
Z	312m N	Tanks	1992	147390
AA	330m NW	Tanks	1981	147347
AA	330m NW	Tanks	1984	147347
Н	333m NW	Unspecified Tank	1911	111679
Υ	354m SW	Unspecified Tank	1981	123356
Υ	354m SW	Unspecified Tank	1993	123356
Υ	355m SW	Unspecified Tank	1984	123356
Н	366m NW	Tanks	1911	104601
AB	376m W	Tanks	1993	136717
AB	377m W	Tanks	1981	134728
АВ	377m W	Tanks	1984	136717
АВ	382m W	Tanks	1993	135609
АВ	383m W	Tanks	1984	122815
АВ	383m W	Tanks	1981	139798
Н	388m NW	Tanks	1981	138180
Н	389m NW	Tanks	1984	144093





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Land Use	Date	Group ID
Н	392m NW	Unspecified Tank	1962	148213
Н	392m NW	Unspecified Tank	1969	148213
Н	394m NW	Unspecified Tank	1981	147924
Н	394m NW	Unspecified Tank	1984	147924
AB	397m W	Tanks	1993	131546
AB	397m W	Unspecified Tank	1981	111764
AD	410m S	Unspecified Tank	1981	138105
AE	410m W	Unspecified Tank	1981	126045
AD	410m S	Unspecified Tank	1992	138105
AE	410m W	Unspecified Tank	1995	126045
AD	421m S	Unspecified Tank	1992	111673
АН	442m E	Unspecified Tank	1992	111677
АН	446m E	Tanks	1992	104606
Q	461m W	Unspecified Tank	1981	142759
Q	461m W	Unspecified Tank	1995	135792
Q	476m W	Unspecified Tank	1981	129637
Q	476m W	Unspecified Tank	1995	129637
Р	491m NW	Tanks	1992	145734
Р	492m NW	Tanks	1980	145734
AJ	498m W	Tanks	1995	143841
AJ	498m W	Tanks	1981	143841

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m 23

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 23 >





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Land Use	Date	Group ID
Е	106m W	Electricity Substation	1993	71886
Е	107m W	Electricity Substation	1969	71886
Е	108m W	Electricity Substation	1981	71886
Е	109m W	Electricity Substation	1984	71886
L	164m SE	Electricity Substation	1983	78913
L	164m SE	Electricity Substation	1988	78913
L	170m SE	Electricity Substation	1992	80472
8	182m N	Electricity Substation	1993	60063
Ο	204m S	Electricity Substation	1992	60062
M	219m SW	Electricity Substation	1981	68467
M	219m SW	Electricity Substation	1969	68467
M	220m SW	Electricity Substation	1984	68467
M	220m SW	Electricity Substation	1993	76963
U	259m NW	Electricity Substation	1992	80721
U	259m NW	Electricity Substation	1980	80721
11	275m S	Electricity Substation	1992	60061
12	342m E	Electricity Substation	1992	60066
Н	420m NW	Power House	1911	63660
Q	436m W	Electricity Substation	1995	79243
Q	436m W	Electricity Substation	1981	79243
AG	439m E	Electricity Substation	1983	64128
AG	439m E	Electricity Substation	1988	64128
AG	440m E	Electricity Substation	1992	79766

This data is sourced from Ordnance Survey / Groundsure.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

0

2.4 Historical petrol stations

Records within 500m

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m 0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

3 Waste and landfill



3.1 Active or recent landfill

Records within 500m 0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m 0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



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3.3 Historical landfill (LA/mapping records)

Records within 500m 0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m 0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m 5

Waste site records derived from Local Authority planning records and high detail historical mapping. Features are displayed on the Waste and landfill map on page 33 >

ID	Location	Address	Further Details	Date
Α	13m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1980
А	103m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1993
I	366m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1984





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Address	Further Details	Date
M	455m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1980
M	458m NW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1995

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m 31

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation. Features are displayed on the Waste and landfill map on page-33 >

ID	Location	Details		
1	79m N	Site Name: Trident Metals Ltd Site Address: Factory Road West, Sandycroft, Deeside, Flintshire, CH5 2DD Correspondence Address: Factory Road West, Sandycroft, Deeside, Flintshire, CH5 2DD	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRI001 EPR reference: - Operator: Trident Metals Ltd Waste Management licence No: 37074 Annual Tonnage: 0	Issue Date: 30/06/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
E	173m N	Site Name: Trident Metals Ltd Site Address: Trident Metals Ltd, Factory Road West, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRI001 EPR reference: EA/EPR/GP3894FB/V004 Operator: Trident Metals Limited Waste Management licence No: 37074 Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: - Modified: 23/01/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
Е	173m N	Site Name: Trident Metals Ltd Site Address: Trident Metals Ltd, Factory Road West, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: TRI001 EPR reference: GP3894FB/V004 Operator: Trident Metals Limited Waste Management licence No: 37074 Annual Tonnage: 0	Issue Date: 30/06/1993 Effective Date: - Modified: 23/01/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
E	173m N	Site Name: - Site Address: Trident Commercial Holdings Limited Trading As Trident Metals, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3894FB EPR reference: - Operator: - Waste Management licence No: 37074 Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: 30/06/1993 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
E	173m N	Site Name: - Site Address: Trident Commercial Holdings Limited Trading As Trident Metals, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3894FB EPR reference: - Operator: Trident Commercial Holdings Limited Waste Management licence No: 0 Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: 30/06/1993 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
Е	173m N	Site Name: - Site Address: Trident Commercial Holdings Limited Trading As Trident Metals, Flintshire, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3894FB EPR reference: - Operator: Trident Commercial Holdings Limited Waste Management licence No: 37074 Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: 30/06/1993 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
Е	173m N	Site Name: - Site Address: Trident Commercial Holdings Limited Trading As Trident Metals, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: - Environmental Permitting Regulations (Waste) Licence Number: GP3894FB EPR reference: - Operator: Trident Commercial Holdings Limited Waste Management licence No: - Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: 30/06/1993 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
E	173m N	Site Name: - Site Address: Trident Commercial Holdings Limited Trading As Trident Metals, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: - Environmental Permitting Regulations (Waste) Licence Number: GP3894FB EPR reference: - Operator: Trident Commercial Holdings Limited Waste Management licence No: - Annual Tonnage: 24999	Issue Date: 30/06/1993 Effective Date: 30/06/1993 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
Е	174m N	Site Name: Trident Commercial Holdings Limited Trading As Trident Metals Site Address: Factory Road West, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: TRI001 EPR reference: GP3894FB/V005 Operator: Trident Commercial Holdings Limited Waste Management licence No: 37074 Annual Tonnage: 0	Issue Date: 30/06/1993 Effective Date: - Modified: 19/08/2015 Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Modified
Н	254m NW	Site Name: Chadwicks Metal Processing Facility Site Address: Chadwicks Metal Processing Facility, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CHA006 EPR reference: WP3194FL/V002 Operator: Susan Joan Chadwick & Frances Susan Crump Waste Management licence No: 37219 Annual Tonnage: 4999	Issue Date: 12/01/2001 Effective Date: - Modified: 10/03/2006 Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Modified





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
Н	254m NW	Site Name: - Site Address: Chadwicks Metal Processing Facility, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: WP3194FL EPR reference: - Operator: - Waste Management licence No: 37219 Annual Tonnage: 0	Issue Date: 12/01/2001 Effective Date: 12/01/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
Н	254m NW	Site Name: - Site Address: Chadwicks Metal Processing Facility, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: WP3194FL EPR reference: - Operator: Susan Joan Chadwick & Frances Susan Crump Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 12/01/2001 Effective Date: 12/01/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
Н	254m NW	Site Name: - Site Address: Chadwicks Metal Processing Facility, Sandycroft, Flintshire, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: WP3194FL EPR reference: - Operator: Susan Joan Chadwick & Frances Susan Crump Waste Management licence No: 37219 Annual Tonnage: 0	Issue Date: 12/01/2001 Effective Date: 12/01/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
Н	254m NW	Site Name: - Site Address: Chadwicks Metal Processing Facility, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: - Environmental Permitting Regulations (Waste) Licence Number: WP3194FL EPR reference: - Operator: Susan Joan Chadwick & Frances Susan Crump Waste Management licence No: - Annual Tonnage: 0	Issue Date: 12/01/2001 Effective Date: 12/01/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
Н	254m NW	Site Name: - Site Address: Chadwicks Metal Processing Facility, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: - Environmental Permitting Regulations (Waste) Licence Number: WP3194FL EPR reference: - Operator: Susan Joan Chadwick & Frances Susan Crump Waste Management licence No: - Annual Tonnage: 0	Issue Date: 12/01/2001 Effective Date: 12/01/2001 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
I	398m W	Site Name: A & A Car Dismantlers Site Address: Dundas Sidings, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2DD Correspondence Address: 26, Boundary Lane, Saltney, Chester, CH4 8LW	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CHA003 EPR reference: - Operator: Chadwick S J Waste Management licence No: 37110 Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
I	398m NW	Site Name: A & A Car Dismantlers Site Address: Dundas Sidings, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CHA003 EPR reference: HP3194FC/A001 Operator: Chadwick James John Waste Management licence No: 37110 Annual Tonnage: 300	Issue Date: 07/07/1994 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Revoked
I	398m NW	Site Name: - Site Address: A & A Car Dismantlers, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: HP3194FC EPR reference: - Operator: - Waste Management licence No: 37110 Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: 07/07/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked



01273 257 755



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
I	398m NW	Site Name: - Site Address: A & A Car Dismantlers, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: HP3194FC EPR reference: - Operator: James John Chadwick Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: 07/07/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked
l	398m NW	Site Name: - Site Address: A & A Car Dismantlers, Sandycroft, Flintshire, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: HP3194FC EPR reference: - Operator: James John Chadwick Waste Management licence No: 37110 Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: 07/07/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked
I	398m NW	Site Name: - Site Address: A & A Car Dismantlers, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: - Environmental Permitting Regulations (Waste) Licence Number: HP3194FC EPR reference: - Operator: James John Chadwick Waste Management licence No: - Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: 07/07/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked
ı	398m NW	Site Name: - Site Address: A & A Car Dismantlers, Sandycroft, Deeside, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: - Environmental Permitting Regulations (Waste) Licence Number: HP3194FC EPR reference: - Operator: James John Chadwick Waste Management licence No: - Annual Tonnage: 0	Issue Date: 07/07/1994 Effective Date: 07/07/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked



01273 257 755



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
1	410m NW	Site Name: Queensferry Depot Site Address: Manweb Cfc Removal, Central Stores, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Physical Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: FP3194FH/A001 Operator: S P Manweb Plc Waste Management licence No: 37120 Annual Tonnage: 50000	Issue Date: 14/10/1994 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued
I	411m NW	Site Name: Queensferry Depot Site Address: Manweb Cfc Removal, Central Stores, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Physical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: EA/EPR/FP3194FH/A001 Operator: S P Manweb Plc Waste Management licence No: 37120 Annual Tonnage: 50000	Issue Date: 14/10/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
ı	411m NW	Site Name: - Site Address: Queensferry Depot, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Physical Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FP3194FH EPR reference: - Operator: - Waste Management licence No: 37120 Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: 14/10/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
ı	411m NW	Site Name: - Site Address: Queensferry Depot, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FP3194FH EPR reference: - Operator: S P Manweb Plc Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: 14/10/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective



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Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
I	411m NW	Site Name: - Site Address: Queensferry Depot, Factory Road, Flintshire, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FP3194FH EPR reference: - Operator: S P Manweb Plc Waste Management licence No: 37120 Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: 14/10/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
I	411m NW	Site Name: - Site Address: Queensferry Depot, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Physical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: FP3194FH EPR reference: - Operator: S P Manweb Plc Waste Management licence No: - Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: 14/10/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
I	411m NW	Site Name: - Site Address: Queensferry Depot, Factory Road, Sandycroft, Flintshire, CH5 2QJ Correspondence Address: -	Type of Site: Physical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: FP3194FH EPR reference: - Operator: S P Manweb Plc Waste Management licence No: - Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: 14/10/1994 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
I	433m NW	Site Name: Manweb C F C Removal Site Address: C F C Treatment, Central Stores, Factory Road, Sandycroft, CH1 4LR Correspondence Address: C F C Treatment, Central Stores, Factory Road, Sandycroft, CH1 6LR	Type of Site: Physical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: - Operator: Scotish Power Manweb Plc Waste Management licence No: 37120 Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details		
I	433m NW	Site Name: Manweb C F C Removal Site Address: C F C Treatment, Central Stores, Factory Road, Sandycroft, CH1 4LR Correspondence Address: C F C Treatment, Central Stores, Factory Road, Sandycroft, CH1 6LR	Type of Site: Physical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: - Operator: Sp Manweb Plc Waste Management licence No: 37120 Annual Tonnage: 0	Issue Date: 14/10/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m 156

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on page 33 >

ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Treating waste exemption	Not on a farm	Recovery of textiles
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Treating waste exemption	Not on a farm	Manual treatment of waste
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Treating waste exemption	Not on a farm	Recovery of scrap metal
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Using waste exemption	Not on a farm	Use of baled end-of-life tyres in construction
В	42m NW	Endurmeta Itd, Unit A-D deva ind park, factory Road, Deeside, CH5 2QJ	NRW- WME071220	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Treating waste exemption	Not on a Farm	Preparatory treatments (baling, sorting, shredding etc)
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Treating waste exemption	Not on a Farm	Recovery of textiles
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Treating waste exemption	Not on a Farm	Manual treatment of waste
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Treating waste exemption	Not on a Farm	Recovery of scrap metal
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Treating waste exemption	Not on a Farm	Sorting mixed waste
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Storing waste exemption	Not on a Farm	Storage of waste in a secure place
В	42m NW	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX158042	Storing waste exemption	Not on a Farm	Storage of waste in secure containers
В	42m NW	MAN COED VM LTD, Factory Road, Sandycroft, UNIT B, Deeside, Flintshire, CH52QJ	NRW- WME065907	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
В	42m NW	Safer Surfacing Ltd, Sandycroft, Factory Road, Deeside, CH5 2QJ	WEX132158	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	Safer Surfacing Ltd, Sandycroft, Factory Road, Deeside, CH5 2QJ	WEX132158	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
В	42m NW	Centrica Business Solutions (UK) Ltd, Scottishpower, Queensferry Depot, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	NRW- WME051020	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Manual treatment of waste
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Recovery of textiles
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Recovery of scrap metal
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	SAFER SURFACING LTD, UNIT A-D DEVA INDUSTRIAL ESTATE, FACTORY ROAD, DEESIDE, DEESIDE, CH5 2QJ	NRW- WME046571	Treating waste exemption	Not on a farm	Sorting mixed waste





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Dwr Cymru Cyfyngedig, Dwr Cymru Queensferry Wastewater Treatment Works, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	NRW- WME040491	Treating waste exemption	Not on a farm	Recovery of waste at a waste water treatment works
В	42m NW	ENER.G Combined heat and power, Scottishpower, Queensferry Depot, Factory Road, Sandycroft, Glannau Dyfrdwy, CH52QJ	NRW- WME019742	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Sorting mixed waste
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Treatment of waste toner cartridges by sorting, dismantling, cleaning or refilling
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Physical treatment of waste edible oil and fat to produce biodiesel





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Recovery of textiles
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Screening and blending of waste
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Treating waste exemption	Not on a farm	Recovery of scrap metal
В	42m NW	Reclaimed Plastic Polymers Ltd, Unit 7, Deva Industrial Park off Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME023863	Using waste exemption	Not on a farm	Use of waste in construction
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Using waste exemption	Not on a farm	Use of baled end-of-life tyres in construction





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Recovery of scrap metal
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Treatment of waste aerosol cans
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Sorting mixed waste
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Manual treatment of waste
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Treatment of waste toner cartridges by sorting, dismantling, cleaning or refilling
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
В	42m NW	3 Recycling Ltd, Unit A-D, Factory Road, Deeside, Cheshire, CH52QJ	NRW- WME025993	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	Trade Effluent Services Ltd, Unit 1, Factory Road, Deeside, Flintshire, CH52QJ	NRW- WME028692	Using waste exemption	Not on a farm	Use of waste in construction
В	42m NW	Safer Surfacing Ltd, Unit B, Deva Industrial Estate, Factory Road, Sandycroft, Deeside, CH52QJ	NRW- WME031186	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Safer Surfacing Ltd, Unit B, Deva Industrial Estate, Factory Road, Sandycroft, Deeside, CH52QJ	NRW- WME031186	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	MAN COED VM LTD, Factory Road, Sandycroft, UNIT B, Deeside, Flintshire, CH52QJ	NRW- WME032266	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
В	42m NW	SAFER SURFACING LTD, YARD A DEVA INDUSTRIAL ESTATE, SANDYCROFT, Deeside, Deeside, Cheshire, CH52QJ	NRW- WME032822	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	SAFER SURFACING LTD, YARD A DEVA INDUSTRIAL ESTATE, SANDYCROFT, Deeside, Deeside, Cheshire, CH52QJ	NRW- WME032822	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	SAFER SURFACING LTD, Safer Surfacing Ltd, Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME032908	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
В	42m NW	SAFER SURFACING LTD, Safer Surfacing Ltd, Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME032908	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	Hollingsworth Bros Uk Ltd, Hollingsworth Bros., Land South of Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME034288	Using waste exemption	Not on a farm	Use of waste in construction
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Storing waste exemption	Not on a farm	Storage of waste in secure containers
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Treating waste exemption	Not on a farm	Manual treatment of waste
В	42m NW	Endurmeta Itd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Storing waste exemption	Not on a farm	Storage of waste in a secure place
В	42m NW	Endurmeta Itd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Treating waste exemption	Not on a farm	Sorting mixed waste
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Treating waste exemption	Not on a farm	Recovery of scrap metal
В	42m NW	Endurmeta ltd, Unit A-D deva ind park, Factory road, Deeside, CH52QJ	NRW- WME036814	Treating waste exemption	Not on a farm	Recovery of textiles
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Cleaning, washing, spraying or coating relevant waste
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Non-Agricultural	Recovery of textiles
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Preparatory treatments (baling, sorting, shredding etc)
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Mechanical treatment of end-of-life tyres
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Recovery of scrap metal
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Sorting mixed waste
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Treating waste exemption	Waste Exemption - Non-Agricultural	Manual treatment of waste
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Storing waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Storage of waste in secure containers





ID	Location	Site	Reference	Category	Sub-Category	Description
В	42m NW	Land off, Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME001381	Storing waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Storage of waste in a secure place
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Treating waste exemption	Waste Exemption - Non-Agricultural	Screening and blending of waste
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Treating waste exemption	Waste Exemption - Non-Agricultural	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Using waste exemption	Waste Exemption - Non-Agricultural	Use of waste in construction
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Using waste exemption	Waste Exemption - Non-Agricultural	Use of waste in the construction of entertainment or educational installations etc
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Using waste exemption	Waste Exemption - Non-Agricultural	Spreading waste on agricultural land to confer benefit
В	42m NW	Hollingsworth Bros (UK) LTD, LAND south of Factory Road, Deeside, Flintshire, CH5 2QJ	NRW- WME002182	Using waste exemption	Waste Exemption - Non-Agricultural	Spreading waste on non- agricultural land to confer benefit
В	42m NW	Factory Road, Sandycroft, Deeside, Flintshire, CH52QJ	NRW- WME003296	Treating waste exemption	Waste Exemption - Non-Agricultural	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Storing waste exemption	Not on a Farm	Storage of waste in a secure place
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Storing waste exemption	Not on a Farm	Storage of waste in secure containers
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Treating waste exemption	Not on a Farm	Manual treatment of waste





ID	Location	Site	Reference	Category	Sub-Category	Description
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Treating waste exemption	Not on a Farm	Sorting mixed waste
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Treating waste exemption	Not on a Farm	Recovery of scrap metal
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Treating waste exemption	Not on a Farm	Preparatory treatments (baling, sorting, shredding etc)
С	46m W	UNIT C&D, FACTORY ROAD, SANDYCROFT, DEESIDE, CH5 2QJ	WEX293442	Treating waste exemption	Not on a Farm	Recovery of textiles
С	46m W	Safer Surfacing Ltd, Sandycroft, Factory Road, Deeside, CH5 2QJ	WEX271715	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
С	46m W	Safer Surfacing Ltd, Sandycroft, Factory Road, Deeside, CH5 2QJ	WEX271715	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
D	121m SE	Trade Effluent Services Ltd, 6 Factory Road, Sandycroft, Deeside, Flintshire, CH52DD	NRW- WME028361	Using waste exemption	Not on a farm	Use of waste in construction
D	121m SE	Trade Effluent Services Ltd, 6 Factory Road, Sandycroft, Deeside, Flintshire, CH52DD	NRW- WME028362	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	191m N	Recyclan Ltd, Units 6 and 7, Deva Industrial Park, Factory Road, Sandycroft, Deeside, CH5 2QJ	NRW- WME073452	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)





ID	Location	Site	Reference	Category	Sub-Category	Description
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Storing waste exemption	Not on a farm	Storage of waste in secure containers
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Treating waste exemption	Not on a farm	Recovery of textiles
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
F	191m N	Reclaimed Plastic Polymers Ltd, UNIT 7, DEVA INDUSTRIAL PARK, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	NRW- WME054529	Treating waste exemption	Not on a farm	Sorting mixed waste
2	221m N	Endurmeta Itd, Unit A-D deva ind park, Factory Road, Deeside, Deeside, Flintshire, CH5 2QJ	NRW- WME066364	Treating waste exemption	Not on a farm	Treatment of waste toner cartridges by sorting, dismantling, cleaning or refilling
G	222m S	AM RECYCLING, Unit 1, Glendale Avenue, Sandycroft Industrial Estate, Glannau Dyfrdwy, CH5 2QP	NRW- WME066804	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	222m S	AM RECYCLING, Unit 1, Glendale Avenue, Sandycroft Industrial Estate, Glannau Dyfrdwy, CH5 2QP	NRW- WME066804	Storing waste exemption	Not on a farm	Storage of waste in a secure place
J	380m S	AM RECYCLING, Unit 1, Glendale Avenue, Glannau Dyfrdwy, CH52QP	NRW- WME004869	Storing waste exemption	Not on a farm	Storage of waste in a secure place
J	380m S	AM RECYCLING, Unit 1, Glendale Avenue, Glannau Dyfrdwy, CH52QP	NRW- WME004869	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
J	380m S	AM RECYCLING, Unit 5, Glendale Avenue, DEESIDE, FLINTSHIRE, CH52QP	NRW- WME028859	Storing waste exemption	Not on a farm	Storage of waste in a secure place





ID	Location	Site	Reference	Category	Sub-Category	Description
J	380m S	AM RECYCLING, Unit 1, Glendale Avenue, Sandycroft Industrial Estate, Glannau Dyfrdwy, CH52QP	NRW- WME034127	Storing waste exemption	Not on a farm	Storage of waste in a secure place
J	380m S	AM RECYCLING, Unit 1, Glendale Avenue, Sandycroft Industrial Estate, Glannau Dyfrdwy, CH52QP	NRW- WME034127	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
J	380m S	Glendale Avenue, Sandycroft Industrial Estate, Deeside, Flintshire, CH5 2QP	NRW- WME001169	Treating waste exemption	Waste Exemption - Non-Agricultural	Anaerobic digestion at premises not used for agriculture and burning of resultant biogas
K	393m SE	Clarke Technologies Ltd, Unit AD, Deva Industrial Estate, Factory Road, SandyCroft, Deeside, CH5 2QY	WEX077586	Storing waste exemption	Not on a farm	Storage of waste in a secure place
K	393m SE	Clarke Technologies Ltd, Unit AD, Deva Industrial Estate, Factory Road, SandyCroft, Deeside, CH5 2QY	WEX077586	Treating waste exemption	Not on a farm	Sorting mixed waste
K	393m SE	Clarke Technologies Ltd, Unit AD, Deva Industrial Estate, Factory Road, SandyCroft, Deeside, CH5 2QY	WEX077586	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
K	393m SE	Clarke Technologies Ltd, Unit AD, Deva Industrial Estate, Factory Road, SandyCroft, Deeside, CH5 2QY	WEX077586	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
K	393m SE	R N Roberts & Sons Ltd, R N Roberts & Sons Ltd, Whittle Close, Engineering park, Sandycroft, Flintshire, ch52qy	NRW- WME008374	Disposing of waste exemption	Not on a farm	Burning waste in the open
K	393m SE	R N Roberts & Sons Ltd, R N Roberts & Sons Ltd, Whittle Close, Engineering park, Sandycroft, Flintshire, ch52qy	NRW- WME008374	Using waste exemption	Not on a farm	Use of waste in construction





ID	Location	Site	Reference	Category	Sub-Category	Description
K	393m SE	3 Recycling Ltd, Clarke Techologies Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Sandycroft, Deeside, Deeside, CH52QY	NRW- WME019874	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
K	393m SE	3 Recycling Ltd, Clarke Techologies Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Sandycroft, Deeside, Deeside, CH52QY	NRW- WME019874	Storing waste exemption	Not on a farm	Storage of waste in a secure place
K	393m SE	3 Recycling Ltd, Clarke Techologies Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Sandycroft, Deeside, Deeside, CH52QY	NRW- WME019874	Treating waste exemption	Not on a farm	Sorting mixed waste
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Treatment of waste toner cartridges by sorting, dismantling, cleaning or refilling
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Manual treatment of waste
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Storing waste exemption	Not on a farm	Storage of waste in secure containers
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Treatment of waste aerosol cans





ID	Location	Site	Reference	Category	Sub-Category	Description
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Treatment of waste food
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Using waste exemption	Not on a farm	Use of baled end-of-life tyres in construction
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Sorting mixed waste
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Recovery of scrap metal
K	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Storing waste exemption	Not on a farm	Storage of waste in a secure place
К	393m SE	3 Recycling Ltd, 300 Recycling Ltd, Unit A-D, Deva Industrial Estate, Factory Road, Deeside, Deeside, CH52QY	NRW- WME021111	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Disposing of waste exemption	Not on a farm	Disposal by incineration





ID	Location	Site	Reference	Category	Sub-Category	Description
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Storing waste exemption	Not on a farm	Storage of waste in secure containers
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Treating waste exemption	Not on a farm	Sorting mixed waste
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Treating waste exemption	Not on a farm	Manual treatment of waste
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Using waste exemption	Not on a farm	Burning of waste as a fuel in a small appliance
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Using waste exemption	Not on a farm	Use of waste for a specified purpose
L	399m E	12, BABBAGE ROAD, ENGINEER PARK, SANDYCROFT, DEESIDE, CH5 2QD	WEX086591	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Treating waste exemption	Not on a farm	Sorting mixed waste
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Using waste exemption	Not on a farm	Burning of waste as a fuel in a small appliance





ID	Location	Site	Reference	Category	Sub-Category	Description
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Disposing of waste exemption	Not on a farm	Disposal by incineration
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Using waste exemption	Not on a farm	Use of waste for a specified purpose
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Treating waste exemption	Not on a farm	Manual treatment of waste
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Storing waste exemption	Not on a farm	Storage of waste in secure containers
L	414m E	Salvtech LTD, 12 Babbage Road, Engineer Park, Sandycroft, Glannau Dyfrdwy, Flintshire, CH5 2QD	NRW- WME049613	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
N	476m SE	United Air Power Ltd, United Air Power Ltd, Whittle Close, Factory Road, Sandycroft, Deeside, Flintshire, CH52QE	NRW- WME026738	Storing waste exemption	Not on a farm	Storage of waste in a secure place
N	476m SE	United Air Power Ltd, United Air Power Ltd, Whittle Close, Factory Road, Sandycroft, Deeside, Flintshire, CH52QE	NRW- WME026738	Storing waste exemption	Not on a farm	Storage of waste in secure containers





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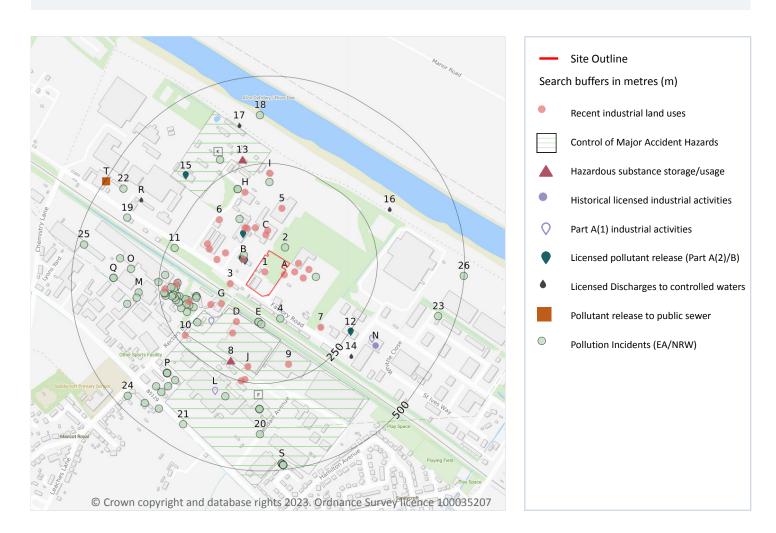
This data is sourced from the Environment Agency and Natural Resources Wales.





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4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m 34

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Company	Address	Activity	Category
1	On site	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
А	4m E	Trade Effluent Services Ltd	Links Commerce Park, Factory Road, Sandycroft, Clwyd, CH5 2QJ	Waste Storage, Processing and Disposal	Infrastructure and Facilities
А	25m E	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features





ID	Location	Company	Address	Activity	Category
А	25m E	P P A Ltd	Unit 1, Links Commerce Park, Factory Road, Sandycroft, Clwyd, CH5 2DD	Aeroplanes	Industrial Products
В	46m NW	CMA	Plot 5b Factory Road, Sandycroft, Deeside, Clwyd, CH5 2QJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
3	46m W	The Powerhouse Auto Ltd	-, Factory Road, Sandycroft, Clwyd, CH5 2QJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
С	46m N	Works	Clwyd, CH5	Unspecified Works Or Factories	Industrial Features
А	54m E	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
С	57m N	Chestnut Motors	Units 1-3, Factory Road, Sandycroft, Clwyd, CH5 2QJ	New Vehicles	Motoring
А	58m E	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
С	76m N	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
G	89m SW	Dynamix Concrete	-, Rectors Lane, Sandycroft, Clwyd, CH5 2DN	Concrete Products	Industrial Products
С	90m NW	Works	Clwyd, CH5	Unspecified Works Or Factories	Industrial Features
С	95m NW	Trident Metals	-, Factory Road, Sandycroft, Clwyd, CH5 2QJ	Scrap Metal Merchants	Recycling Services
В	99m NW	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
D	102m SW	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
В	109m W	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
G	116m SW	Sealand Van Hire	Unit 3 Rectors Yard, Rectors Lane, Sandycroft, Clwyd, CH5 2DH	Vehicle Hire and Rental	Hire Services
5	126m N	Hoppers	Clwyd, CH5	Hoppers and Silos	Farming
D	134m SW	F M C Agro Ltd	Headland Agrochemicals Ltd, Rectors Lane, Sandycroft, Clwyd, CH5 2DH	Agricultural Contractors	Contract Services
В	143m NW	Chimney	Clwyd, CH5	Chimneys	Industrial Features
В	156m NW	Fireprotect Chester Ltd	-, Factory Road, Sandycroft, Clwyd, CH5 2QJ	Special Purpose Machinery and Equipment	Industrial Products
6	166m NW	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features





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ID	Location	Company	Address	Activity	Category
G	171m W	Sandycroft M O T Centre	-, Rectors Lane, Sandycroft, Clwyd, CH5 2DH	Vehicle Repair, Testing and Servicing	Repair and Servicing
7	174m SE	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
Н	181m N	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
G	198m W	Chimney	Clwyd, CH5	Chimneys	Industrial Features
J	206m S	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
9	206m S	Allan Morris Transport Ltd	Unit 1 Glendale Avenue, Sandycroft Industrial Estate, Sandycroft, Deeside, Clwyd, CH5 2QP	Distribution and Haulage	Transport, Storage and Delivery
I	221m N	Endurmeta	300 Recycling Ltd, Factory Road, Sandycroft, Clwyd, CH5 2QJ	Recycling, Reclamation and Disposal	Recycling Services
10	226m SW	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
G	233m W	Works	Clwyd, CH5	Unspecified Works Or Factories	Industrial Features
J	244m S	Tank	Clwyd, CH5	Tanks (Generic)	Industrial Features
J	249m S	Chimney	Clwyd, CH5	Chimneys	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m 0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m 0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.



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4.4 Gas pipelines

Records within 500m 0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m 0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Company	Address	Operational status	Tier
D	74m SW	Headland Agrochemic als Limited	Headland Agrochemicals Limited, Deeside, Rectors Lane, Pentre, Deeside, Flintshire, CH5 2DH	Historical COMAH Site	COMAH Upper Tier Operator
D	78m SW	FMC Agro Limited	FMC Agro Limited, Deeside, Rectors Lane, Pentre, Deeside, Flintshire, CH5 2DH	Current COMAH Site	COMAH Upper Tier Operator
F	79m SW	Shopspec	North West Seelings Ltd (t/a Shopspec), Glendale Park, Sandycroft Ind Est, Flintshire, CH5 2QP	Historical NIHHS Site	-
K	220m N	Cambrian Gas Limited	Cambrian Gas Limited, HQ/Factory Road, Factory Road Industrial Estate, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	Current COMAH Site	COMAH Lower Tier Operator

This data is sourced from the Health and Safety Executive.



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4.7 Regulated explosive sites

Records within 500m 0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Details	
8	205m SW	Application reference number: No Details Application status: Approved Application date: 18/03/2013 Address: FMC Agro Limited, Rectors Lane, Pentre, Deeside, Flintshire, Wales, CH5 2DH	Details: Hazardous Substances consent for agricultural chemical manufacture and storage Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
13	271m N	Application reference number: HS/0010 Application status: Approved Application date: 05/12/2008 Address: Cambrian Gas Ltd, Factory Road Industrial Estate, Factory Road, Sandycroft, Deeside, Flintshire, Wales, CH5 2QJ	Details: Liquified Petroleum Gas 199.9 tonnes Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m 4

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

Features are displayed on the Current industrial land use map on page 60 >





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
N	333m SE	Operator: J Reid Trading Ltd Address: The Laboratories, Factory Road, Sandycroft, Deeside, Clwyd, CH5 2QJ Process: Incineration Permit Number: AH1234	Original Permit Number: IPCAPP Date Approved: 29-12-1993 Effective Date: 29-12-1993 Status: Superseded By Variation
N	333m SE	Operator: J Reid Trading Ltd Address: The Laboratories, Factory Road, Sandycroft, Deeside, Clwyd, CH5 2QJ Process: Incineration Permit Number: AM8431	Original Permit Number: IPCMINVAR Date Approved: 13-6-1995 Effective Date: 23-6-1995 Status: Superseded By Variation
N	333m SE	Operator: J Reid Trading Ltd Address: The Laboratories, Factory Road, Sandycroft, Deeside, Clwyd, CH5 2QJ Process: Incineration Permit Number: AW9846	Original Permit Number: IPCMINVAR Date Approved: 2-12-1996 Effective Date: 6-12-1996 Status: Superseded By Variation
N	333m SE	Operator: J Reid Trading Ltd Address: The Laboratories, Factory Road, Sandycroft, Deeside, Clwyd, CH5 2QJ Process: Incineration Permit Number: BD7367	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m 35

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Details	
G	144m SW	Operator: HEADLAND AGROCHEMICALS LIMITED Installation Name: PENTRE AGROCHEMICALS PLANT EPR/FP3031CW Process: PRODUCING INORGANIC CHEMICALS SUCH AS: (IV) SALTS SUCH AS AMMONIUM CHLORIDE, POT Permit Number: FP3031CW Original Permit Number: FP3031CW	EPR Reference: - Issue Date: 27/09/2013 Effective Date: 27/09/2013 Last date noted as effective: 01/04/2018 Status: EFFECTIVE





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
G	144m SW	Operator: HEADLAND AGROCHEMICALS LIMITED Installation Name: PENTRE AGROCHEMICALS PLANT EPR/FP3031CW Process: - Permit Number: FP3031CW Original Permit Number: FP3031CW	EPR Reference: - Issue Date: 27/09/2013 Effective Date: 27/09/2013 Last date noted as effective: 01/12/2016 Status: EFFECTIVE
G	144m SW	Operator: HEADLAND AGROCHEMICALS LIMITED Installation Name: PENTRE AGROCHEMICALS PLANT EPR/FP3031CW Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: DP3836AE Original Permit Number: FP3031CW	EPR Reference: - Issue Date: 08/10/2015 Effective Date: 08/10/2015 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
G	144m SW	Operator: HEADLAND AGROCHEMICALS LIMITED Installation Name: PENTRE AGROCHEMICALS PLANT EPR/FP3031CW Process: INORGANIC CHEMICALS; SALTS EG AMMONIUM CHLORIDE Permit Number: FP3031CW Original Permit Number: FP3031CW	EPR Reference: - Issue Date: 27/09/2013 Effective Date: 27/09/2013 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	144m SW	Operator: FMC Agro Limited Installation Name: Pentre Agrochemicals Plant EPR/FP3031CW Process: PRODUCING INORGANIC CHEMICALS SUCH AS: (IV) SALTS (FOR EXAMPLE AMMONIUM CHLORIDE, POTASSIUM CHLORATE, POTASSIUM CARBONATE, SODIUM CARBONATE, PERBORATE, SILVER NITRATE, CUPRIC ACETATE, AMMONIUM PHOSPHOMOLYBDATE) Permit Number: FP3031CW Original Permit Number: -	EPR Reference: - Issue Date: 26/02/2020 Effective Date: 26/02/2020 Last date noted as effective: 25/05/2023 Status: Effective
L	303m SW	Operator: 2 Sisters Food Group Limited Installation Name: Sandycroft Poultry Processing Process: DISPOSAL OF NON-HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 50 TONNES PER DAY (OR 100 TONNES PER DAY IF THE ONLY WASTE TREATMENT ACTIVITY IS ANAEROBIC DIGESTION) INVOLVING ONE OR MORE OF THE FOLLOWING ACTIVITIES, AND EXCLUDING ACTIVITIES COVERED BY COUNCIL DIRECTIVE 91/271/EEC CONCERNING URBAN WASTE- WATER TREATMENT(4)—PHYSICO-CHEMICAL TREATMENT Permit Number: YP3632EM Original Permit Number: -	EPR Reference: - Issue Date: 22/10/2019 Effective Date: 24/11/2019 Last date noted as effective: 25/05/2023 Status: Effective



01273 257 755



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
L	303m SW	Operator: 2 Sisters Food Group Limited Installation Name: Sandycroft Poultry Processing Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW MATERIALS, WHETHER PREVIOUSLY PROCESSED OR UNPROCESSED, INTENDED FOR THE PRODUCTION OF FOOD OR FEED (WHERE THE WEIGHT OF THE FINISHED PRODUCT EXCLUDES PACKAGING)—ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) WITH A FINISHED PRODUCT PRODUCTION CAPACITY GREATER THAN 75 TONNES PER DAY Permit Number: YP3632EM Original Permit Number: -	EPR Reference: - Issue Date: 22/10/2019 Effective Date: 24/11/2019 Last date noted as effective: 25/05/2023 Status: Effective
L	303m SW	Operator: 2 Sisters Food Group Limited Installation Name: Sandycroft Poultry Processing Process: SLAUGHTERING ANIMALS AT A PLANT WITH A CARCASS PRODUCTION CAPACITY OF MORE THAN 50 TONNES PER DAY. Permit Number: YP3632EM Original Permit Number: -	EPR Reference: - Issue Date: 22/10/2019 Effective Date: 24/11/2019 Last date noted as effective: 25/05/2023 Status: Effective
L	303m SW	Operator: 2 SISTERS POULTRY LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: - Permit Number: YP3632EM Original Permit Number: YP3632EM	EPR Reference: - Issue Date: 05/02/2014 Effective Date: 05/02/2014 Last date noted as effective: 01/12/2016 Status: EFFECTIVE
L	303m SW	Operator: 2 SISTERS POULTRY LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: TREATMENT AND PROCESSING (OTHER THAN PACKAGING) OF ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) INTENDED FOR PRODUCTION OF FOOD OR FEED WITH A FINISHED PRODUCT CAPACITY GREATER THAN 75 T/D Permit Number: ZP3933AT Original Permit Number: YP3632EM	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 17/11/2015 Status: REFUSED
L	303m SW	Operator: MARSHALL FOOD GROUP Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL, VEGETABLE AND FOOD; SLAUGHTERING ANIMALS >50 T/DAY Permit Number: UP3135LL Original Permit Number: BU2101IL	EPR Reference: - Issue Date: 09/03/2006 Effective Date: 09/03/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED



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ID	Location	Details	
L	303m SW	Operator: MARSHALL FOOD GROUP LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC ANIMAL RAW MATERIALS (NOT MILK) FOR FOOD >75T/D Permit Number: BU2101IL Original Permit Number: BU2101IL	EPR Reference: - Issue Date: 28/02/2005 Effective Date: 28/02/2005 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: 2 SISTERS POULTRY LIMITED Installation Name: SANDYCROFT POULTRY EPR/YP3632EM Process: TREATMENT AND PROCESSING (OTHER THAN PACKAGING) OF ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) INTENDED FOR PRODUCTION OF FOOD OR FEED WITH A FINISHED PRODUCT CAPACITY GREATER THAN 75 T/D Permit Number: YP3632EM Original Permit Number: YP3632EM	EPR Reference: - Issue Date: 05/02/2014 Effective Date: 05/02/2014 Last date noted as effective: 17/11/2015 Status: TRANSFER EFFECTIVE
L	303m SW	Operator: VION FOOD WALES & WEST ENGLAND LTD Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL, VEGETABLE AND FOOD; SLAUGHTERING ANIMALS >50 T/DAY Permit Number: AP3633HT Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 24/08/2010 Effective Date: 24/08/2010 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: VION FOOD WALES & WEST ENGLAND LTD Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL, VEGETABLE AND FOOD; SLAUGHTERING ANIMALS >50 T/DAY Permit Number: BP3835HA Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 28/09/2010 Effective Date: 28/09/2010 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: VION FOOD WALES & WEST ENGLAND LTD Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL, VEGETABLE AND FOOD; SLAUGHTERING ANIMALS >50 T/DAY Permit Number: BP3935ZN Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 28/11/2012 Effective Date: 28/11/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: 2 SISTERS POULTRY LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: SLAUGHTERING ANIMALS AT PLANT WITH A CARCASS PRODUCTION CAPACITY OF MORE THAN 50 Permit Number: YP3632EM Original Permit Number: YP3632EM	EPR Reference: - Issue Date: 05/02/2014 Effective Date: 05/02/2014 Last date noted as effective: 01/04/2018 Status: EFFECTIVE





ID	Location	Details	
L	303m SW	Operator: WW&E (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 01/07/2013 Status: EFFECTIVE
L	303m SW	Operator: W&WE (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL, VEGETABLE AND FOOD; SLAUGHTERING ANIMALS >50 T/DAY Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: W&WE (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: ASSOCIATED PROCESS Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: W&WE (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO- CHEMICAL TREATMENT Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
L	303m SW	Operator: W&WE (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: TREATMENT AND PROCESSING (OTHER THAN PACKAGING) OF ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) INTENDED FOR PRODUCTION OF FOOD OR FEED WITH A FINISHED PRODUCT CAPACITY GREATER THAN 75 T/D Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: SUPERCEDED





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
L	303m SW	Operator: WW&E (WALES AND WEST ENGLAND) LIMITED Installation Name: SANDYCROFT POULTRY PROCESSING Process: TREATMENT AND PROCESSING (OTHER THAN PACKAGING) OF ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) INTENDED FOR PRODUCTION OF FOOD OR FEED WITH A FINISHED PRODUCT CAPACITY GREATER THAN 75 T/D Permit Number: RP3936ZK Original Permit Number: AP3633HT	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 01/07/2013 Status: EFFECTIVE
L	303m SW	Operator: CYMRU COUNTRY CHICKENS LTD Installation Name: SANDYCROFT POULTRY PROCESSING Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC ANIMAL RAW MATERIALS (NOT MILK) FOR FOOD >75T/D Permit Number: UP3135LL Original Permit Number: BU2101IL	EPR Reference: - Issue Date: 09/03/2006 Effective Date: 09/03/2006 Last date noted as effective: 02/10/2009 Status: EFFECTIVE
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J Reid Trading Ltd EPR/MP3531MD/V003 Process: - Permit Number: MP3531MD Original Permit Number: -	EPR Reference: - Issue Date: 03/03/2022 Effective Date: 03/03/2022 Last date noted as effective: 25/05/2023 Status: Effective
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J Reid Trading Ltd EPR/MP3531MD/V003 Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING ONE OR MORE OF THE FOLLOWING ACTIVITIES - REPACKAGING PRIOR TO SUBMISSION TO ANY OTHER ACTIVITIES IN THIS SECTION OR IN SECTION 5.1 Permit Number: MP3531MD Original Permit Number: -	EPR Reference: - Issue Date: 03/03/2022 Effective Date: 03/03/2022 Last date noted as effective: 25/05/2023 Status: Effective
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD EA/EPR/MP3531MD/V002 Process: OTHER WASTE DISPOSAL; HAZARDOUS WASTE >10T/D Permit Number: YP3837FR Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 21/12/2011 Effective Date: 21/12/2011 Last date noted as effective: 17/11/2015 Status: SUPERCEDED



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Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD EA/EPR/MP3531MD/V002 Process: OTHER WASTE DISPOSAL; HAZARDOUS WASTE >10T/D Permit Number: MP3231GK Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 06/10/2009 Effective Date: 06/10/2009 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD Process: OTHER WASTE DISPOSAL; HAZARDOUS WASTE >10T/D Permit Number: MP3531MD Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 19/04/2007 Effective Date: 19/04/2007 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: REFRIGERANT TRANSFER OPERATION EPR/MP3531MD Process: ASSOCIATED PROCESS Permit Number: ZP3031ZC Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 22/03/2013 Effective Date: 22/03/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: REFRIGERANT TRANSFER OPERATION EPR/MP3531MD Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1 Permit Number: ZP3031ZC Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 22/03/2013 Effective Date: 22/03/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD EPR/MP3531MD/V003 Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1 Permit Number: ZP3031ZC Original Permit Number: MP3531MD	EPR Reference: - Issue Date: 22/03/2013 Effective Date: 22/03/2013 Last date noted as effective: 01/07/2013 Status: EFFECTIVE
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD EPR/MP3531MD/V003 Process: - Permit Number: MP3531MD Original Permit Number: ZP3031ZC	EPR Reference: - Issue Date: 22/03/2013 Effective Date: 22/03/2013 Last date noted as effective: 01/12/2016 Status: EFFECTIVE





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
N	314m SE	Operator: J REID TRADING LIMITED Installation Name: J REID TRADING LTD EPR/MP3531MD/V003 Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER Permit Number: MP3531MD Original Permit Number: ZP3031ZC	EPR Reference: - Issue Date: 22/03/2013 Effective Date: 22/03/2013 Last date noted as effective: 26/10/2020 Status: EFFECTIVE
Т	495m NW	Operator: TOYOTA MOTOR MANUFACTURING UK LTD Installation Name: - Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BK6483 Original Permit Number: BK6483	EPR Reference: - Issue Date: 20/12/2002 Effective Date: 20/12/2002 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m 5

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Address	Details	
В	40m NW	Mcalpine Business Services, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	Process: Engineering Works Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
В	51m NW	Waste Oil Burner, Carillion, Prospect House, CH5 2QJ	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
С	86m NW	Trident Metals, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	Process: Various Aluminium Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
12	251m SE	Spraytone Ltd, Factory Road, Sandycroft, Flintshire, CH5 2QJ	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Address	Details	
15	320m NW	Durable Castings Ltd, Factory Road, Sandycroft, Deeside, Flintshire, CH5 2QJ	Process: Non-ferrous Metal Foundry Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m 5

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991. Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Address	Details	
14	293m SE	DEESIDE SANDYCROFT ENGINEER PARK IN, DEESIDE SANDYCROFT ENGINEER PARK, SANDYCROFT ENGINEER PARK INDUSTR, ENGINEER PARK INDUSTRIAL ESTAT	Effluent Type: UNSPECIFIED Permit Number: CM0086001 Permit Version: 1 Receiving Water: TRIB.OF SANDYCROFT DRAIN	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 05/09/1979 Effective Date: 05/09/1979 Revocation Date: 17/06/1996
16	324m NE	PENTRE FACTORY ROAD, FACTORY ROAD	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0034101 Permit Version: 1 Receiving Water: DEE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 22/06/1966 Effective Date: 22/06/1966 Revocation Date: 15/12/1992
17	368m N	TILCON LTD FACTORY ROAD SANDYC	Effluent Type: UNSPECIFIED Permit Number: CM0163001 Permit Version: 1 Receiving Water: LAND	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 02/11/1988 Effective Date: 02/11/1988 Revocation Date: 26/04/1995





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ID	Location	Address	Details	
R	383m NW	FACTORY ROAD, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: WQD007720 Permit Version: 0 Receiving Water: RIVER DEE	Status: Effective Issue date: 14/08/2009 Effective Date: 14/08/2009 Revocation Date: -
R	383m NW	FACTORY ROAD, SANDYCROFT, DEESIDE, FLINTSHIRE, CH5 2QJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: NPSWQD007720 Permit Version: 1 Receiving Water: RIVER DEE	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 14/08/2009 Effective Date: 14/08/2009 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m 0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m 1

Discharges of Special Category Effluents to the public sewer.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Address	Details	
Т	495m NW	TOYOTA MOTOR MANUFACTURING UK LTD, TM (UK) ENGINE PLANT, DEESIDE INDUSTRIAL PARK, DEESIDE, CLWYD, CH5 2TW	Permission reference: AU5858 Local Authority: FLINTSHIRE COUNTY COUNCIL First received date: 01/06/2001	Last received date: 01/07/2017 Status: RECEIVED

This data is sourced from the Environment Agency and Natural Resources Wales.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

4.16 List 1 Dangerous Substances

Records within 500m 0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m 0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m 93

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on page 60 >

ID	Location	Details	
2	32m NE	Incident Date: 09/08/2003 Incident Identification: 180516 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
В	51m NW	Incident Date: 22/07/2014 Incident Identification: 1259193 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
Е	74m S	Incident Date: 13/10/2016 Incident Identification: 1606230 Pollutant: - Pollutant Description: -	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: Category 3 (Minor)
E	74m S	Incident Date: 13/10/2016 Incident Identification: 1606230 Pollutant: Sewage Material Pollutant Description: Other Sewage Material	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: Category 3 (Minor)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
4	74m S	Incident Date: 27/08/2015 Incident Identification: 1368613 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
E	80m S	Incident Date: 30/10/2002 Incident Identification: 117695 Pollutant: Agricultural Materials and Wastes Pollutant Description: Other Agricultural Material or Waste	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
А	83m E	Incident Date: 14/06/2021 Incident Identification: 2105111 Pollutant: Oils and Fuels Pollutant Description: Mixed/Waste Oils	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: No Details
С	123m NW	Incident Date: 29/04/2013 Incident Identification: 1107640 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	145m W	Incident Date: 06/06/2002 Incident Identification: 83192 Pollutant: Atmospheric Pollutants and Effects:Pollutant Not Identified Pollutant Description: Other Atmospheric Pollutant or Effect:Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	145m W	Incident Date: 06/06/2002 Incident Identification: 83192 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	145m W	Incident Date: 06/06/2002 Incident Identification: 83192 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	146m W	Incident Date: 11/05/2002 Incident Identification: 78087 Pollutant: Inert Materials and Wastes Pollutant Description: Mineral Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
G	163m SW	Incident Date: 26/04/2002 Incident Identification: 75118 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
G	170m W	Incident Date: 27/03/2015 Incident Identification: 1324077 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Droplets	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	172m W	Incident Date: 31/05/2013 Incident Identification: 1117535 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	175m SW	Incident Date: 05/11/2001 Incident Identification: 41162 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
G	178m W	Incident Date: 25/07/2015 Incident Identification: 1358470 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	179m W	Incident Date: 19/09/2014 Incident Identification: 1279219 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	185m SW	Incident Date: 08/09/2014 Incident Identification: 1275157 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	193m W	Incident Date: 15/10/2015 Incident Identification: 1380901 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	197m W	Incident Date: 27/09/2013 Incident Identification: 1162695 Pollutant: Multiple Pollutants Pollutant Description: 2 Pollutants Including Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	197m W	Incident Date: 18/08/2015 Incident Identification: 1365778 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Н	197m N	Incident Date: 30/12/2016 Incident Identification: 1607619 Pollutant: - Pollutant Description: -	Water Impact: No Details Land Impact: Category 3 (Minor) Air Impact: No Details





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
Н	197m N	Incident Date: 30/12/2016 Incident Identification: 1607619 Pollutant: Inert Materials and Waste Pollutant Description: Other Inert Material or Waste	Water Impact: No Details Land Impact: Category 3 (Minor) Air Impact: No Details
1	197m N	Incident Date: 09/03/2018 Incident Identification: 1801245 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: No Details Land Impact: No Details Air Impact: Category 2 (Significant)
G	199m W	Incident Date: 23/06/2014 Incident Identification: 1248215 Pollutant: Multiple Pollutants Pollutant Description: 2 Pollutants Including Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	200m W	Incident Date: 10/08/2013 Incident Identification: 1146287 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	201m W	Incident Date: 16/07/2013 Incident Identification: 1134275 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	204m W	Incident Date: 27/04/2013 Incident Identification: 1107176 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Soot/Smuts	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	205m W	Incident Date: 23/06/2015 Incident Identification: 1347912 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	206m W	Incident Date: 12/03/2014 Incident Identification: 1216947 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	207m W	Incident Date: 25/06/2013 Incident Identification: 1125781 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Damage to Buildings, Vehicles and Vegetation	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	211m W	Incident Date: 11/07/2014 Incident Identification: 1255038 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
G	214m W	Incident Date: 28/11/2013 Incident Identification: 1179568 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	215m W	Incident Date: 18/04/2014 Incident Identification: 1228381 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11	230m W	Incident Date: 28/09/2015 Incident Identification: 1376454 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	232m W	Incident Date: 17/02/2016 Incident Identification: 1411988 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	233m W	Incident Date: 23/01/2014 Incident Identification: 1197344 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	233m W	Incident Date: 10/05/2013 Incident Identification: 1111462 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	235m W	Incident Date: 26/04/2013 Incident Identification: 1106989 Pollutant: Multiple Pollutants Pollutant Description: 2 Pollutants Including Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	251m W	Incident Date: 26/04/2013 Incident Identification: 1106990 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	295m NW	Incident Date: 12/06/2015 Incident Identification: 1344552 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	304m S	Incident Date: 11/11/2015 Incident Identification: 1387136 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



01273 257 755



ID	Location	Details	
M	307m W	Incident Date: 09/06/2003 Incident Identification: 164502 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
Μ	315m W	Incident Date: 19/11/2015 Incident Identification: 1389206 Pollutant: Oils and Fuel Pollutant Description: Cutting Oils	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
F	322m S	Incident Date: 22/07/2014 Incident Identification: 1259118 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	322m S	Incident Date: 07/08/2014 Incident Identification: 1266009 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	322m S	Incident Date: 21/07/2014 Incident Identification: 1258455 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	322m S	Incident Date: 25/07/2014 Incident Identification: 1260658 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
0	333m W	Incident Date: 02/09/2015 Incident Identification: 1370021 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 05/06/2013 Incident Identification: 1119315 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 06/08/2013 Incident Identification: 1144622 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 29/09/2013 Incident Identification: 1163346 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
Р	338m SW	Incident Date: 04/06/2013 Incident Identification: 1118938 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 17/06/2013 Incident Identification: 1123338 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 16/07/2015 Incident Identification: 1355818 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 11/06/2015 Incident Identification: 1344515 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 10/04/2013 Incident Identification: 1101506 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 30/08/2015 Incident Identification: 1369241 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Blood and Offal	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 08/09/2013 Incident Identification: 1157507 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	338m SW	Incident Date: 30/09/2013 Incident Identification: 1163509 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	340m SW	Incident Date: 06/06/2013 Incident Identification: 1119746 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
M	344m W	Incident Date: 09/06/2003 Incident Identification: 164486 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
Р	366m SW	Incident Date: 25/08/2013 Incident Identification: 1151969 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
0	369m W	Incident Date: 13/03/2014 Incident Identification: 1217688 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Q	380m W	Incident Date: 16/03/2016 Incident Identification: 1600971 Pollutant: - Pollutant Description: -	Water Impact: No Details Land Impact: No Details Air Impact: Category 3 (Minor)
Q	380m W	Incident Date: 16/03/2016 Incident Identification: 1600971 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: No Details Land Impact: No Details Air Impact: Category 3 (Minor)
Р	388m SW	Incident Date: 24/07/2014 Incident Identification: 1260378 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
18	389m N	Incident Date: 12/09/2001 Incident Identification: 30440 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
19	390m W	Incident Date: 17/07/2014 Incident Identification: 1257396 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	390m SW	Incident Date: 08/04/2013 Incident Identification: 1100585 Pollutant: Multiple Pollutants Pollutant Description: 2 Pollutants Including Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
20	394m S	Incident Date: 01/09/2014 Incident Identification: 1273035 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
21	430m SW	Incident Date: 04/04/2013 Incident Identification: 1099472 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
Р	432m SW	Incident Date: 02/09/2015 Incident Identification: 1369849 Pollutant: - Pollutant Description: -	Water Impact: - Land Impact: - Air Impact: -
22	443m NW	Incident Date: 15/04/2015 Incident Identification: 1329057 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Р	444m SW	Incident Date: 11/03/2014 Incident Identification: 1216739 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
23	450m E	Incident Date: 22/04/2013 Incident Identification: 1105088 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
24	464m SW	Incident Date: 18/06/2013 Incident Identification: 1123585 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
25	478m W	Incident Date: 15/10/2013 Incident Identification: 1167691 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	481m S	Incident Date: 30/05/2013 Incident Identification: 1117391 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	481m S	Incident Date: 01/09/2013 Incident Identification: 1154550 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	481m S	Incident Date: 13/09/2013 Incident Identification: 1159189 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	481m S	Incident Date: 09/09/2013 Incident Identification: 1157946 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Details	
S	486m S	Incident Date: 16/08/2013 Incident Identification: 1148455 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 25/09/2013 Incident Identification: 1162324 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 17/10/2013 Incident Identification: 1168513 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 03/09/2013 Incident Identification: 1155510 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 27/08/2013 Incident Identification: 1152771 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 01/07/2013 Incident Identification: 1127501 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 19/09/2013 Incident Identification: 1160479 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 09/09/2015 Incident Identification: 1371899 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
S	486m S	Incident Date: 24/09/2013 Incident Identification: 1161995 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
26	499m E	Incident Date: 23/06/2003 Incident Identification: 168177 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

4.19 Pollution inventory substances

Records within 500m 0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m 0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.





5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m 1

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on page 86 >

ID	Location	Designation	Description
1	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

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m 1

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on page 87 >

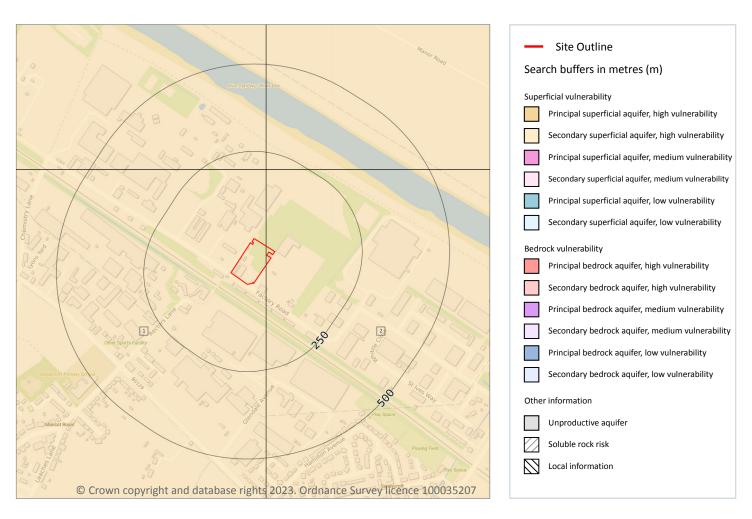
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.





Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m 2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium Intermediate between high and low vulnerability.
- Low Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on page 88 >





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Summary	Soil / surface Superficial geolo		Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site 0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site 0

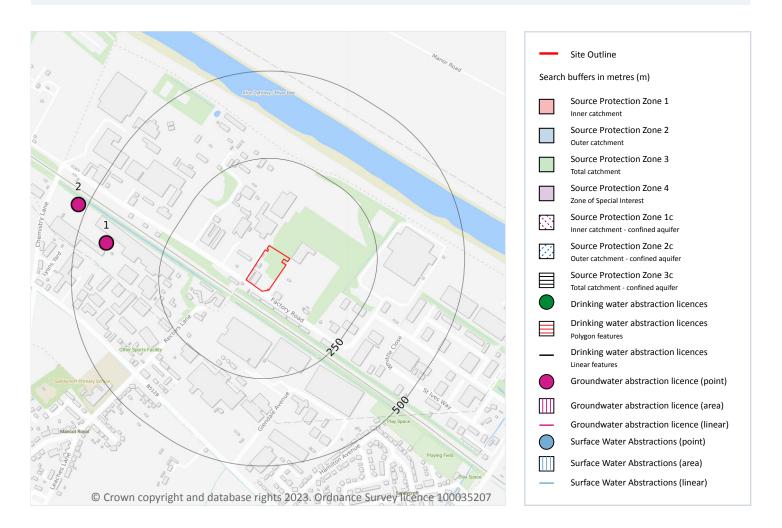
This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.





Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m 6

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on page 90 >





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
1	413m W	Status: Historical Licence No: 24/67/10/0106 Details: Process water Direct Source: EAW Groundwater Point: WELL B Data Type: Point Name: Knauf Insulation Ltd Easting: 332500 Northing: 367810	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 15/12/1983 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2003 Version End Date: -
2	526m W	Status: Historical Licence No: 24/67/10/0106 Details: Process water Direct Source: EAW Groundwater Point: WELL A Data Type: Point Name: Knauf Insulation Ltd Easting: 332420 Northing: 367920	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 15/12/1983 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2003 Version End Date: -
-	811m E	Status: Historical Licence No: 24/67/10/0112 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Archimica Limited Easting: 333760 Northing: 367420	Annual Volume (m³): 119814 Max Daily Volume (m³): 327.36 Original Application No: - Original Start Date: 16/08/1988 Expiry Date: 31/03/2008 Issue No: 106 Version Start Date: 01/07/2006 Version End Date: -
-	811m E	Status: Historical Licence No: 24/67/10/0154 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Archimica Limited Easting: 333760 Northing: 367420	Annual Volume (m³): 119814 Max Daily Volume (m³): 327.36 Original Application No: - Original Start Date: 01/04/2008 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -
-	936m E	Status: Historical Licence No: 24/67/10/0141 Details: Spray Irrigation - Direct Direct Source: EAW Groundwater Point: REACH A - A ON THE SEALAND MAIN DRAIN Data Type: Line Name: WT Banks & Co. (Farming) Ltd. Easting: 333960 Northing: 367720	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 01/08/2003 Expiry Date: 31/03/2014 Issue No: 1 Version Start Date: 01/08/2003 Version End Date: -





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	Details	
-	976m N	Status: Historical Licence No: 24/67/10/0046 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Jones Balers Ltd Easting: 332780 Northing: 368760	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 24/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 06/06/1967 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m 8

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on page 90 >

ID	Location	Details	
-	931m E	Status: Historical Licence No: WA/067/0010/011 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: SEALAND MAIN DRAIN Data Type: Line Name: WT Banks & Co (Farming) Ltd Easting: 333955 Northing: 367720	Annual Volume (m³): 67962.7 Max Daily Volume (m³): 1227.42 Original Application No: - Original Start Date: 30/07/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 26/11/2014 Version End Date: -
-	931m E	Status: Historical Licence No: WA/067/0010/011 Details: Spray Irrigation - Direct - High Direct Source: - Point: - Data Type: Line Name: - Easting: 333955 Northing: 367720	Annual Volume (m³): 67962.7 Max Daily Volume (m³): 2727.6 Original Application No: - Original Start Date: 26/11/2014 Expiry Date: 31/03/2027 Issue No: - Version Start Date: - Version End Date: -





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
-	936m E	Status: Historical Licence No: 24/67/10/0129 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: REACH A TO A AT SEALAND MAIN DRAIN Data Type: Line Name: Banks Easting: 333960 Northing: 367720	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 31/07/1998 Expiry Date: 31/07/2003 Issue No: 100 Version Start Date: 01/04/2001 Version End Date: -
-	936m E	Status: Historical Licence No: 24/67/10/0141 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: REACH A-A ON THE SEALAND MAIN DRAIN Data Type: Line Name: WT Banks & Co (Farming) Ltd Easting: 333960 Northing: 367720	Annual Volume (m³): 104558 Max Daily Volume (m³): 1227.42 Original Application No: - Original Start Date: 01/08/2003 Expiry Date: 31/03/2014 Issue No: 2 Version Start Date: 19/07/2010 Version End Date: -
-	1291m E	Status: Historical Licence No: 24/67/10/0103 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: SEALAND MAIN DRAIN POINT C Data Type: Point Name: Jones Balers Ltd Easting: 334300 Northing: 367970	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 17/11/1987 Expiry Date: - Issue No: 100 Version Start Date: 27/04/1989 Version End Date: -
-	1311m N	Status: Historical Licence No: 24/67/10/0103 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: MANOR DRAIN POINT B Data Type: Point Name: Jones Balers Ltd Easting: 333370 Northing: 369050	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 17/11/1987 Expiry Date: - Issue No: 100 Version Start Date: 27/04/1989 Version End Date: -
-	1507m NE	Status: Historical Licence No: 24/67/10/0103 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: MANOR DRAIN POINT B Data Type: Point Name: Jones Balers Ltd Easting: 334300 Northing: 368570	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 17/11/1987 Expiry Date: - Issue No: 100 Version Start Date: 27/04/1989 Version End Date: -



01273 257 755



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Details	
-	1883m NE	Status: Historical Licence No: 24/67/10/0102 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: WATERLOO DRAIN Data Type: Line Name: Williams Easting: 334930 Northing: 368470	Annual Volume (m³): 12274 Max Daily Volume (m³): 355 Original Application No: - Original Start Date: 17/09/1980 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m 0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m 0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



Date: 23 November 2023

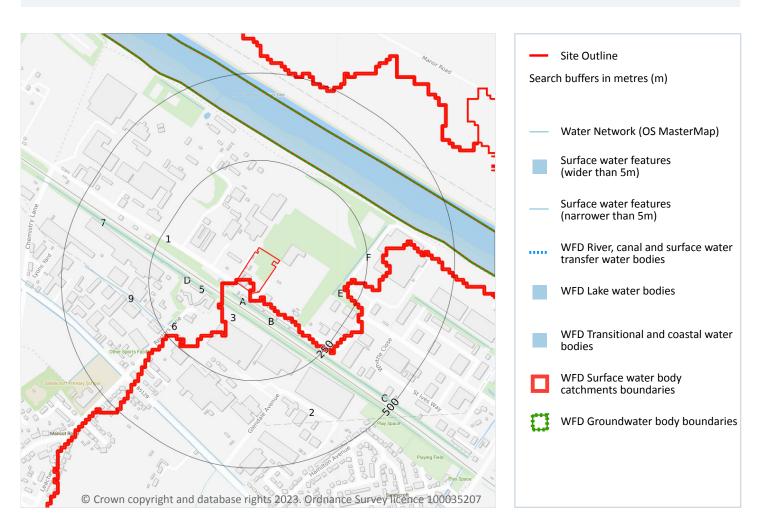
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6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m 14

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on page 95 >

ID	Location	Type of water feature	Ground level	Permanence	Name
А	32m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-





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ID	Location	Type of water feature	Ground level	Permanence	Name
В	33m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
В	68m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	76m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
С	146m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	152m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	152m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	178m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	191m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	212m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	219m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	219m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
С	241m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
9	242m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



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6.2 Surface water features

Records within 250m 7

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on page 95 >

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site 2

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on page 95 >

ID	Location	Туре	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	Coastal catchment	Not part of a river WB catchment	166	Dee Estuary	Dee
2	On site	River WB catchment	Sandycroft Drain	GB111067052160	Dee Estuary	Dee

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified 1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on page 95 >





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ID	Location	Туре	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	761m SE	River	Sandycroft Drain	GB111067052160	Moderate	Good	Moderate	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site 1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on page 95 >

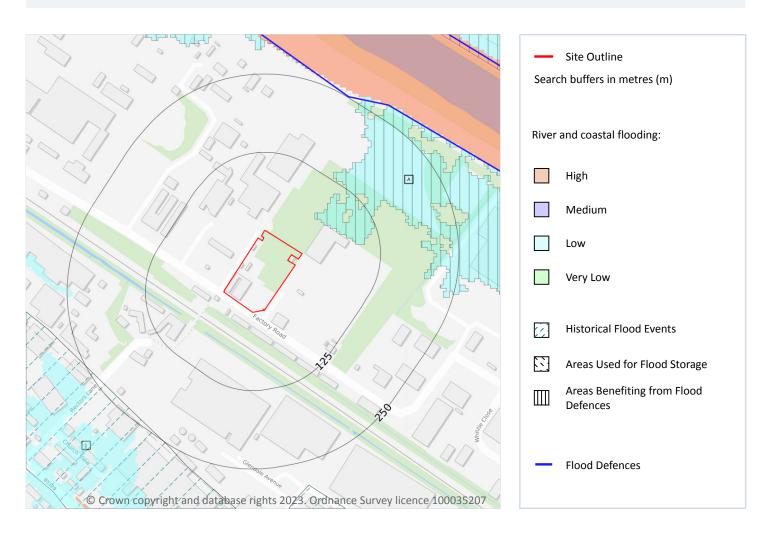
ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year	
3	On site	Dee Carboniferous Coal Measures	GB41102G204800	Poor	Poor	Good	2017	

This data is sourced from the Environment Agency and Natural Resources Wales.





7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m 0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.



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7.2 Historical Flood Events

Records within 250m 1

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on page 99 >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	238m SW	Queensferry Drain September 1976	1976-09-26 1976-09-27	Main river	Channel capacity exceeded (no raised defences)	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m 0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m 1

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on page 99 >

This data is sourced from the Environment Agency and Natural Resources Wales.







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7.5 Flood Storage Areas

Records within 250m 0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.





River and coastal flooding - Flood Zones



7.6 Flood Zone 2

Records within 50m 1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on page 99 >

Location Type
On site Zone 2 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.





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1

7.7 Flood Zone 3

Records within 50m

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on page 99 >

Location	Туре
On site	Zone 3 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.





8 Surface water flooding



8.1 Surface water flooding

1 in 100 year, 0.1m - 0.3m Highest risk on site

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Date: 23 November 2023

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on page 104 >

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.







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The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.





9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

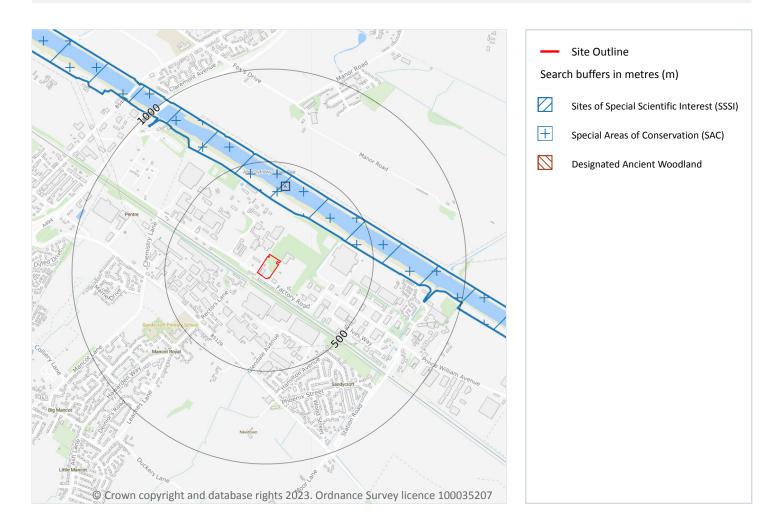
Features are displayed on the Groundwater flooding map on page 106 >

This data is sourced from Ambiental Risk Analytics.





10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m 1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were renotified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on page 107 >

I	D	Location	Name	Data source
A	A	259m NE	Afon Dyfrdwy (River Dee)	Natural Resources Wales





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This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m 0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m 1

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

Features are displayed on the Environmental designations map on page 107 >

ID	Location	Name	Features of interest	Habitat description	Data source
A	259m NE	River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales)	Rivers with floating vegetation often dominated by water-crowfoot; Mixed woodland on base-rich soils associated with rocky slopes; Western acidic oak woodland; Alder woodland on floodplains; Sea lamprey; Brook lamprey; River lamprey; Twaite shad; Atlantic salmon; Bullhead; Freshwater pearl mussel; Otter; Floating water-plantain.	Broad-leaved deciduous woodland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Improved grassland; Inland water bodies (Standing water, Running water); Salt marshes, Salt pastures, Salt steppes	Natural Resource s Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.





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10.4 Special Protection Areas (SPA)

Records within 2000m 0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m 2

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on page 107 >

ID	Location	Name	Woodland Type
-	1560m SW	Unknown	Restored Ancient Woodland Site
-	1825m N	Unknown	Ancient Semi Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



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10.8 Biosphere Reserves

Records within 2000m 0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m 0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m 0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m 0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m 0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.



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10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m 0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m 0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m 0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m 4

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Туре	NVZ ID	Status
548m N	Shotwick Brook NVZ	Surface Water	708	Existing





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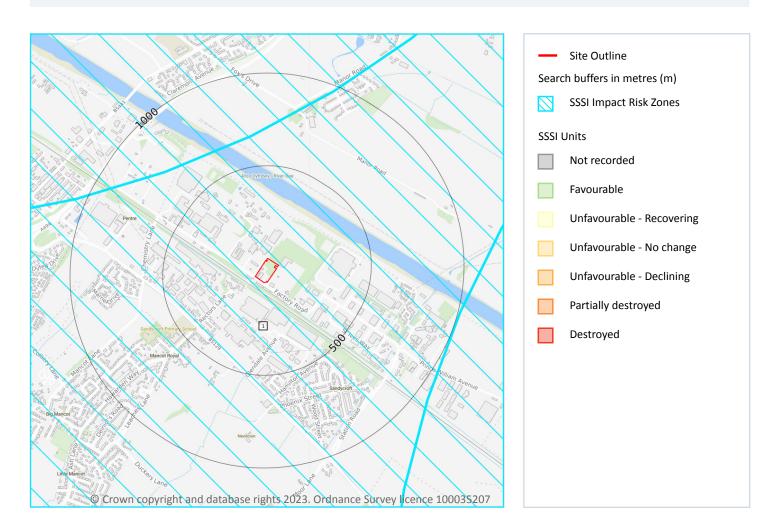
Location	Name	Туре	NVZ ID	Status
673m N	-	Surface Water	708	New
1355m NE	Shotwick Brook NVZ	Surface Water	708	Existing
1410m NE	-	Surface Water	708	New

This data is sourced from Natural England and Natural Resources Wales.





SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site 1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on page 113 >

ID	Location	Type of developments requiring consultation	
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion	





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This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m 0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



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11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m 0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m 0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m 0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m 0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



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This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m 0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m 0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m 0

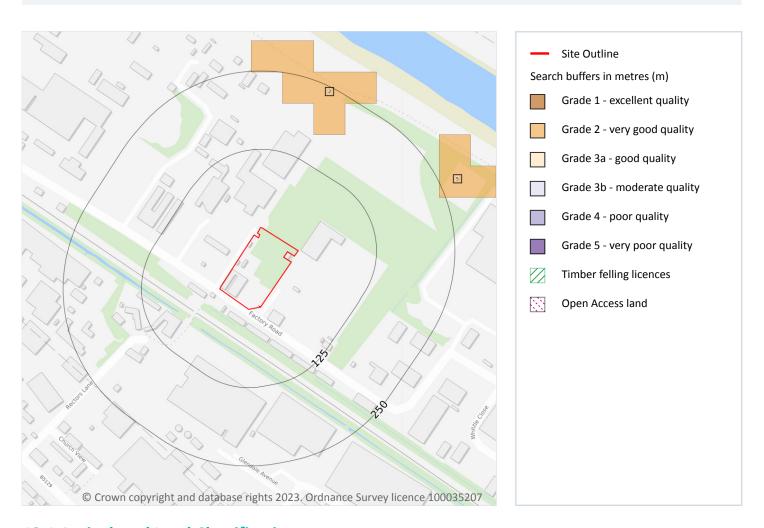
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.





12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m 2

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on page 117 >

ID	Location	Classification	Description
2	170m N	Grade 2	Good quality agricultural land
5	241m E	Grade 2	Good quality agricultural land

This data is sourced from Natural Resources Wales.



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12.2 Open Access Land

Records within 250m 0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m 0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m 0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m 0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



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13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m 0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m 0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m 0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m 0

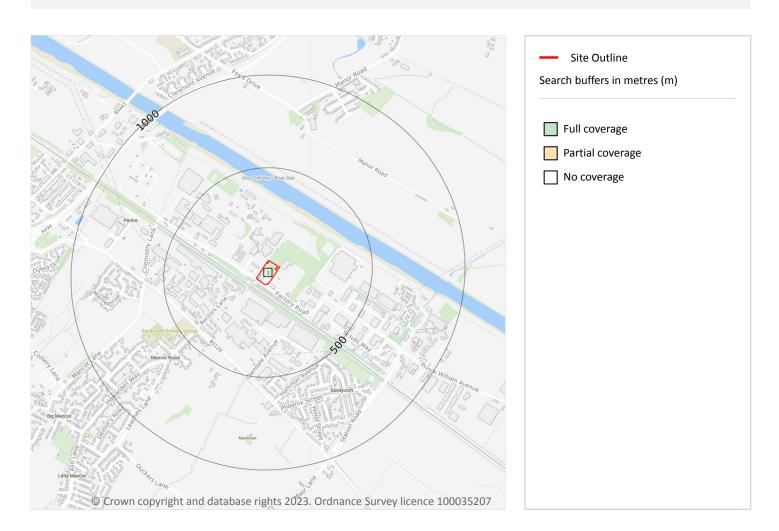
Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.





14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on page 120 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov



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Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m 0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799 PO2880 **Grid ref**: 332961 367737

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m 0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m 0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m 0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

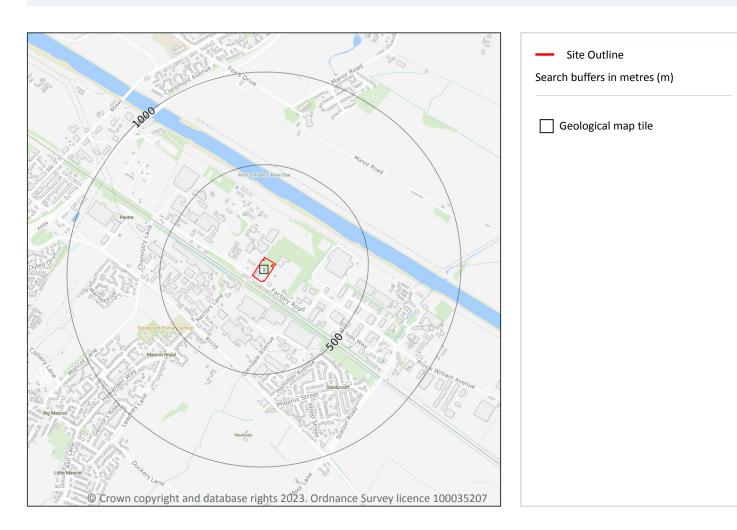
Records within 500m 0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.





15 Geology 1:50,000 scale - Availability



15.1 50k Availability

Records within 500m 1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on page 124 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW108_flint_v4





Geology 1:50,000 scale - Artificial and made ground



15.2 Artificial and made ground (50k)

Records within 500m 2

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on page 125 >

ID	Location	LEX Code	Description	Rock description
1	42m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	401m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

15.3 Artificial ground permeability (50k)

Records within 50m 1

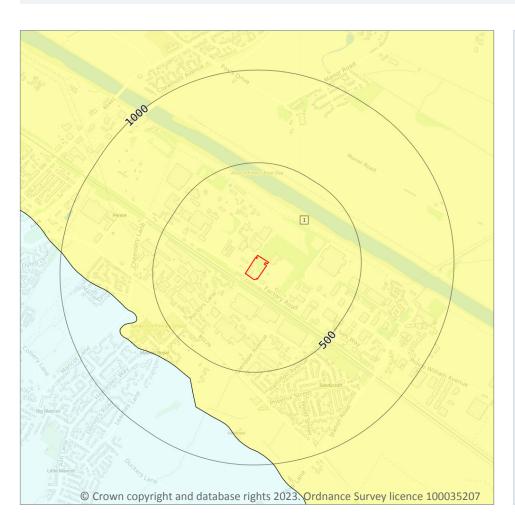
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
42m N	Mixed	Very High	Low





Geology 1:50,000 scale - Superficial



— Site Outline
Search buffers in metres (m)

☑ Landslip (50k)
Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on page 127 >

ID	Location	LEX Code	Description	Rock description
1	On site	TFD-XCZS	TIDAL FLAT DEPOSITS	CLAY, SILT AND SAND



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

15.5 Superficial permeability (50k)

Records within 50m

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Moderate	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m 0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m 0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).





Geology 1:50,000 scale - Bedrock



Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)

Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m 8

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on page 129 >

IC)	Location	LEX Code	Description	Rock age
1		On site	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
2		70m W	PMCM- MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

ID	Location	LEX Code	Description	Rock age
4	204m NE	PMCM- MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
6	206m NE	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
8	324m S	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
10	409m W	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
12	465m E	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
14	481m W	PMCM- MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m 1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m 7

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on page 129 >

ID	Location	Category	Description
3	70m W	FAULT	Fault, inferred, displacement unknown
5	204m NE	FAULT	Fault, inferred, displacement unknown





Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

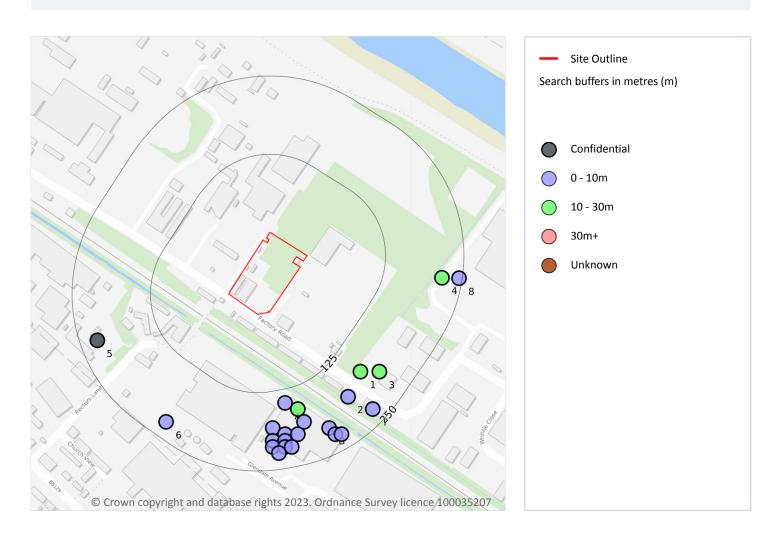
ID	Location	Category	Description
7	248m S	ROCK	Coal seam, inferred
9	326m W	ROCK	Coal seam, inferred
11	409m W	FAULT	Fault, inferred, displacement unknown
13	465m E	FAULT	Fault, inferred, displacement unknown
15	481m W	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.





16 Boreholes



16.1 BGS Boreholes

Records within 250m 23

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on page 132 >

ID	Location	Grid reference	Name	Length	Confidential	Web link
Α	147m S	332990 367530	SANDYCROFT IND EST TP1	3.0	N	<u>156555</u> ⊅
Α	161m S	333010 367520	SANDYCROFT IND EST BH1	11.0	N	<u>156553</u> ⊅





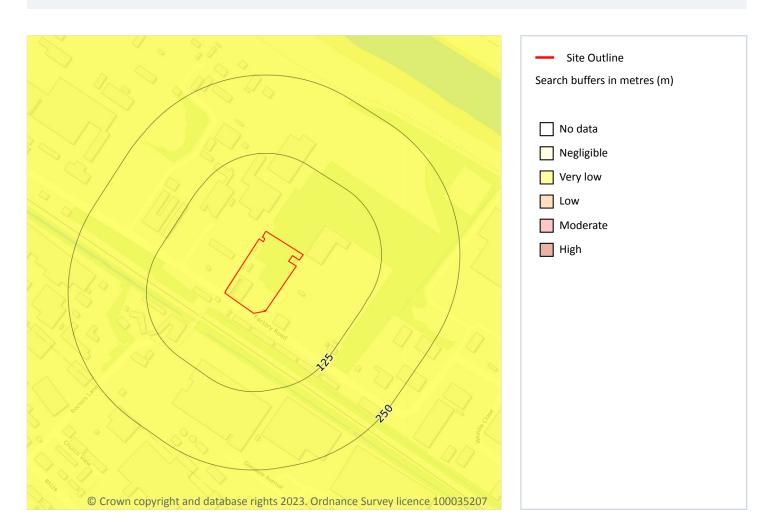
Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	173m SE	333110 367580	SANDYCROFT INDUSTRIAL ESTATE, SEWAGE SCHEME. 5	12.5	N	<u>156326</u> ⊅
Α	183m S	332970 367490	SANDYCROFT IND EST TP9	2.0	N	<u>156563</u> ↗
А	184m S	333020 367500	SANDYCROFT IND EST TP2	3.0	N	<u>156556</u> ⊅
2	184m SE	333090 367540	SANDYCROFT INDUSTRIAL ESTATE, SEWAGE SCHEME. 1	6.5	N	<u>156322</u> ↗
Α	196m S	332990 367480	SANDYCROFT IND EST TP7	3.0	N	<u>156561</u> ↗
3	198m SE	333140 367580	WELSH IND ESTS CORPNO323 RE DEP SANDYCFT 3	15.3	N	<u>156377</u> ⊅
Α	200m S	333010 367480	SANDYCROFT IND EST TP5	1.0	N	<u>156559</u> ⊅
Α	203m S	332970 367470	SANDYCROFT IND EST TP10	3.0	N	<u>156564</u> ⊅
Α	206m S	332990 367470	SANDYCROFT IND EST TP8	2.0	N	<u>156562</u> ⊅
В	208m S	333060 367490	SANDYCROFT INDUSTRIAL ESTATE, SEWAGE SCHEME. 2	6.5	N	<u>156323</u> ⊅
А	213m S	332970 367460	SANDYCROFT IND EST TP3	3.0	N	<u>156557</u> ⊅
А	216m S	332990 367460	SANDYCROFT IND EST TP6	3.0	N	<u>156560</u> ⊅
4	218m E	333240 367730	WELSH IND ESTS CORPNO323 RE DEP SANDYCFT 2	15.3	N	156376 7
Α	218m S	333000 367460	SANDYCROFT IND EST TP4	3.0	N	<u>156558</u> ⊅
В	222m SE	333070 367480	SANDYCROFT INDUSTRIAL ESTATE 3	6.55	N	<u>156385</u> ⊅
5	223m W	332690 367630	OWENS CORNING QUEENSFERRY 1	-	Υ	N/A
А	224m S	332980 367450	SANDYCROFT IND EST BH2	10.0	N	<u>156554</u> ⊅
6	224m SW	332800 367500	SANDYCROFT INDUSTRIAL ESTATE 1	6.55	N	156383 7
7	227m SE	333130 367520	SANDYCROFT INDUSTRIAL ESTATE, SEWAGE SCHEME. 3	6.5	N	156324 7
В	227m SE	333080 367480	SANDYCROFT INDUSTRIAL ESTATE, SEWAGE SCHEME. 4	6.5	N	156325 7
8	245m E	333267 367729	ENGINEER PARK, SANDYCROFT, CLWYD 1	6.5	N	<u>18235416</u>





17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m 1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on page 134 >

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.





Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m 2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on page 135 >

Location	Hazard rating	Details
On site	Moderate	Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.





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Location	Hazard rating	Details
42m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



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Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m 2

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on page 137 >

Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

Location	Hazard rating	Details
42m N	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.





Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m 1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

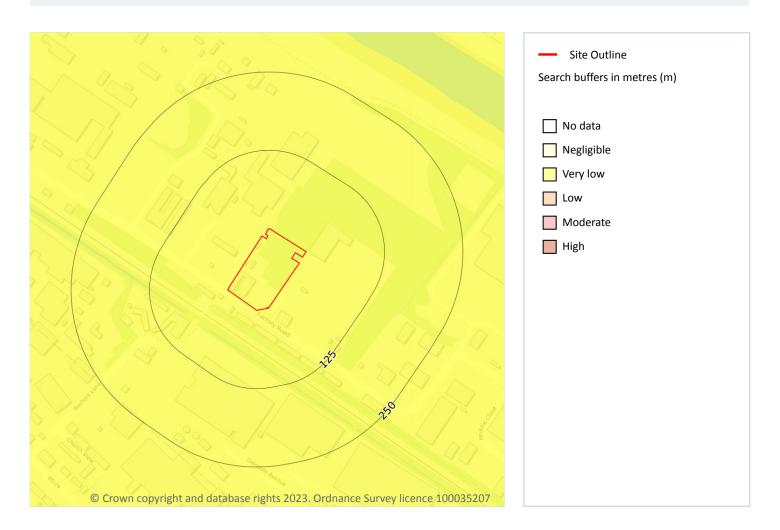
Features are displayed on the Natural ground subsidence - Collapsible deposits map on page 139 >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.





Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m 1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on page 140 >

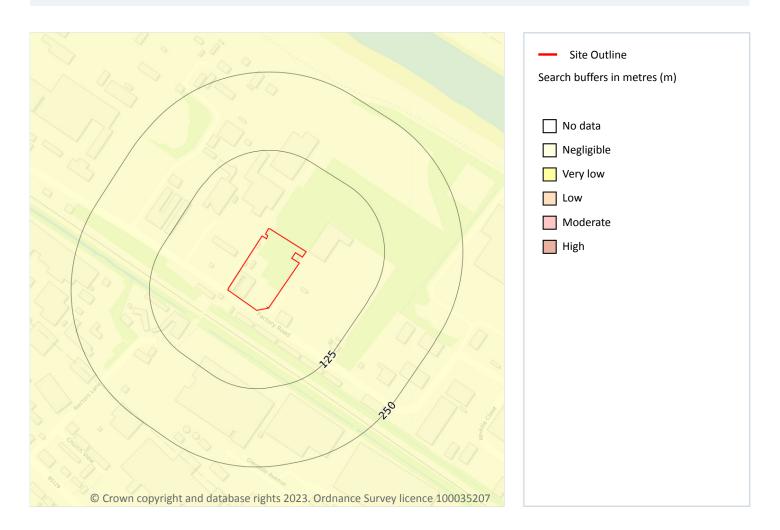
Locatio	n Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.





Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m 1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on page
141 >

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.





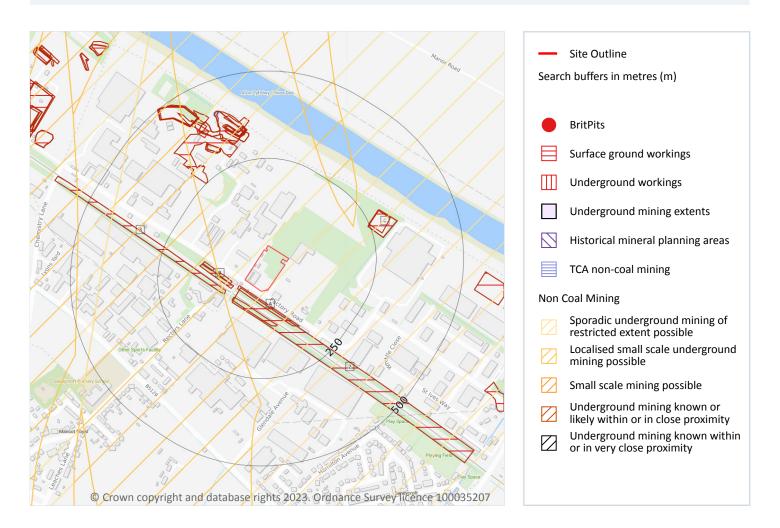
Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

This data is sourced from the British Geological Survey.





18 Mining and ground workings



18.1 BritPits

Records within 500m 0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

18.2 Surface ground workings

Records within 250m 10

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on page 143 >

ID	Location	Land Use	Year of mapping	Mapping scale
А	21m S	Unspecified Pit	1914	1:10560
2	25m S	Cuttings	1948	1:10560
В	37m SW	Cuttings	1967	1:10560
В	38m W	Unspecified Pit	1914	1:10560
А	55m SW	Unspecified Pit	1914	1:10560
3	64m SW	Unspecified Pit	1914	1:10560
В	93m W	Unspecified Pit	1914	1:10560
С	244m NE	Pond	1989	1:10000
С	244m NE	Pond	1976	1:10000
С	250m NE	Pond	1948	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m 2

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining and ground workings map on page 143 >

ID	Location	Land Use	Year of mapping	Mapping scale
-	953m SW	Colliery	1869	1:10560
_	1000m W	Colliery	1910	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



Ref: GS-9RM-2MD-293-VWR Your ref: TE1799_PO2880 Grid ref: 332961 367737

18.4 Underground mining extents

Records within 500m 0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m 0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m 9

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on page 143 >

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
4	70m W	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
5	204m NE	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

ID	Location	Name	Commodity	Class	Likelihood
6	409m W	Not available	Vein Mineral	А	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
7	481m W	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
9	599m SW	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
10	669m NW	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
12	800m NW	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	841m W	Not available	Iron Ore (Bedded)	В	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site 1

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.





Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

Location

Details

On site

In addition to being located inside an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property which may supplement this information. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) can be obtained by emailing this report to enquiries.gs@jpb.co.uk 7.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m 0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m 0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

info@groundsure.com ↗

01273 257 755

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

18.11 BGS mine plans

Records within 500m 0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site 1

Areas which could be affected by past, current or future coal mining.

Location Details

On site The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site 0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site 0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site 0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.





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18.16 Clay mining

Records on site 0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799_PO2880 **Grid ref**: 332961 367737

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m 0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m 0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



(150



Ref: GS-9RM-2MD-293-VWR **Your ref**: TE1799 PO2880 **Grid ref**: 332961 367737

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m 0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

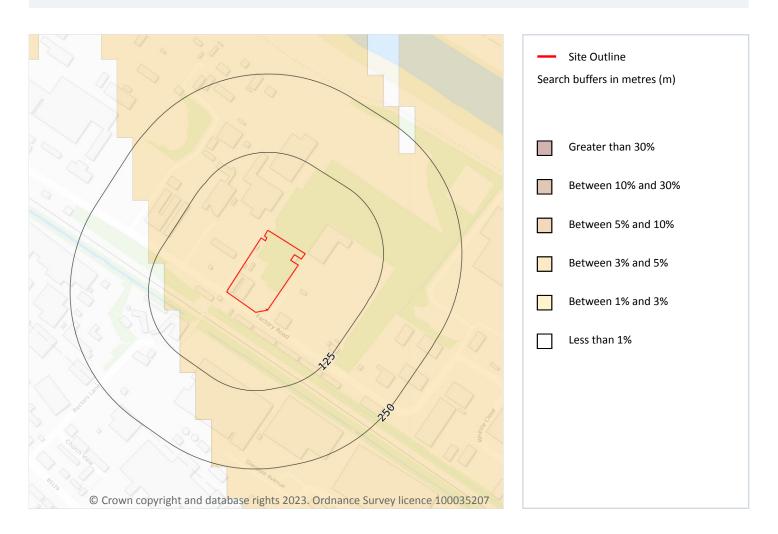
This data is sourced from the British Geological Survey.



01273 257 755

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20 Radon



20.1 Radon

Records on site 1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on page 152 >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 3% and 5%	Basic





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This data is sourced from the British Geological Survey and UK Health Security Agency.



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21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m 3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m 0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

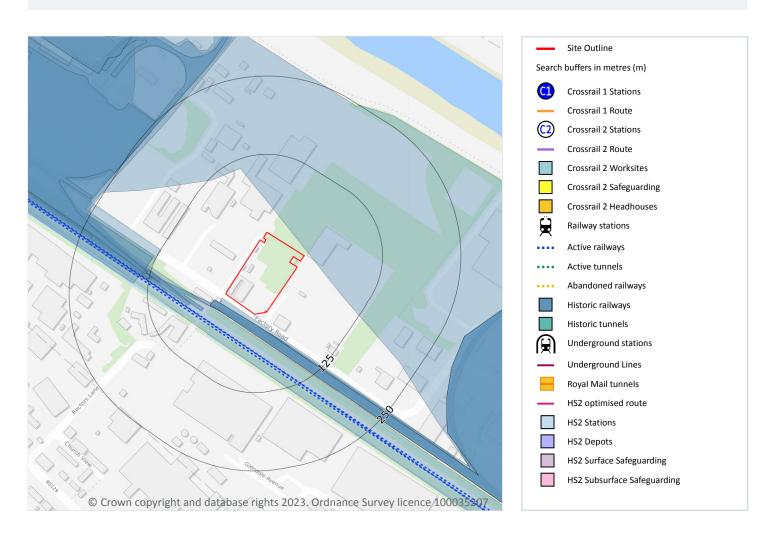
The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².





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22 Railway infrastructure and projects



22.1 Underground railways (London)

Records within 250m 0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



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This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m 0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m 23

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on page 155 >

Location	Land Use	Year of mapping	Mapping scale
8m S	Railway Sidings	1948	10560
13m S	Railway Sidings	1969	10560
13m S	Railway Sidings	1989	10000
13m S	Railway Sidings	1976	10000
13m S	Railway Sidings	1967	10560
16m S	Railway Sidings	1981	1250
16m S	Railway Sidings	1969	2500
16m S	Railway Sidings	1962	2500
29m S	Railway Sidings	1898	10560
58m W	Railway Sidings	1981	1250
59m W	Railway Sidings	1984	1250
95m W	Railway Sidings	1869	10560
108m W	Railway Sidings	1911	2500
109m W	Railway Sidings	1899	2500
119m W	Railway Sidings	1870	2500
121m W	Railway Sidings	1969	10560
121m W	Railway Sidings	1967	10560





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Location	Land Use	Year of mapping	Mapping scale
124m W	Railway Sidings	1898	10560
128m W	Railway Sidings	1914	10560
130m W	Railway Sidings	1938	10560
130m W	Railway Sidings	1909	10560
190m W	Railway Sidings	1899	2500
190m W	Railway Sidings	1870	2500

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m 0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m 0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on page 155 >

Location	Name	Туре
51m S	North Wales Coast Line	rail
51m S	Not given	Multi Track
55m SW	North Wales Coast Line	rail



Date: 23 November 2023



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Location	Name	Туре
55m SW	Not given	Multi Track
100m S	Not given	Multi Track
129m S	Not given	Multi Track
153m W	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m 0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m 0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m 0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.





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Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/<a> ↗.





CON29M OFFICIAL COAL MINING SEARCH

GAINLAND INTERNATIONAL LTD, GAINLAND INTERNATIONAL LTD, FACTORY ROAD, SANDYCROFT, CH5 2QJ

Professional opinion

Inc. integrated mine entry interpretive assessment



Site plan



Search results



1. Past underground coal mining Identified

page 4 >



2. Present underground coal mining

Not identified



3. Future underground coal mining

Not identified



4. Mine entries

Not identified



5. Coal mining geology

Not identified



6. Past opencast coal mining

Not identified



7. Present opencast coal mining

Not identified



8. Future opencast coal mining

Not identified



9. Coal mining subsidence claims

Not identified



10. Mine gas emissions

Not identified



11. Emergency Call Out incidents

Not identified



12. Withdrawal of support

Not identified



13. Working facilities orders

Not identified



14. Payments to copyhold owners

Not identified



Cheshire Brine

Not identified



Conveyancing Information Executive Contact us with any questions at: info@groundsure.com

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CON29M

Coal mining (CON29M) assessment

We consider the property to be acceptably free from coal mining related risk. No further action is required with regards to past coal mining.



Coal mining

Coal Mining Subsidence Act 1991

If any coal mining subsidence damage has occurred, as determined by the appropriate persons/bodies, the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

This Act, however, does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester. In this instance it would be prudent to have the property visually inspected for signs of mining related settlement or subsidence by a suitably qualified and experienced person, who could be sought through www.ricsfirms.com.

The Coal Authority provide a call out service on 01623 646 333 to take remedial action concerning the movement or collapse of any coal entries or coal mining surface hazards. Further details can be found on www.groundstability.com 7.

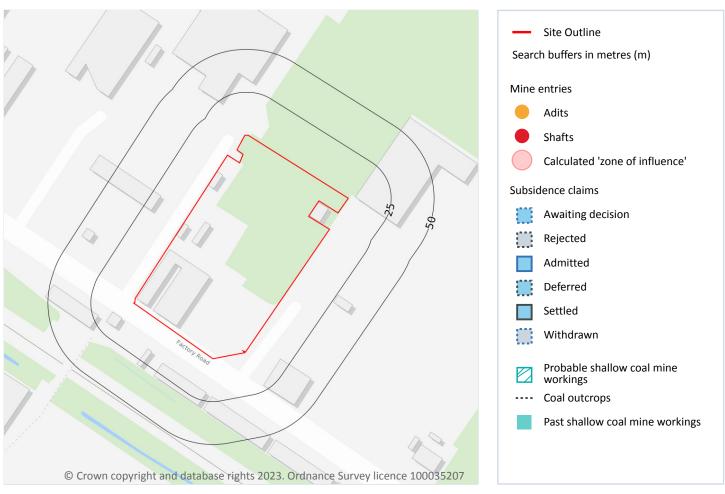
CON29M reports are a requirement for conveyancing and are recommended throughout the official Coal Mining Reporting Area. This is the area within which it is deemed prudent to clarify the risk presented by coal mining, using the questions laid out in the Law Society's CON29M form. The need for a CON29M does not always translate to an identification of risk, and reports will often be assessed as free from risk or 'Passed' even though they are within the official Coal Mining Reporting Area.



CON29M

Coal mining (CON29M)





Coal mining (CON29M)

The map above shows relevant, mappable hazards identified that could constitute a risk to the property. It does not necessarily show all features or potential issues identified in this report. Further details of any features shown indicating the location of Mine Entries or Subsidence Claims can be found in the relevant sections of this report (4 and 9 respectively).

Responses to the Law Society CON29M Coal Mining search enquiries are produced using official Coal Authority data and the expert interpretation of Groundsure. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation and calculation of mine entry zones of influence has also been carried out by Groundsure using Coal Authority and British Geological Survey data.

Please read this report carefully, and in particular any sections flagged with an amber 'i'.



CON29M



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1. Past underground coal mining



Is the property within the zone of likely physical influence on the surface of past underground coal workings?

The property lies within the potential zone of influence of recorded workings in 1 seam(s) of coal. The
most recent underground working in the area was in 1913. These workings lie approximately 90 metres
below surface. Any ground movement due to this coal mining activity should have stopped.

2. Present underground coal mining



Is the property within the zone of likely physical influence on the surface of present underground coal workings?

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

3. Future underground coal mining



(a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?

 The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods.

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?

• The property does not lie within the boundary of an underground site for which a licence to remove coal by underground methods has been granted.

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?





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 The property does not lie within the zone of likely physical influence on the surface of planned future underground workings.

(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?

 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



Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

No coal mine entries are recorded to lie within 20 metres of the property.

5. Coal mining geology



Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?

 No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.

6. Past opencast coal mining



Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

 The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.

7. Present opencast coal mining



Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

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



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8. Future opencast coal mining



(a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?

 The property does not lie within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods.

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

• The property does not lie 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 claims



(a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 31st October 1994?

• We have no evidence of a damage notice or subsidence claim for the property or within 50m of the property since 31st October 1994.

(b) In respect of any such notice or claim has the responsible person given notice agreeing that there is a remedial obligation or otherwise accepted that a claim would lie against them?

Not applicable.

(c) In respect of any such notice or acceptance has the remedial obligation or claim been discharged?

- Not applicable.
- (d) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?
- There are no current Stop Notices delaying the start of remedial works or repairs to the property.

(e) Has any request been made under Section 33 of the 1991 Act to execute preventive works before coal is worked, which would prevent the occurrence or reduce the extent of subsidence damage to any buildings, structures or works and, if yes, has any person withheld consent or failed to comply with any such request to execute preventive works?

• There is no record of a request that has been made to carry out preventive works before coal is worked under Section 33 of the Coal Mining Subsidence Act 1991.

NB. Records of damage notices or subsidence claims before 31st October 1994 are excluded from The Coal Authority data from which this search is compiled.







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10. Mine gas emissions



Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

No mine gas emissions are recorded within the boundary of the property.

11. Emergency Surface Hazard Call Out incidents



Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

No Emergency Surface Hazard Call Out procedures are recorded against the property.

12. Withdrawal of support



- (a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?
- The property does not lie in an area where the right to withdraw support has been granted.
- (b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?
- The property does not lie within a geographical area in which a revocation notice has been given under section 41 of the Coal Industry Act 1994.

13. Working facilities orders



Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?

The property is not in an area where a court order has been issued.

14. Payments to owners of former copyhold land



- (a) Has any relevant notice, which may affect the property, been given?
- The property does not lie within former copyholder land.
- (b) If yes, has any notice of retained interests in coal and coal mines been given?





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- No notices of retained interests in coal and coal mines been given.
- (c) If yes, has any acceptance notice or rejection notice been served?
- No acceptance or rejection notices have been served.
- (d) If any such acceptance notice has been served, has any compensation been paid to a claimant?
- No compensation has been paid to a claimant.



CON29M

CON29M notes and guidance

This report is prepared in accordance with <u>The Law Society Guidance Notes 2018</u>; under which all replies to these enquiries are made. Groundsure's Terms and Conditions are applicable at the time the report was produced.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848. Further information can be found on their website: www.groundstability.com 7.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

The Coal Authority emergency telephone number at all times is 01623 646333.

Responses to The Law Society CON29M (2018) Coal Mining Search enquiries and associated findings and recommendations relating to coal mining risk have been provided by Groundsure Ltd. Groundsure Ltd have additionally provided information relating to the Cheshire Brine Compensation Area, and have compiled all information into this report.

Queries should be made of Groundsure Ltd on 01273 257 755, or via email: info@groundsure.com ↗.

CON29M report limitations

This CON29M (2018) Coal Mining Report has been carried out with reference to all available official Coal Authority licensed data, an extensive collection of abandoned mine plans, maps and records. From this material, we have endeavoured to provide as accurate a report as possible. Any and all analysis and interpretation of licensed Coal Authority data in this report is made by Groundsure

The information provided in this report by Groundsure Ltd has been compiled in response to The Law Society CON29M (2018) Coal Mining search enquiries. The scope of the assessment is limited to interpretation of past, present and future extraction of coal, and does not consider the impact from non-coal mining hazards and/or natural ground stability hazards. The Law Society's Guidance Notes 2018 recommends separate enquiries to the appropriate sources are made with regard to other minerals.

The Report is created by a remote investigation and reviews only information provided by the client (address and site location boundaries) and from the databases of publicly available and/or licensable information that enable a desk-based assessment of the Site. The Report does not include a Site Investigation, nor does Groundsure Ltd make additional specific information requests of the regulatory authorities for any relevant information they may hold.

This report is concerned solely with the Site searched and should not be used in connection with nearby properties, as only known coal mining features that could potentially have a direct influence upon the Site searched are considered relevant; other features present in the general area may have been omitted for ease of reference.

This report is confidential to the client, the client's legal advisor and the client's Mortgage lender, as defined in the Groundsure terms & conditions, and as such may be used by them for conveyancing or related purposes. Groundsure has no liability toward any person or organisation not party to commissioning this report. This report or any part of it is not permitted to be reproduced, copied, altered or in any other way distributed by any other person or organisation.

Additional mine entry assessment is based on and limited to the data supplied by the Coal Authority at the time of production. In order to determine whether a property is within the likely zone of influence of a disused coal mine entry the following is considered: the actual or plotted position of the mine entry, its known or assumed diameter and the thickness of superficial deposits above rockhead. Where these figures are not known, assumptions based on established estimations have been made.





CON29M

CON29M report licensing

This report contains Data provided by the Coal Authority. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure Limited and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure Limited prior to any re-use. Due to data collection methods and processing time, there may be a period of up to 2 weeks between the Coal Authority updating their data and it appearing within the Groundsure report.

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This report may contain plans and records held by the Coal Authority and made publicly available at the time of inspection which may include British Geological Survey and Ordnance Survey data.



CON29M

Conveyancing Information Executive and our terms & conditions

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Groundsure Ltd, Nile House, Nile Street, Brighton, BN1 1HW. Tel: 01273 257 755. Email: info@groundsure.com ✓. Groundsure adheres to the Conveyancing Information Executive Standards.

The Standards

- Conveyancing Information Executive Members shall act in a professional and honest manner at all times in line with the Conveyancing Information Executive Standards and carry out the delivery of the Search with integrity and due care and skill.
- Compliance with the Conveyancing Information Executive Standards will be a condition within the Conveyancing Information Executive Member's Terms and Conditions.
- Conveyancing Information Executive Members will promote the benefits of and deliver the Search to the agreed standards and in the best interests of the customer and associated parties.

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If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure.

If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Standards.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

COMPLAINTS PROCEDURE: If you want to make a complaint, we will:

- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:

Operations Director, Groundsure Ltd, Nile House, Nile Street, Brighton, BN1 1HW. Tel: 01273 257 755. Email: info@groundsure.com If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

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Ref: GS-RF6-VUE-PDK-S2P Your ref: TE1799_PO2880 Grid ref: 332961 367737

(11)



CON29M

Coal Mining Report Insurance Policy



Coal Mining Report Insurance Policy

The Schedule

Policy Number: The Reference contained in the Coal Mining Search Report

Premium: £1.40 inclusive of Insurance Premium Tax at 12%

Property: The property which is the subject of the Coal Mining Search Report

Limit of Indemnity: £100,000 increasing by 10% compound per annum on each anniversary of and for the first 10 years following the

Commencement Date

Commencement Date: The date of the Coal Mining Search Report

You/Your:

1. A purchaser of the **Property**

2. A lender providing a Mortgage in connection with a purchase of the Property

3. A lender providing a Mortgage by way of a re-mortgage of the Property

Definitions

Where a word is defined below or in the schedule it shall carry the same meaning wherever it appears in bold text in this policy

Insured Use: The continued use of the **Property** as a single house or flat or a single commercial premises

Market Value: The value as determined by a surveyor appointed by agreement between You and Us or (in default of agreement) the President for the time being of the Royal Institution of Chartered Surveyors

Mortgage: A mortgage or charge secured on the Property by an institutional mortgage lender

Coal Mining Search Report: The coal mining search report attached to this policy

Search: An official search comprising a search in form CON29M (2018) being mining searches relating to coal and brine in the area in which the **Property** is situated

We/Our/Us:

Zurich Insurance plc. A public limited company incorporated in Ireland. Registration No. 13460. Registered Office: Zurich House, Ballsbridge Park, Dublin 4, Ireland. UK Branch registered in England and Wales Registration No. BR7985. UK Branch Head Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Hampshire PO15 7JZ.

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CON29M

Your Policy

This is a legal document and should be kept in a safe place.

This policy is an agreement between You and Us and cover is provided subject to the payment of the Premium.

You must read this policy and its conditions, exclusions, schedule and any endorsements as one contract. Please read all of them to make sure that they provide the cover You require. If they do not, please contact Us or Your insurance adviser who arranged the policy for You.

When **You** take out and make changes to the cover provided by this policy, **You** must take reasonable care to ensure that **You** accurately answer any questions which **We** ask of **You** and that any information **You** give **Us** is accurate. If **You** are taking out this policy for purposes which are mainly related to **Your** trade, business or profession, **You** must also let **Us** know about all facts which are material to **Our** decision to provide **You** with insurance. Failure to meet these obligations could result in this policy being invalidated, a claim not being paid, or an additional premium being charged.

Fair presentation of the risk

- a) At inception of this policy and also whenever changes are made to it at Your request You must:
 - i) where **You** have taken out this policy for purposes which are wholly or mainly related to **Your** trade, business or profession, disclose to **Us** all material facts in a clear and accessible manner and not misrepresent any material facts, and
 - ii) where **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, take reasonable care not to misrepresent any material facts.
- b) If **You** do not comply with clause a) of this condition **We** may:
 - i) avoid this policy which means that **We** will treat it as if it had never existed and refuse all claims where any non-disclosure or misrepresentation by **You** is proven by **Us** to be deliberate or reckless in which case **We** will not return the premium paid by **You**; and
 - ii) recover from You any amount We have already paid for any claims including costs or expenses We have incurred.
- c) If You do not comply with clause a) of this condition and the non-disclosure or misrepresentation is not deliberate or reckless this policy may be affected in one or more of the following ways depending on what **We** would have done if **We** had known about the facts which **You** failed to disclose or misrepresented:
 - i) if **We** would not have provided **You** with any cover **We** will have the option to:
 - 1. avoid the policy which means that **We** will treat it as if it had never existed and repay the premium paid; and
 - 2. recover from You any amount We have already paid for any claims including costs or expenses We have incurred
 - ii) if **We** would have applied different terms to the cover **We** will have the option to treat this policy as if those different terms apply. **We** may recover any payments made by **Us** on claims which have already been paid to the extent that such claims would not have been payable had such additional terms been applied
 - iii) if **We** would have charged **You** a higher premium for providing the cover **We** will charge **You** the additional premium which **You** must pay in full.
- d) If any insured person, other than **You**, is responsible for a misrepresentation or failure to make a fair presentation of the risk, **We** will invoke the remedies available to **Us** under this condition as against that particular person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

NB: For the purposes of the duty of disclosure stated in paragraphs a) i) and ii) above the content of the **Coal Mining Search Report** will be deemed to satisfy **Your** disclosure obligations.

Cover

- 1. You are in the process of purchasing the Property relying on the Coal Mining Search Report and/or
- 2. You (being a lender) have agreed to provide a Mortgage in connection with Your borrower's purchase or re-mortgage of the Property relying on the Coal Mining Search Report.

We will pay the following losses sustained by You arising out of the Property being affected by any matter which would have been revealed by a Search had one been carried out on the date of the Coal Mining Search Report but which was not revealed by the Coal Mining Search Report:





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- 1. any reduction in **Market Value** of the **Property** calculated at the date **You** become aware of the matter(s) and/or loss in connection with a **Mortgage** as a result of such reduction.
- 2. all other costs and expenses including out of court settlement costs incurred by **Us** or by **You** with **Our** prior written agreement.

Waiver of Breach of Policy Condition

We will not exercise Our right to avoid Our liability to You in respect of loss where You have inadvertently breached any term or condition of the policy provided that such breach does not prejudice Our rights and remedies under the policy or otherwise directly or indirectly result in or increase the amount of any loss.

Protection for Mortgagees and Successors in Title

We will not avoid **Our** liability to make a payment to **You** solely because another person breaches the terms and conditions of this policy, provided such breach was not committed on **Your** behalf or with **Your** agreement, and **We** will invoke the remedies available to **Us** under the Policy as against that other person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

Joint Insured

Any party insured under this policy standing in the relation of parent company, subsidiary company, associated company, branch office or joint venture partner to each other will be deemed to be joint insured for the purposes of this policy and jointly liable and responsible for any breach of any terms and conditions of this policy. If there is any inconsistency between this clause and any other term of this policy, this clause shall prevail.

Exclusions

We will not pay for any:

- 1. amount in excess of the Limit of Indemnity.
- 2. loss which would be recoverable under a household buildings insurance policy.
- 3. loss arising from any matter that **You** were aware of at the **Commencement Date**.
- 4. loss if the **Property** is used for any purpose other than the **Insured Use**.

Claims Conditions and How to Claim

1. You must:

- i) give **Us** written notice as soon as possible of any potential or actual claim or any circumstances likely to result in a claim. Please provide the policy number, **Your** name, the full address of the **Property** and a brief description of the incident that has occurred. Notifications should be sent to: Speciality Lines Claims Team, Zurich Insurance, 8th Floor, 70 Mark Lane, London, EC3R 7NQ. Email: claims@uk.zurich.com, Enquiry line: telephone 0207 648 3523
- ii) pass all court documents and/or other communications to Us as soon as possible after receipt
- iii) not deal with, make any admission of liability or attempt to settle a claim without Our prior written agreement.
- iv) agree to and carry out at **Our** expense all things necessary to minimise any loss.
- v) provide all information and assistance that **We** may require to help defend and settle the claim.

2. **We** are entitled to:

- i) decide how to settle or defend a claim and may carry out proceedings in the name of any person insured under this policy, including proceedings for recovering any claim.
- ii) pay to **You** at any time, an amount equal to the **Limit of Indemnity** or any lower amount for which the claim can be settled, after deduction of any sum already paid. **We** may then give up control of and have no further liability in connection with the claim
- 3. If **We** admit liability for a claim but there is a dispute as to the amount to be paid the dispute will be referred to an arbitrator. The arbitrator will be appointed jointly by **You** and **Us** in accordance with the law at the time. **You** may not take any legal action against **Us** over the dispute before the arbitrator has reached a decision.
- 4. If You or anyone acting on Your behalf:





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- a) makes a fraudulent or exaggerated claim under this policy; or
- b) uses fraudulent means or devices including the submission of false or forged documents in support of a claim whether or not the claim is itself genuine; or
- c) makes a false statement in support of a claim whether or not the claim is itself genuine; or
- d) submits a claim under this policy for loss or damage which **You** or anyone acting on **Your** behalf or in connivance with **You** deliberately caused; or
- e) realises after submitting what **You** reasonably believed was a genuine claim under this policy and then fails to tell **Us** that **You** have not suffered any loss or damage; or
- f) suppresses information which You know would otherwise enable Us to refuse to pay a claim under this policy

We will be entitled to refuse to pay the whole of the claim and recover any sums that We have already paid in respect of the claim.

If any fraud is perpetrated by or on behalf of an insured person and not on behalf of **You** this condition should be read as if it applies only to that insured person's claim and references to this policy should be read as if they were references to the cover effected for that person alone and not to the policy as a whole.

- 5. If any claim is covered by any other insurance, **We** will not pay for more than **Our** share of that claim.
- 6. The most **We** will pay for any loss (or all losses in the aggregate), including costs and expenses agreed by **Us** is the **Limit of Indemnity**. Once **We** have paid a loss or losses equal to the amount of the **Limit of Indemnity**, **We** will have no further liability under this policy.

General Conditions

- 1. Neither **You** (nor anyone acting on **Your** behalf) must disclose the existence of this policy to any other party except **Your** legal and other professional advisers, prospective purchasers, lessees and tenants of the **Property**, their respective mortgagees, legal and other professional advisers.
- 2. In the UK the law allows both **You** and **Us** to choose the law applicable to the contract. This contract will be subject to the relevant law of England and Wales, Scotland, Northern Ireland, the Isle of Man or the Channel Islands depending upon the Property address stated in the Schedule. If there is any dispute as to which law applies it will be English law. The parties agree to submit to the exclusive jurisdiction of the English courts.
- 3. Notwithstanding any other terms of this policy **We** will be deemed not to provide cover nor will **We** make any payment or provide any service or benefit to **You** or any other party to the extent that such cover, payment, service, benefit and/or any business or activity of **Yours** would violate any applicable trade or economic sanctions law or regulation.

Cancellation Clause

If **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, **You** may cancel this policy within 14 days of receiving the policy by writing to **Us** and in such event **We** may, at **Our** discretion, charge **You** for the time that **You** have been on cover. Any refund will be made to the party who paid the premium. If **You** do cancel, **You** may be in breach of the terms of **Your** mortgage or the terms of the contract for the sale of **Your** property. If **You** are in doubt, **You** may wish to seek legal advice prior to cancellation.

Fair Processing and Complaints Procedure Our Complaints Procedure

Our commitment to customer service

We are committed to providing a high level of customer service. If you feel we have not delivered this, we would welcome the opportunity to put things right for you.

Who to contact in the first instance

Many concerns can be resolved straight away. Therefore in the first instance, please get in touch with your usual contact at Zurich or your broker or insurance intermediary, as they will generally be able to provide you with a prompt response to your satisfaction.

Contact details will be provided on correspondence that we or our representatives have sent you.

Many complaints can be resolved within a few days of receipt

If we can resolve your complaint to your satisfaction within the first few days of receipt, we will do so. Otherwise, we will keep you



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updated with progress and will provide you with our decision as quickly as possible.

Next steps if you are still unhappy

If you are not happy with the outcome of your complaint, you may be able to ask the Financial Ombudsman Service to review your case

We will let you know if we believe the ombudsman service can consider your complaint when we provide you with our decision. The service they provide is free and impartial, but you would need to contact them within 6 months of the date of our decision.

More information about the ombudsman and the type of complaints they can review is available via their website $\underline{\text{www.financial-ombudsman.org.uk}}$ \nearrow .

You can also contact them as follows:

Post: Financial Ombudsman Service, Exchange Tower, London, E14 9SR **Telephone**: 08000 234567 (free on mobile phones and landlines)

Email: complaint.info@financial-ombudsman.org.uk ↗

If the Financial Ombudsman Service is unable to consider your complaint, you may wish to obtain advice from the Citizens Advice Bureau or seek legal advice.

The Financial Services Compensation Scheme (FSCS)

We are covered by the Financial Services Compensation Scheme (FSCS) which means that you may be entitled to compensation if we are unable to meet our obligations to you. Further information is available on www.fscs.org.uk or by contacting the FSCS directly on 0800 678 1100.

How we use your information

Who controls your personal information

This notice tells you how Zurich Insurance plc ('Zurich'), as data controller, will deal with your personal information. Where Zurich introduces you to a company outside the group, that company will tell you how your personal information will be used.

You can ask for further information about our use of your personal information or complain about its use in the first instance, by contacting our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com.

If you have any concerns regarding our processing of your personal information, or are not satisfied with our handling of any request by you in relation to your rights, you also have the right to make a complaint to the Information Commissioner's Office. Their address is: First Contact Team, Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

What personal information we collect about you

We will collect and process the personal information that you give us by phone, e-mail, filling in forms, including on our website, and when you report a problem with our website. We also collect personal information from your appointed agent such as your trustee, broker, intermediary or financial adviser in order to provide you with the services you have requested and from other sources, such as credit reference agencies and other insurance companies, for verification purposes. We will also collect information you have volunteered to be in the public domain and other industry-wide sources. We will only collect personal information that we require to fulfil our contractual or legal requirements unless you consent to provide additional information. The type of personal information we will collect includes; basic personal information (i.e. name, address and date of birth), occupation and financial details, health and family information, claims and convictions information and where you have requested other individuals be included in the arrangement, personal information about those individuals.

If you give us personal information on other individuals, this will be used to provide you with a quotation and/or contract of insurance and/or provision of financial services. You agree you have their permission to do so. Except where you are managing the contract on another's behalf, please ensure that the individual knows how their personal information will be used by Zurich. More information about this can be found in the 'How we use your personal information' section.

How we use your personal information

We and our selected third parties will only collect and use your personal information (i) where the processing is necessary in connection with providing you with a quotation and/or contract of insurance and/or provision of financial services that you have requested; (ii) to meet our legal or regulatory obligations; or (iii) for our 'legitimate interests'. It is in our legitimate interests to collect



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your personal information as it provides us with the information that we need to provide our services to you more effectively including providing you with information about our products and services. We will always ensure that we keep the amount of information collected and the extent of any processing to the absolute minimum to meet this legitimate interest. Examples of the purposes for which we will collect and use your personal information are:

- 1. to provide you with a quotation and/or contract of insurance;
- 2. to identify you when you contact us;
- 3. to deal with administration and assess claims;
- 4. to make and receive payments;
- 5. to obtain feedback on the service we provide to you;
- 6. to administer our site and for internal operations including troubleshooting, data analysis, testing, research, statistical and survey purposes;
- 7. for fraud prevention and detection purposes.

We will contact you to obtain consent prior to processing your personal information for any other purpose, including for the purposes of targeted marketing unless we already have consent to do so.

Who we share your personal information with

Where necessary, we will share the personal information you gave us for the purposes of providing you with the goods and services you requested with the types of organisations described below:

associated companies including reinsurers, suppliers and service providers; introducers and professional advisers; regulatory and legal bodies; survey and research organisations; credit reference agencies; healthcare professionals, social and welfare organisations; and other insurance companies

Or, in order to meet our legal or regulatory requirements, with the types of organisations described below:

regulatory and legal bodies; central government or local councils; law enforcement bodies, including investigators; credit reference agencies; and other insurance companies

How we use your personal information for websites and email communications

When you visit one of our websites we may collect information from you such as your email address or IP address. This helps us to track unique visits and monitor patterns of customer website traffic, such as who visits and why they visit.

We use cookies and/or pixel tags on some pages of our website. A cookie is a small text file sent to your computer. A pixel tag is an invisible tag placed on certain pages of our website but not on your computer. Pixel tags usually work together with cookies to assist us to provide you with a more tailored service. This allows us to monitor and improve our email communications and website. Useful information about cookies, including how to remove them, can be found on our websites.

How we transfer your personal information to other countries

Where we transfer your personal information to countries that are outside of the UK and the European Union (EU) we will ensure that it is protected and that the transfer is lawful. We will do this by ensuring that the personal information is given adequate safeguards by using 'standard contractual clauses' which have been adopted or approved by the UK and the EU, or other solutions that are in line with the requirements of European data protection laws.

A copy of our security measures for personal information transfers can be obtained from our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN, or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com ↗.

How long we keep your personal information for

We will retain and process your personal information for as long as necessary to meet the purposes for which it was originally

Contact us with any questions at:

01273 257 755





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collected. These periods of time are subject to legal, tax and regulatory requirements or to enable us to manage our business.

Your data protection rights

You have a number of rights under the data protection laws, namely:

to access your data (by way of a subject access request);

to have your data rectified if it is inaccurate or incomplete;

in certain circumstances, to have your data deleted or removed;

in certain circumstances, to restrict the processing of your data;

a right of data portability, namely to obtain and reuse your data for your own purposes across different services;

to object to direct marketing;

not to be subject to automated decision making (including profiling), where it produces a legal effect or a similarly significant effect on you;

to claim compensation for damages caused by a breach of the data protection legislation.

if we are processing your personal information with your consent, you have the right to withdraw your consent at any time.

We will, for the purposes of providing you with a contract of insurance, processing claims, reinsurance and targeted marketing, process your personal information by means of automated decision making and profiling where we have a legitimate interest or you have consented to this.

What happens if you fail to provide your personal information to us

If you do not provide us with your personal information, we will not be able to provide you with a contract or assess future claims for the service you have requested.

Fraud prevention and detection

In order to prevent and detect fraud we may at any time:

check your personal data against counter fraud systems

use your information to search against various publicly available and third party resources

use industry fraud tools including undertaking credit searches and to review your claims history

share information about you with other organisations including but not limited to the police, the Insurance Fraud Bureau (IFB), other insurers and other interested parties.

If you provide false or inaccurate information and fraud is identified, the matter will be investigated and appropriate action taken. This may result in your case being referred to the Insurance Fraud Enforcement Department (IFED) or other police forces and fraud prevention agencies. You may face fines or criminal prosecution. In addition, Zurich may register your name on the Insurance Fraud Register, an industry-wide fraud database.

Claims history

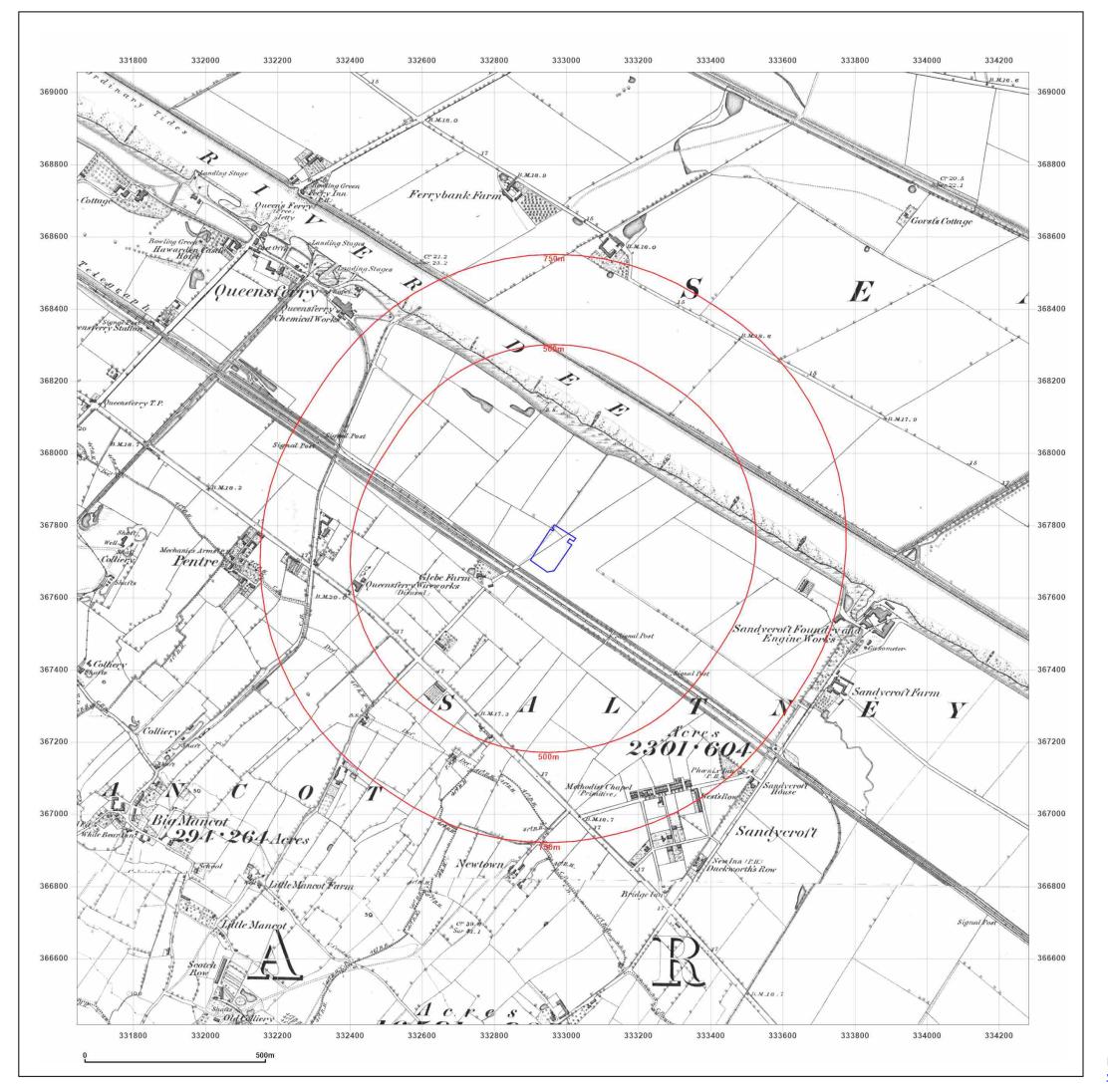
We may pass information relating to claims or potential claims to any relevant database. We and other insurers may search these databases when you apply for insurance, when claims or potential claims are notified to us or at time of renewal to validate your claims history or that of any other person or property likely to be involved in the policy or claim.

Contact us with any questions at:

01273 257 755

This helps to check information provided and prevent fraudulent claims.







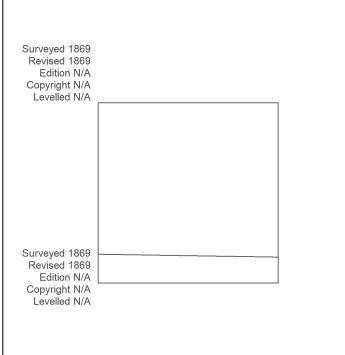
GAINLAND INTERNATIONAL LTD, GAINLAND INTERNATIONAL LTD, FACTORY ROAD, SANDYCROFT, CH5 2QJ Client Ref: TE1799_PO2880 Report Ref: GS-4GB-CUC-ZV3-Y9N Grid Ref: 332962, 367736 Map Name: County Series

Scale: 1:10,560

1869

Printed at: 1:10,560

Map date:



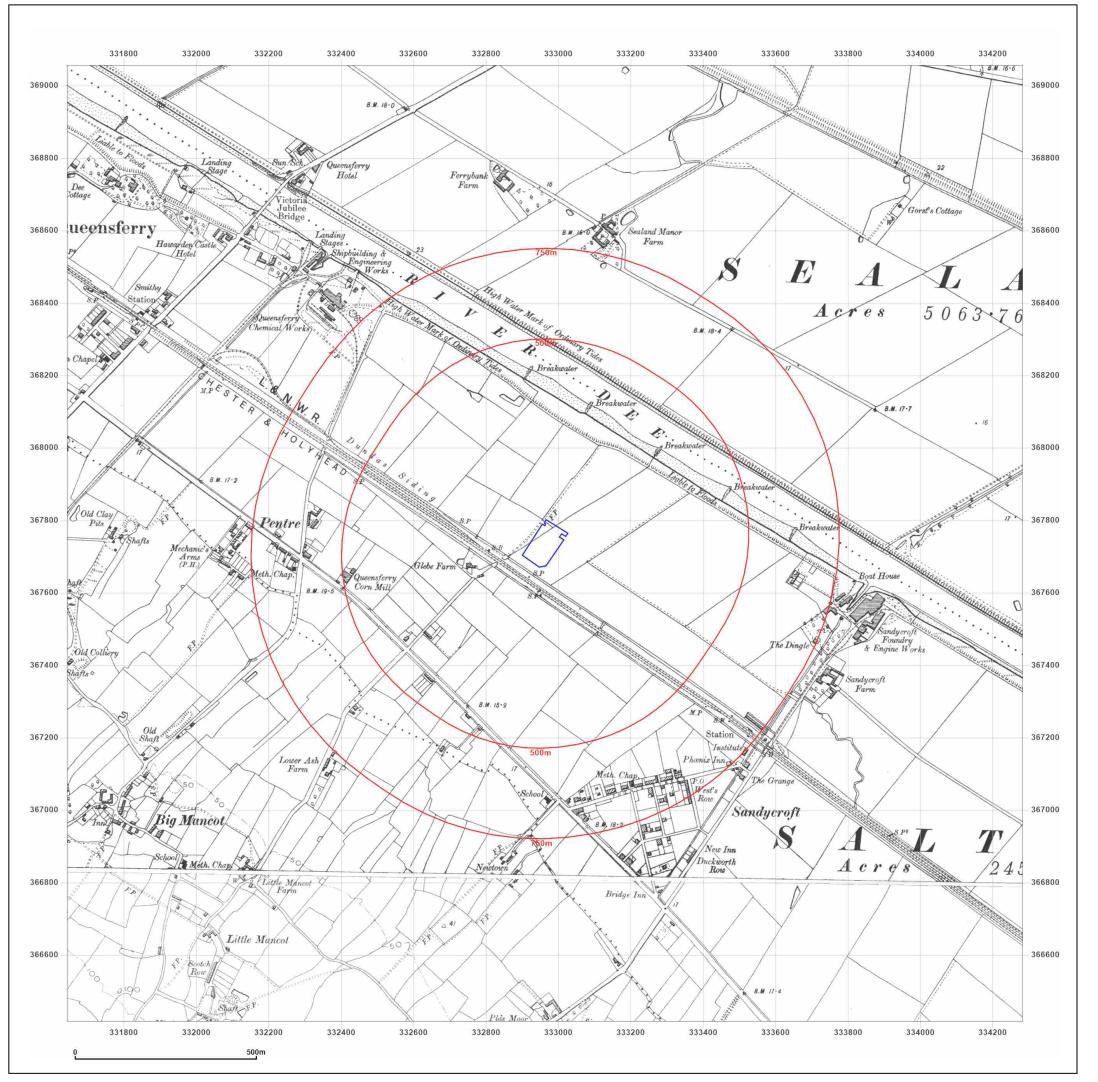


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Client Ref: TE1799_PO2880

Report Ref: GS-4GB-CUC-ZV3-Y9N

Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1898

Scale:

1:10,560

Printed at: 1:10,560

Surveyed 1869
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1869
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

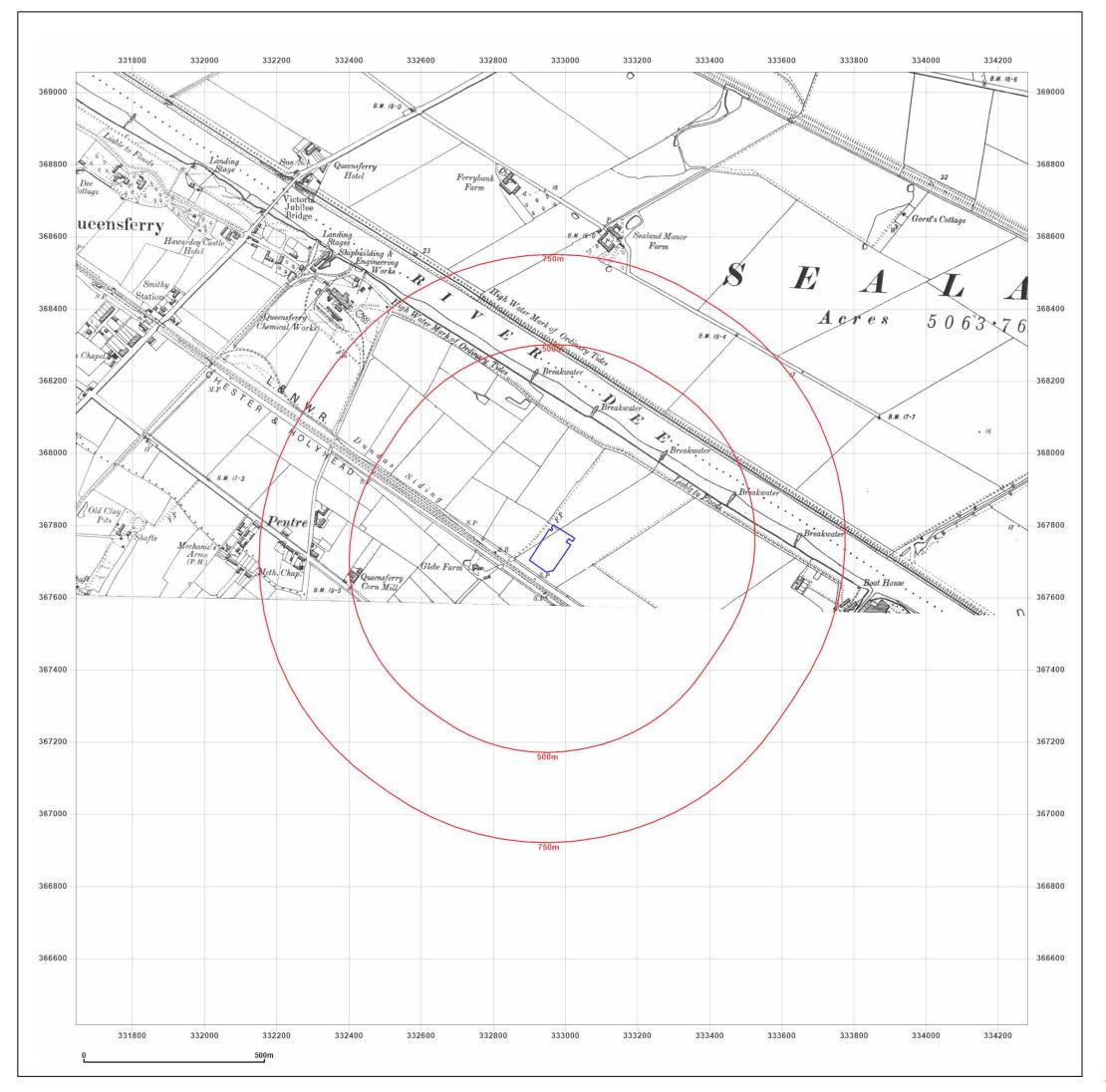


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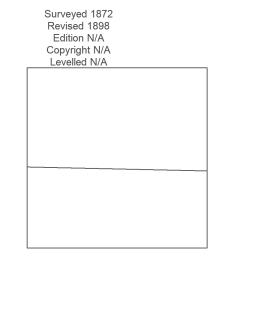
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Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1898

Scale: 1:10,560

Printed at: 1:10,560



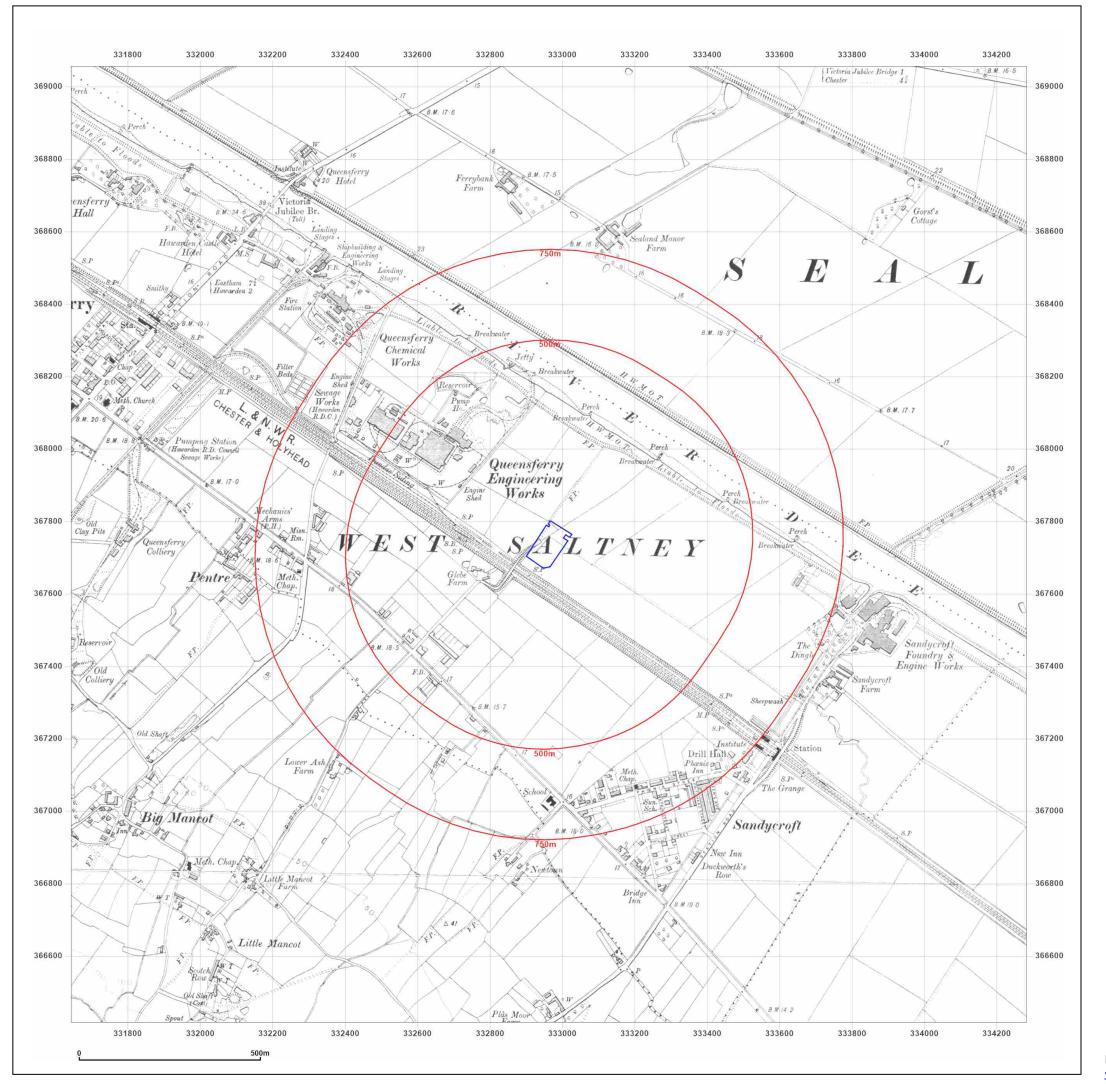


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 Client Ref:
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 Report Ref:
 GS-4GB-CUC-ZV3-Y9N

 Grid Ref:
 332962, 367736

Map Name: County Series

Map date: 1909

Scale:

1:10,560

Printed at: 1:10,560

Surveyed 1869
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1869
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

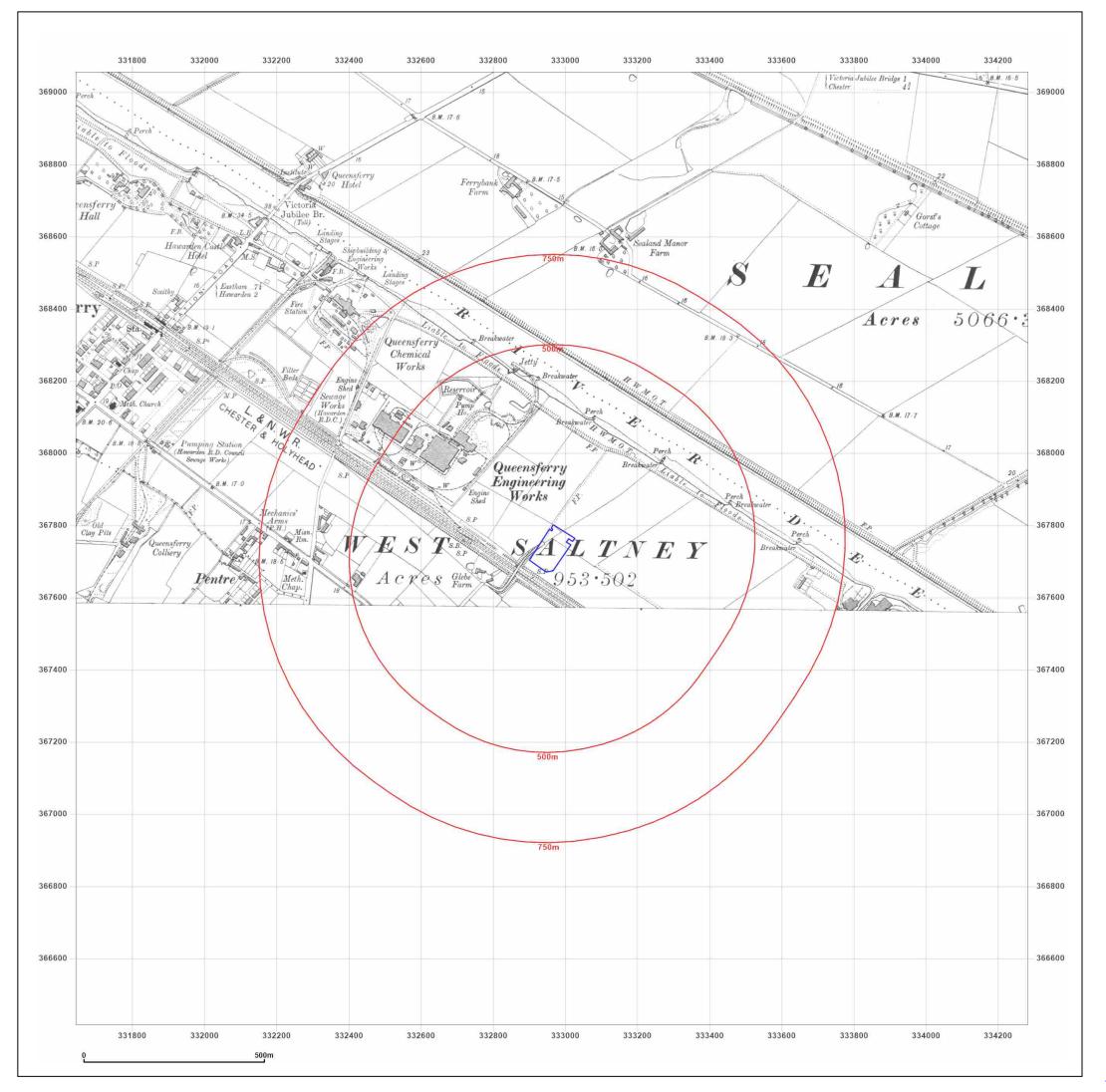


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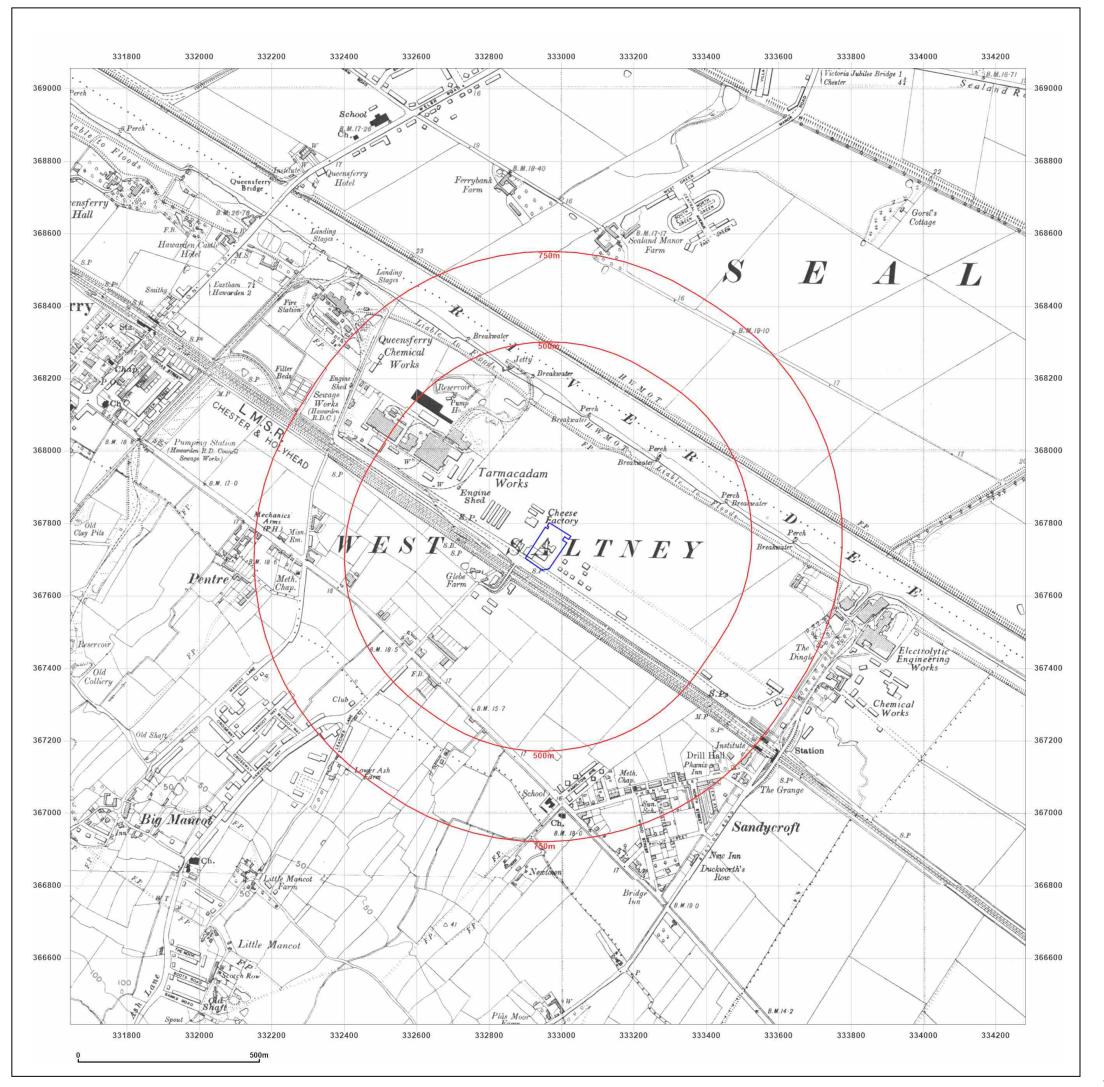


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Client Ref: TE1799_PO2880

Report Ref: GS-4GB-CUC-ZV3-Y9N

Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1938

1:10,560

Printed at: 1:10,560

Scale:

Surveyed 1869
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1869
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

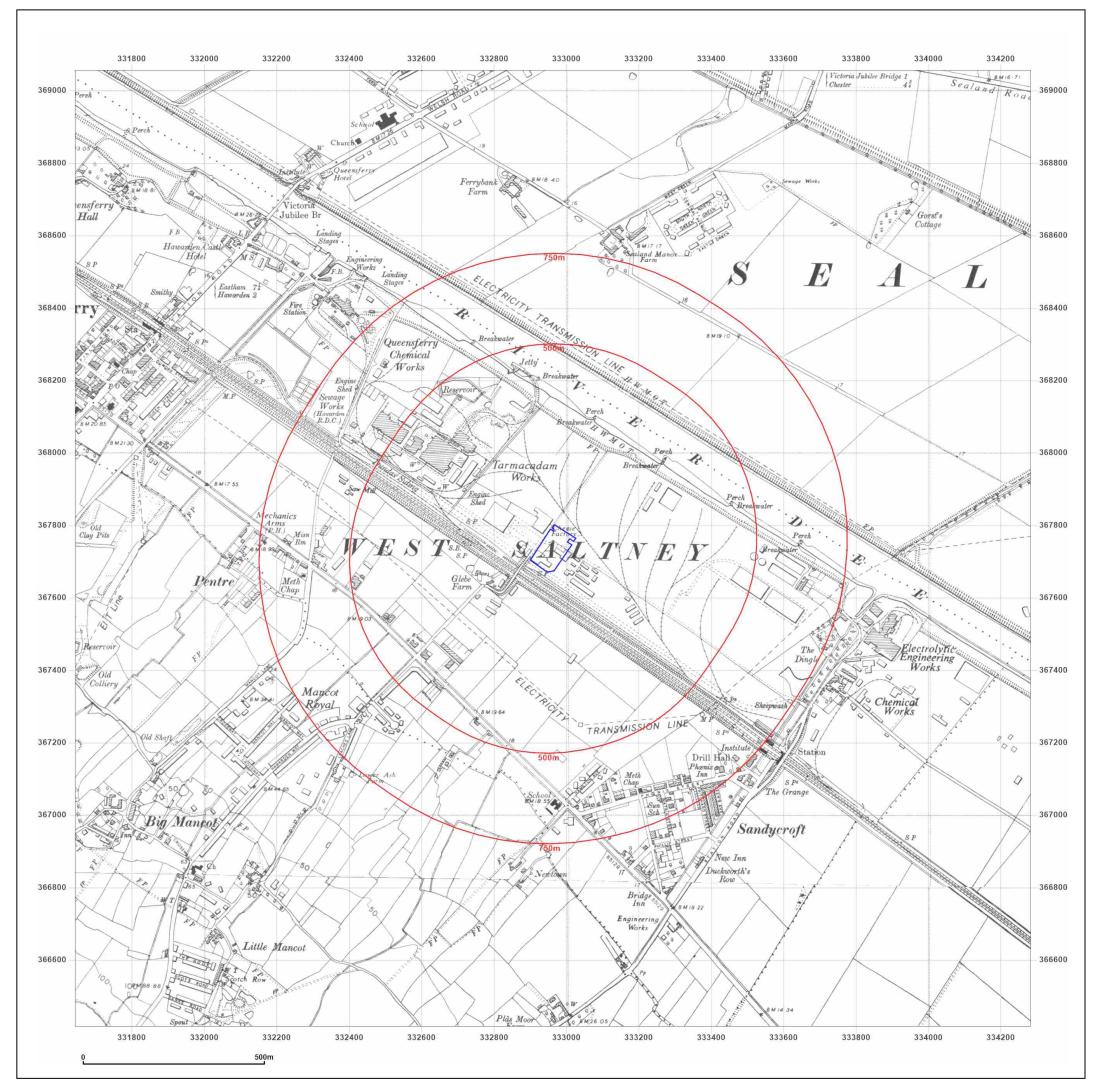


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Client Ref: TE1799_PO2880

Report Ref: GS-4GB-CUC-ZV3-Y9N

Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1948

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1869
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1869
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

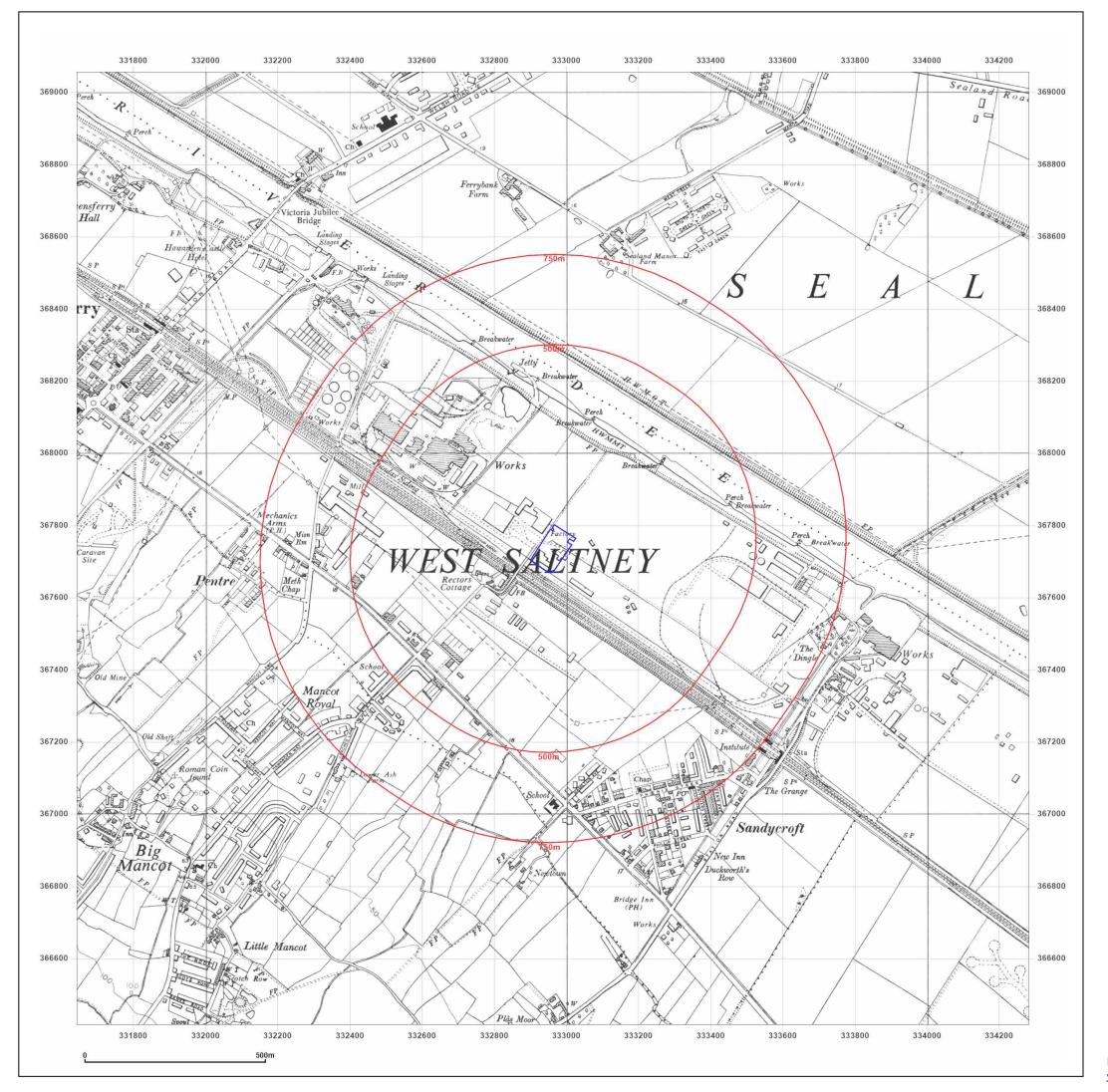


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 Client Ref:
 TE1799_PO2880

 Report Ref:
 GS-4GB-CUC-ZV3-Y9N

 Grid Ref:
 332962, 367736

Map Name: Provisional

Map date: 1963

Scale: 1:10,560

Printed at: 1:10,560

Surveyed N/A Revised 1962 Edition N/A Copyright 1963 Levelled N/A

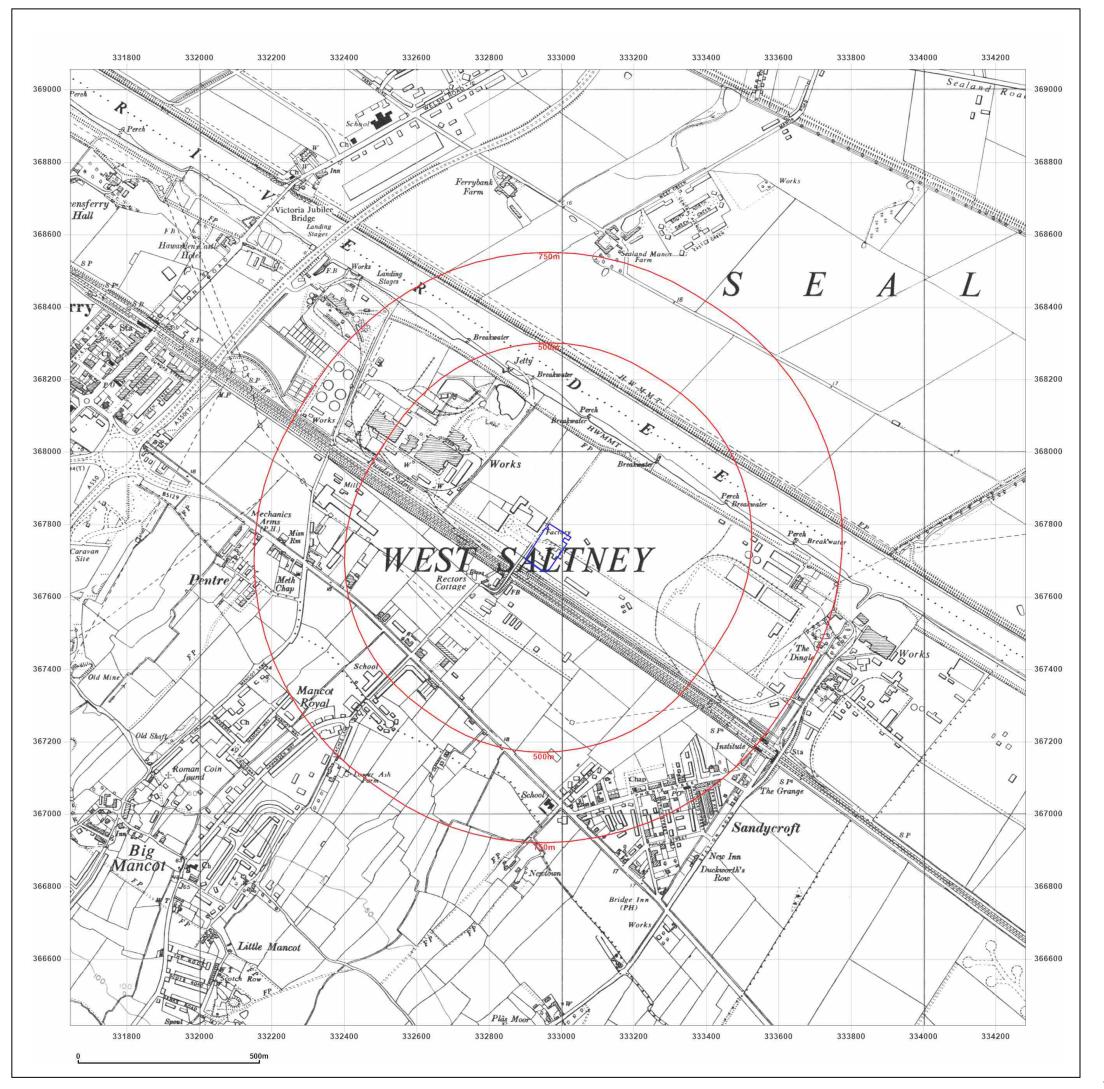


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: Provisional

Map date: 1963

Scale: 1:10,560

Printed at: 1:10,560

Surveyed N/A Revised 1963 Edition N/A Copyright 1963 Levelled N/A

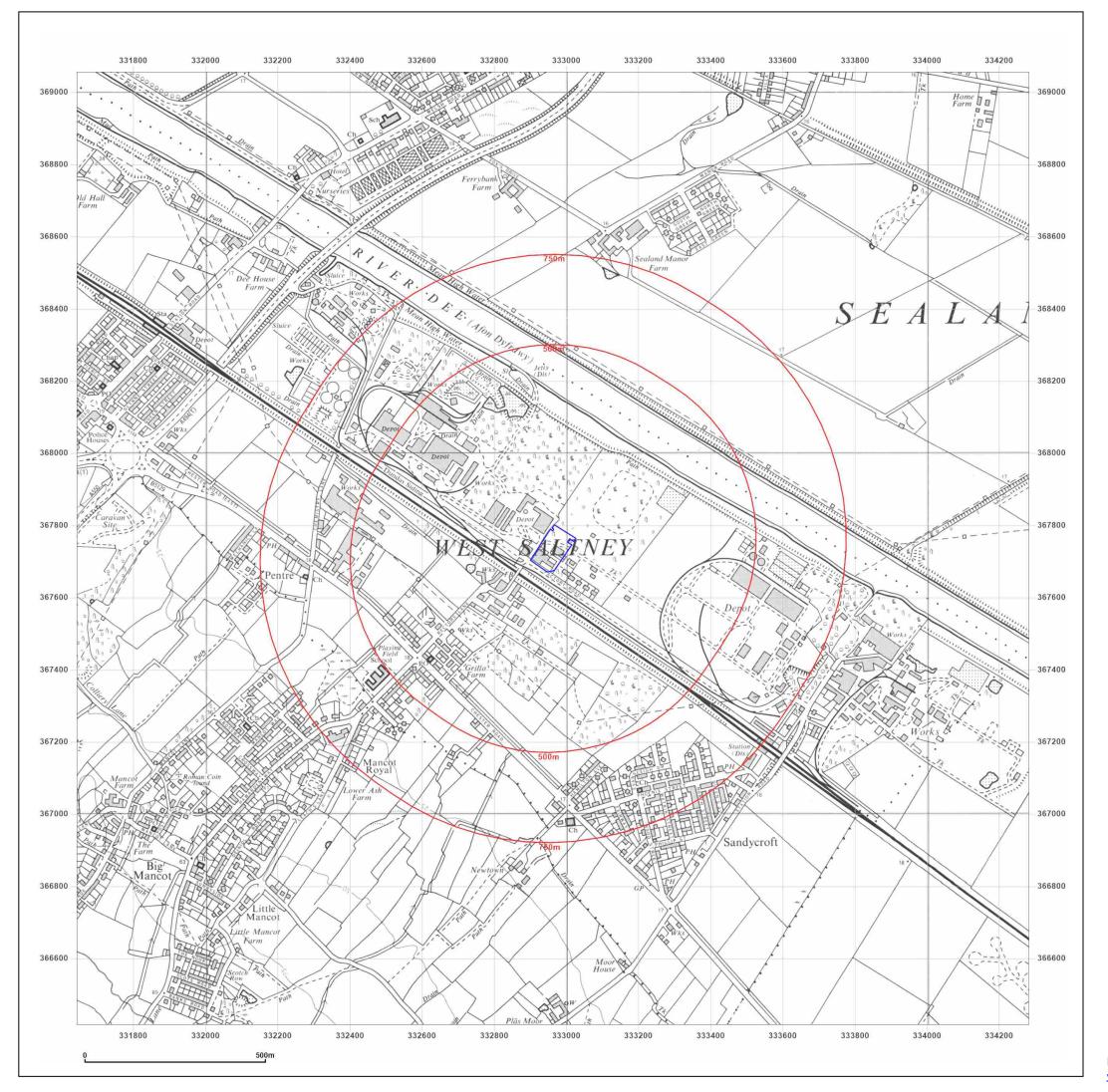


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: Provisional

Map date: 1969

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1965 Revised 1968 Edition N/A Copyright 1969 Levelled N/A

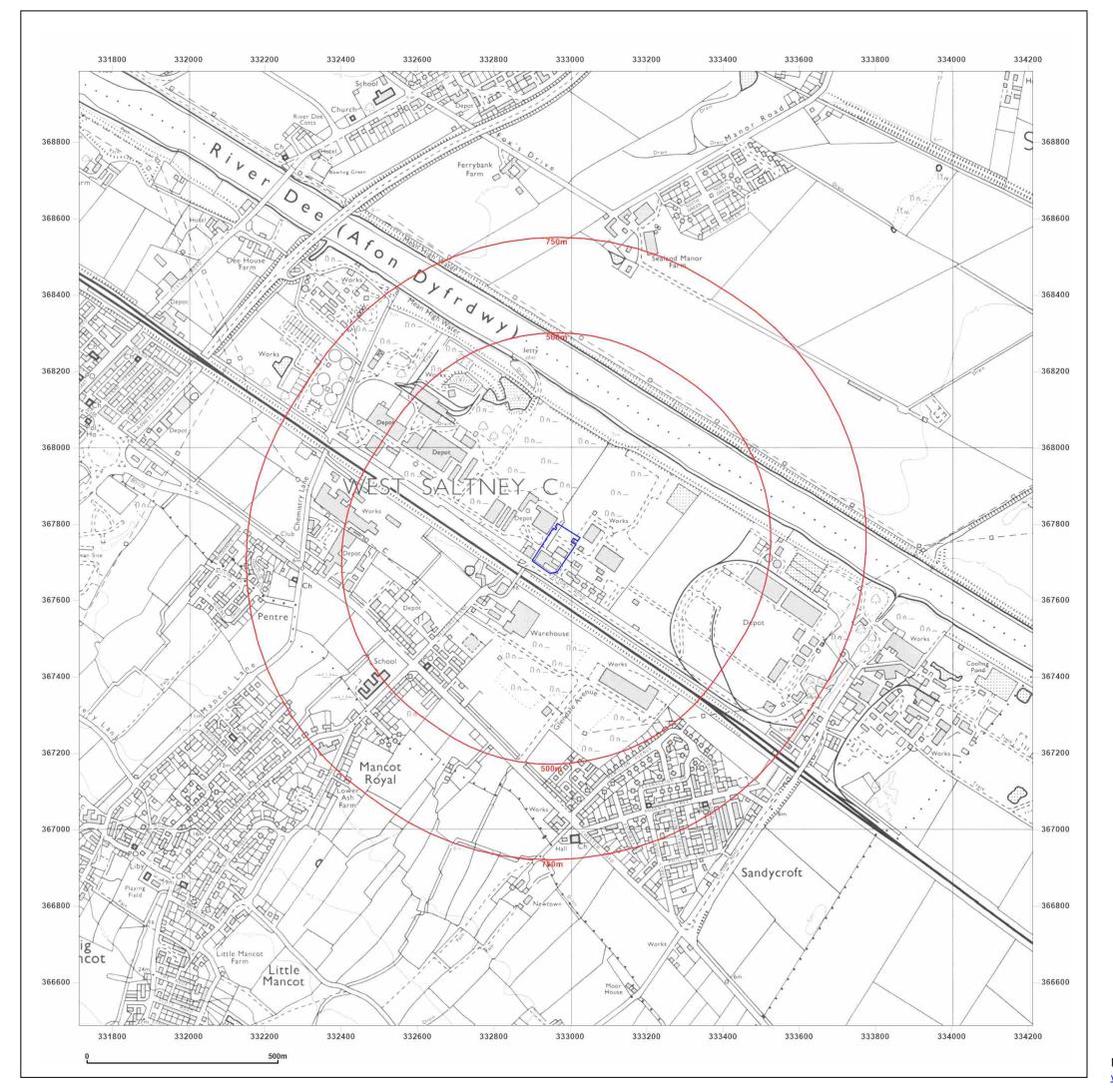


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 1978

Scale: 1:10,000

Printed at: 1:10,000

Surveyed 1969 Revised 1978 Edition N/A Copyright 1978 Levelled 1965

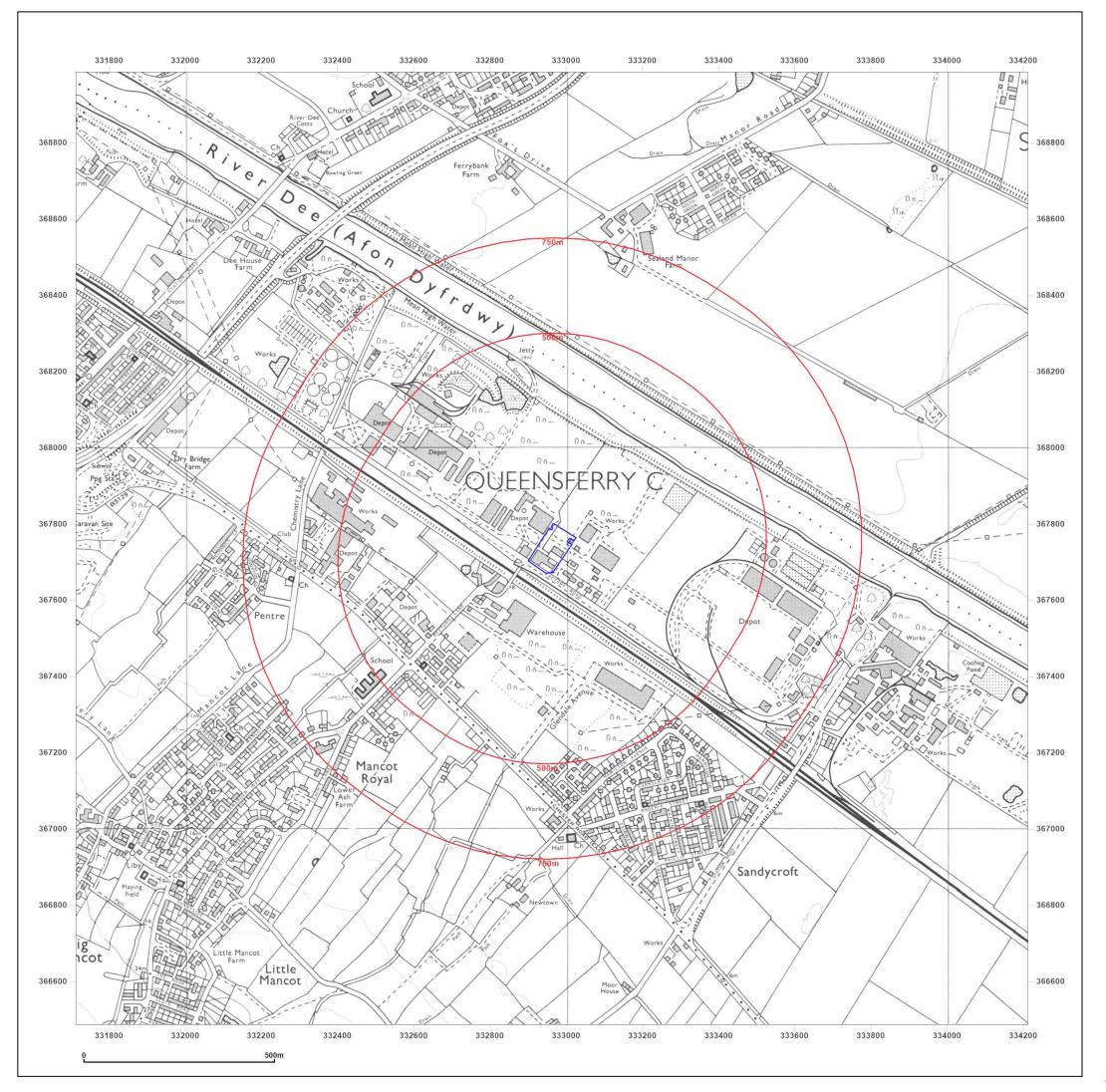


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 1989

Scale: 1:10,000

Printed at: 1:10,000

Surveyed 1988 Revised 1989 Edition N/A Copyright N/A Levelled N/A

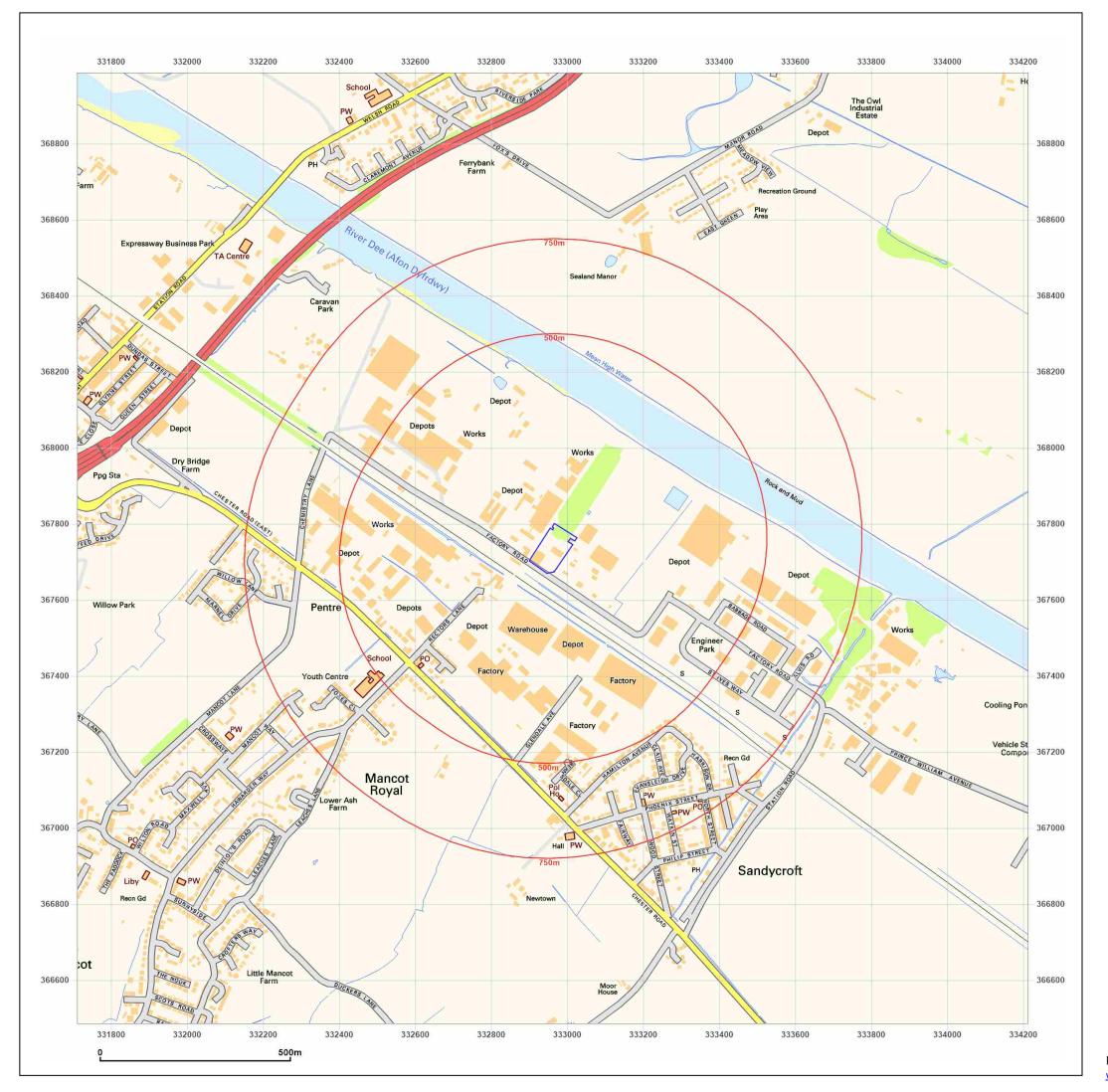


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 2001

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Printed at: 1:10,000

2001

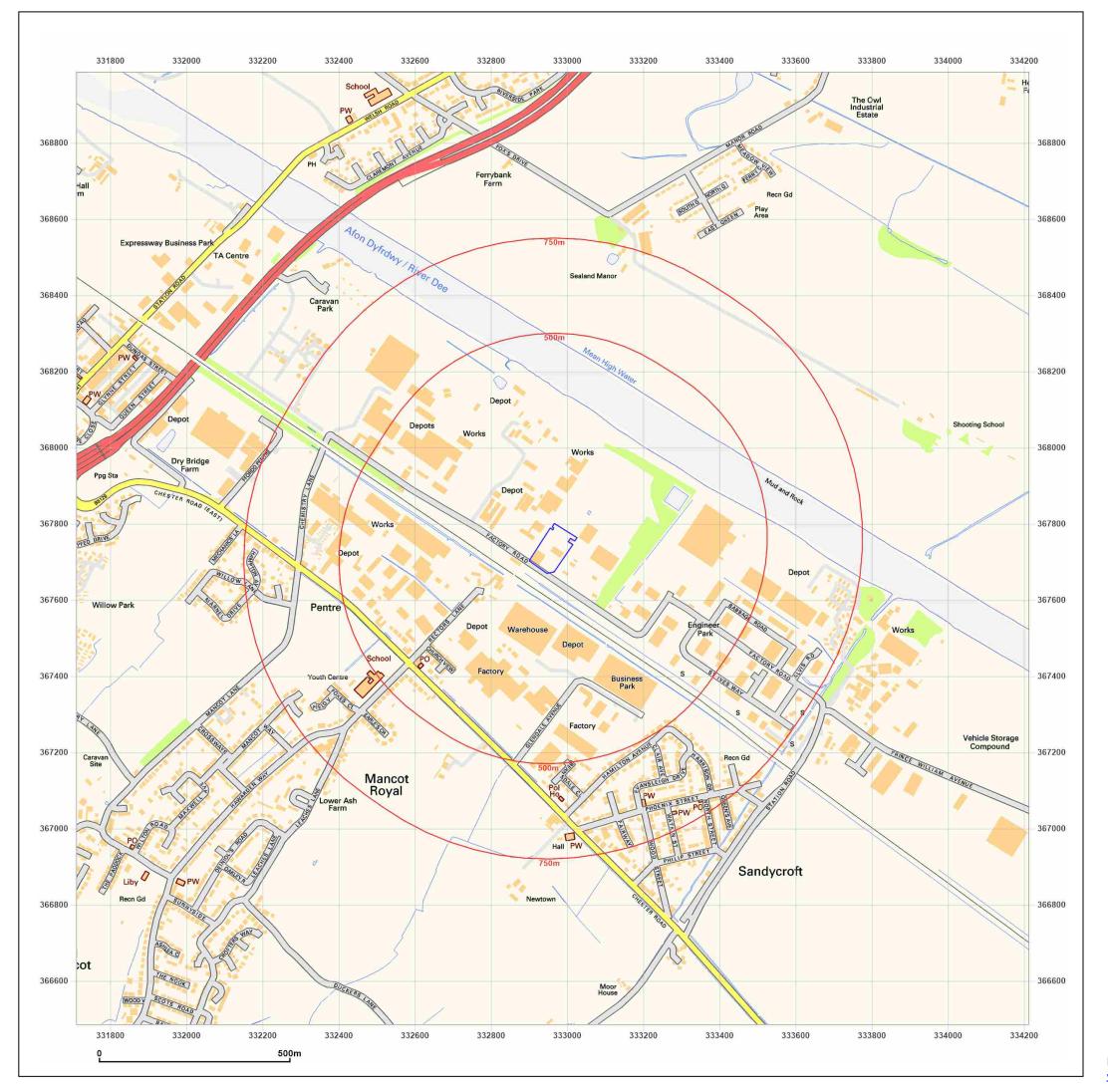


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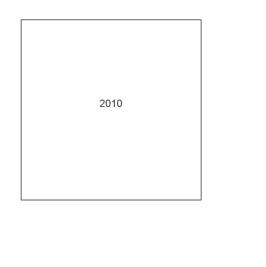
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Map Name: National Grid

Map date: 2010

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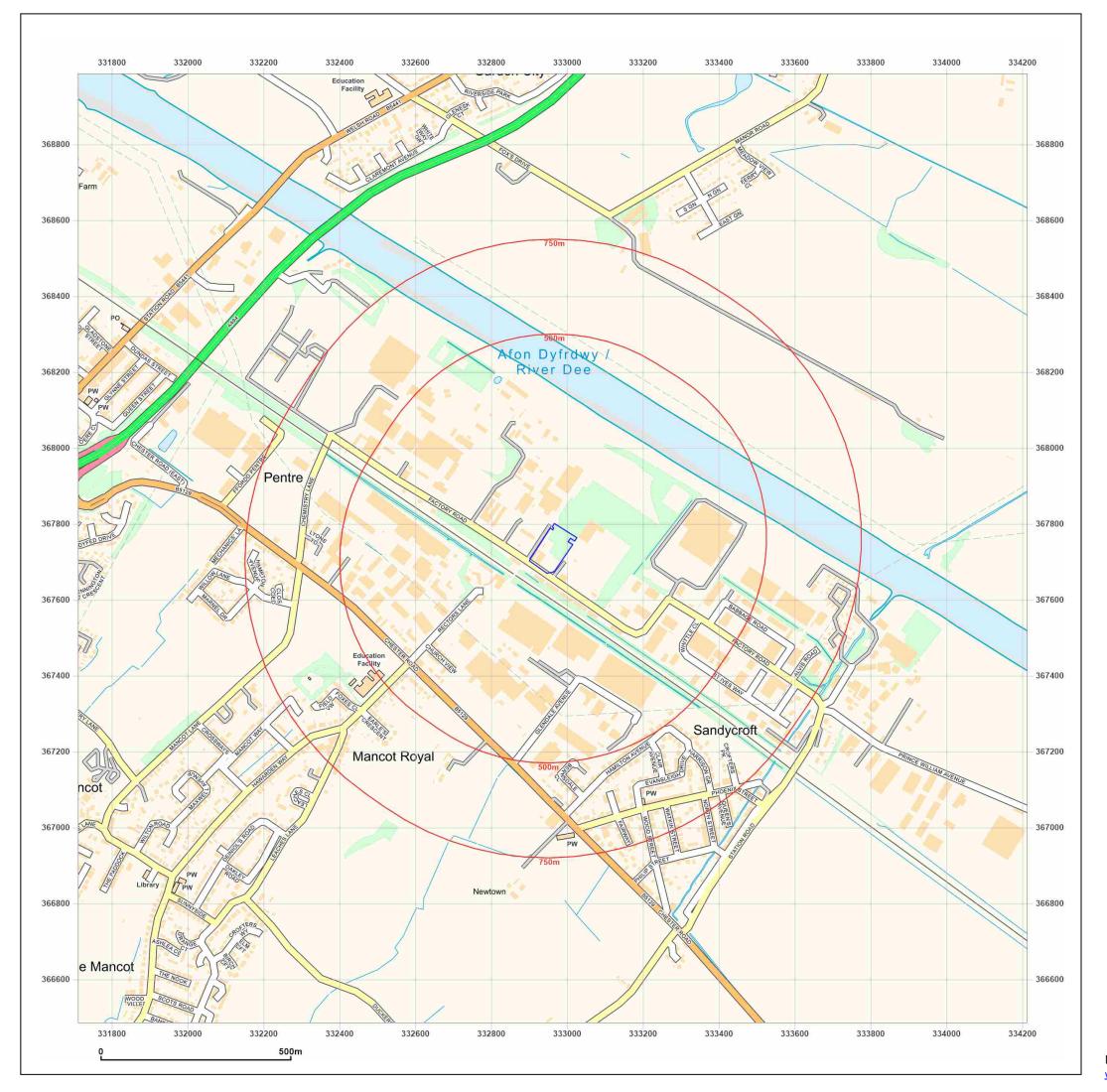


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 2023

Scale: 1:10,000

Printed at: 1:10,000



2023

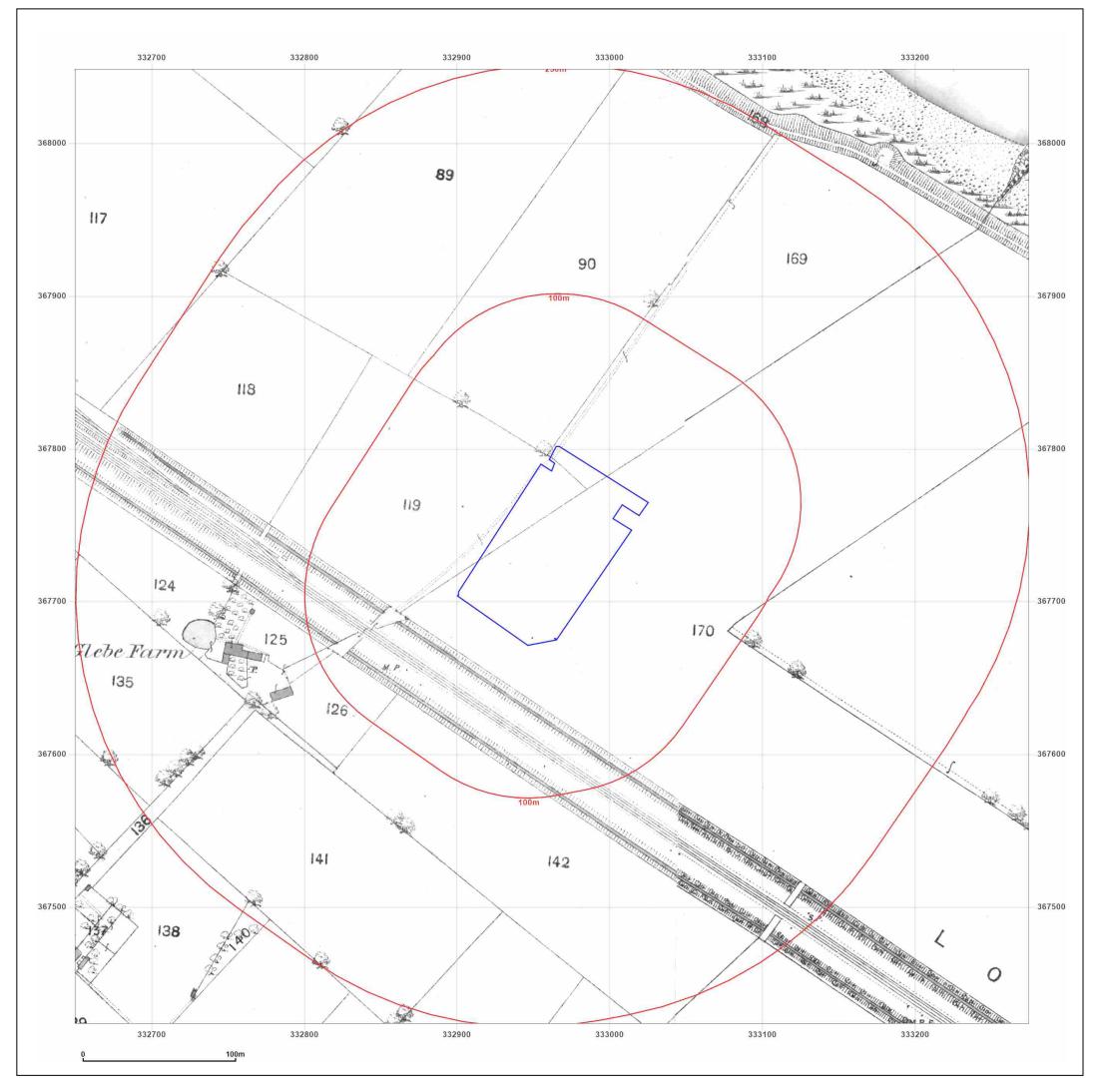


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 Client Ref:
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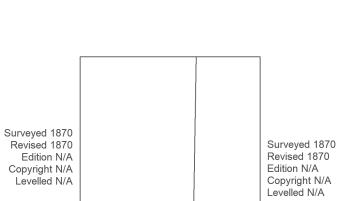
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Map date: 1870

Scale: 1:2,500

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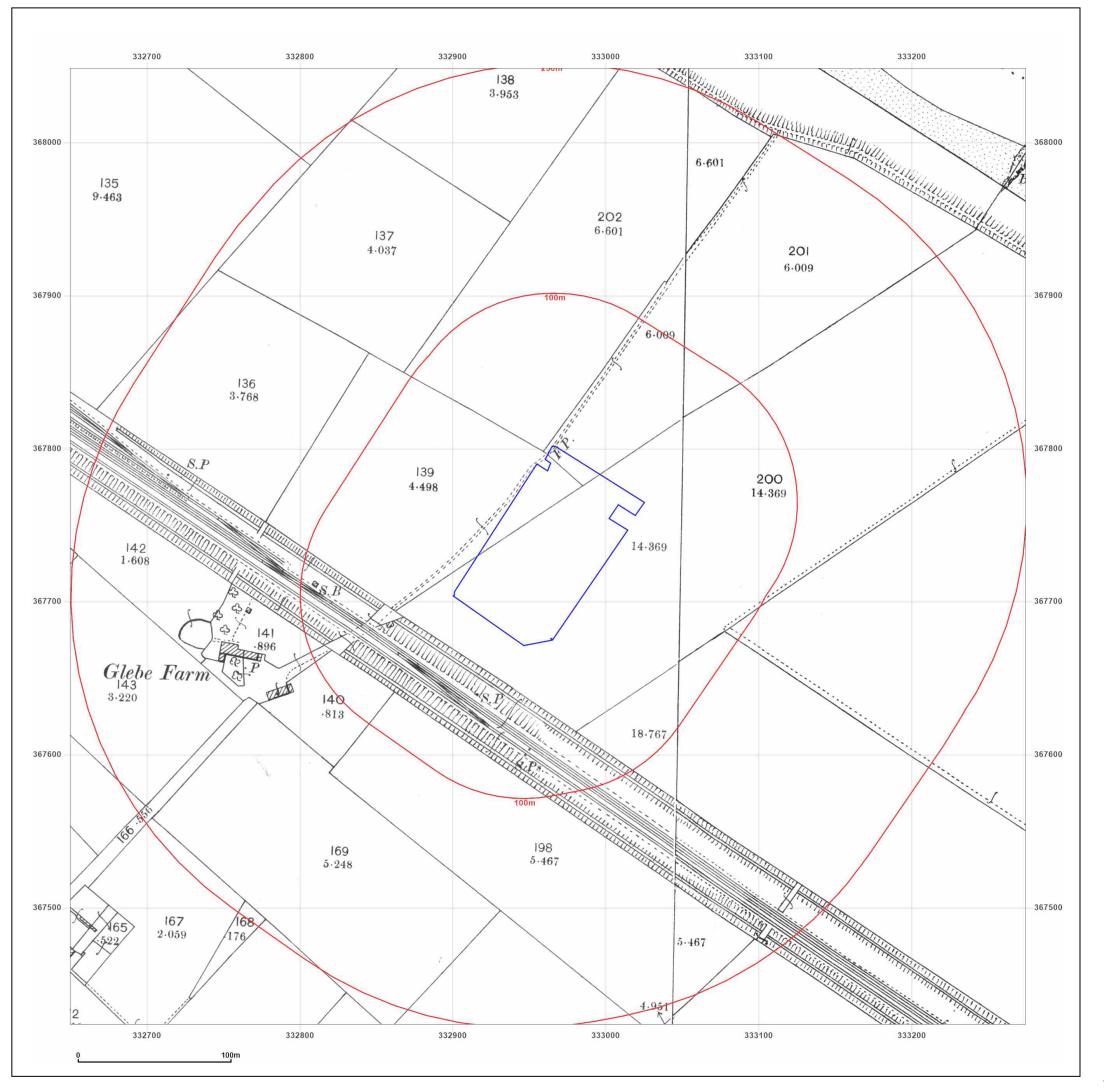


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A
Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

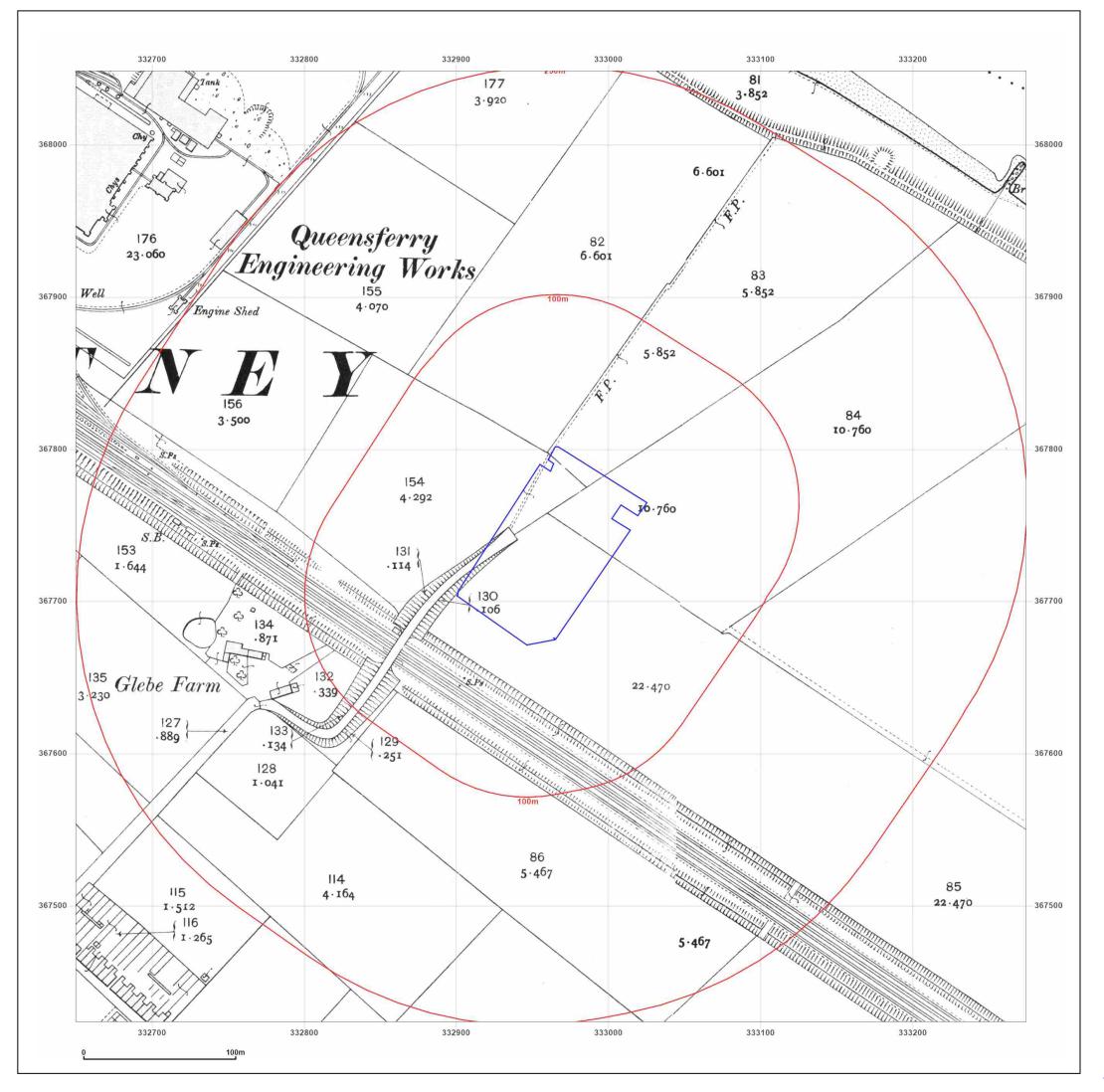


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Client Ref: TE1799_PO2880
Report Ref: GS-4GB-CUC-ZV3-Y9N
Grid Ref: 332962, 367736

Map Name: County Series

Map date: 1911

Scale: 1:2,500

Printed at: 1:2,500

Surveyed 1911
Revised 1911
Edition N/A
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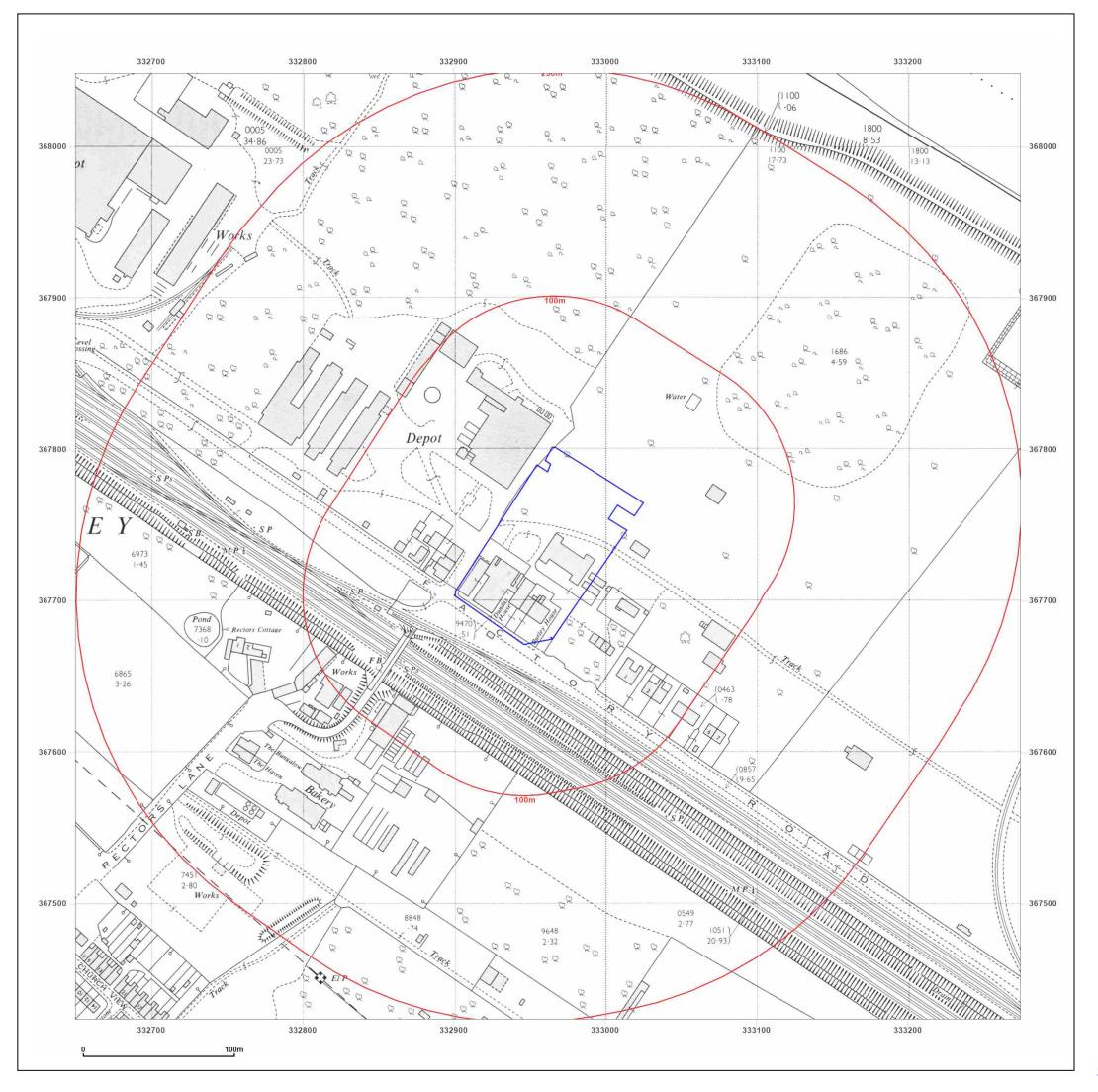
Levelled N/A

Edition N/A

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Client Ref: TE1799_PO2880

Report Ref: GS-4GB-CUC-ZV3-Y9N

Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 1962-1963

Scale: 1:2,500

Printed at: 1:2,500

Surveyed 1963 Revised 1963 Edition N/A Copyright 1964 Levelled 1959

Surveyed 1962 Revised 1962 Edition N/A Copyright 1963 Levelled 1951

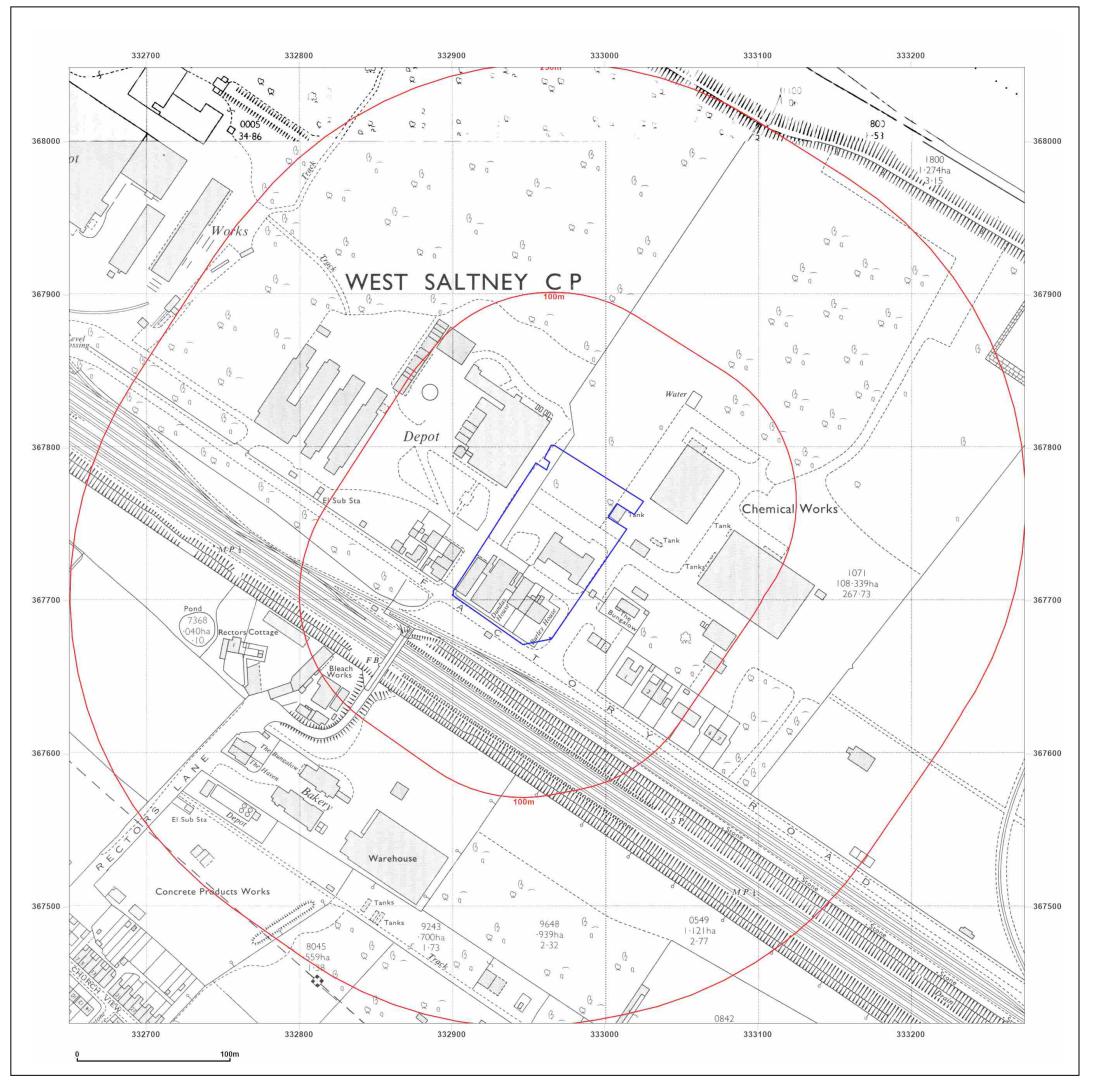


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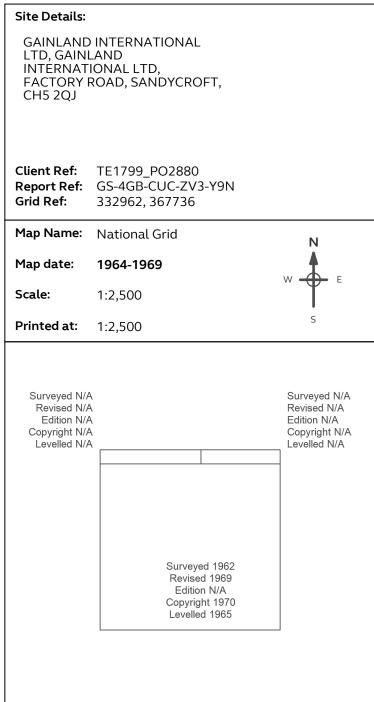
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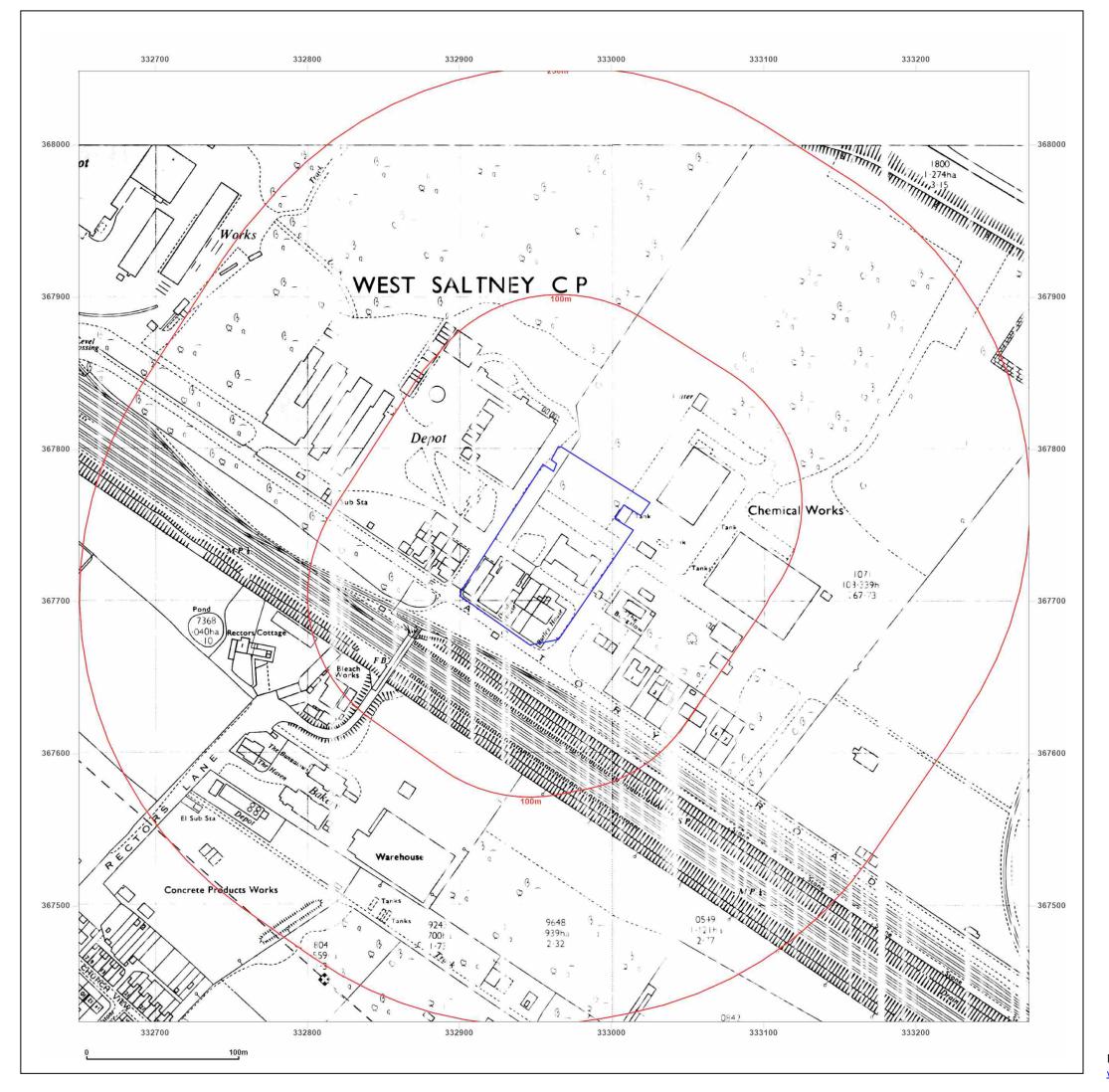


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Client Ref: TE1799_PO2880

Report Ref: GS-4GB-CUC-ZV3-Y9N

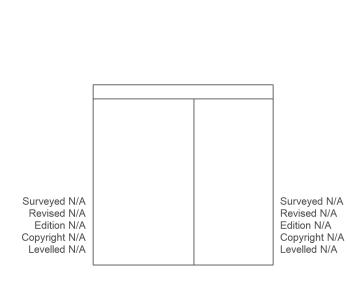
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Map Name: National Grid

Map date: 1970

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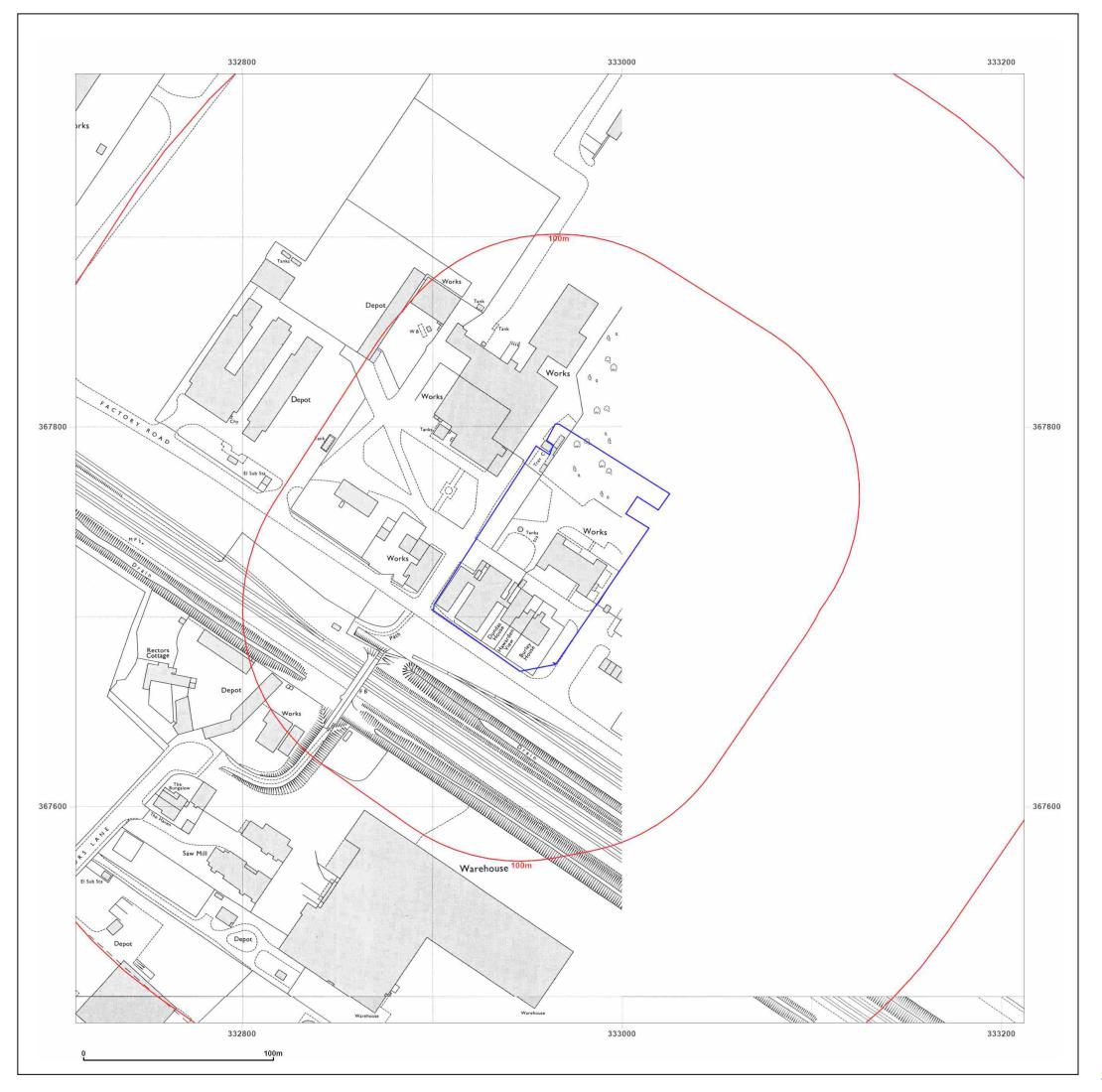


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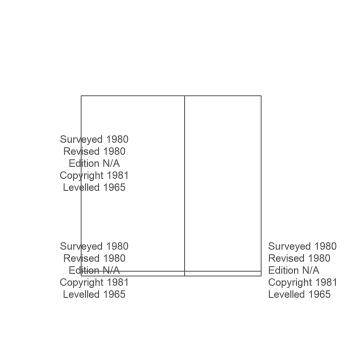
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Map Name: National Grid

Map date: 1981

Scale: 1:1,250

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 Client Ref:
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 Report Ref:
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 Grid Ref:
 332962, 367736

Map Name: National Grid

Map date: 1984

Scale: 1:1,250

Printed at: 1:2,000

Surveyed 1965
Revised 1984
Edition N/A
Copyright 1984
Levelled 1965

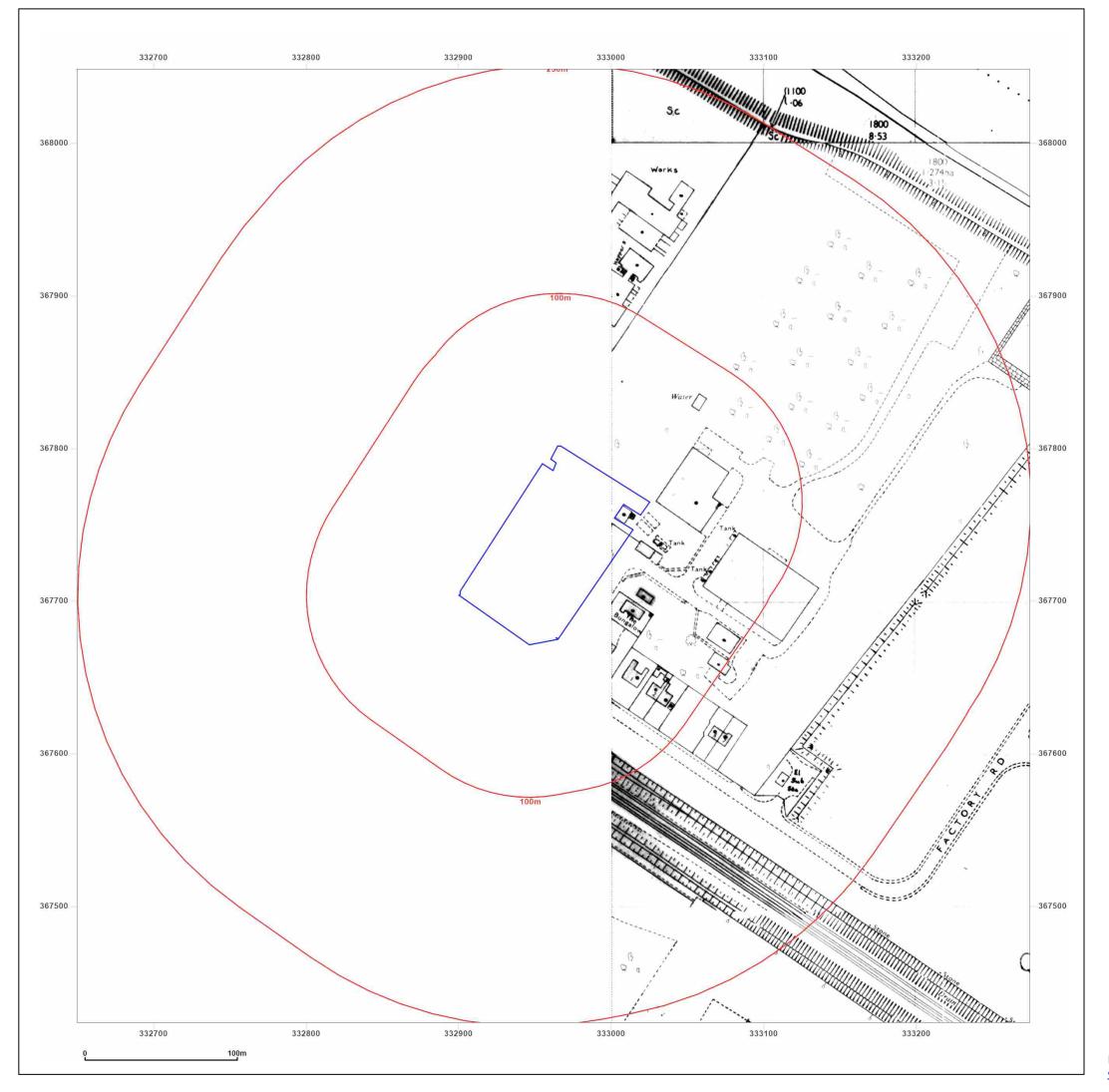


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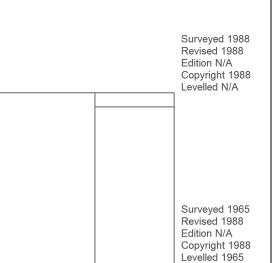
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Grid Ref: 332962, 367736

Map Name: National Grid

Map date: 1988

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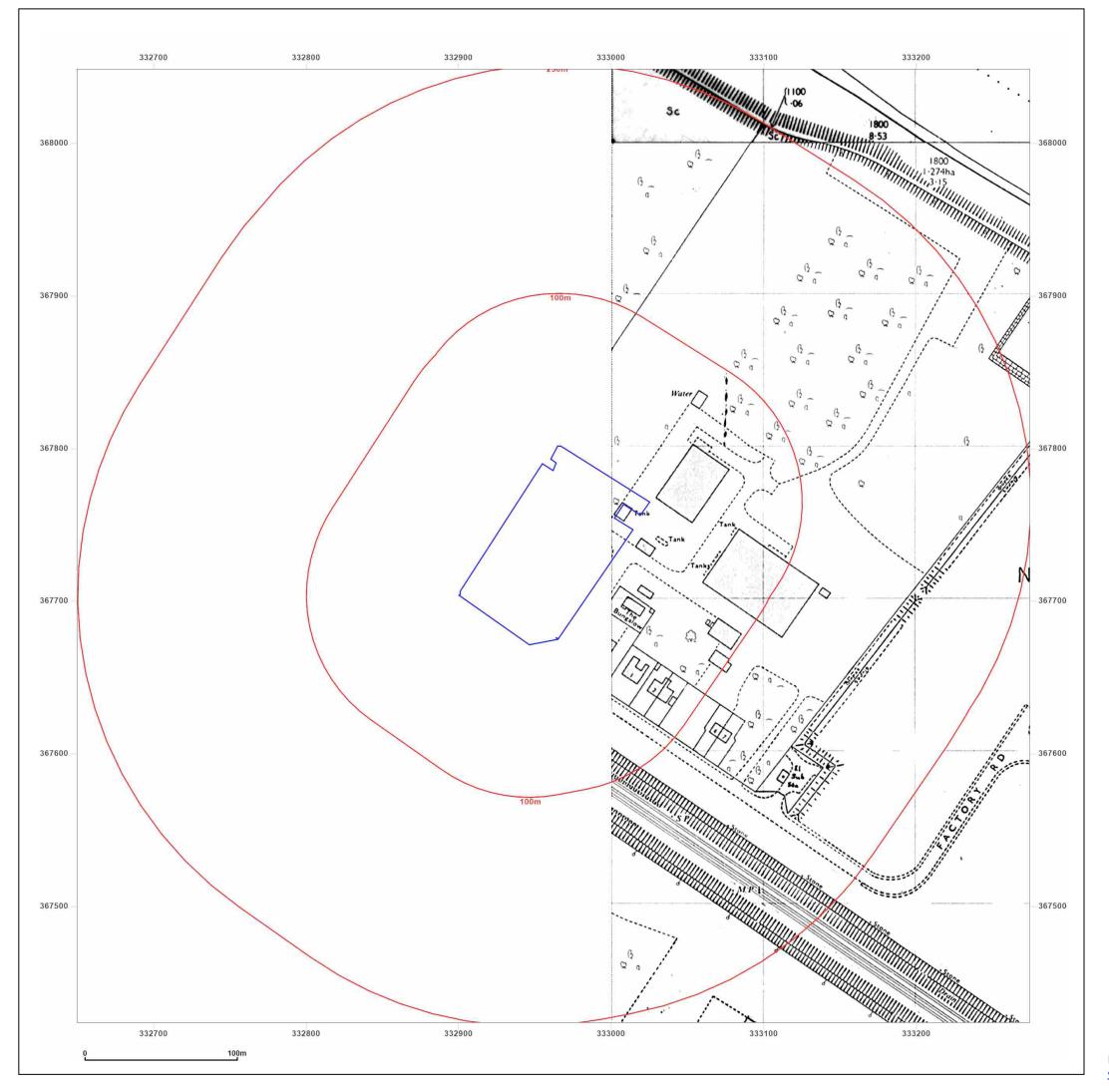


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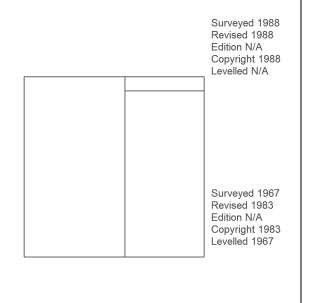
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Grid Ref: 332962, 367736

Map Name: National Grid

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Printed at: 1:2,500



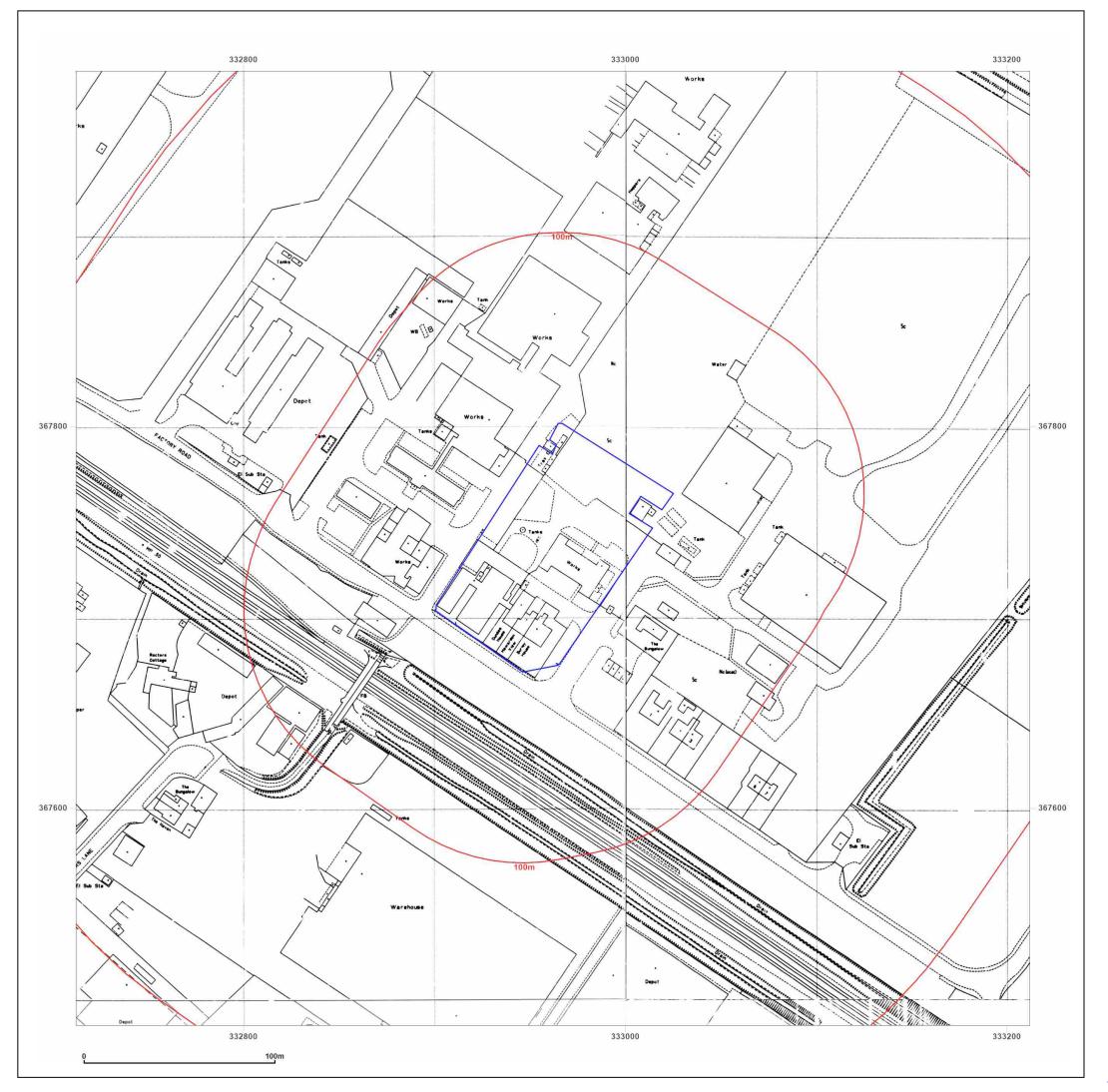


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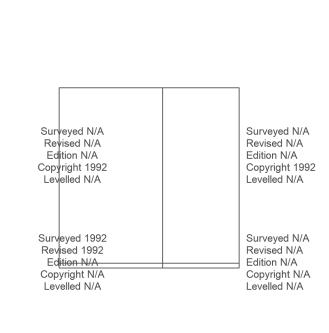
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Map Name: National Grid

Map date: 1991-1992

Scale: 1:1,250

Printed at: 1:2,000





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 Grid Ref:
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Map Name: National Grid

Map date: 1992-1993

Scale: 1:1,250

Printed at: 1:2,000

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Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1962
Revised 1969
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
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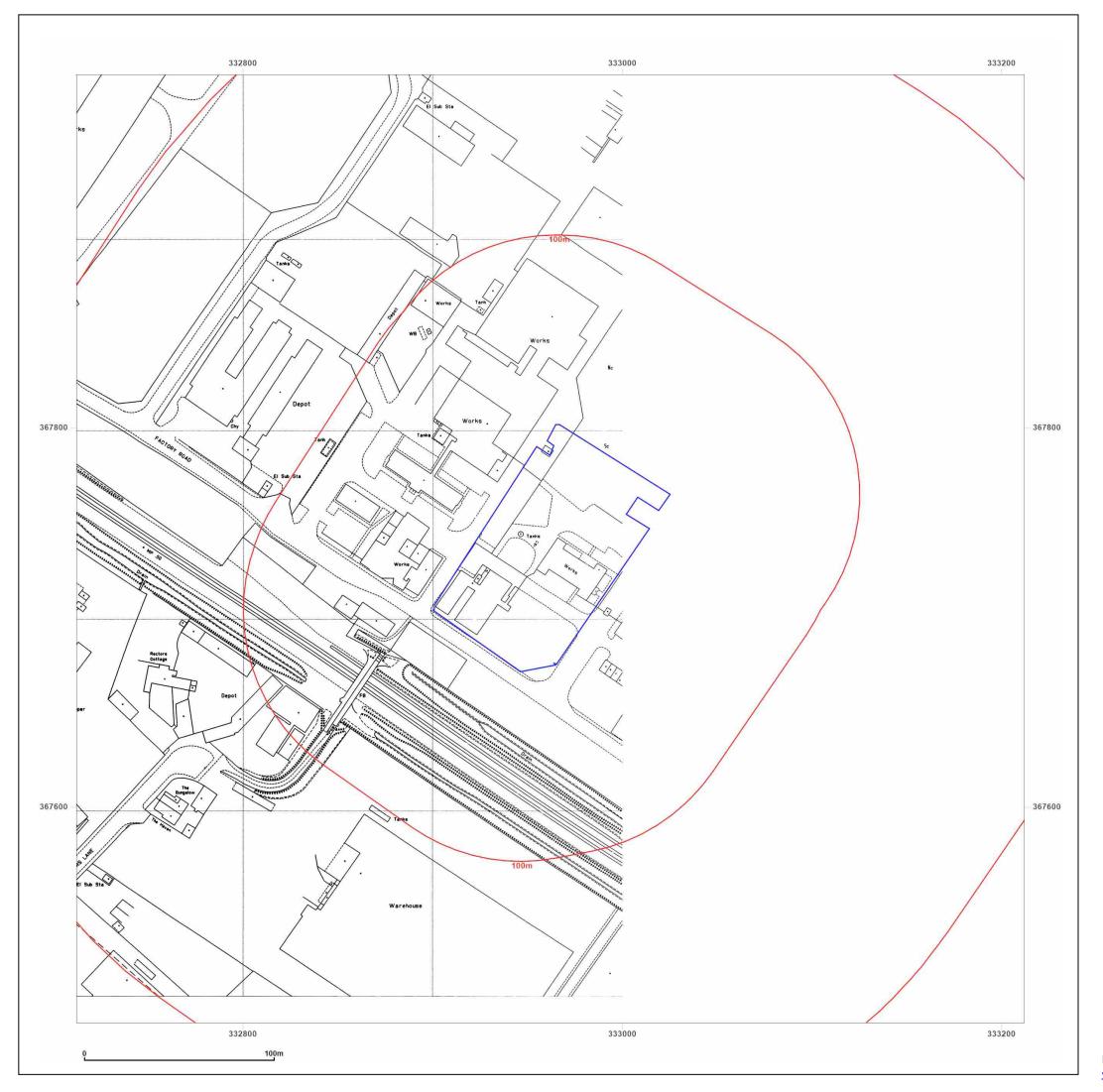


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 Client Ref:
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 Report Ref:
 GS-4GB-CUC-ZV3-Y9N

 Grid Ref:
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Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

Surveyed 1993 Revised 1993 Edition N/A Copyright 1993 Levelled N/A

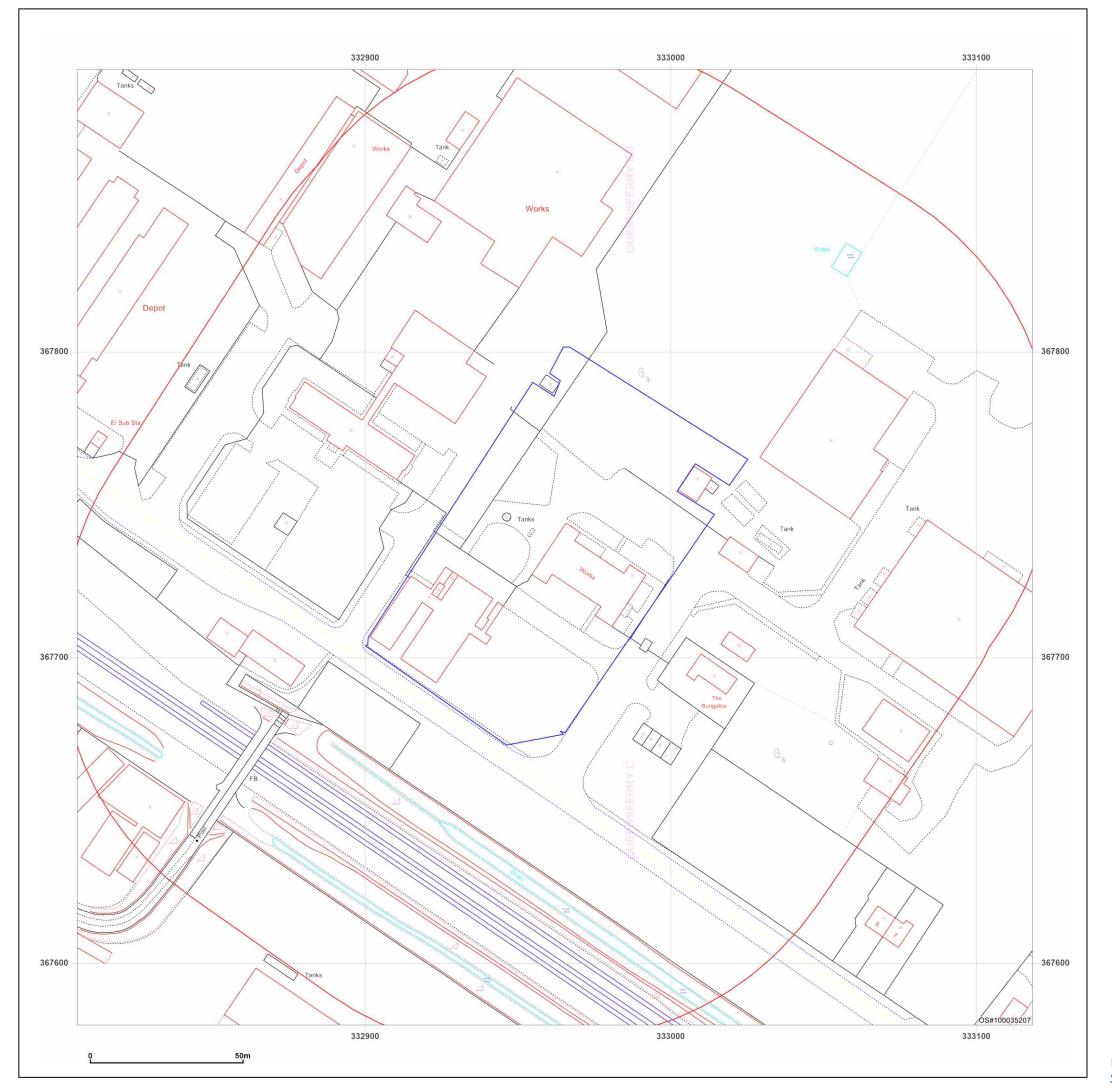


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 Client Ref:
 TE1799_PO2880

 Report Ref:
 GS-4GB-CUC-ZV3-Y9N

 Grid Ref:
 332962, 367736

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

2003



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APPENDIX I - REGULATOR PROVIDED INFORMATION	

RATE

APPENDIX K - DEFINITION RISK ASSESSMENTS	IS OF TERMS USED IN	N QUALITATIVE ANI	O QUANTITATIVE

CIRIA C552 Terminology

For the qualitative and quantitative assessment of risks posed by potential pollutant linkages have been undertaken using the risk matrix adapted from CIRIA C552 and outlined in the table below.

	Category	Definition
Potential severity	Severe	Acute (short term) risk to human health,
		Major pollution of sensitive controlled waters, ecosystems or habitat.
		Catastrophic damage to buildings or property or crops.
	Medium	Chronic (Medium / long term) risk to human health
		Pollution of sensitive controlled waters, ecosystems or species,
		Significant damage to crops, buildings or structures
	Mild	Easily preventable permanent health effects on humans.
		Pollution of non-sensitive controlled waters.
		Minor damage to buildings or structures.
	Minor	Easily preventable non-permanent health effects on humans, or no effects.
		Minor, low level and localised contamination of on-site soil.
		Easily repairable damage to buildings or structures.
Probability of risk	High Likelihood	Pollutant linkage may be present, and the risk is almost certain to occur , or there is evidence of harm already occurring.
	Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
	Low Likelihood	Pollutant linkages may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
	Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

		Potential Severity			
		Severe	Medium	Mild	Minor
Probability of risk	High Likelihood	Very high risk	High risk	Moderate risk	Moderate / low risk
1136	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



HUMAN HEALTH ASSESSMENT CRITERIA

Context

Contaminated Land is defined under law through Part IIA of the Environmental Protection Act 1990, implemented through Section 57 of the Environment Act 1995 and associated guidance ("Part IIA"). These specify that a "suitable for use" approach is to be applied in the assessment of potentially contaminated land, implemented through a phased programme of site investigation and risk assessment appropriate to the site under consideration.

The assessment of potential risks posed by contaminated land is based upon the assessment of plausible contaminant source - pathway receptor linkages ("pollutant linkages") for the current and/or proposed future use of the site. The process for the assessment of contaminated land adopted in this report is in line with guidance issued by the Environment Agency Land contamination risk management (LCRM) - GOV.UK (www.gov.uk)

Land contamination can harm:

- human health
- drinking water supplies, groundwater and surface water
- soils
- · ecosystems including wildlife, animals and wetlands.
- property

It can also affect the current and future land use. Dealing with land contamination helps make the environment clean and safe. Through regeneration it can:

- enhance the health and wellbeing of all.
- add to the economic, ecological and amenity value of the area.

Use land contamination risk management (LCRM) to:

- identify and assess if there is an unacceptable risk.
- assess what remediation options are suitable to manage the risk.
- plan and carry out remediation.
- verify that remediation has worked.

You can use LCRM in a range of regulatory and management contexts. For example, voluntary remediation, planning, assessing liabilities or under the Part 2A contaminated land regime. The Environment Agency expects you to follow LCRM if you are managing the risks from land contamination.

 $We support the use of the \ National \ Quality \ Mark \ Scheme \ (NQMS). \ You \ can \ use \ it for \ any \ type \ of \ land \ contamination \ report.$

Using the NQMS:

- will make sure all legislative requirements and necessary standards related to managing land contamination are met.
- can provide increased confidence by submitting reports of the quality we expect.
- can result in cost and time savings by 'getting it right first time'.

LCRM is made up of 4 guides.

- 1. LCRM: Before you start.
- 2. LCRM: Risk assessment.
- 3. LCRM: Options appraisal.
- 4. LCRM: Remediation and verification.

We use a staged risk based approach. There are 3 stages, and each stage is broken down into tiers or steps.

Stage 1: Risk assessment

You will use a tiered approach to risk assessment. The 3 tiers are:

- 1. Preliminary risk assessment.
- 2. Generic quantitative risk assessment.
- 3. Detailed quantitative risk assessment.

Stage 1 includes information for intrusive site investigations.

Stage 2: Options appraisal

There are 3 steps to follow.

- 1. Identify feasible remediation options.
- 2. Do a detailed evaluation of options.
- 3. Select the final remediation option.

Stage 3: Remediation and verification

There are 4 steps to follow.

- 1. Develop a remediation strategy.
- 2. Remediate.
- 3. Produce a verification report.
- 4. Do long term monitoring and maintenance, if required

You must always start with a preliminary risk assessment.

The risk assessment stage is an iterative process. You can do the 3 tiers in order or progress from a preliminary risk assessment to a detailed quantitative risk assessment. As part of a generic or detailed quantitative risk assessment you will need to collect detailed information about the site. This is usually through an intrusive site investigation.

Depending on the level of risk or regulatory requirements, you can proceed from a preliminary risk assessment to the options appraisal stage. If you proceed direct to the options appraisal stage, you still need to collect the detailed site investigation information required by the generic and detailed quantitative risk assessments. This is to confirm that your approach is viable and acceptable.

Following the risk assessment stage, if you conclude that the risks are acceptable, with agreement from the relevant regulator, you can end the process.

If there are unacceptable risks, then remediation or mitigation is required. Follow stages 2 and 3 in order.

In stage 2 options appraisal, you will:

- look at the most feasible options.
- produce a shortlist of options.
- use evaluation criteria to assess them.
- select which ones are the most suitable to take forward to stage 3.

In stage 3 remediation and verification, you will produce a remediation strategy, do the remediation and then produce a verification report.

You will decide at the options appraisal stage if long term monitoring and maintenance is the remediation option. You may need to do post-remediation monitoring for further verification.

The risk assessment and subsequent investigation, remediation and verification must address all potential sources of pollutants that may be present on the site (the "hazards"), all receptors that may be harmed by these (e.g., human health, controlled waters, ecological receptors) and the pathways by which the contamination may be transported from the contaminant source(s) to the receptor(s). This is defined within the conceptual model for the site, which represents the characteristics of the site in a form that shows the possible pollutant linkages. As further information becomes available (for example, through site investigation), so the conceptual model will be refined.

Remedial action can be specified at any phase within this assessment process to break the identified pollutant linkage in determining whether or not to undertake further assessment or to undertake remediation, the potential cost-savings arising from a more thorough assessment of the pollutant linkages and more tightly defined remedial strategy must be considered against the direct costs involved in the work and the time that this will take to execute and gain regulatory approval.

A different approach to the statistical appraisal of data is required depending on whether the assessment is being undertaken to assess land as Contaminated Land in accordance with the regulations or whether the assessment is to assess whether the site is suitable for new development in accordance with the Planning regime. The statistical approach to assessment is discussed further in CL:AIRE:2020 "Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration".

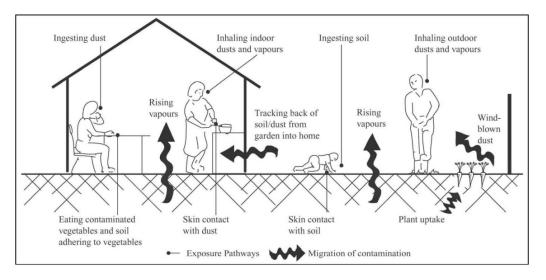
Some form of Detailed Quantitative Risk Assessment (DQRA) will be essential for those cases where appropriate GAC values cannot be established for the contaminant linkages under consideration.

Generic Assessment Criteria for Human Health Risk Assessment

In March 2002, the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) published the Contaminated Land Exposure Assessment (CLEA) Model and a series of related reports and guidance. These were designed to provide a scientifically based framework for the assessment of chronic risks to human health from contaminated land. The initial documents (CLR7 – 10) were withdrawn and replaced with revised guidance issued by the Environment Agency including:

- "Using Soil Guideline Values"; EA,2009; Land contamination: using soil guideline values (SGVs) GOV.UK (www.gov.uk)
- "Human Health toxicology assessment of contaminants in soil" EA;, 2009; https://www.gov.uk/government/publications/human-health-toxicological-assessment-of-contaminants-in-soil
- "Update technical background to the CLEA model" 2009; https://www.gov.uk/government/publications/updated-technical-background-to-the-clea-model
- CLEA Software (Version1.05) Handbook 2015; https://www.gov.uk/government/publications/contaminated-land-exposure-assessment-clea-tool
- Compilation of Data for priority Organic Contaminants for Derivation of Soil Guideline Values; Science Report SC050021/SR7, 2008; and,
- "Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration". CL:AIRE:2020 https://www.claire.co.uk/component/phocadownload/category/9-other-cl-aire-documents?download=745:2020-stats-guidance

The CLEA model and associated guidance was developed to calculate an estimated tolerable daily intake (TDI) of contaminants for site users given a set of 'typical' human health exposure pathways which are detailed in "SR3: Updated technical background to the CLEA model"



(Science Report SC050021/SR3, EA, 2009) and reproduced below.

Ingestion

- Outdoor soil;
- Indoor dust;
- Home grown produce;
- Soil attached to home grown produce.

Dermal Contact

- Outdoor soil;
- Indoor dust.

Inhalation

- Outdoor dust;
- Indoor dust;
- Outdoor vapour;
- Indoor vapour.

It should be noted that the CLEA model does not include an exhaustive list of potential exposure pathways, e.g. certain compounds can pass through plastic water pipes into drinking water supply.

The potential significance of each of the exposure pathways is dependent upon the type of land use and the nature of the contaminant being considered. The CLEA model considers principal 'default' land use scenarios and makes a series of assumptions with regards to building type (where applicable), identification of the critical human receptor group, exposure frequency and duration. The definitions of the principal land use types given in SR3 (EA, 2009) are:

Residential land use;

- A typical residential property consisting of a two-storey terraced house built on a ground-bearing slab of 0.15m thickness with a private garden consisting of lawn, flowerbeds, and a small fruit and vegetable patch. The occupants are assumed to be parents with young children, who make regular use of the garden. The critical receptor is a 0 6-year-old female.
- Active exposure pathways are ingestion of outdoor soil, ingestion of indoor dust, ingestion of home grown produce and soil
 adhering to home grown produce; direct dermal contact with outdoor soil and indoor dust; inhalation of outdoor dust and vapour
 and indoor dust and vapour.

Allotments

- A plot of open space commonly made available by the Local Authority to tenants to grow fruit and vegetables for their own consumption. There are usually several plots to a site and the overall site area may cover more than one hectare. The tenants are assumed to be the parents or grandparents and that young children make occasional accompanied visits to the plots. The critical receptor is a 0 6-year-old female and there is no building present on site.
- Active exposure pathways are ingestion of outdoor soil, ingestion of home grown produce and soil adhering to home grown produce; direct dermal contact with outdoor soil; inhalation of outdoor vapour.

Commercial and industrial land use.

- A typical commercial or light industrial property consisting of a three-story office building (pre-1970) with a ground bearing floor slab at which employees spend most time indoors and are involved in office based or related light physical work. The critical receptor is a working female adult aged 16 – 65 years.
- Active exposure pathway is ingestion of outdoor soil, ingestion of indoor dust; direct dermal contact with outdoor soil and indoor dust; inhalation of outdoor dust and vapour and inhalation of indoor dust and vapour.

Soil Guideline Values

Based on the assumption of each land use type, the EA and DEFRA developed and published Soil Guideline Value (SGV) using the CLEA model for a number of principal contaminants and 'default' end-use scenarios of residential, allotments and commercial/industrial use. The primary purpose of the SGVs is as trigger value for the tolerable daily intake (TDI), below which it can be assumed that the soil does not pose an unacceptable risk to the identified receptor. Where soils contamination is present above this level further assessment may be required. SGVs were developed for the following contaminants:

- Heavy metals and other inorganic compounds: arsenic, cadmium, chromium, cyanide, lead (now withdrawn), mercury, nickel and selenium.
- Benzene, ethylbenzene, toluene and xylenes.
- Phenol.
- Dioxins and dioxin-like polychlorinated biphenyls (PCBs)
- Polycyclic aromatic hydrocarbons (PAHs) 11 substances

LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment

In addition, in 2009 CIEH through LQM and EIC published generic assessment criteria (GACs) for 82 substances including metals, petroleum hydrocarbons, PAHs and explosive substances for a variety of soil types and the three 'default' land uses – (residential, allotments and commercial end-uses) as described in SR3 (EA, 2009). These have been superseded as described below.

Category 4 Screening Values

In 2013 "SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination" (CL:AIRE 2013) was issued which detailed findings of a research project undertaken by CL:AIRE to set out the framework by which potential Category 4 Screening Levels (pC4SL) may be derived for 6 contaminants of concern, Arsenic, Benzene, Benzo(a)pyrene, Cadmium, Chromium VI and Lead.

This was supplemented in 2014 by "SP1010: Development of Category 4 Screening Levels for the Assessment of Land Affected by Contamination – Policy Companion Document" (DEFRA, 2014). SP1010 proposed several updated toxicology information relating to contaminant behaviour updated assumptions relating to the modelling of human exposure to soil contaminants, derivation of separate C4SLs for residential with the consumption of home grown produce, residential without the consumption of home grown produce, and two new land uses: public open spaces near residential housing (POS resi) and public parks (POS park).

Public Open Space: Residential

For public open space in close proximity to residential housing and the central green area around which houses are located, as on
many housing estates from the 1930s to 1970s. It is also applicable for smaller areas commonly incorporated in newer
developments as informal grassed areas or more formal landscaped areas with a mixture of open space and covered soil with
planting. It is considered to be a generally grassed area up to 0.5ha with up to 50% bare soil. The land use is an important resource

for children and the area is near the homes. The critical receptor is a female child age >3 - <9 years old (CLEA age class 4-9) as younger children are unlikely to play outdoors unsupervised.

Active exposure pathways are ingestion of outdoor soil, ingestion of indoor dust; direct dermal contact with outdoor soil and
indoor soil derived dust; inhalation of outdoor and indoor dust and inhalation of outdoor vapour.

Public Open Space: Park

- A public park is defined as an area of open space provided for recreational use and usually owned and maintained by the Local Authority. It is anticipated the park could be used for a wide range of activities, including the following:
 - o Family visits and picnics;
 - Children's play area;
 - o Sporting activities such as football on an informal basis (i.e. not a dedicated sports pitch); and
 - o Dog walking.
- The park is modelled as an area >0.5 ha of predominantly grasses open space with no more than 25% of exposed soil.
- The critical receptor is a female child with CLEA age classes 1 6.
- Active exposure pathways are: ingestion of outdoor soil; direct dermal contact with outdoor soil; inhalation of outdoor dust and
 inhalation of outdoor vapour.

Furthermore, the C4SLs are based on a different toxicological benchmark, the 'low level of toxicological concern' (LLTC). This difference in approach was adopted because the C4SLs were primarily intended for use under Part2A of the EPA 1990 to quickly screen out Category 4 sites where there is "no risk or that the level of risk posed is low". SGVs and LQM GACs are based on the more conservative 'minimal or tolerable level of risk' as defined in SR2 (EA, 2009) and were derived for assessment of contamination for the Planning process.

LQM/CIEH Suitable 4 Use Levels (S4ULs)

The publication of the C4SLs resulted in considerable and inconclusive debate about the applicability of the lower level of protection of the C4SL, which are underlain by the LLTC, outside of the Part 2A context for which they were derived. In 2014 LQM/CIEH presented a Suitable 4 Use Levels (S4ULs), which incorporate the updated assumption exposure derived for the production of the C4SLs but within the context of deriving screening criteria above which further assessment of the risks or remedial action may be needed. The S4ULs replace the 82 substances, species and fractions and congeners contained in the previous LQM/CIEH GACs issued in 2009. Additionally, following changes and new land uses proposed in the C4SL research project, S4ULs have also been derived for the majority of substances for which the EA derived SGVs in 2009 with the exception of lead (see below).

Lead

The C4SL for lead provides a technically robust and conservative assessment tool using significantly updated toxicological modelling than the withdrawn SGV and derived in line with current science of lead toxicology.

EIC/AGS/CL:AIRE Soil Generic Assessment Criteria (2010)

In some instances, EIC/AGC/CL:AIRE GACs for certain VOC / SVOC potential contaminants of concern have been used *in lieu* of available LQM / CIEH S4UL values.

Parameter		itial with own produ	ce		tial without own produce		Allotm	ent		Comme	rcial / Indust	rial	Public O Residen	pen Space tial	near	Public	Open Spac	ce - Park	Source		
	(mg/kg, stated)	unless oth	erwise	(mg/kg, stated)	unless other	wise	(mg/kg stated)	, unless oth	erwise	(mg/kg, stated)	unless othe	rwise	(mg/kg, stated)	unless othe	erwise	(mg/kg stated)	g, unless o	therwise			
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%			
Metals/metalloids			· ·	1	•	•	I	•				u .		•		1		•	.		
Arsenic		37			40			43			640			79			170		LQM (2014)		
Beryllium		1.7			1.7			35			12			2.2			63		LQM (2014)		
Boron		290			11000			45			240000			21000			46000				
Cadmium		11			85			1.9			190			120			532				
Chromium III		910			910			18000			8600			1500			33000				
Chromium VI		6			6			1.8			33			7.7			220		LQM (2014)		
Copper		2400			7100			520			68000			12000			4400	0	LQM (2014)		
Lead		200			310			80			2330			630			1300)	C4SL		
Mercury (elemental)		1.2			1.2			21			58 (25.8)			16			30 (25.	.8)	LQM (2014)		
Mercury (Inorganic)		40			56			19			1100			120			240		LQM (2014)		
Methylmercury		11			15			6			320			40			68		LQM (2014)		
Nickel		180			180			230			980			230			LQM (2014)				
Selenium		250			430			88			12000			1100			LQM (2014)				
Vanadium		410			1200			91			9000			2000			5000)	LQM (2014)		

Parameter	Resident homegro	tial with own produc	ce		ial without wn produce		Allotme	nt		Commer	cial / Indust	rial	Public Op Residenti	en Space n ial	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, i stated)	unless otherwi	se	(mg/kg, stated)	unless oth	erwise	(mg/kg, i stated)	unless other	wise	(mg/kg, u stated)	ınless othei	rwise	(mg/kg, u stated)	ınless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	-
Zinc		3700	L		40000			620	I		730000			81000	-1		170000	l	LQM (2014)
Other																			
Total Sulphate		2,400			2,400			2,400			2,400			2,400			2,400		BRE (2005)
Water Soluble Sulphate (g/l)		0.5			0.5			0.5			0.5			0.5			0.5		BRE (2005)
	<u>.1</u>			I.			I.		PAHs	l			<u>I</u>			I			I.
Acenaphthene	210	510	1100	3000 (57)	4700(141)	6000 (336)	34	85	200	84000 (57)	97000 (141)	100000	15000	15000	15000	29000	30000	30000	LQM (2014)
Acenaphthylene	170	420	920	2900 (86.1)	4600 (212)	6000 (506)	28	69	160	8300 (86.1)	97000 (212)	100000	15000	15000	15000	29000	30000	30000	LQM (2014)
Anthracene	2400	5400	11000	31000 (1.17)	35000	37000	380	950	2200	520000	540000	540000	74000	74000	74000	150000	150000	150000	LQM (2014)
Benzo(a)anthrace ne	7.2	11	13	11	14	15	2.9	6.5	13	170	170	180	29	29	29	49	56	62	LQM (2014)
Benzo(a)pyrene	2.2	2.7	3	3.2	3.2	3.2	0.97	2	3.5	35	35	36	5.7	5.7	5.7	11	12	13	LQM (2014)
Benzo(b)fluoranth ene	2.6	3.3	3.7	3.9	4	4	0.99	2.1	3.9	44	44	45	7.1	7.1	7.1	13	15	16	LQM (2014)
Benzo(g,h,i)peryle ne	320	340	350	360	360	360	290	470	640	3900	4000	4000	640	640	640	1400	1500	1600	LQM (2014)
Benzo(k)fluoranth ene	77	93	100	110	110	110	37	75	130	1200	1200	1200	190	190	190	370	410	440	LQM (2014)
Chrysene	15	22	27	30	31	32	4.1	9.4	19	350	350	350	57	57	57	93	110	120	LQM (2014)

	Resident homegro	tial with own produc	ce		ial without own produce		Allotme	nt		Commer	cial / Indust	rial	Public Op Residenti	en Space n ial	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless otherw	vise	(mg/kg, stated)	unless oth	erwise	(mg/kg, stated)	unless other	wise	(mg/kg, u stated)	ınless othei	rwise	(mg/kg, u stated)	unless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1
Dibenz(a,h)anthra cene	0.24	0.28	0.3	0.31	0.32	0.32	0.14	0.27	0.61	3.5	3.6	3.6	0.57	0.57	0.58	1.1	1.3	1.4	LQM (2014)
Fluoranthene	280	560	890	1500	1600	1600	52	130	290	23000	23000	23000	3100	3100	3100	63	6300	6400	LQM (2014)
Fluorene	170	400	860	2800 (30.9)	3800 (76.5)	4500 (183)	27	67	160	63000 (30.9)	68000	71000	9900	9900	9900	20000	20000	20000	LQM (2014)
Indeno(1,2,3- cd)pyrene	27	36	41	45	46	46	9.5	21	39	500	510	510	82	82	82	150	170	180	LQM (2014)
Naphthalene	2.3	5.6	13	2.3	5.6	13	4.1	10	24	190 (76.4)	460 (183)	1100 (432)	4900	4900	4900	1200 (76.4)	1900 (183)	3000	LQM (2014)
Phenanthrene	95	220	440	1300 (36)	1500	1500	15	38	90	22000	22000	23000	3100	3100	3100	6200	6200	6300	LQM (2014)
Pyrene	620	1200	2000	3700	3800	3800	110	270	620	54000	54000	54000	7400	7400	7400	15000	15000	15000	LQM (2014)
Coal Tar (BaP as surrogate marker)	0.79	0.98	1.1	1.2	1.2	1.2	0.32	0.67	1.2	15	15	15	2.2	2.2	2.2	4.4	4.7	4.8	LQM (2014)
	•				•			•	BTEX and	TPH	•		•		•	1			•
Benzene	0.087	0.17	0.37	0.38	0.7	1.4	0.017	0.034	0.075	27	47	90	72	72	73	90	100	110	LQM (2014)
Toluene	130	290	660	880 vap (869)	1900	3900	22	51	120	56000 vap (869)	110000 vap (1920)	180000 vap (4360)	56000	56000	56000	87000 vap (869)	95000 vap (1920)	100000 vap (4360)	LQM (2014)
Ethylbenzene	47	110	260	83	190	440	16	39	91	5700 vap (518)	13000 vap (1220)	27000 vap (2840)	24000	24000	25000	17000 vap (518)	22000 vap (1220)	27000 vap (2840)	LQM (2014)
Xylene - o	60	140	330	88	210	480	28	67	160	6600 (478)	15000 (1120)	33000 (2620)	41000	42000	43000	17000 (478)	24000 (1120)	33000 (2620)	LQM (2014)

Parameter	Resident homegro	ial with own produc	ce		ial without own produce		Allotme	nt		Commer	cial / Industi	rial	Public Op Residenti	en Space n	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless otherw	ise	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless other	wise	(mg/kg, u stated)	inless other	wise	(mg/kg, u stated)	ınless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	
Xylene - m	59	140	320	82	190	450	31	74	170	6200 (625)	14000 (1470)	31000 (3460)	41000	42000	43000	17000 (625)	24000 (1470)	32000 (3460)	LQM (2014)
Xylene - p	56	130	310	79	180	430	29	69	160	5900 (576)	14000 (1350)	30000 (3170)	41000	42000	43000	17000 (576)	23000 (1350)	31000 (3170)	LQM (2014)
Aliphatic EC 5-6	42	78	160	42	78	160	730	1700	3900	3200 (304)	5900 (558)	12000 (1150)	570000 (304)	590000	60000 0	95000 (304)	130000 (558)	180000 (1150)	LQM (2014)
Aliphatic EC >6-8	100	230	530	100	230	530	2300	5600	13000	7800 (144)	17000 (322)	40000 (736)	600000	610000	62000 0	150000 (144)	220000 (322)	320000 (736)	LQM (2014)
Aliphatic EC >8-10	27	65	150	27	65	150	320	770	1700	2000 (78)	4800 (190)	11000 (451)	13000	13000	13000	14000 (78)	18000 (190)	21000 (451)	LQM (2014)
Aliphatic EC >10- 12	130 (48)	330 (118)	760 (283)	130 (48)	330 (118)	760 (283)	2200	4400	7300	9700 (48)	23000 (118)	47000 (283)	13000	13000	13000	21000 (48)	23000 (118)	24000(283)	LQM (2014)
Aliphatic EC >12- 16	1100 (24)	2400 (59)	4300 (142)	1100 (24)	2400 (59)	4300 (142)	11000	13000	13000	59000 (24)	82000 (59)	90000 (142)	13000	13000	13000	25000 (24)	25000 (59)	26000 (142)	LQM (2014)
Aliphatic EC >16- 35	65000 (8.48)	92000 (21)	11000 0	65000 (8.48)	92000 (21)	110000	26000 0	270000	27000 0	160000 0	1700000	180000 0	250000	250000	25000 0	450000	480000	490000	LQM (2014)
Aliphatic EC >35- 44	65000 (8.48)	92000 (21)	11000 0	65000 (8.48)	92000 (21)	110000	26000 0	270000	27000 0	160000 0	1700000	180000 0	250000	250000	25000 0	450000	480000	490000	LQM (2014)
Aromatic EC 5-7	70	140	300	370	690	1400	13	27	57	26000 (1220)	46000 (2260)	86000 (4710)	56000	56000	56000	76000 (1220)	84000 (2260)	92000 (4710)	LQM (2014)
Aromatic EC >7-8	130	290	660	860	1800	3900	22	51	120	56000 (869)	110000 (1920)	180000 (4360)	56000	56000	56000	87000 (869)	95000 (1920)	100000 (4360)	LQM (2014)
Aromatic EC >8-10	34	83	190	47	110	270	8.6	21	51	3500 (613)	8100 (1500)	17000 (3580)	5000	5000	5000	7200 (613)	8500 (1500)	9300 (3580)	LQM (2014)
Aromatic EC >10- 12	74	180	380	250	590	1200	13	31	74	16000 (364)	28000 (899)	34000 (2150)	5000	5000	5000	9200 (364)	9700 (899)	10000	LQM (2014)

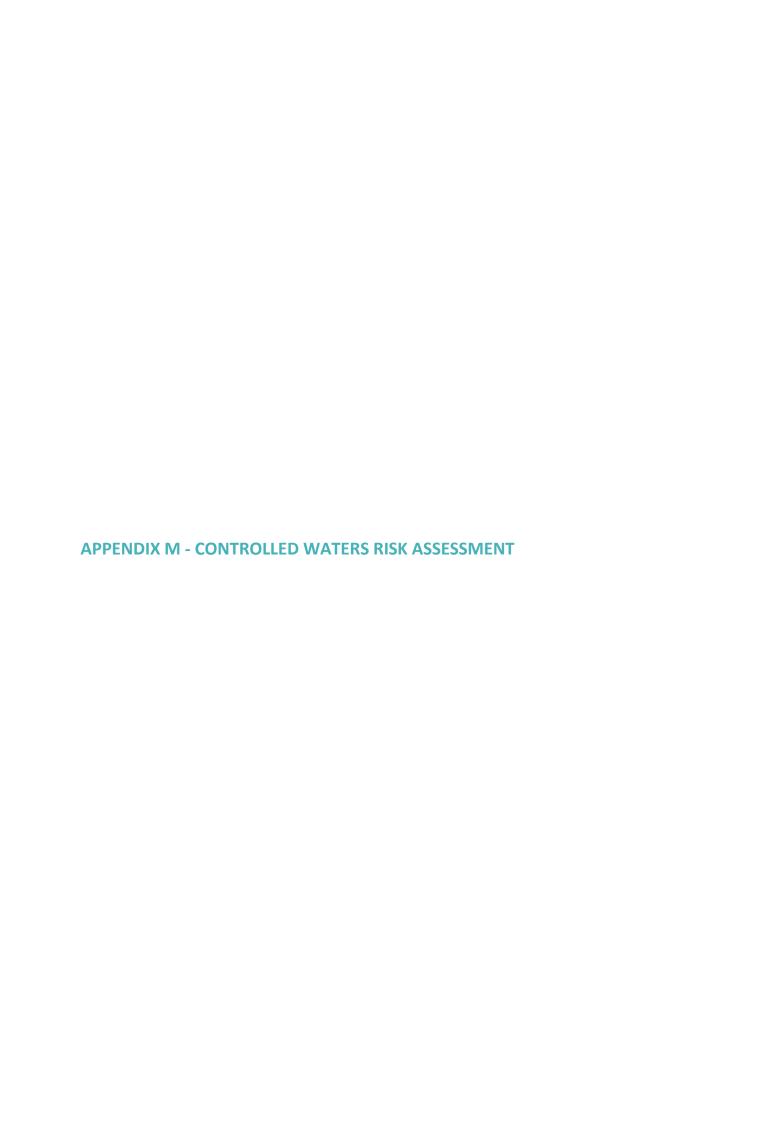
Parameter	Resident homegro	ial with own produc	ce		ial without own produce		Allotmei	nt		Commer	cial / Indust	rial	Public Op Residenti	en Space no al	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless otherwi	se	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless other	wise	(mg/kg, u stated)	inless other	wise	(mg/kg, u stated)	ınless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	
Aromatic EC >12- 16	140	330	660	1800	2300 (419)	2500	23	27	130	36000 (169)	37000	38000	5100	5100	5000	10000	10000	10000	LQM (2014)
Aromatic EC >16- 21	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000	3800	3800	3800	7600	7700	7800	LQM (2014)
Aromatic EC >21- 35	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	LQM (2014)
Aromatic EC >35- 44	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	LQM (2014)
Aromatic EC >44- 75	1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000	3800	3800	3800	7800	7800	7900	LQM (2014)
		•	•	•	•				VOCs	•	•		•	•	•	•	•		•
1,2- dichloroethane (1,2-DCA)	0.0071	0.011	0.019	0.0092	0.013	0.023	0.0046	0.0083	0.016	0.67	0.97	1.7	29	29	29	21	24	28	LQM (2014)
1,1,1- trichloroethane	8.8	18	39	9	18	40	48	110	240	660	1300	3000	140000	140000	14000 0	57000 (1425)	76000 (2915)	100000 (6392)	LQM (2014)
1,1,2,2,tetrachlor oethane	1.6	3.4	7.5	3.9	8	17	0.41	0.89	2	270	550	1100	1400	1400	1400	1800	2100	2300	LQM (2014)
tetrachloroethene	0.18	0.39	0.9	0.18	0.4	0.92	0.65	1.5	3.6	19	45	95	1400	1400	1400	810 (424)	1100 (951)	1500	LQM (2014)
tetrachlorometha ne (Carbon tetrachloride)	0.026	0.056	0.13	0.026	0.056	0.13	0.45	1	2.4	2.9	6.3	14	890	920	950	190	270	400	LQM (2014)
Trichloroethene	0.016	0.034	0.075	0.017	0.036	0.08	0.041	0.091	0.21	1.2	2.6	5.7	120	120	120	70	91	120	LQM (2014)
Trichloromethane (chloroform)	0.91	1.7	3.4	1.2	2.1	4.2	0.42	0.83	1.7	99	170	350	2500	2500	2500	2600	2800	3100	LQM (2014)

Parameter	Resident homegro	ial with own produc	ce		ial without own produce		Allotme	nt		Commer	cial / Indust	rial	Public Op Residenti	en Space n ial	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless otherw	ise	(mg/kg, stated)	unless oth	erwise	(mg/kg, stated)	unless other	wise	(mg/kg, u stated)	ınless othei	wise	(mg/kg, u stated)	ınless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1
Chloroethene (Vinyl chloride)	0.0006 4	0.0008 7	0.0014	0.0007 7	0.001	0.0015	0.0005 5	0.001	0.0018	0.059	0.077	0.12	3.5	3.5	3.5	4.8	5	5.4	LQM (2014)
2,4,6 Trinitrotoluene (TNT)	1.6	3.7	8.1	65	66	66	0.24	0.58	1.4	1000	1000	1000	130	130	130	260	270	270	LQM (2014)
RDX	120	250	540	13000	13000	13000	17	38	85	210000	210000	210000	26000	26000	27000	49000 (18.7)	51000	53000	LQM (2014)
НМХ	5.7	13	26	6700	6700	6700	0.86	1.9	3.9	110000	110000	110000	13000	13000	13000	23000 (0.35)	23000 (0.39)	24000 (0.48)	LQM (2014)
Aldrin	5.7	6.6	7.1	7.3	7.4	7.5	3.2	6.1	9.6	170	170	170	18	18	18	30	31	31	LQM (2014)
Dieldrin	0.97	2	3.5	7	7.3	7.4	0.17	0.41	0.96	170	170	170	18	18	18	30	30	31	LQM (2014)
Atrazine	3.3	7.6	17.4	610	620	620	0.5	1.2	2.7	9300	9400	9400	1200	1200	1200	2300	2400	2400	LQM (2014)
Dichlovos	0.032	0.066	0.014	6.4	6.5	6.6	0.0049	0.01	0.022	140	140	140	16	16	16	26	26	27	LQM (2014)
Alpha-Endosulfan	7.4	18	41	160 (0.003)	280 (0.007)	410 (0.016)	1.2	2.9	6.8	5600 (0.003)	7400 (0.007)	8400 (0.016)	1200	1200	1200	2400	2400	2500	LQM (2014)
alpha- Hexachlorocycloh exane	0.23	0.55	1.2	6.9	9.2	11	0.035	0.087	0.21	170	180	180	24	24	24	47	48	48	LQM (2014)
beta- hexachlorocycloh exanes	0.085	0.2	0.46	3.7	3.8	3.8	0.013	0.032	0.077	65	65	65	8.1	8.1	8.1	15	15	16	LQM (2014)
gamma- hexachlorocycloh exanes	0.06	0.14	0.33	2.9	3.3	3.5	0.0092	0.023	0.054	67	69	70	8.2	8.2	8.2	14	15	15	LQM (2014)

Parameter	Resident homegre	tial with own produc	ce		tial without own produce		Allotme	nt		Commer	cial / Industi	rial	Public Op Residenti	en Space n ial	ear	Public Op	en Space -	Park	Source
	(mg/kg, stated)	unless othe	erwise	(mg/kg, stated)	unless otherw	vise	(mg/kg, stated)	unless oth	erwise	(mg/kg, stated)	unless other	wise	(mg/kg, u stated)	ınless othei	wise	(mg/kg, u stated)	ınless othe	rwise	
SOM	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	
Chlorobenzene	0.46	1	2.4	0.46	1	2.4	5.9	14	32	56	130	290	11000	13000	14000	1300 (675)	2000 (1520)	2900	LQM (2014)
1,2- Dichlorobenzene	23	55	130	24	57	130	94	230	540	2000 (571)	4800 (1370)	11000 (3240)	90000	95000	98000	24000 (571)	36000 (1370)	51000 (3240)	LQM (2014)
1,3- Dichlorobenzene	0.4	1	2.3	0.44	1.1	2.5	0.25	0.6	1.5	30	73	170	300	300	300	390	440	470	LQM (2014)
1,4- Dichlorobenzene	61	150	350	61	150	350	15	37	88	4400 (224)	10000 (540)	25000 (1280)	17000	17000	17000	36000 (224)	36000 (540)	36000 (1280)	LQM (2014)
							1	\	/OCs Cont	inued			1	1	1	1			
1,2,3- Trichlorobenzene	1.5	3.6	8.6	1.5	3.7	8.8	4.7	12	28	102	250	590	1800	1800	1800	770 (134)	1100 (330)	1600 (789)	LQM (2014)
1,2,4- Trichlorobenzene	2.6	6.4	15	2.6	6.4	15	55	140	320	220	530	1300	15000	17000	19000	1700 (318)	2600 (786)	4000 (1880)	LQM (2014)
1,3,5- Trichlorobenzene	0.33	0.81	1.9	0.33	0.81	1.9	4.7	12	28	23	55	130	1700	1700	1800	380 (36.7)	580 (90.8)	860 (217)	LQM (2014)
1,2,3,4- Tetrachlorobenze ne	15	36	78	24	56	120	4.4	11	26	1700 (122)	3080 (304)	4400 (728)	830	830	830	1500 (122)	1600	1600	LQM (2014)
1,2,3,5- Tetrachlorobenze ne	0.66	1.6	3.7	0.75	1.9	4.3	0.38	0.9	2.2	49 (39.4)	120 (98.1)	240 (235)	78	79	79	110 (39)	120	130	LQM (2014)
1,2,4,5- Tetrachlorobenze ne	0.33	0.77	1.6	0.73	1.7	3.5	0.06	0.16	0.37	42 (19.7)	72 (49.1)	96	13	13	13	25	26	26	LQM (2014)
Pentachlorobenze ne	5.8	12	22	19	30	38	1.2	3.1	7	640 (43)	770 (107)	830	100	100	100	190	190	190	LQM (2014)

Parameter	Residential with homegrown produce			Residential without homegrown produce			Allotment			Commercial / Industrial			Public Open Space near Residential			Public Open Space - Park			Source
	(mg/kg, i stated)	unless othe	erwise	(mg/kg, unless otherwise stated)			(mg/kg, unless otherwise stated)			(mg/kg, unless otherwise stated)			(mg/kg, unless otherwise stated)			(mg/kg, unless otherwise stated)			
	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1%	2.50%	6%	1
Hexachlorobenze ne	1.8 (0.2)	3.3 (0.5)	4.9	4.1 (0.2)	5.7 (0.5)	6.7 (1.2)	0.47	1.1	2.5	110 (0.2)	120	120	16	16	16	30	30	30	LQM (2014)
Phenol	280	550	1100	750	1300	2300	66	140	280	760 dir (31000)	1500 dir (35000)	3200 dir (37000)	760 dir (31000)	1500 dir (35000)	3200 dir (37000)	760 dir (31000)	1500 dir (35000)	3200 dir (37000)	LQM (2014)
Chlorophenols (excluding pentachlorophen ol)	0.87 (g)	2	4.5	94	150	210	0.13 (g)	0.3	0.7	3500	4000	4300	620	620	620	1100	1100	1100	LQM (2014)
Pentachlorophen ol	0.22	0.52	1.2	27 (16.4)	29	31	0.03	0.08	0.19	400	400	400	60	60	60	110	120	120	LQM (2014)
Carbon Disulphide	0.14	0.29	0.62	0.14	0.29	0.62	4.8	10	23	11	22	47	11000	11000	12000	1300	1900	2700	LQM (2014)
Hexachlorobutadi ene	0.29	0.7	1.6	0.32	0.78	1.8	0.25	0.61	1.4	31	66	120	25	25	25	48	50	51	LQM (2014)

⁽g) derived based on 2,3,4,6-tetrachlorophenol; dir - based on a threshold protective of direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustration only); (vap) calculated for vapour phase only. SOM – Soil Organic Matter; (4.5) solubility.



CURRENT GUIDANCE FOR CONTROLLED WATERS RISK ASSESSMENT

Regulatory Context

Government policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, controlled waters or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:

- (a) Significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) Pollution of controlled waters is being, or is likely to be, caused."

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter"

Controlled Waters are defined Section 104 of the Water Resources Act 1991. In summary, the comprise relevant territorial waters which extend seaward for three miles from the low-tide limit from which the territorial sea adjacent to England and Wales is measured.

The Environment Agency has powers under Part 7 of The Water Resources Act (1991) to take action to prevent or remedy the pollution of controlled waters, including circumstances where the pollution arises from contamination in the land. This is reinforced in The Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, 2012) which came into force in early April 2012.

Part IIA introduces the concept of a contaminant linkage; where for potential harm to exist there must be a connection between the source of the hazard and the receptor via a pathway. Risk assessment in contaminated land is therefore directed towards identifying the contaminants, pathways and receptors that can provide contaminant linkages. This is known as the contaminant-pathway-receptor link (CPR or contaminant linkage).

Part IIA places contaminated land responsibility as a part of the planning and redevelopment process, rather than Local Authority or Environment Agency directly, except in cases of very high pollution risk or where harm is occurring. In the planning process, guidance is provided by National Planning Policy Framework (NPPF) of March 2012. The NPPF requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. Therefore, appropriate risk-based investigation is required to identify the contaminant linkages that can then be assessed, and then mitigated using methods that can be agreed with the planners.

Source Protection Zones

Source Protection Zones (SPZs) are defined by the Environment Agency (for England and Wales), SEPA (Scotland) and the Environment and Heritage Service (Northern Ireland) for groundwater sources such as wells, boreholes and springs that are used for public drinking water supply. The zones show the risk of contamination from activities that might cause groundwater pollution in the area. The size and shape of a zone depends upon subsurface conditions, how the groundwater is removed, and other environmental factors.

SPZs are classified into four categories:

- Zone 1 (Inner protection zone). Any pollution that can travel to the abstraction point within 50 days from any point within the zone is
 classified as being inside Zone 1. This applies at and below the groundwater table. This zone also has a minimum 50 m protection radius
 around the abstraction point. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.
- Zone 2 (Outer protection zone). The outer zone covers pollution that takes up to 400 days to travel to the abstraction point, or 25% of the total catchment area, whichever area is the largest. This travel time is the minimum period over which the Environment Agency considers that pollutants need to be diluted, reduced in strength or delayed by the time they reach the abstraction point.
- Zone 3 (Total catchment). This is the total area needed to support removal of water from the abstraction point, and to support any discharge from this.
- **Zone of special interest.** This may occasionally be defined as a special case. This is usually where local conditions mean that industrial sites and other potential sources of contamination could affect the groundwater source, even though they are outside the normal catchment area.

Groundwater Vulnerability Assessments

From 1 April 2010 The Environment Agency Groundwater Protection Policy began to use aquifer designations which are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It is updated regularly to reflect their ongoing programme of improvements to these maps. The maps are split into two different type of aquifer designation:

- Superficial (Drift) permeable unconsolidated (loose) deposits. For example, sands and gravels.
- Bedrock -solid permeable formations e.g. sandstone, chalk and limestone.

The maps display the following aquifer designations:

Table 1. Aquifer Classification ("Geological Classification").

Classification	Definition			
Principal Aquifers (Highly Permeable)	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.			
Secondary A Aquifers	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.			
Secondary B Aquifers	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.			
Secondary Undifferentiated Aquifers	This has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.			
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.			

Environment Agency Guidance

The Environment Agency's stance on groundwater resources is:

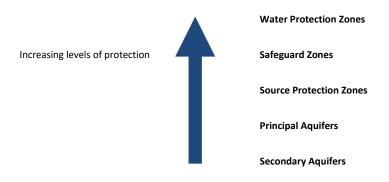
"to protect and manage groundwater resources for present and future generations in ways that are appropriate for the risks we identify" (Groundwater Protection: Policy and Practice GP3, 2012).

At present, the legislation and guidance pertaining to the protection of controlled waters in the UK is complex; however, the core objectives seek to enforce the position given above.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document introduced areas of focus for developments such as Source Protection Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was revised in 1998, since which there have been substantial changes in legislation, driven by key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991 as amended by the Water Act 2003. Gaps in the 1998 PPPG that emerged as the result of further legislative changes were addressed in the Environment Agency Policy document Groundwater Protection: Policy and Practice (GP3), Version 1 of November 2012. The three main parts of GP3 were:

- Groundwater principals;
- Position statements and legislation; and
- Technical information.

The Environment Agency has a tiered risk based approach to drinking water protection as summarised below:



Controlled Waters Risk Assessment

A number of tools are available (as detailed in GP3) in order for a developer of a potentially contaminated site to fulfil their obligations under the legislation. A site assessment would be required in order to identify any potential risks to controlled waters and to derive suitable clean up criteria, if required, to ensure the protection of controlled waters.

There are three main stages to any risk assessment of controlled waters:

- 1. Risk Screening (devise Conceptual Site Model, making reference to groundwater vulnerability maps, site setting, controlled waters context etc)
- 2. Generic Risk Assessment (EA Remedial Targets Methodology Tier 1 / Comparison of groundwater data with relevant standards)
- 3. Detailed Quantitative Risk Assessment (Consideration of aquifer properties and site specific parameters, EA Remedial Targets Methodology Tiers 2 & 3)

Risk Screening

Here, the Conceptual Site Model (CSM) is a critical tool to assessing any potentially contaminated site. The information from a robust CSM can be used to establish any pathways or receptors that do not require further assessment at an early stage. For example, it may be possible to confirm the absence of a particular sensitive controlled water receptor (such as a surface water feature) within the vicinity of the site thereby breaking the associated source-pathway-receptor pollutant linkage. Information from subsequent tiers of risk assessment, such as following intrusive investigations, are used to update the CSM accordingly.

Generic Risk Assessment - England and Wales

When undertaking the Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Tier 1), comparison of chemical analytical results is made with those screening criteria.

In accordance with Part 2A of the Environmental Protection Act 1990, Tier Environmental has made regard to all of the Water Quality Standards (WQS) that are relevant to the specific site and a judgment has been made against the most stringent of those relevant standards:

- EQS Directive 2008/105/EC
- Priority Substances Directive 2013/39/EU
- Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015
- UK Drinking Water Standards (UK DWS)
- World Health Organisation (WHO Guidelines) for Drinking Water Quality
- Council Directive 98/83/EC on the quality of water intended for human consumption (Drinking water directive)

In some instances, the laboratory method detection limit is greater than the appropriate EQS/UKDWS value. In these instances, only measured concentrations in excess of the laboratory method detection limit have been considered likely to potentially represent a possible significant risk to controlled waters.

Please note that there is no quantitative criterion for total petroleum hydrocarbons (TPH), or speciated TPH fractions. Historically, standards provided for petroleum hydrocarbons ranges from $10\mu g/l$ (Private Water Supply Regulations 1991, removed from the 2009 regulations) to $50\mu g/l$ - $1000\mu g/l$ (Surface Waters (Abstraction for Drinking Water) Regulations 1989) which related to the degree of treatment of water prior to use as drinking water. Over time, the legislative standards have been rescinded and no alternative standard provided, although the Environment Agency planned to release speciated TPH criteria (Fretwell et al., 2009).

In order to assess whether there is a potentially unacceptable risk of pollution of controlled waters, the results of the groundwater chemical analysis for TPH and BTEX were evaluated against Water Quality Standards (WQS) appropriate to the conceptual model for the site:

Table 2. Summary of Selected TPH and BTEX Water Quality Standards Selected for Tier 1 Screening

Determinand	Units	WQS Selected	Source of WQS
Aliphatics >C5-C6	μg/l	15000	Table 5.4 of CL:AIRE 2017#
Aliphatics >C6-C8	μg/l	15000	Table 5.4 of CL:AIRE 2017#
Aliphatics >C8-C10	μg/l	300	Table 5.4 of CL:AIRE 2017#
Aliphatics >C10-C12	μg/l	300	Table 5.4 of CL:AIRE 2017#
Aliphatics >C12-C16	μg/l	300	Table 5.4 of CL:AIRE 2017#
Aliphatics >C16-C21	μg/l	-	Table 5.4 of CL:AIRE 2017#
Aliphatics >C21-C35	μg/l	-	Table 5.4 of CL:AIRE 2017#
Aromatics >C5-EC7	μg/l	10	Table 5.4 of CL:AIRE 2017#
Aromatics >EC7-EC8	μg/l	700	Table 5.4 of CL:AIRE 2017#
Aromatics >EC8-EC10	μg/l	300	Table 5.4 of CL:AIRE 2017#
Aromatics >EC10-EC12	μg/l	100	Table 5.4 of CL:AIRE 2017#

Aromatics >EC12-EC16	μg/l	100	Table 5.4 of CL:AIRE 2017#
Aromatics >EC16-EC21	μg/l	90	Table 5.4 of CL:AIRE 2017#
Aromatics >EC21-EC35	μg/l	90	Table 5.4 of CL:AIRE 2017#
Benzene	μg/l	10	Priority Substance Water Framework Directive 2015 and Table 5.3 of CL:AIRE 2017#
Toluene	μg/l	74	Table 1 Water Framework Directive 2015 and Table 5.3 of CL:AIRE 2017#
Ethylbenzene	μg/l	20	R&D Technical Report P2-115/TR4, 2002
Total xylenes	μg/l	30	DoE (1997c) Hedgecott S. and Lewis S, An update on proposed environmental quality standards for xylenes in water, final report to the Department of the Environment. Report No. DoE 4273/1. Medmenham: WRc; and;
			Table 5.3 of CL:AIRE 2017#

Notes - # = CL:AIRE document 'Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological risk assessment methodologies' (ISBN 978-1-905046-31-7, dated 2017),

Table 5.3 was referenced in the first instance from the CL:AIRE document 'Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological risk assessment methodologies' (ISBN 978-1-905046-31-7, dated 2017), the to select appropriate Freshwater EQS values for benzene, toluene and total xylenes. The selected value for Ethylbenzene was derived from the proposed EQS value of 20μg/l from the Environment Agency R&D Technical Report P2-115/TR4, 2002. This represents a more conservative value than the 300μg/l value in Table 5.3.

With respect to speciated TPH CWG fractions, Table 5.3 states and refers the reader to 'See Table 5.4'. On this basis, Tier Environmental selected the World Health Organization (WHO) guide values for TPHCWG fractions in drinking water that are presented in Table 5.4 which may be considered appropriately protective of the controlled waters environment based on the conceptual site model.

Generic Risk Assessment is generally undertaken via comparison of reported leachate and/or groundwater concentrations against selected assessment criteria for the potential contaminants of concern identified for the site from a preliminary desk based assessment.

The selected Generic Assessment Criteria (GAC) derived from a Water Quality Standard (WQS) for any specific substance may not necessarily be a simple number and can often be found to be expressed as:

- · Annual mean concentration;
- Maximum allowable concentration;
- 95th percentile concentration for *n* samples;
- Total concentration;
- Dissolved concentration (applicable to filtered samples)

The values may sometimes be expressed for individual substances (e.g. arsenic or for groups of substances e.g. total xylenes or sums of certain PAHs).

Environmental Quality Standards (EQS) have been used where available for Priority Substances and Priority Hazardous Substances set at a European level:

- Priority Substances Directive 2013/39/EU;
- Amending 2008/105 and 2000/118/EC

In addition, EQS values derived for Specific Pollutants have been used as presented in The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.

For assessing risks to potable water abstraction supplies, UK Drinking Water Standards presented in the Water Supply (Water Quality) Regulations 2000 (SI/2000/3184) (as amended) have been applied.

In selecting a GAC for a particular site, Tier Environmental considers the following factors:

- Current use/function of the groundwater (e.g. drinking water, irrigation water, industrial use, base-flow to rivers and streams);
- Plausible, proposed or planned future uses of the water and nearby waters;
- · Sensitivity of the critical receptor (e.g. human health, aquatic life); and,
- Requirements to trigger action under the legal context.

In accordance with Part 2A:

"in deciding whether pollution of controlled waters is occurring, the assessor will have regard to all of the water quality standards that are relevant to the specific site and make a judgment against the most stringent of those relevant standards."

 $Should the \ Level \ 1 \ or \ 2 \ assessments \ indicate \ threshold \ levels \ to \ be \ exceeded, \ then \ there \ are \ three \ alternative \ ways \ in \ which \ to \ proceed:$

- To devise suitable remedial solutions;
- To carry out more investigation, sampling and analysis;
- To conduct a site-specific Detailed Quantitative Risk Assessment (DQRA) to whether or not the soil materials are suitable for their site-specific intended use or to devise a site-specific clean-up level.

Detailed Quantitative Risk Assessment (DQRA)

The decision to carry out a DQRA will be informed by the initial qualitative and generic assessment. The scope of any such assessment will be accurately defined by the outcomes of the former two stages. The robust CSM will be sufficiently refined by this stage that only certain contaminants of concern, certain pathways and certain receptors will require further assessment.

Additional site specific data is normally required for this stage of assessment, as explained above, more processes that are capable of affecting contaminant concentrations are considered (such as dilution and attenuation).

Remediation criteria derived will therefore be specific to each site and will be based on a detailed assessment of the potential impact at the identified receptor or compliance point. A greater level of confidence can be placed on the predicted impact on the compliance point following a DQRA.

Hazardous and Non Hazardous Substances

The Groundwater (England and Wales) Regulations 2009 control the disposal to the hydrogeological environment of potentially polluting substances which are divided into Hazardous Substances and Non-hazardous Contaminants (this roughly approximates to the former List 1 and List 2 substances).

Hazardous Substances are the most damaging and toxic and must be prevented from directly or indirectly entering the groundwater environment. Hazardous Substances include mineral oils and hydrocarbons, pesticides, biocides, herbicides, solvents and some metals. Discharge of Hazardous Substances to Controlled Waters must be prevented.

Non-hazardous Pollutants are any contaminants other than Hazardous Substances. Non-hazardous Pollutants are potentially toxic but are less harmful than Hazardous Substances, but their direct discharge to groundwater is generally not permitted and any indirect discharge to groundwater must be limited and be controlled by technical precautions in order to prevent pollution. Non-hazardous Pollutants include ammonia and nitrites, many metals and fluorides.

APPENDIX N - ASSESSMENT C	RITERIA APPLIED FOR GROU	ND GAS

Ground Gas Monitoring Methodology

Monitoring for the following is generally performed as part of ground gas assessment:

- Methane (CH₄): an odourless, flammable gas. Mixtures of methane with air containing between 5 and 15% v/v methane are explosive.
- Carbon dioxide (CO₂): an asphyxiant at elevated concentrations. Denser than air, it can accumulate in excavations, and within low points inside buildings.
- Oxygen (O₂): important in the assessment of the potential formation of explosive mixtures with methane. Monitoring normally measures
 both methane and oxygen concentrations in ground gas to derive an indication of the risk of explosive mixture formation, expressed as a
 percentage of the Lower Explosive Limit (LEL). Low concentrations of oxygen in ground gas can also exacerbate the risk of CO₂ asphyxiation.
- Hydrogen sulphide (H₂S): odorous and toxic, capable of forming flammable mixtures with air.

In addition, depending on the Conceptual Site Model, monitoring may also include for measurements of Volatile Organic Compounds (VOCs); present as chemical contaminants of soil and sometimes also biologically produced in low concentrations.

Assessment of methane (CH₄) and carbon dioxide (CO₂)

Methane and carbon dioxide can arise from natural geological sources, mine workings, rotting organic matter (peat, landfilled materials, etc.) and/or contaminant biodegradation. Assessment of ground gas composition and flows is therefore an essential part of site assessment. The need to adequately address potential risks from ground gas on development sites is therefore required under the planning regime.

In order to appropriately assess the site risks, the Construction Industry Research and Information Association (CIRIA) and others have issued several guidance documents on landfill and ground gas that are intended to provide advice on how to investigate and deal with gas contaminated ground with respect to development. These are:

- Report 149: 'Protecting Development from Methane' (CIRIA, 1995a)
- Report 150: 'Methane Investigation Strategies' (CIRIA, 1995b)
- Report 151: 'Interpreting Measurement of Gas in the Ground' (CIRIA, 1995c)
- Report 152: 'Risk Assessment for Methane and Other Gases from the Ground' (CIRIA, 1995d)

More recent guidance has been published to update the documents detailed above to collaborate and promote industry 'good practice'. These are:

- CIRIA Report 665: 'Assessing risks posed by hazardous ground gases to buildings (CIRIA, 2008)
- NHBC: 'Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present' (NHBC, 2007)
- BS8485:201+A1:2019: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (BSI Group, 2019)
- BS8576:2013: Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs) (BSI Group, 2013)
- Sobra Report Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater (Feb 2017)
- CL:AIRE Technical Bulletin TB17 Ground Gas Monitoring and 'Worst Case' Conditions (CL:AIRE Aug 2018)

The earlier CIRIA 149 approach is now considered to be too conservative. A more realistic measure of the risk posed by methane and CO2 in ground gas can be established by determining an appropriate Gas Screening Value (GSV), using the methods described in the NHBC and CIRIA 659 documents. These values are based upon earlier work undertaken by Wilson and Card (1999).

GSVs are calculated by multiplying the borehole flow rate (I/hr) by the percentage (% v/v) concentration in the gas stream of the specific component, i.e.:

GSV = (Concentration / 100) x Flow rate.

A risk-based methodology for deriving GSVs is defined for two situations (designated A and B), which are adequate for the great majority of site cases (as per CIRIA 665 Section 8.3):

- **Situation A**: Any development other than Situation B, e.g. factories, shops, commercial, warehouses, schools, cinemas, sports centres, stadiums, high rise housing, housing with basements, etc
- Situation B: Low rise building with minimum ventilated under floor void (min 150 mm)

Under Situation A, classification of the scope of protection required is determined from the site GSV, summarised in Table 1. For Situation B, GSVs derived are used in a 'Traffic Light' classification (summarised in Table 2) which determines the required level and scope of protection measures. Tables 1 and 2 are summaries only: the details provided in the body text, footnotes and appendices of the above-referenced documents should be read in conjunction with the results to determine the appropriate level of protection.

For conservatism, Tier Environmental <u>initially</u> uses the maximum concentration and gas flow rate of methane detected in any borehole during all of the monitoring visits in deriving recommendations on appropriate protection measures. This represents the worst-case risk of forming an explosive mixtures. For carbon dioxide, steady state concentrations and flow data are applied, as these determine the development of an asphyxiating mixture. All values are selected whether or not they occurred in the same borehole or during the same monitoring event.

Exceedances of the maximum concentrations used in a Tier 1 Gas Risk Assessment can be tolerated, when the conceptual site model indicates that it is safe to do so. However, appropriately derived GSV values must never be exceeded - where site-specific circumstances permit the derivation of alternative GSVs according to the defined conceptual model, then the appropriate GSV values should be applied.

Table 1. GSV Categories Defined for Situation A (Summarised from CIRIA Report 665).

Risk classification	GSV (CH4 or CO2; I/hr)	Additional factors	Characteristic Situation
Very low	<0.07	Typically methane <=1% and/or CO ₂ <=5%, otherwise consider increase to Low Risk.	1
Low	<0.7	Typically borehole ground gas flow rate <=70 l/hr; otherwise consider increase to Moderate Risk.	2
Moderate	<3.5		3
Moderate to high	<15	QRA required to evaluate scope of remediation measures.	4
High	<70		5
Very high	>70		6

Table 2. GSV Categories Defined for Situation B (Summarised from NHBC, 2007).

Methane		CO ₂	"Traffic light"		
Typical max. conc. (% v/v)	pical max. conc. (% v/v) GSV (I/hr)		GSV (I/hr)	classification	
				Green	
1	0.13	5	0.78		
				Amber 1	
5	0.63	10	1.60		
				Amber 2	
20	1.60	30	3.10		
	Red				

Assessment of hydrogen sulphide (H2S)

H2S is toxic and highly odorous ("rotten eggs") gas. It is often a minor component within mine gases, in ground gas within or overlying strata rich in pyrites or other sulphide-rich ores, and in most natural gas fields.

H2S can be generated biologically in significant concentrations by the decomposition by sulphate-reducing bacteria of natural or anthropogenic organic matter under oxygen-free conditions. Its potential generation will be greater in environments containing elevated sulphate concentrations (including sea water). H2S is therefore common within the gas arising from estuarine and marine sediments, pond sediment, stagnant water bodies, bogs and marshlands and landfilled waste, for example.

It must be noted that H2S normally occurs together with other potentially hazardous ground gases. The measures adopted for protection against these will prove equally protective against H2S.

There are no standards by which H2S concentrations in ground gas can be assessed directly. Therefore, the significance of measured H2S concentrations in ground gas must be evaluated on a case-by-case basis, taking into account the measured concentrations of other components and the specific conceptual site and exposure models. To assist in this process, the following standards and guidance may be applied.

General protection of land users

There are no UK air quality standards for general exposure to H2S. The World Health Organisation has derived ambient air quality standards (WHO, 2000) for this gas, which may be used to inform risk assessment and decision-making:

The 24 hour average exposure guideline value for ambient air: 0.15 mg/m3 (0.1 ppmv, approx.; this was derived by the application of a 100x safety factor to the LOAEL for long-term exposure).

This is significantly above the odour threshold, which is typically around 0.01 mg/m3. To avoid substantial nuisance odour complaints, WHO (2000) recommends that the 30 minute average H2S concentration in ambient air should not exceed: 0.007 mg/m3 (0.005 ppmv, approx.).

Occupational exposures

For occupational exposure, the HSE (2005) limits for H2S are applicable:

- 8 hour time weighted average occupational exposure limit: 5 ppmv (7 mg/m3).
- Short-term exposure limit (15 minute reference period): 10 ppmv (14 mg/m3).

VOC Data Collection, Sampling and Assessment

BS8576 Guidance on investigations for ground gas - Permanent gases and Volatile Organic Compounds (VOCs).

Volatile organic compounds (VOCs) include, for example, halogenated hydrocarbons such as trichloroethene, non-halogenated hydrocarbons such as benzene, and organosulfur compounds such as thiols (mercapatans). They can occur as a component of ground gas originating from historically contaminated ground, spills and leaks from industry, commercial or residential properties (e.g. from pipelines, storage facilities, and at the point of use or dispensing), land-filled wastes and from naturally occurring sources.

The migration of VOCs in ground gas can be via three primary mechanisms:

- diffusive flow (movement of constituent along a concentration gradient);
- advective flow (movement of constituent due to motion of a transporting fluid);
- dispersion (transport resulting from local variations in fluid flow, e.g. due to friction effects in the matrix).

The choice of sampling and monitoring techniques should be based upon the conceptual model and be designed to achieve the objectives of the investigation, bearing in mind the requirements of any subsequent analytical procedures and the need to provide relevant data of sufficient quantity and quality. Consideration should also be given to the nature of ground under investigation, as well as the nature and distribution of contamination, the geology and the hydrogeology. Every effort should be made to avoid cross-contamination and at no point should underlying aquifers be put at risk

Where the response zone extends below the water table, gas present in the groundwater will tend to produce an equilibrium concentration in the well headspace. This applies to both permanent gases and VOCs but can be particularly misleading in the latter case. Testing for dissolved gases in groundwater is useful to help interpret monitoring results in such a situation. Similarly, any VOCs in a floating non-aqueous hydrocarbon layer will produce an equilibrium concentration in the well headspace.

The monitoring period and frequency of monitoring for VOCs in ground gases should be developed on a site-specific basis from the conceptual site model and investigation data quality objectives.

Ground gas samples can be collected from the unsaturated zone adjacent to, or above, the known or suspected source of VOCs in ground gas through installation of a ground gas monitoring point in the unsaturated zone (see 10.2), and from a near-surface location beneath hardstanding or a floor or foundation slab through installation of a near- or sub-slab monitoring point (see 10.3). For monitoring of VOCs in ground gas the monitoring well should be installed into unsaturated ground to allow sampling for VOCs to take place. The borehole should not be progressed below the groundwater table or the surface of any floating non-aqueous layer. The borehole should be progressed to the target sampling depth within the unsaturated zone. Full details can be found in BS8576 Section 10.2 onwards.

Assessment of VOC concentrations have been made for limited number of VOCs by SoBRA with the Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater in Feb 2017.

The assessment of VOC concentrations is not covered by above-referenced reports. These data can be used to inform the human health risk assessment for site occupants but should not be relied upon to assess human health risk due to uncertainties in the ground gas flow regime, variability in the (generally low) contaminant concentrations measured and inaccuracies in the concentrations measured by PID instruments.

Data on the VOC concentration in ground gas can also help inform potential occupational exposure risks to construction and similar workers. For this purpose, the measured values can be compared to the relevant occupational exposure limit (OEL) for the contaminant(s) of concern, as given in HSE (2005). In cases of doubt as to the identity of the organic contaminants within the ground gas or when these are present as a complex mixture, then the 8 hour time-weighted average (TWA) exposure limit for benzene (1 ppmv) will be applied for screening purposes. This is a reasonably conservative approach since the OEL for benzene is lower than that for the great majority of organic contaminants commonly encountered in soil and groundwater at contaminated sites.

APPENDIX O - CHEMICAL AND GEOTECHNICAL TEST SAMPLING	

Samples were selected by a representative of Tier Environmental during the site investigation works in accordance with the sampling approach described elsewhere in this report.

Samples for geotechnical and related testing

Bulk samples were placed within robust heavy duty plastic bags and sealed, together with small-disturbed samples, within airtight 1 litre plastic containers.

100 mm diameter 'undisturbed' samples ("U100 samples") were obtained where possible from cable percussive and large diameter window sample boreholes within cohesive materials.

Samples for chemical analysis

All samples for chemical analysis were placed into clean new containers as summarised in Table 1. Unless explicitly stated elsewhere in this report, no preservatives were used to eliminate the risk that preservatives cause contaminant dissolution or analytical interference. Containers for VOC analysis were fully filled to exclude headspace.

Soil samples were dispensed as soon as possible after collection using reusable stainless steel spatulas, trowels or similar implements.

Ground water samples were collected from boreholes using single-use Teflon bailers or dedicated Waterra tubing with foot valves, except as otherwise noted within this report. Caution was taken to avoid excessive agitation during collection.

New disposable gloves were used by the engineer for the collection of each sample.

Reusable equipment was washed down with distilled or deionised water between samples, except where tarry or similarly sticky materials were present. In such cases specific cleaning procedures were adopted as specifically described elsewhere in this report.

All sub-samples taken for chemical analysis were placed into refrigerators or cool boxes containing frozen ice packs immediately after aliquoting. All samples were transferred in cool boxes containing frozen ice packs to the relevant UKAS/MCERTS accredited laboratory as soon as possible. Recommended maximum holding times before analysis are summarised in Table 1.

Table 1. Sample containers and holding times.

Analysis	Container/special requirements	Max. holding time at 4°C before analysis	
Soil and sediment sam	ples		
VOCs	30-60 g brown or green glass jar with VOC-resistant cap and inert cap liner. Must be fully filled.	14 days	
TPHCWG	30-60 g brown or green glass jar with VOC-resistant cap and inert cap liner PLUS 250-500 g brown or green glass jar with unwaxed cap liner. ¹ The former must be fully filled.	14 days	
All other organics	250-500 g brown or green glass jar with unwaxed cap liner.	7 days	
Inorganics	Air-tight 0.5-2.0 kg plastic container (250-500 g brown or green glass jar may also be used).	14 days²	
Water samples			
VOCs	40-50 ml glass vial with VOC resistant screw cap and inert liner. Must be fully filled.	14 days	
TPHCWG	40-50 ml glass vial with VOC resistant screw cap and inert liner PLUS 500-1000 ml brown or green glass bottle with screw cap and unwaxed liner. ¹	14 days	
	The former must be fully filled, the latter should be filled if possible.		
All other organics	500-1000 ml brown or green glass bottle with screw cap. Fill if possible.	7 days	
Inorganics	500-1000 ml translucent or opaque screw cap plastic <i>or</i> brown or green glass bottles. Fill if possible.	14 days³	

¹ The smaller vessel is used for analysis of the volatile components within the TPH mixture and the larger one is for the non-volatile components.

^{2 14} days is set as a reasonable limit for all routine analyses of soil for those inorganic components vulnerable to chemical and/or biological breakdown. Samples for sulphate analysis are vulnerable to biological sulphate-reduction but can be held for up to 28 days. For total metals, a holding period of up to 6 months is acceptable.

^{3 14} days applies for all routine analyses of most inorganic components that may be vulnerable to chemical and/or biological reactions. In the specific cases of sulphide, nitrite, nitrate and phosphate analyses, storage time must not exceed 48 hours. For total metals, a holding time of up to 6 months is acceptable.

Tier Environmental standard analytical suites

The analyses included with Tier Environmental's standard analytical suites for soil, soil leachate and water samples are presented in Table 2. Other individual analyses were specified as described within this report.

Table 2. Tier Environmental Standard Analytical Suites.

Parameter	Sample type					
	Soil		Leachate ¹		Water	
		LoD ²		LoD		LoD
		(mg/kg or as stated)		(μg/I or as stated)		(μg/I or as stated)
Metals and metalloids	l					
Arsenic	✓	1	√	10	✓	10
Cadmium	✓	1	✓	5	✓	5
Chromium	✓	1	✓	5	✓	5
Mercury	✓	1	✓	1	✓	1
Lead	√	1	✓	4	✓	4
Selenium	✓	2	✓	10	✓	10
Copper	√	1	✓	1	✓	1
Nickel	✓	1	✓	50	✓	50
Zinc	✓	1	✓	8	✓	8
Other inorganics	'	-		•	u .	•
Ammonia (as NH ₄ -N)					✓	15
Total sulphate	✓	100			✓	50 mg/l
Water-soluble sulphate	√	0.1 g/l				
Hardness (as CaCO ₃)					✓	1 mg/l
Organics	I	1				1
Monohydric phenol	✓	1	✓	0.5	✓	0.5
Speciated PAHs (USEPA 16)	√	0.1	✓	0.01	✓	0.01
Total Organic Carbon	✓	0.1 wt%				
Others		1	Ī	1	ı	- 1
Electrical conductivity					√	NA
рН	✓	NA	✓	NA	✓	NA

NA - Not applicable

¹ Leachate preparation according to NRA (1994), 10:1 liquid to solid ratio.

² The table presents the desired limit of detection for the analysis. Higher LoDs may be reported on analytical data sheets due to interference between analytes within specific samples or if the laboratory needed to dilute samples to achieve results within the calibrated range for that instrument.

Analytical QA procedures

Introduction

Quality Assurance (QA) is a system of review and audit that assesses the effectiveness of that product and assures the producer and user that defined standards of quality have been met. If we consider site investigation and chemical analysis, QA is the management system that ensures these measures are in place and working as intended.

QA within the laboratory form part of relevant certification programmes (such as UKAS and MCERTS) and, indeed, will be undertaken in some form by any reputable analyst, whether for a certified technique or not. Laboratory QA/QC is beyond the control of Tier Environmental and will not be considered further in this document, although the relevant laboratory documentation can be obtained upon request. QA must also form part of the design and execution of a site investigation.

Two parameters often used to assess measurement quality objectives are bias and precision. Bias is a systematic deviation in the data. For example, a positive bias (concentrations higher than in reality) would be introduced if sampling bottles were a source of the analyte and this fact was unknown. Precision is the variation in the measurements around a central 'expected' value. This could be due both to real variability in the environmental medium being measured and random errors in the analytical process. Both precision and bias can be assessed by the use of appropriate blanks and replicates within the site investigation programme.

The objectives of the QA activities undertaken in this present site investigation were to recognise and quantify systematic bias within the analytical dataset and to obtain an indication of precision. In environmental samples, much of the observed variability is likely to result from heterogeneity in the sampled medium, particularly for soil and sediment samples.

Such QA practice within the sampling programme is required by current guidance (e.g., Environment Agency report P5-065/TR (2000); Environment Agency LFTGN02 (2002); BS 10175:2001).

Alternative QA procedures to the generic approach presented in this appendix may be specified for a project, provided case-specific justification is given.

QA checking procedure (data validation)

The responsible Engineer and Project Reviewer are required to undertake data validation and provide comment on data quality within the main body of the report(s) issued, when noteworthy matters arise. This QA checking should involve:

Confirming that data reported by the laboratory have achieved the standards specified by the certification scheme (MCERTS or UKAS). This will be indicated on the analytical certificates issued by the laboratory.

Checking that the limit of detection (LoD) and limit of quantification (LoQ) achieved by the laboratory for an individual analyte is appropriate for the purposes of the report. LoD and LoQ will vary dependent upon analyte concentrations, sample matrix properties and interference from co-contaminants.

A check that the reported range of concentrations are reasonable for the analyte. For example, the dissolved concentration of an analyte in a water sample should not exceed saturation. If it does, then this merits further consideration (e.g., was colloidal organic matter or other solid-phase material present or could there have been unobserved free-phase organic liquid?) and explicit comment. At its simplest, there may be a unit error.

Where analysis involves reporting of Tentatively Identified Compounds (TICs; normally by mass spectrometry), the reviewers should check that these might reasonably be expected at the site under consideration. The uncertainties in identification by MS mean that it is not uncommon that TICs are incorrectly assigned. In cases of doubt, the analytical laboratory can re-check the raw data and confirm.

A review of the analytical precision by comparing data obtained for duplicate samples. There is no absolute threshold - variability is entirely dependent upon the sample matrix and manner in which the contaminant has entered the sample. Variability that cannot reasonably be assigned to such factors (for example a very high apparent variability in data for sediment-free water samples) should be reviewed with the laboratory. Variability that is attributable to the sample matrix can nevertheless provide important pointers to improve understanding of contaminant transport pathways and the risks posed by pollutant linkages (e.g., soil heterogeneity, the association of contamination with particular soil fractions, the presence of residual NAPL within soil pores or the role of suspended sediments in contaminant transport).

Confirmation that no errors have been introduced by data transcription, unit conversion or corrections between preliminary and certificates issued by the laboratory. The reviewer should audit a proportion (typically 5-10%) of all data from the original (final) certificates of analysis through to the equivalent values in the report for those specific samples.

In is important to consult the analytical laboratory if apparent QA issues arise. Many apparent concerns can be adequately resolved on the basis of revisiting the raw analytical data or by obtaining a better understanding of the inherent limitations of the analysis for a particular matrix or sample type.

APPENDIX P -	COAL TAR CONTAININ	G ASPHALT CONSID	ERATIONS

Tier Environmental Approach to Coal Tar in Asphalt

This appendix outlines a summary of available guidance and describes the Tier Environmental interpretation of available information to inform, in a robust manner, the approach adopted to consider on, or both of the following objectives:

- If asphalt is present on site, what the waste classification and waste disposal route should be if there is an intention to grub up and dispose of either some, or all, of the asphalt;
- If asphalt is present and there is an intention (subject to suitability for re-use assessment) for re-use, then to determine how that may be achieved.

In order to info the decision making with respect to the above, the following guidance documents and articles have been referenced:

- Waste Classification Guidance on the classification and assessment of waste (1st Edition v1.2.GB) Technical Guidance WM3. Environment Agency, Scottish Environmental Protection Agency and Natural Resources Wales;
- Managing Reclaimed Asphalt Highways And Pavements An ADEPT & Construction Demolition Waste Forum Guidance Note (Version 2019 Revision 1, August 2019):
- Environment Agency Regulatory Position Statement 075: 'The movement and use of treated asphalt waste containing coal tar';
- Environment Agency Regulatory Position Statement 157: 'Storing and treating asphalt waste: RPS 157' (Updated 4th February 2020);
- Environment Agency WRAP Quality Protocol Aggregates from inert waste. End of waste criteria for the production of aggregates from inert waste;
- CIRIA Sustainable management of surplus soil and aggregates from construction, CIRIA, C809, dated 2023;
- Contaminated Land: Applications in Real Environments (CL:AIRE) (2011) Definition of Waste Code of Practice (version 2);
- SEPA Guidance on the Production of fully Recovered Asphalt Road Planings (Scotland);
- AGS magazine article entitled 'Coal Tar: Analysis and Detection' (March 2023 edition)

COAL TAR CONTAINING ASPHALT

WM3 includes the following text with regards to ascertaining the correct EWC code for waste asphalt:

Waste containing coal tar

This example provides guidance on the classification of road asphalt waste containing coal tar (AWCCT) and other construction and demolition wastes containing coal tar and related materials. This does not apply to wastes where coal tar is known not to be present.

Coal tar and many coal tar distillates are potentially carcinogenic hazardous substances. If the concentration of such materials is at or above 0.1% the waste would possess the hazardous property HP 7 carcinogenic. Coal tar is complex mix of hydrocarbon compounds which have to be added to together to determine the concentration of coal tar. Therefore the 0.1% concentration must be applied to all fractions of the coal tar. Assessments based on PAH's alone are not consistent with the legislation and cannot be used to classify a waste as non-hazardous. However, if the concentration of coal tar is known, the MCL under the GB CLP uses benzo[a]pyrene (BaP) as a marker compound for carcinogenicity for certain coal tar entries. Where the concentration of BaP is less than 0.005% of the concentration of the coal tar (rather than in the waste as a whole), the coal tar is not carcinogenic and does not need to be considered for HP7.

'Black top' (road surface) waste

The following applies only to Asphalt material classified in the List of Wastes as

- 17 03 01* bituminous mixtures containing coal tar
- 17 03 02 bituminous mixtures other than those mentioned in 17 03 01

Where the concentration of benzo[a]pyrene is at or above 50 ppm (mg/kg) in the black top alone (excluding other material) then the amount of coal tar should be considered to be sufficient (0.1% or more) for the material to be hazardous and thus coded 17 03 01*. Any sampling of black top would need to ensure that layers with different concentrations of benzo[a]pyrene are identified and sampled.

Tier Environmental have observed third party assessments that have determined 'black top' (road surface) waste as non-hazardous when benzo(a)pyrene is at or below 50mg/kg; however, it is considered that this represents a misunderstanding of WM3 guidance for the following reasons:

- 1) The first paragraph in the 'Waste containing coal tar' section of WM3 is clear to state that 'This example provides guidance on the classification of road asphalt waste containing coal tar (AWCCT) and other construction and demolition wastes containing coal tar and related materials.';
- 2) It also states, explicitly that "Assessments based on PAH's alone are not consistent with the legislation and cannot be used to classify a waste as non-hazardous". Tier Environmental consider this statement is tacit to include road asphalt waste containing coal tar (AWCCT) as it is mentioned in the previous paragraph;
- 3) The 'Black top' (road surface) waste sub-section states "Where the concentration of benzo[a]pyrene is at or above 50 ppm (mg/kg) in the black top alone (excluding other material) then the amount of coal tar should be considered to be sufficient (0.1% or more) for the material

to be hazardous and thus coded 17 03 01*". However, this does not mean that benzo(a)pyrene concentrations less than 50 mg/kg can be classed as non-hazardous when you take into consideration the text in Item 2), above. This either suggests a contradiction in the guidance, or that benzo(a)pyrene alone can only be used to prove the whether the AWCCT is hazardous but that the opposite does not classify the material as non-hazardous such that to prove non-hazardous you would still require the concentration of the coal tar to be determined.

The AGS article (March 2023) states that for determining whether asphalt waste is hazardous waste that "we *also* have to consider [B(a)P being greater than or equal to 50mg/kg]" suggesting that is consistent with the Tier Environmental interpretation. However, a bit further down the article states that the ADEPT Guidance reiterates and references WM3 and "the use of the 50 mg/kg level for measuring B(a)P should the total coal tar concentration values not be available for measurement". Tier Environmental's interpretation of WM3 is that it does not make reference to the 50mg/kg B(a)P level being used as a threshold in lieu of a coal tar concentration value being available.

So if, in order to determine whether asphalt is non-hazardous waste, there is a requirement for the concentration of coal tar to be analysed then a decision needs to be made as to what type of coal tar test is adequate. The AGS article (March 2023) highlights that "One of the challenges facing laboratories is the lack of standardization in the specification from clients and, also, the analysis itself". The article explains that a review by the AGS Laboratory Working Group revealed a range of techniques and "a potentially confusing landscape for the industry to navigate".

The ADEPT Guidance states there is data corroborating this assertion that 50mg/kg correlates to around 1000mg/kg road tar, this data is presented in Appendix D4.0. of the ADEPT Guidance document; however, Tier Environmental notes that the ADEPT Guidance states "This guidance is not intended as a complete guide to managing waste materials and should be read in conjunction with Regulations and guidance issued by the relevant Regulator, these will take precedence over this guidance in all cases". As such, with respect to waste classification WM3 takes precedence over the ADEPT Guidance and WM3 does not provide details of any corroboration between B(a)P and road tar.

RE-USE OF ASPHALT

The AGS article (March 2023) summarises the ADEPT Guidance as follows:

The ADEPT guidance provides more specific focus on the managing of reclaimed asphalt and provides information in to the classification of waste. It reiterates and references WM3 and the 0.1% threshold for coal tar and also the use of the 50mg/kg level for measuring B(a)P should the total coal tar concentration values not be available for measurement [see Tier Environmental comment above regarding this statement].

What the ADEPT guidance then gives, is a clear and defined protocol for sampling, sample preparation, sample volumes and data review with also indication of analytical requirements and basic principles. The document gives details and refences to specific British Standards for the sampling and preparation of road plannings and road cores (BS 932 and BS 12697), and then recommends the following testing:

- PAH analysis in the laboratory by gas chromatography mass spectrometry (GCMS) for the USEPA16 suite of PAHs, though only B(a)P may be necessary. It is worth noting here that labs will test for the full suite in a single process so requesting B(a)P only will usually give no cost or speed benefit. Should further characterisation for landfill disposal be required then the USEPA17 suite inclusive of coronene should be used,
- Screening methods such as PAK marker sprays or Acrylic White sprays can be used but validated by the use of frequent 'full' analysis,
- Specifies the use of Monohydric Phenol (Phenol Index) testing, with a potential requirement to speciate the individual compounds (Phenol, Cresols and Xylenols) should the levels be sufficiently high.

In terms of data review the 3 potential outcomes are:

- 1) Classed as Inert for the purposes of the Quality Protocol for Aggregates from Inert Waste if:
 - a. The guidance of sample numbers has been observed,
 - b. All the B(Aa)P results are below 25mg/kg,
 - c. There are ≥3 results.
- Classed as Hazardous and treated accordingly is:
 - a. All the B(a)P results are above 50mg/kg Note: If there are limited results and close to the threshold then further investigation is required.
- 3) Full statistical analysis required to make assessment if:
 - a. Some or all results are above 25mg/kg and below 50mg/kg.

Tier Environmental once again notes that the ADEPT Guidance states 'This guidance is not intended as a complete guide to managing waste materials and should be read in conjunction with Regulations and guidance issued by the relevant Regulator, these will take precedence over this guidance in all cases'. As such, with respect to waste classification WM3 takes precedence over the ADEPT Guidance.

ENVIRONMENT AGENCY REGULATORY POSITION STATEMENTS 075 AND 157

The ADEPT Guidance describes that these documents allow the treatment, movement and use of asphalt waste containing coal tar in construction operations for hard paving structures in England only. They do not enable the producer to demonstrate that end of waste criteria has been met, but they do state that if followed correctly, the EA will not pursue an application for an environmental permit.

CIRIA C809 states the following:

RPS 75 (EA, 2014d) allows the use of treated asphalt waste containing coal tar (AWCCT) (ie classified as hazardous) in specific construction operations for hard paving structures such as roads, pavements, footways, car parks and airfields.

While AWCCT is commonly treated by crushing, grinding, and screening, the treatment of AWCCT is not covered by this RPS. The AWCCT needs to meet the requirements of the Specification for Highways Works and can only be used in bound sub-surface layers, eg sub-base, base and binder layers.

SEPA GUIDANCE ON THE PRODUCTION OF FULLY RECOVERED ASPHALT ROAD PLANINGS (SCOTLAND)

The ADEPT Guidance describes that this document provides approved methodology that allows producers to demonstrate when aggregate produced from asphalt has been fully recovered and has ceased to be a waste. This guidance is only applicable in Scotland. However, it is not applicable to tar bound aggregates, asphalt contaminated with other substances or asphalt removed/processed by any other method than a road planer.

WRAP QUALITY PROTOCOL - AGGREGATES FROM INERT WASTE. END OF WASTE CRITERIA FOR THE PRODUCTION OF AGGREGATES FROM INERT WASTE

The ADEPT Guidance summarises that this document is applicable to England, Northern Ireland and Wales. It identifies that certain specified inert wastes (including uncontaminated asphalt) may achieve end of waste status through treatment and use in compliance with the Quality Protocol for recycled aggregates from inert waste.

RE-USE UNDER DOWCOP

Tier Environmental consider that *in situ* asphalt may be reasonably considered for re-use under DoWCoP, (subject to following DoWCoP fully including conducting site-specific risk assessments to demonstrate suitability for use) as it would constitute "Source segregated aggregate material arising from demolition activities....".

If the asphalt materials are coal tar containing then it would be necessary to consider the potential risks to human health and controlled waters carefully and agreement with the Local Authority (via Contaminated Land Officer or equivalent), Environment Agency / Natural Resources Wales local waste team / groundwater team would be necessary.

Due consideration may also need to be given to Series 600 if the materials is to be combined with other materials to form an engineering material.



Complying with Control of Asbestos Regulations (CAR): Risk Assessments, Licensing and Training

This appendix outlines CAR risk assessments and where they should be applied in relation to assessing and remediating brownfield sites. The information below details the different classifications of work with asbestos under CAR, summarises the legal requirements for asbestos awareness training for all involved in the investigation and management of asbestos containing soil (ACS), and details the potential requirements for suitable proficiency training relating specifically to ACS.

CAR RISK ASSESSMENTS

A CAR Risk Assessment is required for any work which may expose employees to asbestos. It is recommended that a precautionary approach is adopted if there is any doubt about risks associated with asbestos.

There are three main activities for potential asbestos exposure during work on brownfield sites:

- Site reconnaissance visits;
- Site investigation works; and
- Site remediation.

CAR risk assessments are needed at each stage but may be incorporated during the site investigation stage into the overarching health and safety risk assessments.

The CAR risk assessment must:

- Identify the type of asbestos to which employees are liable to be exposed, where possible, or assume it is present in different forms;
- Determine the type and extent of exposures to asbestos that may occur during the work.
- Identify the steps to be taken to prevent exposure or reduce it to the lowest level reasonably practicable; and,
- Consider the effects of control measures that have been or will be taken.

The CAR risk assessment should include any information used to inform the risk assessment such as asbestos reports or desk study information. In the event that this information is not available, the assessor should be assumed that all forms of asbestos may be present on site.

For all investigation and remediation of ACSs, a detailed written work plan should he produced and followed as detailed on the HSE website and in the CAR

The CAR risk assessments for specific investigations or remediation projects, will determine whether or not work is 'licensable work' (LW), notifiable non-licensable work' (NNLW) or 'non-licensed work' (NLW). In addition, training requirements are also defined by the CAR risk assessment.

Some examples of control measures that apply during site reconnaissance, site investigation works, and site remediation are given below and should be applied depending on the asbestos risks identified for the site at each stage of investigation:

- Avoiding stirring up dust;
- Cleaning footwear after site works;
- Removing and bagging any overalls for disposal/laundering;
- Respirators and hygiene facilities for high risk sites;
- Segregated welfare units;
- Wetting ground
- Minimising soil disturbances;
- Implementation or retention of capping/break layers;
- Implementation of awareness training;
- Air monitoring;
- Managing stockpiles;
- Area segregation;
- Wheel washing
- Road washing/cleaning

It is important to note that during site reconnaissance visits, site investigation works and site remediation that asbestos should not be considered in isolation and control measures are likely to form part of a wider health and safety precautions.

Respiratory protective equipment (RPE)

RPE is the last line of defence and its requirement would be defined by the CAR risk assessment. HSE (2013b) advises that RPE should have an assigned protection factor of 20 or more for all work with asbestos. In certain instances, full face-piece, positive pressure respirators with a protection factor of 40 are necessary (to EN 12942:1998, TM3).

Suitable types of RPE for most *short* duration non-licensed asbestos work:

- Disposable respirator to standards EN149 (type FFP3) or EN1827 (type FMP3)
- Half mask respirator (to standard EN140) with P3 filter
- Semi-disposable respirator (to EN405) with P3 filter

These filters are not suitable for people with beards/stubble or for long or continuous use.

LICENSING

CAR defined certain types of activities involving asbestos as 'licensable work' (LW) or as 'notifiable non-licensable work' (NNLW). All other work would be 'non-licensable work' (NLW).

LW is defined as:

- work where exposure is not 'sporadic and low intensity'.
- work where the risk assessment cannot demonstrate that the control limits (four hour and 10 minute limits) will not be exceeded.
- work on asbestos coating
- work on AIB or insulation where risk assessment is either of first two points above or not of short duration (where short duration is defined for any work liable to disturb asbestos as taking less than two hours per week (including ancillary work) and no one person carries out that work for more than one hour').

NNLW includes work with:

- AIB or asbestos insulation of short duration that is not licensable.
- fire-damaged asbestos cement or asbestos cement damaged so as to create significant dust and debris.
- asbestos ropes, yarns, woven cloths in poor condition or handling cutting or breaking up the materials.
- asbestos papers, felts and cardboard in poor condition, unencapsulated or not bound into another material.

Work with weathered asbestos cement, air monitoring and collecting samples of ACM in buildings would not normally be notifiable.

It is impossible to specify definitively what activities will and will not be licensable. This decision should be made as part of the CAR risk assessment. CAR is not primarily aimed at work with ACSs and there is little published information on airborne asbestos concentrations during work with ACSs. Nevertheless, CAR will require some remediation projects, and occasionally site investigations, to be LW. Investigations on other sites may involve NNLW. The decision as to whether work is LW or NNLW should be made during the CAR risk assessment by those in charge of the brownfield site investigations and remediation projects.

TRAINING REQUIREMENTS

Asbestos health and safety courses are offered by a number of providers in the UK. Training courses that include the problem of identifying ACMs in soil should be undertaken at regular intervals by those involved in the investigation, assessment and management of sites where ACs are known or suspected. It is the role of the employer to identify the level of training required for an employee based on their role, experience and duties. Reference to Regulation 10 of CAR should be referred to for more information on training requirements.

Recognising asbestos within soils is challenging due to the heterogeneity of such soils and the discolouration of asbestos by smeared soil. Specific training for ground workers should include understanding fibre release potential, potential control measures in the field, how to take representative ACSs safely, sample labelling and what analytical tests are available and when the y should be implemented.

Health and safety training required under CAR includes asbestos awareness, non-licensable work (including notifiable non-licensable work) and licensable work with asbestos.

In addition to health and safety training, some staff involved in the technical identification on site of ACMs, sampling and analysis may require technical proficiency training (competency training).

Training vs. Competence

HSE (2005) identifies that 'training alone does not make people competent. Training must be consolidated by practical experience so that the person becomes confident, skilful and knowledgeable in practice on the job'. It is critical that ACS surveyors demonstrate competency with details of relevant field experience alongside training and examples of previous works/references.